Climate Change and Coastal Asset Vulnerability

An audit of Tasmania's coastal assets potentially vulnerable to flooding and sea-level rise.

Department of Primary Industries and Water

Tasmania
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Introduction

Background

The Department of Primary Industries and Water initiated a *Climate Change and Coastal Risk Management Project* in 2006. The Project is supported by the Tasmanian Risk Mitigation Programme, coordinated by the State Emergency Service.

The Project has three phases. The first phase is to develop detailed information on the probabilities of storm surges combined with sea-level rise, known as exceedance statistics, for use in risk planning and management. The second phase considers the coastal assets and values vulnerable to storm surge flooding at current and projected sea-levels. The third phase is focussed on using the information developed in the first two phases to direct Project resources to the highest priority areas so that relevant and effective tools and resources can be developed to support improved risk management of assets and values in Tasmania's coastal zone.

This Report has been been produced as part of the Project's second phase, and outlines a desktop audit undertaken on assets and values potentially at risk in the Tasmanian coastal zone. The desktop audit identifies sites (by a broad class of asset and by local government area) which appear vulnerable to erosion and flooding impacts. However, limitations in the availability of Statewide data for some asset types prevented their inclusion in this study.

Objective

The coastal zone is vulnerable to the impacts of natural hazards such as storm surge and erosion. Climate change and sea-level rise will exacerbate the impacts of these hazards, causing progressive flooding and erosion of shorelines. Information on the potential vulnerability to these hazards is critical to the development of planning, mitigation and management responses that are appropriate, and based in sound risk management techniques.

The objective of this report is to support the identification of assets most vulnerable to storm-surge, erosion and sea-level rise impacts, and the broad tools and resources that will be needed to support improved coastal risk management in Tasmania.

Application of Australian Standard

Australian Standard AAS/NZS 4360:2004 "…provides a generic framework for establishing the context, identifying, analysing, evaluating, treating, monitoring and communicating risk."

The Standard has been adopted throughout Australia, and notably by Emergency Management Australia and the Tasmanian State Disaster Committee. The Standard provides the foundation for the Climate Change and Coastal Risk Management Project, with the Project outputs designed to meet the requirements of the Standard.

The Standard defines a risk as 'the possibility of something happening that impacts on your objectives. It is the chance to either make a gain or loss. It is measured in terms of likelihood and consequence.'

Key Definitions drawn from the Standard include:

Consequence	outcome or impact of an event. *Notes:* *There can be more than one consequence from one event.* *Consequences can range from positive to negative.* *Consequences can be expressed qualitatively or quantitatively.* *Consequences are considered in relation to the achievement of objectives.*
Event	occurrence of a particular set of circumstances *Note: The event can be certain or uncertain, and the event can be a single occurrence or a series of occurrences.*
Hazard	a source of potential harm
Likelihood	used as a general description of probability or frequency. *Note: Can be expressed qualitatively or quantitatively.*

Risk	the chance of something happening that will have an impact on objectives *Notes:* *A risk is often specified in terms of an event or circumstance and the consequences that may flow from it.* *Risk is measured in terms of a combination of the consequences of an event and their likelihood.* *Risk may have a positive or negative impact.*
Risk assessment	the overall process of risk identification, risk analysis and risk evaluation, including: • Establishing the context (eg organisation structures and risk management policies); • Identifying the risks (ie what can happen, when, where and why); • Analysing the risks (including determining consequences and likelihood to determine the level of risk); • Evaluating the risks (including deciding whether to treat the risks or not); and • Treating the risks Each step above requires communication and consultation, and also monitoring and review.

Risk Assessment Methodology

Assets included in the Risk Assessment

Assets used in this desktop audit were sourced from existing digital data from a number of sources. No new data collection was undertaken. Table 1 outlines the assets and values considered.

Data used included:

- Land tenure (source: Resource Management and Conservation Division, DPIW, though State of the Environment Reporting, Resource Planning and Development Commission)
- The LIST layers (source: Information and Land Services Division, DPIW, though State of the Environment Reporting, Resource Planning and Development Commission)
    - Community Facilities
    - Roads
- The Parks and Wildlife Service asset management register (source: Parks and Wildlife Service, Department of Tourism, Arts and the Environment)
- Environmentally Relevant Land Use Register (ERLUR) (source: Environment Division, Department of Tourism, Arts and the Environment).

The data collected as part of the Crown Land Services Marine Structures Review Project was not analysed as most of those structures are on the water side of the hazard zones used in this analysis (see the section 'Risk Assessment' for further details of the analysis methodology). That Project has a significantly better understanding of the condition and vulnerability of those structures than could be obtained from the indicative analysis used here.

The risk assessment considered Historic Sites, as represented by land tenure. Data was not available to consider in the spatial analysis items on the Heritage Register, so the land tenure for which data was available was used as a surrogate. While this was in part a limitation, it did provide recognition of the importance of surrounding 'lands' to the historic value and context of the particular item(s) for which the land was reserved.

Issues with data availability prevented a number of other asset types from being included in this desktop analysis. Of particular note are sewage pipes and pumping stations. As the most low lying parts of the sewage infrastructure, these are potentially vulnerable, which could cause major pollution events and are expensive to replace. They were not included in the desktop GIS analysis as a consistent, Statewide dataset of all elements was not readily available. The analysis did include a range of sewage and waste water treatment plants, however it is recognised that this is a significant understatement of the potential risks.

Likewise, comprehensive Statewide spatial datasets were not available, or readily accessible, for Aboriginal cultural heritage sites, stormwater infrastructure, land-based boating and aircraft

navigational infrastructure, electricity and communications facilities, and seawalls and other protective infrastructure.

The analysis did consider 'private' land, which includes residential, commercial and industrial areas. Individual parcels were not analysed given the magnitude of this task and the diversity of development around the State. In addition, it is more appropriate to address development on private land through planning schemes than through individual risk management plans, which is the focus of this Project. The section 'Priority focus areas' (page 11) provides further details.

Further detailed analysis, often for specific locations, would be required to address the limitations of the analysis undertaken for this Project.

Table 1 Summary of assets and values considered

Asset Type	
Land tenure (area)	
Commonwealth Land	Land administered by the Commonwealth, including Defence
Historical Sites	Land classed as Historic Site under the *National Parks and Reserve Management Act 2002*
Natural Reserves	Land reserved for primarily natural reasons under the *National Parks and Reserve Management Act 2002, Crown Lands Act 1976*, and *Forestry Act 1920*.
Other Public Land	Public land administered by a public agency or authority (State or Local), but not as a formal reserve for natural reasons, State Forest or private reserve.
Private Reserves	Formal private reserves under the *National Parks and Reserve Management Act 2002*
State Forest	Land defined as State Forest under the *Forestry Act 1920*
Unreserved Private	Private land
Facilities (number)	
Boating & Surf Life Clubs	Rowing, Surf life saving and Yacht and sailing clubs
Burial Sites	A cemetery
Camping Ground/Caravan Park	Camps, Camping Ground and Caravan Parks
Car Park	A public car park
Church	A place used for religious purposes by a particular sect
Community Care	A non-government establishment that provides accommodation, care or support to those in need
Hall/Community Centre	A hall or community centre belonging to a particular community, council, group or organisation.
Cultural Area	A cultural feature
Historical	A historical feature
Libraries	A place containing an organised collection of literary material, films, recordings, music, or other documents. Excludes private video library
Medical Services	A public or private establishment, other than a private medical or para-medical practice, that provides treatment, care, accommodation or insurance for the ill or injured
Museums/Galleries	Gallery - A place for exhibiting works of art and craft. Museum - A place for keeping, exhibiting and studying objects of scientific, artistic, and historical interest.
Natural	A natural feature
Park/Reserve	A small public ground for informal, outdoor recreation belonging to and/or maintained by a Council or community organisation
Picnic Area	A public amenity providing basic cooking or picnic facilities
Schools	An establishment for formal instruction. (But excluding university sites)
Scout/Girl Guide	A meeting place of a scouting organisation or Guides Tasmania
Senior/Elderly Citizens	A meeting place of a club for senior and elderly citizens
Service Station	A retail fuel outlet
Sports Building	Building for Indoor cricket, Squash, for more than one sport, Swimming pools or a facility for any other particular sport

Sports Clubs	A meeting place of any type of sporting club, including Bowls, Cricket, Croquet, Football, Golf, Gun and rifle, Rugby, Soccer, Tennis or Other sporting club
Sports Grounds	A ground used for a variety of sports, usually having grandstands for spectators and facilities for players.
State Police/Emergency Management Services	An establishment for an operational unit or service of a Tasmanian government police or emergency service (but not a headquarters or administration unit). This may not include designated emergency service centres such as coordination, evacuation or recovery centres.
Sewage Treatment and Waster Water plants	Sites in the LIST Community Services layer that include 'sewage' or 'wastewater' in their description, and including lagoons, plants and works. This does not include the sewage pipe network, nor the pumping stations at the low points along the sewage pipelines.
Roads (km)	
National/State Highway	Roads which are of importance in a national sense, and/or are a major intrastate through route, and/or are principal connector roads between Capitals and/or major regions and/or key towns
Arterial Road	A road that predominantly carries traffic from one region to another, forming a principal avenue of communication for traffic movements
Feeder	Commonly used roads that service urban networks, and/or rural communities, and/or resource areas. Normally connects access roads to higher classification roads
Access Road	Public or private road providing access to local properties, resources, facilities, or minor tourism destinations
Vehicular Track	Rougher roads, usually unpaved, for vehicular traffic
PWS assets (number)	
PWS Major Buildings	Houses, accommodation buildings and visitor centres
PWS Minor Buildings	Shelters, information booths, stores, workshops, walker accommodation huts
PWS Camping Areas	Camp sites (informal and defined)
PWS Car Park	Car park (formed and informal)
PWS Coastal Infrastructure	Boat ramps, slips and minor jetties
PWS Picnic Areas or Facilities	Sites with barbeques and/or picnic tables
PWS Toilet	Toilets (including septic, pit, contained)
PWS Track Infrastructure	Including bridges, walkways, duckboarding, and viewing platforms
PWS Road Infrastructure	Includes barriers, bridges and cattle grids
PWS Track (km in reserves)	Track for walkers
PWS Road (km in reserves)	Roads for vehicles
Environmental permit sites	
Waste disposal sites	Sites for the disposal of waste, including both operating and closed sites. Does not include waste transfer stations.
Storage tanks or facility	Tanks or facilities storing materials such as explosives, gas and chemicals, either above or below ground.

Each asset was also analysed by Local Government area, and for the State as a whole. There are 24 municipal areas in the State that include at least a small proportion of coastline, or an estuarine system that is significantly affected by tidal and storm surge influences.

Table 2 Tasmanian coastal Councils

Coastal Council	
Break O'Day Council	Glenorchy City Council
Brighton Council	Hobart City Council
Burnie City Council	Huon Valley Council
Central Coast Council	Kingborough Council
Circular Head Council	King Island Council
Clarence City Council	Latrobe Council
Derwent Valley Council	Launceston City Council
Devonport City Council	Sorell
Dorset Council	Tasman Council
Flinders Council	Waratah/Wynyard Council
George Town Council	West Coast Council
Glamorgan/Spring Bay Council	West Tamar Council

The details of the assessment of each asset type against each coastal municipality is provided in Appendix A. The details of all the assets for each of the municipalities are provided in Appendix B.

Hazards

The threats to assets were identified using four flood hazard zones. Three were identified in Sharples (2006) who mapped the likely storm surge inundation zones using historically recorded storm surge events, and examined the increase in the hazard zone under climate change scenarios. A fourth zone utilised a buffer of a further 50m inland.

The inundation zones used in Sharples correspond to indicative coastal areas potentially susceptible to flooding in a 0.01% exceedance storm-surge event, which corresponds to a return period of approximately 2 years (for further details, see Sharples (2006) section 4.3.2, pp78–88). While this level of hazard is different to the 1% annual exceedance level used in most regulatory standards for risk management, it provided the most useful Statewide assessment of the potential hazard area that was available at the time of the analysis.

The sea-level rise scenarios used by Sharples were based on the Intergovernmental Panel on Climate Change (IPCC) Third Assessment Report (2001). At the time of the analysis by Sharples, the Fourth Assessment Report had not been released. To identify the spectrum of risk from potential sea-level rise, the two extremes of the sea-level rise scenarios were used to add to the current levels of storm surge hazard. The IPCC's low scenario of +9cm and the high scenario of +88cm are calculated from 1990 sea-levels, so these were adjusted in Sharples for the 2004 baseline being used. Hence, Sharples used projections of global average sea-level rise between 2004 and 2100 of 8cm and 84cm respectively (Sharples 2006, p81).

As an additional mechanism for assessing the hazard from sea-level rise and storm surge, a further 50 metre buffer was added inland of the high sea-level rise projection. This was done for two reasons. Firstly, such a buffer recognises that the digital representations of the assets being considered was not always accurate, as some assets are represented in the digital datasets as a single point, whereas they can actually physically take up an area of some distance around the central location point. Hence, an asset with a point location just outside a hazard zone, may actually also occur in the hazard zone. Secondly, some of the assets analysed also have infrastructure associated with them that would be vulnerable to these hazards, but which are not represented in the digital data used for the analysis. Therefore, using a 50m buffer gave an additional zone of lower risk, but with still some potential risk.

A known limitation of the method used to assess vulnerability is that the mapping of the hazard zones is based on the high water mark, and therefore does not identify those assets in the intertidal zone, or which span estuarine areas. An initial analysis of the impact of this limitation suggested that there were not many examples of the assets being considered that would be missed. This does highlight, however, that the analysis has produced an indicative level of vulnerability, and that detailed local assessments will be necessary for local planning authorities to fully assess the risks to the assets and values they manage.

Another perspective that was not able to be assessed with the data available (including Sharples' (2006) mapping) was the depth or duration of flooding in the various hazard zones. The mapping of the hazard zones available – and used in this analysis – only provided information on the changes to the inland extent of flooding. It would stand to reason that the areas currently vulnerable to flooding would be inundated more frequently, to a greater depth, and for longer, as sea-levels rise and the flooding zone extends inland.

In summary, the four flood hazard zones used in this audit were:

- "2004 hazard" = indicative coastal areas potentially susceptible to flooding under 2004 sea-level conditions;
- "low 2100 hazard" = indicative coastal areas potentially susceptible to flooding with a low sea-level rise scenario (2004 level + 8cm);
- "high 2100 hazard" = indicative coastal areas potentially susceptible to flooding with a high sea-level rise scenario (2004 level + 84cm); and
- "cautionary 50m buffer" = indicative zone of 50m inland of the high sea-level rise scenario.

Vulnerability

Vulnerability was identified by assessing the broad type of assets included in each of the assessment categories, and applying an 'average', or 'typical', level of susceptibility of that type of asset to flooding and erosion impacts caused by storm surge and sea-level rise.

The assessment outlines the level of consequence that such hazards have on the various types of assets. Vulnerability considers a range of environmental, social and economic factors. Environmental factors can include salt contamination of soils from flooding, erosion of beach and dune systems, loss of vegetation and damage to habitats, including the loss of threatened species. Social factors can include disruption to the use of the asset, and loss of amenity. Economic factors can include issues such as physical damage or corrosion to built structures, the undermining of foundations, and damage to building contents from being flooded.

Other issues such as emergency services are also considered, for example, the disruption to critical transport routes due to flooding events. A road subject to significant flooding during an extreme sea-level event is highly vulnerable if it is the only access route to an area. An area that is cut off makes it more difficult to provide critical services, such as fire and ambulance, during those events.

Another example is the category of "Community and Public Buildings". These can be highly vulnerable as flooding and/or erosion can physically damage the structure or foundations, which in turn is likely to have a significant economic cost to repair. It would also have a social cost as such structures are often focal points for local communities, and any disruption to their use – either during an extreme sea-level event or afterwards as it is repaired – could be a considerable negative to the community.

Hence the assessment in Table 4 provides an indicative summary of the likely vulnerability of each of the significant categories, highlighting particular aspects where relevant.

The vulnerability assessment primarily considers short to medium term impacts on public or community assets and infrastructure. The consideration of longer-term adjustment issues would require further assessments to be undertaken. Longer term human health and welfare issues were also beyond the scope of this analysis.

Risks

A risk exists when there is a combination of the presence of a hazard (or threat), the likelihood of occurrence, a vulnerability to that hazard, and therefore a consequential impact.

A preliminary assessment of the risk faced by the range of categories used in this analysis has been provided in Table 4 to assist with identifying priority tools and resources to be developed in the latter part of the Climate Change and Coastal Risk Management Project.

The process for assessing a level of risk incorporated the amount of the asset likely to be affected at 2004 sea-levels, and the increase at higher sea-level rise projections. It also considered the vulnerability – or consequence of impact – of each of the categories to the hazard of storm surge and sea-level rise.

These elements were considered jointly, allowing for a qualitative assessment of the indicative level of risk for that category. This can then be used to prioritise future action to mitigate the increasing risks faced from storm surge and coastal erosion.

Results of Risk Assessment

Summary of Results

The details of the assets considered and the hazard zones they occur in are provided in Appendix A. A breakdown of assets by municipality is provided in Appendix B.

A summary of the assets considered and their Statewide totals are provided in Table 3. As noted above, there are also other categories of assets that were not able to be considered as consistent Statewide data was not readily accessible for this desktop analysis.

It should be noted that the audit primarily considers short to medium term impacts on public or community assets and infrastructure. The consideration of longer term adjustment issues would require further assessments to be undertaken. Longer term human health and welfare issues were also beyond the scope of the analysis.

The desktop audit highlights that there are a number of values and types of assets around Tasmania's coastline that are in the current hazard zone and/or register in the potential hazard zones. These types of values and assets are vulnerable to the impacts of storm-surge and sea-level rise, with there being particular concern for:

- the area of natural reserves, especially in the Circular Head, Flinders and Huon municipalities (Table 7);
- the area of other public land (State and Local Government), predominantly in the Flinders, Circular Head and West Coast municipalities (Table 8);
- the area of unreserved private land, especially in the Circular Head, Flinders, Glamorgan/Spring Bay and West Tamar municipalities (Table 11);
- Community/Public buildings including Community Care, Hall/Community Centre, Sports Building, Sports Clubs, particularly in the north, east and south of the State (Table 17, Table 18, Table 31, and Table 32);
- Picnic areas, both inside and outside reserves, especially in the Break O'Day, Central Coast, Clarence, Glamorgan/Spring Bay, Kingborough, West Tamar and Latrobe municipalities (Table 26 and Table 46);
- Schools in the Circular Head, Break O'Day and Launceston municipalities (Table 27);
- Service stations particularly in the north, east and south of the State (Table 30);
- Emergency services buildings especially in the Break O'Day, Glamorgan/Spring Bay and Circular Head municipalities. Clarence, Kingborough and Flinders also register in the potential hazard zones (Table 34). (Note that designated emergency service centres such as coordination, evacuation or recovery centres were generally not included in the analysis, hence further work would be required to identify these sites);
- Sewage and wastewater treatment plants, especially in the north of the State (Table 35). (Note that sewage pipes and pumping stations were not able to be assessed, however it is recognised that these are important vulnerable points of the total sewage infrastructure);
- Major State highways and arterial roads in many areas around the State (Table 36 and Table 37);

- Access roads, where Local Governments are primarily responsible, especially in the north, north-west and south-east of the State (Table 39);

- Major buildings under the jurisdiction of the Parks and Wildlife Service, especially in George Town and West Coast municipalities (Table 41);

- Toilets managed by the Parks and Wildlife Service especially in the east, north-east and south-east of the State (Table 47);

- Waste disposal sites, mainly in the north-west, though there are also some potential issues in the south-east (Table 52);

- Storage tanks and facilities, especially in the north of the State, though throughout the State under higher sea-level rise scenarios (Table 53).

Management responsibilities for the assets at risk are spread between Local and State Government, with the Commonwealth also having some responsibilities.

Table 3 Summary of asset vulnerability

Asset Type	2004 hazard	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m) [1]
Land tenure (ha)				
Commonwealth Land	22	24	40	123
Historical Sites	114	119	163	757
Natural Reserves	9,137	9,462	12,854	37,941
Other Public Land	2,707	2,795	3,743	8,373
Private Reserves	571	584	692	997
State Forest	140	142	169	427
Unreserved Private	10,557	10,892	14,588	23,528
Facilities (number)				
Boating & Surf Life Clubs	21	21	27	53
Burial Sites	2	2	3	8
Camping Ground/Caravan Park	16	16	21	37
Car Park	6	6	7	10
Church	9	9	14	22
Community Care	13	13	16	25
Hall/Community Centre	9	9	10	28
Cultural Area	0	0	7	12
Historical	2	2	2	11
Libraries	1	1	2	2
Medical Services	5	5	8	13
Museums/Galleries	3	3	3	12
Natural	2	2	2	7
Park/Reserve	35	35	54	92
Picnic Area	65	65	79	122
Schools	4	4	6	12
Scout/Girl Guide	9	9	10	17
Senior/Elderly Citizens	1	1	3	4
Service Station	13	13	15	38
Sports Building	14	14	16	48
Sports Clubs	27	27	35	63
Sports Grounds	3	3	6	11
State Police/Emergency Management Services	10	10	11	32
Sewage and wastewater treatment	9	9	12	22
Roads (km)				
National/State Highway	31	32	47	140
Arterial Road	42	43	56	111
Feeder	21	22	32	91
Access Road	247	251	339	706
Vehicular Track	139	145	211	437

PWS assets (number)				
PWS Major Buildings	11	11	13	21
PWS Minor Buildings	29	29	34	55
PWS Camping Areas	13	13	22	54
PWS Car Park	21	25	33	72
PWS Coastal Infrastructure	12	12	14	17
PWS Picnic Areas or Facilities	87	90	128	204
PWS Toilet	41	41	61	129
PWS Track Infrastructure	12	12	17	44
PWS Road Infrastructure	13	13	22	43
PWS Track (km in reserves)	35	36	58	169
PWS Road (km in reserves)	11	12	16	20
Environmental permit sites (number)				
Waste disposal sites	4	4	5	6
Storage tanks or facility	24	24	36	67

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.

Table 4 outlines the assets most significantly impacted together with a preliminary risk assessment and potential responses. The Amount/Likelihood column is derived from Table 3 above. The process for determining Vulnerability and Risk is provided in the previous section, "Risk Assessment Methodology". An outline of the focus of the likely necessary response is provided in the final column of Table 4.

For the assets reviewed (Table 3) but not addressed in the risk assessment (Table 4), it was considered that the amount or likelihood of impact, and/or the low level of consequences of that impact meant that it should not be a priority for the project. Details of these assets are included in Appendix A: Vulnerability Assessment Data – by Type, and Appendix B: Vulnerability Assessment Data – by Municipality.

Table 4 Preliminary risk assessment of major assets and proposed responses

Asset type	Amount/likelihood of impact [1]	Vulnerability	Risk	Response focus
Unreserved Private land	2004 hazard – a large area (10,557ha) *High SLR – potentially very large area (up to 23,528ha)	Potentially high	High – depending on level of development	Depends on infrastructure/ development
Natural Reserves	2004 hazard – a large area (9,138ha) High SLR – potentially a very large area (up to 37,942ha)	High impact on natural/ conservation values	High	Specific coastal vulnerability input into natural area management planning
Other Public Land	2004 hazard – an important area (2,708ha) High SLR – potentially a large area (up to 8,373ha)	Important area. Often high value to local community	Moderate	General risk management planning
Community and public buildings	2004 hazard– 63 High SLR – potentially up to 164, a significant number	Usually high value to local community	Moderate	General risk management planning (Note: lifespan may be less than high SLR timeframe)

Picnic Area and PWS Picnic Areas or Facilities	2004 hazard– 152 High SLR – potentially up to 326, a very significant number	Usually high social value to local community but low level of development. Often some natural values.	Moderate	General risk management planning for most affected infrastructure, and link to natural value planning
Schools	2004 hazard– 4 High SLR – potentially up to 12	Very high through damage and disruption	Potentially high	Provide info where relevant for existing risk management planning
Service Station	2004 hazard – 13, a large amount High SLR – potentially up to 38, a very significant number	Potentially high from pollution and damage	Potentially high	Provide info where relevant for existing risk management planning
State Police/Emergency Management Services	2004 hazard – 10 High SLR – potentially up to 32	Potentially high through disruption to emergency response capability	Potentially high	Provide info where relevant for existing risk management planning
Sewage/ Wastewater Treatment Plants	2004 hazard – 9 High SLR – potentially up to 22	High	High despite low numbers as high value assets	Risk management plan for 'now' which also recognises sewage pipelines and pumping stations, and broader principles for peripheral sites (Note: lifespan may be less than high SLR timeframe)
State/National Highway and Arterial Road	2004 hazard – 73km, a significant length and key routes. High SLR – potentially up to 251km, of high significance	Potentially high through damage and disruption	Potentially high	Provide info where relevant for existing risk management planning
Access Road	2004 hazard – 247km, a very large amount High SLR – potentially up to 706km, very large amount	Potentially high through damage and disruption	Potentially high, especially with low resource in Local Gvmnt as manager	General risk management planning
PWS Major Buildings	2004 hazard– 11 High SLR – potentially up to 21	Potentially high through damage and disruption	Moderate	Provide info for existing risk management planning (Note: lifespan may be less than high SLR timeframe).
PWS Toilet	2004 hazard – 41 High SLR – potentially up to 129	Potentially high from pollution and damage	High as high value assets	Provide info for existing risk management planning. (Note: lifespan may be less than high SLR timeframe).

Waste disposal sites	2004 hazard – 4 High SLR – potentially up to 6	Potentially high from pollution	High despite low numbers as high value assets	Provide info for existing risk management planning
Storage tanks or facility	2004 hazard – 24 High SLR – potentially up to 67	Potentially high from pollution and damage	Moderate to High	Provide info for existing risk management planning

Note:
[1] High SLR refers to "high 2100 hazard" and "cautionary buffer (+50m)".

Priority focus areas

The desktop audit provides a significantly better understanding of the types of assets at greatest risk from storm-surge and sea-level rise, and the regions in which they occur. The purpose of such an analysis was to provide a more quantitative mechanism for prioritising future risk assessment and management work.

From the Summary of Results above, it is clear that further work will need to address a number of areas. The areas requiring particular attention include (in no priority order):

1) Reserves for generally natural purposes;
2) Large community and public buildings, including:
    a) Community Care facilities;
    b) Hall/Community Centres;
    c) Sports Building;
    d) Sports Clubs;
3) Picnic areas and facilities, both inside and outside formal reserve areas;
4) Schools;
5) Service Stations;
6) Emergency services buildings;
7) Sewage and wastewater treatment plants (including associated pipelines and pumping stations);
8) Roads – especially local (access) roads;
9) PWS infrastructure, especially major buildings and toilets;
10) Waste disposal sites;
11) Storage tanks and facilities.

Further details of the other categories assessed but not listed are provided below.

Private Land and Other Public Land has not been listed as a specific Project focus area as the risks are dependent on the type of development and infrastructure present. Private land can range from no development at all, in which case the consequence of impacts is probably generally restricted to physical erosion, through to significantly developed where the consequences of impact are very high. Given this diversity of potential impact, it is expected that the most appropriate way to deal with this category is through appropriate and consistent planning and development standards, implemented through Local Government planning schemes. Hence, a focus area of the Project will include liaison with the relevant planning bodies to assist in the development of appropriate methods for defining risk, and appropriate development standards to apply for the different levels of risk around the Tasmanian coastline. Wherever possible, the Project will work with existing processes and structures to ensure that standard planning process are provided with the best information and guidance on the most appropriate methodologies to apply to determine, asses and mitigate risks from storm surge flooding and sea-level rise.

Historic Sites have also not been listed, as further examination of the types of assets and values covered by this category is required to better understand the vulnerabilities, or the consequences, before the level of risk can be assessed. This is required before an assessment can be made of the most effective tools and resources required. It is possible that with the existence of an already mature planning and management system, the provision of information as for the natural reserves listed above will be the best form of 'support' that this Project is able to provide.

While there are many parts of the State that are impacted, the north-west, and east coast regions have particularly high concentrations of assets vulnerable to sea-level rise and flooding.

To address the issues above, further liaison with some key stakeholders will be required before the nature of the most effective 'tools' and 'resources' can be determined. While some stakeholders may require assistance to develop fully developed risk management plans, other stakeholders may only need further technical advice on storm surge and sea-level rise exceedance probabilities for them to incorporate into their own existing management systems.

The key stakeholders for helping guide the tool and resource development process include:

- Parks and Wildlife Service, Department of Tourism, Arts and the Environment – for natural area planning and infrastructure management planning (including major buildings, toilets and picnic areas), and also types of historic 'values' in the hazard zones;
- Environment Division, Department of Tourism, Arts and the Environment – for locating and permitting activities such as service stations, waste disposal and storage facilities;
- Local Government – for community buildings, local (natural) parks and picnic areas and facilities, road management and general hazard zoning.
- State Emergency Service – for emergency response capabilities from coordination centres in hazard zones, and also disruption to transport lines during emergencies;
- Department of Infrastructure, Energy and Resources – for road planning requirements;
- Department of Education – for infrastructure management and emergency response planning.

Resource and tool development

Outline of proposed tools

There are a number of areas that arise from the asset vulnerability analysis that will need further work to improve risk management planning. Some will be a priority for the Climate Change and Coastal Risk Management Project, others will require work to be done through other activities and programs.

Below is an outline of the major categories of assets identified, and a description of the risks that includes the level of vulnerability, or degree of consequence, on the value of those assets.

The priority focus areas are also indicated based on the level of risk. These have been developed to assist in guiding the work of the Climate Change and Coastal Risk Management Project. The terms used are:

- 'Primary' – refers to those categories where significant tool development is required; and
- 'Secondary' – refers to those categories for which the main response will be to provide information to another organisation for them to incorporate into their existing planning and management system.

The following also outlines the likely range of tools and resources required to improve risk management in the coastal zone. The term "tool" is used to refer to a range of products including information papers, mapping, template management plans, detailed management plans, data and so on.

There are a number of policy approaches that these tools can work to achieve. Previous studies have shown that strategic management of hazards requires full consideration of the risks, and the costs and benefits of response actions. This analysis has been aimed at assisting the Climate Change and Coastal Risk Management Project to develop tools that take a risk management approach, and therefore consider strategic aims, to ensure planning and management approaches will be effective. To guide the development of tools, the adaptive decision-making framework and indicative policy response options detailed in Rigby (2005) were considered. Such policy responses include:

- Abandon (allow natural processes to continue unabated);
- Protect (shield areas from relevant climate change impacts and identified hazards);
- Adapt (formulate measures that allow continued or extended use of vulnerable land and resources);
- Retreat, including phased retreat (instigate measures to minimise the costs of changing land-use once threatened by coastal hazards and climate change impacts).

As noted previously, an important category not detailed here is private land. With such diversity of development on private land, it is not possible for a specific project such as the Climate Change and Coastal Risk Management Project to develop specific tools to cover the broad range of possibilities. It would be more effective for the Project to work with those areas in Government that are also developing general planning and development standards. This is discussed in more detail in the following sections.

Another category that has not been addressed specifically but which still covers important values are historic sites and historic buildings. Their management is likely to have a number of similarities to several of the other categories, and the managing authorities are generally already covered. It is proposed that relevant information is provided to appropriate management authorities as part of the other discussions planned.

It is also a known limitation of the analysis that there were some categories of asset and infrastructure that could not be included, as consistent datasets for the whole State were not readily available. These include: sewage pipes and pumping stations; Aboriginal cultural heritage sites; stormwater infrastructure; land-based boating and aircraft navigational infrastructure; electricity and communications facilities; and seawalls and other protective infrastructure.

Category: **Reserves (for natural purposes)**

Assets included: land reserved for primarily natural purposes under the *National Parks and Reserve Management Act 2002*, *Crown Lands Act 1976* and *Forestry Act 1920*, other 'natural parks' and 'park/reserves' with less formal status and usually managed locally.

Risks: Not only is there a large area susceptible, most of these areas contain high natural values (eg high conservation value vegetation types and geomorphic features, and threatened species). They are often also highly valued social assets.

Project focus area: Secondary

"Tools" required: Provide foundation information to incorporate into existing PWS planning and management system, and some tool development for more local level natural reserves:

- Data/mapping on extreme sea-levels
- Template risk assessment methodologies and plans
- Case study risk assessment and management plan

Major Stakeholders: Parks and Wildlife Service, Local Government, Resource Management and Conservation Division, and Natural Resource Management groups.

Category: **Large Community and Public Buildings**

Assets included: Significant community buildings with often items or equipment of significant value that may not be easily removed. Buildings include Community Care facilities, Hall/Community Centres, Sports Building and Sports Clubs.

Risks: While some of these large buildings may be able to withstand periodic flooding, and the disruption to services may not be highly critical, some structural damage is likely and clean up costs are likely to stretch generally tight budgets. Such facilities are generally strong focal points for local communities, resulting in high social impacts. Some facilities may also serve as focal points during emergencies, so their placement in a hazard zone may need consideration.

Project focus area: Primary

"Tools" required: Will need further liaison with Local Government and targeted service providers, but likely to include:

- Data/mapping on extreme sea-levels
- Template risk assessment methodologies and plans
- Case study risk assessment and management plan

Major Stakeholders: Local Government, Health and Human Services.

Category: **Picnic areas and facilities**

Assets included: Areas designated as picnic grounds or facilities both inside the PWS managed reserve system and outside, which are usually managed at the local level.

Risks: While these areas tend to have low levels of development and disruption from flooding is not usually critical, many are considered valuable community assets with high social value. Many in the formal reserve system are also in areas with high natural values.

Project focus area: Secondary

"Tools" required: Many of the tools required will be similar to those for the natural area reserves and those developed for the other general community facilities.

Major Stakeholders: Local Government, Parks and Wildlife Service.

Category: **Schools**

Assets included: sites listed in the Tasmanian Street Atlas as a school, including primary, secondary (high) or college/matriculation, most of which are public.

Risks: The number of schools in the immediate hazard zone is relatively small (4), and this number only increases to 12 with high sea-level scenarios. However, schools are very high value assets, focal points for the community, and sometimes have a role in emergency situations. The risks therefore are significant. Due to land zoning and infrastructure costs, moving schools will not be an option in the short or medium term. However, with such high consequence of impact, high sea-level rise scenarios will require eventual relocation.

Project focus area: Secondary

"Tools" required: The existing planning and management system for schools is already mature, though details of extreme sea-level scenarios are likely to not have been included into current plans. The particular nature of such planning and management indicates that the most useful support for the Project to provide is to increase awareness of the issue and provide relevant data and mapping where possible:

- Data/mapping on extreme sea-levels

Major Stakeholders: Department of Education, State Emergency Service.

Category: **Service Stations**

Assets included: Sites listed in the Tasmanian Street Atlas as Service Stations, and likely to require an 'environmental permit' from the Environment Division.

Risks: While comparably small numbers are immediately vulnerable, this number trebles with high sea-level scenarios. Flooding would probably cause significant structural damage, and is very likely to cause significant contamination/pollution of the general area.

Project focus area: Secondary

"Tools" required: As these assets are already subject to a mature planning and management system, the most effective response is to ensure those processes are adequately informed of the risks:

- Data/mapping on extreme sea-levels

Major Stakeholders: Environment Division, Local Government and Workplace Standards.

Category: **Emergency Services Buildings**

Assets included: facilities listed in the Tasmanian Street Atlas as State Police/Emergency Management Services. It does not necessarily include designated emergency service centres such as coordination, evacuation or recovery centres.

Risks: While comparably small numbers are immediately vulnerable, this number increases significantly with high sea-level scenarios. Flooding would probably cause some structural damage and to equipment. However, the greatest risks come from the presence of a focus for emergency coordination itself existing in a hazard area.

Project focus area: Secondary

"Tools" required: As these assets are already subject to a mature planning and management system, the most effective response is to ensure those processes are adequately informed of the risks:

- Data/mapping on extreme sea-levels

Major Stakeholders: Police and Public Safety (State Emergency Service).

Category: **Sewage and Wastewater Treatment Plants**

Assets included: Sites described as 'sewage' or 'wastewater', and including lagoons, plants and works. Does not include the sewage pipes and pumping stations.

Risks: These are critical community infrastructure, expensive to repair and/or re-locate. The low number in the hazard zones belies their importance and consequence of impact, and often the capacity of the managing authority (usually Local Government) to undertake significant re-development, as it is often not just the site itself, but all the infrastructure leading to and servicing that site as well.

Project focus area: Primary

"Tools" required: Further analysis and liaison with Local Governments will be required to determine the nature of the most effective tools for this category, but are likely to include:

- Data/mapping on extreme sea-levels
- Template risk assessment methodologies and plans
- Case study risk assessment and management plan

Major Stakeholders: Local Government, Water Authorities.

Category: **Major Roads**

Assets included: Primarily State Government managed roads, including National/State Highway, and major Arterial roads, but may also include some Local Government managed roads.

Risks: There is a significant length and key routes in the current hazard zones, which increases considerably with high sea-levels. While road foundation integrity may not be a major issue due to the generally higher standard of construction, disruption to key transportation routes from flooding is likely to be very high. Bridge construction may need review for water flow, clearance levels and foundation/buttress integrity standards.

Project focus area: Secondary

"Tools" required: Planning, management and standard setting already subject to mature system.

- Key data/mapping on extreme sea-levels to be provided to primary stakeholder, DIER

Major Stakeholders: Dept of Infrastructure, Energy and Resources, Local Government, and Police and Public Safety.

Category: **Local Roads**

Assets included: Roads for which Local Government are primarily responsible, including smaller Arterial, Feeder, and Access roads.

Risks: Very significant length and location of these roads in current and high sea-level rise hazard zones. Social and economic value of roads significant to local communities, as well as often key emergency routes. Foundation integrity potentially subject to damage from flooding, in addition to disruption to accessibility. The primary manager of these assets, Local Government, is likely to require assistance due to their smaller resource base, especially given the potential magnitude of the issue.

Project focus area: Primary

"Tools" required: Will need further liaison with Local Government, but likely to include:
- Data/mapping on extreme sea-levels
- Template risk assessment methodologies and plans
- Case study risk assessment and management plan

Major Stakeholders: Local Government, Dept of Infrastructure, Energy and Resources, and Police and Public Safety.

Category: **PWS infrastructure**

Assets included: Primarily built infrastructure such as major buildings and toilets

Risks: These high value assets are likely to be severely damaged by even minor flooding events, and are often more difficult to repair given their usual remoteness. Given high sea-level scenarios considerably increase the number of assets potentially impacted, there are significant risks to this category.

Project focus area: Secondary

"Tools" required: Planning, management and standard setting already subject to mature system, however some support likely to be necessary, such as
- Data/mapping on extreme sea-levels
- Template risk assessment methodologies

Major Stakeholders: Parks and Wildlife Service.

Category: **Waste Disposal Sites**

Assets included: Those sites used for the disposal of waste, but not including waste transfer stations, and requiring an environmental permit from the Environment Division. Incudes open and closed sites.

Risks: While only a few are subject to a flood hazard (6), the potential contamination and pollution arising from flooding events makes this a high risk category.

Project focus area: Secondary

"Tools" required: As these assets are already subject to a structured planning, management and permitting system, the Project's role is best focussed on providing accurate foundation information on the magnitude of the hazard around Tasmania:
- Data/mapping on extreme sea-levels

Major Stakeholders: Environment Division, Local Government.

Category: **Storage Tanks and facilities**

Assets included: Tanks or facilities storing materials such as explosives, gas and chemicals, either above or below ground.

Risks: With a number of facilities round the Tasmanian coast in the high hazard zone (24), and nearly three times this with a high sea-level rise scenario, these facilities may suffer structural damage from flooding, and there is a high chance of pollution or contamination.

Project focus area: Secondary

"Tools" required: As these assets are already subject to a mature planning and management system, the most effective response is to ensure those processes are adequately informed of the risks:
- Data/mapping on extreme sea-levels

Major Stakeholders: Environment Division, Workplace Standards, Local Government.

Discussion of proposed tools

Data/mapping of extreme sea-levels

Appropriate data on extreme sea-levels is considered fundamental to being able to conduct appropriate risk management activities. Without the foundation of credible and consistent information on the hazard, it will not be possible to adequately assess the risk for individual assets, values or areas. However, the information required will need the extension of the results of Phase 1 of this Project. The data of extreme sea-levels for Hobart and Burnie are the best that will be available in Tasmania until other tide gauges have records extending over several decades. This is some time away. In the mean time, the results of the Hobart and Burnie tide gauge analyses need to be extended around the rest of Tasmania's coast, and packaged for delivery to a range of stakeholders. The Project will develop information on this to assist planners and managers use the best available data for their areas of interest.

Template risk assessment methodologies and plans

For the relevant categories, templates for practical risk management plans that are based on standard risk management principles should be developed. The plans should outline the process and information required to assess the risks to a particular type of asset, and outline the types of management principles that could be applied to ensure the most effective long term management of the asset.

Such templates will require supporting information on extreme sea-level probabilities to be available to allow the level of risk to be determined. The Project will be undertaking the development of template plans for some of the key areas outlined above. It is expected that the templates will also have wider application as the basis for use on other major types of assets that occur in the coastal zone.

Case Study risk assessments and management plans

The availability of a template risk management plan can be greatly enhanced by also providing a worked example as well. The Project will be undertaking some risk management plans on particular sites, as case study examples of how the template risk management plan can be applied.

General Tools

The analysis highlights a number of assets that are regulated through the Local Government planning system (especially LUPAA and EMPCA). While the above tools will be valuable for the management of specific elements around the State, a number of generic tools and resources implemented through the planing system could also provide significant improvements in the appropriate planning and

development of the coastal zone. This is also considered the most appropriate way for addressing the issues related to development on private land.

Hence it is considered that there are a variety of general "tools" that should be developed to help improve the application of risk management principles around the State. These include:

- A general Information Sheet on the issue of extreme sea-levels, and the broad policy options for addressing the issue;
- Background report on the use of exceedance statistics, and their application;
- Summary and full Reference Manual on the probability of extreme sea-levels events based on Hobart and Burnie data (ie work from Phase 1 of the Project);
- Advice to planners and managers on improving the delineation of coastal flooding and erosion hazard zones, together with the continual development of appropriate standards to apply in those zones.

A key area that is required to be addressed to allow improved coastal hazard mapping is the determination of extreme sea-level statistics for the regions around Tasmania that are not represented by the two stations used in the work being undertaken as part of Phase 1 of this Project (ie Hobart and Burnie). This also includes decisions about how to treat the different sea-level rise scenarios (ie choosing to use high, medium or low projections in risk analyses), and what risk thresholds are appropriate to consider (eg annual exceedance probabilities of 0.5%, 1%, 10%, 50%). It will not be the Project's role to definitively answer all the range of questions associated with this, and it appears that additional investigations will be required to help guide appropriate risk-based decision-making processes.

Assisting in the improvement of general planning and development standards will have significant benefit at all levels, and especially at local level planning and management that is the target of the Climate Change and Coastal Risk Management Project.

Developing a relevant system of hazard maps for flooding (and erosion) will allow for the development of appropriate standards for inclusion in planning scheme ordinances. Some work has already been undertaken in this area, for example the standards in the draft Coastal Policy released in 2005. However, more work has been undertaken since then on coastal erosion vulnerability (eg Sharples 2nd edition) and extreme sea-levels through Phase 1 of the Climate Change and Coastal Risk Management Project.

Continued liaison between relevant areas will be needed to ensure that the mapping of hazard zones is done in the most effective form, and that the standards developed incorporate the best available information available on climate change, sea-level rise, and risk management principles.

As well as planning and development standards, such considerations also relate to building standards, through the *Building Act 2000* and its associated regulations.

Further research

During this vulnerability analysis, a number of suggestions were made for providing valuable information to support improved coastal planning and management. Many of these ideas are beyond the scope of specific projects such as the Climate Change and Coastal Risk Management Project, but have been included here to indicate potential areas of further work required.

<u>Erosion mapping</u>

Phase 1 of this Project has developed information on probabilities of coastal flooding. Coastal erosion is strongly related to this, but is also influenced by other factors (eg bedrock type). Sharples (2006) extended the indicative assessment of shoreline vulnerability to erosion to 84% of the Tasmanian coast, and included additional types of shoreline that were not included in the first edition (Sharples 2004).

It is possible to translate the shoreline types of Sharples (2006) into horizontal recession factors based on a projected rise in sea-levels. This may produce a useful indicative assessment of the potential coastal erosion hazard zones. Further analysis and discussion with experts would be required.

The erosion work being done for the Clarence City Council Project is based on a different approach, where more detailed assessments of local geomorphology are used to model zones of shoreline loss and zones of reduced foundation stability. While this is more useful for municipal planning, it also requires a level of geomorphological understanding that is not, and is not likely to be, available for the majority of the State's coastline.

Hence, it may be beneficial to develop a hybrid of the two systems where erosion hazard zones are developed based on the detailed work in Clarence as case studies, which is then extended elsewhere in Tasmania using the (nearly) Statewide coverage of Sharples' mapping. Such a methodology would aim to provide regional level erosion hazard mapping of value to all coastal Councils. It may also be a methodology that could be considered by the national Coastal Vulnerability Assessment Project currently being developed by the Commonwealth Department of Climate Change in collaboration with Geoscience Australia.

Digital elevation model

Substantial improvements are required to existing terrestrial and near-shore contouring to enable accurate mapping of potential flood hazard zones. A national proposal is being pursued by the Commonwealth Department of Climate Change, while a local consortium of south-eastern councils has considered contracting the acquisition of appropriate data for areas relevant to them. There are also linkages to work being undertaken through the State Emergency Services on modelling the impact of tsunamis. The Climate Futures for Tasmania Project also recognises the importance of high resolution data for modelling the impact of coastal flooding, and is likely to acquire appropriate data in early 2008.

Where efforts are made to capture information to support the creation of digital elevation models, national standards to data acquisition should apply. A national approach should be pursued wherever possible. Collaboration between jurisdictions and projects will also provide significant improvements in leveraging funding.

A further important dimension is the linking of terrestrial elevation data to bathymetric data. Bathymetry has a major influence on local wave regimes, which in turn can have a significant impact on localised flooding and erosion. Therefore, a seamless integration of terrestrial elevation data with bathymetry will allow for significantly improved modelling and analysis of wave regimes, their impact on the coast, and the potential flooding zones.

Macro-wave modelling

Understanding wave patterns and wave energy zones are crucial for determining storm surge magnitudes and impact zones. Near-shore wave modelling has recently been conducted in south-east Tasmania, with initial analyses suggesting wave setup may add up to a further 0.5m to the level of an extreme sea-level event. However, the models are hampered by only a coarse understanding of the broader wave regimes around Tasmania. They are also restricted by poor information on near-shore bathymetry.

Improving the understanding of the macro-wave environment around Tasmania would greatly improve the ability to undertake analyses of the impacts of waves at the local level. However, this is complex area that will require significant collaborative approaches from a range of national, State and Local Government organisations.

Mapping of Quaternary sediments

Quaternary sediments are the geologically-more-recent sediments of sand, silt and mud laid down in the last two million years. Of particular relevance are the sand dune systems, many of which have developed during the last ten thousand years or so (the Holocene period). The Quaternary sediments are particularly prone to erosion as they have generally not consolidated into hard rock formations. Current geological mapping variously treats these formations, as they are often thin layers over more substantial layers of bedrock. Hence it is often the underlying bedrock that is mapped on geological maps, rather than the surface formation. And where the surface formation is mapped, the depth of the layer, and hence its vulnerability to erosion, is not generally provided.

While this information is recognised as valuable to properly assess potential coastal erosion vulnerability, significant effort would be required to determine the extent and depth of Quaternary sediments.

Long term beach change historical analysis

Recent work by Sharples for CSIRO has shown the value of analysing historical aerial imagery against current imagery to assess the magnitude of shoreline recession in the last 50 or so years.

Given the reliance on aerial photography for this, the Department's extensive library of aerial photographs could provide the basis for analysis of important local areas around Tasmania. It should be noted though that the process can be time consuming, especially ensuring the georeferencing of the imagery is accurate. Collaboration between organisations to undertaken the work in larger batches would provide a number of efficiencies.

Habitat/biodiversity sensitivity analysis

A number of coastal vegetation and landform types are vulnerable to sea-level rise changes. For example, shoreline erosion can remove whole habitats, while flooding and salt water intrusion into ground water can kill some vegetation and cause shifts to other types more tolerate of salt conditions.

To undertake regional or local level vulnerability assessments for these vegetation types, a more detailed examination of the sensitivities would be required. This would be a significant task, requiring collaborative support from a range of organisations, including Natural Resource Management groups.

Acid Sulphate Soils

The exposure of acid sulphate soils due to shoreline erosion could lead to significant environmental impacts. In Tasmania, most of these hazard areas are along the northern coastline. These soils have been the subject of examination through the Land and Water Resources Audit, but issues relating to their exposure by erosion that is driven by sea-level rise is yet to be considered fully. Management response options are also still to be considered.

The significance of this issue would need to be recognised through relevant natural resource management, land use planning, and landform resource analyses.

Tide Gauges

The basis of projecting extreme sea-levels usually requires a historical record of tide heights from tide gauges. Projecting out to one hundred years – a commonly used time frame in planning and management – generally requires a data record of at least 30 years. Few stations around Tasmania currently meet that length, and it will be some years before the additional tide gauge records are suitably long enough. Spring Bay for example, despite its extremely valuable high precision record, has been in operation in its present form only since 1991. On the west coast of Tasmania, the only tide gauge record is for Granville Harbour which was in place between 1974 and 1994 but only has a total of just over 4 years of record.

The placement of tide gauges at strategic points around the Tasmanian coastline would be important to allow for future analyses to be undertaken. Tide gauges are generally under the management control of port authorities, or the National Tidal Centre (part of the Bureau of Meteorology), so it would be most appropriate for such organisations to operate any new stations in Tasmania, especially on the west coast where there are no current tide gauge stations.

However, further analysis is required. In particular, it is likely that it would be valuable for a strategic analysis by experts to review the need and benefits of an extended network, including details of the costs and benefits of the options for the type and location of additional tide gauges in Tasmania.

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Valuable comments on earlier drafts of the report were also provided by a number of other stakeholders, helping to ensure the scope of the analysis provides a useful foundation for the continual improvement of planning and management in the coastal zone in Tasmania.

References

Rigby, J. (2005) 'Sea level rise and coastal settlements: An analysis of adaptive decision making within integrated coastal zone management', Report to the Tasmanian Government on the findings of an Honours study within the University of Tasmania. Technical Report 2, Antarctic Climate and Ecosystems CRC, Hobart, Tasmania.

Sharples, C. (2004) *Indicative Mapping of Tasmanian Coastal Vulnerability to Climate Change and Sea-Level Rise: Explanatory Report* Consultant Report to Department of Primary Industries & Water, Tasmania.

Sharples, C. (2006) *Indicative Mapping of Tasmanian Coastal Vulnerability to Climate Change and Sea-Level Rise: Explanatory Report (Second Edition)* Consultant Report to Department of Primary Industries & Water, Tasmania.

Standards Australia (2004) *AS/NZS 4360:2004: Risk management*, Standards Australia, Sydney.

Appendix A: Vulnerability Assessment Data – by Type

This Appendix details the results of a desktop audit for the amount of various assets in four hazard zones. They are listed by coastal municipality, and as a total for the whole State.

(For details of the assets by municipality, see Appendix B).

The assets considered are:

Land tenure
Commonwealth Land
Historical Sites
Natural Reserves
Other Public Land
Private Reserves
State Forest
Unreserved Private
Facilities
Boating & Surf Life Clubs
Burial Sites
Camping Ground/Caravan Park
Car Park
Church
Community Care
Hall/Community Centre
Cultural Area
Historical
Libraries
Medical Services
Museums/Galleries
Natural
Park/Reserve
Picnic Area
Schools
Scout/Girl Guide
Senior/Elderly Citizens
Service Station
Sports Building
Sports Clubs
Sports Grounds
State Police/Emergency Management Services
Sewage and wastewater treatment plants

Roads
National/State Highway
Arterial Road
Feeder
Access Road
Vehicular Track
PWS assets
PWS Major Buildings
PWS Minor Buildings
PWS Camping Areas
PWS Car Park
PWS Coastal Infrastructure
PWS Picnic Areas or Facilities
PWS Toilet
PWS Track Infrastructure
PWS Road Infrastructure
PWS Track (km in reserves)
PWS Road (km in reserves)
Environmental permit sites
Waste disposal sites
Storage tanks or facility

Land Tenure

Table 5 Asset Type: Commonwealth Land (ha)

Description: Land administered by the Commonwealth, including Defence

Local Government Area	2004 hazard	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m) [1]
Break O'Day	0.11	0.11	0.11	0.11
Brighton				
Burnie City				0.04
Central Coast				
Circular Head	0.18	0.18	0.3	3.75
Clarence City	12.8	13.78	26.16	48.9
Derwent Valley			0.02	1.19
Devonport City			0.09	0.12
Dorset				
Flinders				
George Town	8.02	8.45	11.56	59.78
Glamorgan/Spring Bay				0.01
Glenorchy City	0.45	0.55	0.93	5.46
Hobart City	0.61	0.61	0.95	2.66
Huon Valley				
King Island				
Kingborough				
Latrobe	0.29	0.29	0.29	0.39
Launceston City	0.04	0.04	0.43	0.59
Sorell				
Tasman				
Waratah/Wynyard				
West Coast				
West Tamar				
LGA not defined				
TOTAL	22.5	24.01	40.84	123

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.

Table 6 Asset Type: Historical Sites (ha)

Description: Land classed as Historic Site under the *National Parks and Reserve Management Act 2002*

Local Government Area	2004 hazard	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m) [1]
Break O'Day	0.49	0.57	0.86	6.97
Brighton				
Burnie City				
Central Coast				
Circular Head				
Clarence City				0.71
Derwent Valley			0.06	0.06
Devonport City				
Dorset				
Flinders	5.02	5.31	7.14	29.66
George Town	2.35	2.35	2.68	13.47
Glamorgan/Spring Bay				
Glenorchy City				
Hobart City				
Huon Valley	0.8	0.92	1.46	9.95
King Island				
Kingborough	0.18	0.18	0.22	0.83
Latrobe				
Launceston City				
Sorell				
Tasman	10.63	11.26	16.24	72.27
Waratah/Wynyard				
West Coast	88.28	91.92	127.63	611.76
West Tamar	6.31	6.52	6.76	11.68
LGA not defined				
TOTAL	114.1	119.03	163.05	757.36

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.

Table 7 Asset Type: Natural Reserves (ha)

Description: Land reserved for primarily natural reasons under the *National Parks and Reserve Management Act 2002, Crown Lands Act 1976*, and *Forestry Act 1920*.

Local Government Area	2004 hazard	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m) [1]
Break O'Day	578.56	598.26	762.59	2326.13
Brighton	27.23	29.2	44.54	140.81
Burnie City	21.57	22.81	30.29	68.31
Central Coast	147.64	149.73	173.66	300.61
Circular Head	1121.87	1145.73	1377.02	4334.6
Clarence City	163.96	172.8	254.26	720.12
Derwent Valley	20.35	20.81	27.41	202.21
Devonport City	50.94	51.65	59.03	115.44
Dorset	664.78	681.04	846.56	2141.5
Flinders	1914.41	2007.28	3154.56	6624.87
George Town	115.22	118.17	143.9	375.48
Glamorgan/Spring Bay	638.17	660.69	875.19	2577
Glenorchy City	2.24	2.32	2.77	17.12
Hobart City	0.10	0.1	0.4	1.33
Huon Valley	1408.88	1465.06	2004.02	6616.71
King Island	293.22	305.53	460.28	1435.41
Kingborough	212.64	221.66	301.92	1328.76
Latrobe	356.11	363.5	416.37	801.7
Launceston City	45.52	46.24	51.39	211.9
Sorell	86.99	90.14	121.34	318.49
Tasman	131.85	139.4	212.63	1175.6
Waratah/Wynyard	91.36	92.75	105.72	228.17
West Coast	751.27	781.76	1102.31	5122.69
West Tamar	292.88	296.36	325.93	756.57
LGA not defined				
TOTAL	9137.75	9462.99	12854.09	37941.53

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.

Table 8 Asset Type: Other Public Land (ha)

Description: Public land administered by a public agency or authority (State or Local), but not as a formal reserve for natural reasons, State Forest or private reserve.

Local Government Area	2004 hazard	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m) [1]
Break O'Day	45.02	45.62	52.08	115.03
Brighton	2.40	2.56	3.71	13.11
Burnie City	25.79	25.98	28.16	43.95
Central Coast	80.51	82.55	101.90	149.21
Circular Head	407.50	416.14	502.30	722.41
Clarence City	99.20	104.81	161.50	405.39
Derwent Valley	4.22	4.41	6.27	18.50
Devonport City	61.95	63.66	80.96	137.08
Dorset	77.74	79.69	97.58	203.00
Flinders	1057.91	1102.46	1638.28	4142.13
George Town	58.80	61.04	79.53	191.03
Glamorgan/Spring Bay	47.91	48.97	60.00	121.39
Glenorchy City	23.02	24.02	33.73	84.98
Hobart City	25.90	27.16	34.89	78.09
Huon Valley	116.00	116.36	121.89	177.08
King Island	28.31	29.36	37.25	105.91
Kingborough	32.11	32.85	40.02	98.60
Latrobe	59.29	61.32	79.21	115.16
Launceston City	48.39	49.30	57.07	76.94
Sorell	6.07	6.73	12.77	84.37
Tasman	4.09	4.15	5.20	31.63
Waratah/Wynyard	3.91	4.17	7.36	27.51
West Coast	344.55	353.35	440.50	1137.10
West Tamar	47.03	48.87	61.77	93.77
LGA not defined				
TOTAL	2707.63	2795.55	3743.90	8373.35

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.

Table 9 Asset Type: Private Reserves (ha)

Description: Formal private reserves under the *National Parks and Reserve Management Act 2002*

Local Government Area	2004 hazard	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m) [1]
Break O'Day	48.73	49.15	53.65	62.35
Brighton				
Burnie City				
Central Coast				
Circular Head		0.01	0.43	11.19
Clarence City	37.43	37.99	42.07	53.17
Derwent Valley				
Devonport City				
Dorset	17.24	17.94	25.17	58.77
Flinders	9.96	10.79	17.32	22.62
George Town	1.48	1.59	2.68	40.48
Glamorgan/Spring Bay	384.40	391.46	454.72	538.96
Glenorchy City				
Hobart City				
Huon Valley	0.24	0.24	0.28	2.70
King Island				
Kingborough	17.76	18.01	20.09	55.91
Latrobe				
Launceston City				
Sorell	40.88	42.08	53.11	89.59
Tasman	13.74	15.15	22.84	61.48
Waratah/Wynyard				
West Coast				
West Tamar				
LGA not defined				
TOTAL	571.85	584.39	692.36	997.21

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.

Table 10 Asset Type: State Forest (ha)

Description: Land defined as State Forest under the *Forestry Act 1920*

Local Government Area	2004 hazard	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m) [1]
Break O'Day	0.15	0.16	0.27	6.39
Brighton				
Burnie City				
Central Coast				
Circular Head	0.75	0.75	0.75	0.75
Clarence City	0.13	0.13	0.17	0.21
Derwent Valley				
Devonport City				
Dorset				
Flinders				
George Town				
Glamorgan/Spring Bay				
Glenorchy City				
Hobart City				
Huon Valley	7.99	8.52	13.83	62.97
King Island				
Kingborough				0.75
Latrobe	2.31	2.34	3.04	12.78
Launceston City				
Sorell				
Tasman	0.27	0.31	0.65	15.63
Waratah/Wynyard				
West Coast	128.48	130.23	150.77	327.54
West Tamar				
LGA not defined				
TOTAL	140.07	142.45	169.47	427.03

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.

Table 11 Asset Type: Unreserved Private Land (ha)

Description: Private land

Local Government Area	2004 hazard	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m) [1]
Break O'Day	368.46	375.67	443.19	783.75
Brighton	14.21	14.42	22.20	100.27
Burnie City	9.20	9.93	15.77	47.85
Central Coast	194.58	199.08	247.06	442.02
Circular Head	5827.61	5949.08	7182.99	8513.27
Clarence City	356.32	377.38	575.28	1166.92
Derwent Valley	34.02	35.76	57.55	171.13
Devonport City	80.93	83.60	115.36	224.32
Dorset	297.75	311.48	447.04	791.03
Flinders	632.63	691.94	1618.05	2490.77
George Town	129.54	134.81	183.95	488.00
Glamorgan/Spring Bay	692.04	722.29	1031.40	2014.99
Glenorchy City	20.48	21.71	33.80	137.74
Hobart City	5.34	6.01	10.32	41.93
Huon Valley	221.94	226.93	273.94	819.87
King Island	56.66	59.04	80.78	478.12
Kingborough	145.19	152.24	223.66	933.56
Latrobe	340.84	348.98	415.24	677.23
Launceston City	313.93	322.32	401.23	562.36
Sorell	121.05	128.33	207.40	623.69
Tasman	33.64	36.72	69.08	468.76
Waratah/Wynyard	87.82	90.96	129.27	229.87
West Coast	17.20	17.67	26.49	69.18
West Tamar	555.89	576.35	777.87	1251.57
LGA not defined				
TOTAL	10557.27	10892.70	14588.91	23528.21

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.

Community Facilities etc

Table 12 Asset Type: Boating and Surf Lifesaving Clubs (number)

Description: Rowing, Surf life saving and Yacht and sailing clubs

Local Government Area	2004 hazard	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m) [1]
Break O'Day	0	0	0	0
Brighton	0	0	0	0
Burnie City	2	2	2	2
Central Coast	3	3	3	4
Circular Head	0	0	0	0
Clarence City	0	0	1	5
Derwent Valley	0	0	0	2
Devonport City	2	2	3	5
Dorset	0	0	0	1
Flinders	0	0	0	0
George Town	2	2	2	2
Glamorgan/Spring Bay	0	0	0	0
Glenorchy City	2	2	3	4
Hobart City	2	2	2	10
Huon Valley	2	2	3	3
Kingborough	0	0	1	3
King Island	0	0	0	0
Latrobe	0	0	0	0
Launceston City	2	2	3	3
Sorell	0	0	0	2
Tasman	0	0	0	0
Waratah/Wynyard	2	2	2	3
West Coast	1	1	1	1
West Tamar	1	1	1	3
LGA not defined				
TOTAL	21	21	27	53

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.

Table 13 Asset Type: Burial Sites (number)

Description: A cemetery.

Local Government Area	2004 hazard	low 2100 hazard[1]	high 2100 hazard[1]	Cautionary buffer (+50m) [1]
Break O'Day	0	0	0	0
Brighton	0	0	0	0
Burnie City	0	0	0	0
Central Coast	0	0	0	1
Circular Head	0	0	1	2
Clarence City	0	0	0	0
Derwent Valley	0	0	0	0
Devonport City	0	0	0	0
Dorset	0	0	0	0
Flinders	0	0	0	0
George Town	0	0	0	0
Glamorgan/Spring Bay	2	2	2	2
Glenorchy City	0	0	0	0
Hobart City	0	0	0	0
Huon Valley	0	0	0	1
Kingborough	0	0	0	0
King Island	0	0	0	0
Latrobe	0	0	0	0
Launceston City	0	0	0	0
Sorell	0	0	0	1
Tasman	0	0	0	0
Waratah/Wynyard	0	0	0	1
West Coast	0	0	0	0
West Tamar	0	0	0	0
LGA not defined				
TOTAL	2	2	3	8

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.

Table 14 Asset Type: Camping Ground and Caravan Park (number)

Description: Camps, Camping Ground and Caravan Parks

Local Government Area	2004 hazard	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m) [1]
Break O'Day	0	0	0	0
Brighton	0	0	0	0
Burnie City	0	0	0	0
Central Coast	4	4	4	5
Circular Head	1	1	1	3
Clarence City	0	0	0	0
Derwent Valley	1	1	1	1
Devonport City	1	1	3	3
Dorset	0	0	0	2
Flinders	0	0	0	0
George Town	0	0	1	1
Glamorgan/Spring Bay	1	1	2	6
Glenorchy City	1	1	1	1
Hobart City	0	0	0	0
Huon Valley	0	0	0	1
Kingborough	2	2	2	3
King Island	0	0	0	0
Latrobe	3	3	3	3
Launceston City	0	0	0	0
Sorell	0	0	0	0
Tasman	0	0	0	2
Waratah/Wynyard	1	1	1	1
West Coast	0	0	0	1
West Tamar	1	1	2	3
LGA not defined				
TOTAL	16	16	21	37

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.

Table 15 Asset Type: Car park (number)

Description: A public car park.

Local Government Area	2004 hazard	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m) [1]
Break O'Day	0	0	0	0
Brighton	0	0	0	0
Burnie City	1	1	1	1
Central Coast	0	0	0	2
Circular Head	0	0	0	0
Clarence City	0	0	0	0
Derwent Valley	0	0	0	0
Devonport City	0	0	1	1
Dorset	0	0	0	0
Flinders	0	0	0	0
George Town	0	0	0	0
Glamorgan/Spring Bay	0	0	0	0
Glenorchy City	0	0	0	0
Hobart City	2	2	2	3
Huon Valley	0	0	0	0
Kingborough	0	0	0	0
King Island	0	0	0	0
Latrobe	0	0	0	0
Launceston City	3	3	3	3
Sorell	0	0	0	0
Tasman	0	0	0	0
Waratah/Wynyard	0	0	0	0
West Coast	0	0	0	0
West Tamar	0	0	0	0
LGA not defined				
TOTAL	6	6	7	10

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.

Table 16 Asset Type: Churches (number)

Description: A place used for religious purposes by a particular sect. (LIST definition)

Local Government Area	2004 hazard	low 2100 hazard[1]	high 2100 hazard[1]	Cautionary buffer (+50m) [1]
Break O'Day	4	4	4	5
Brighton	0	0	0	0
Burnie City	0	0	0	0
Central Coast	0	0	1	2
Circular Head	0	0	0	0
Clarence City	1	1	1	1
Derwent Valley	0	0	0	0
Devonport City	0	0	0	0
Dorset	0	0	0	0
Flinders	0	0	0	0
George Town	2	2	3	4
Glamorgan/Spring Bay	0	0	0	0
Glenorchy City	0	0	0	0
Hobart City	0	0	0	1
Huon Valley	0	0	0	0
Kingborough	0	0	1	1
King Island	0	0	0	0
Latrobe	2	2	2	2
Launceston City	0	0	1	3
Sorell	0	0	0	0
Tasman	0	0	0	0
Waratah/Wynyard	0	0	1	2
West Coast	0	0	0	0
West Tamar	0	0	0	1
LGA not defined				
TOTAL	9	9	14	22

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.

Table 17 Asset Type: Community Care (number)

Description: A non-government establishment that provides accommodation, care or support to those in need

Local Government Area	2004 hazard	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m) [1]
Break O'Day	4	4	4	4
Brighton	0	0	0	0
Burnie City	0	0	0	0
Central Coast	3	3	3	4
Circular Head	0	0	0	1
Clarence City	0	0	1	2
Derwent Valley	0	0	0	0
Devonport City	0	0	0	1
Dorset	0	0	0	0
Flinders	0	0	0	0
George Town	0	0	0	1
Glamorgan/Spring Bay	0	0	0	0
Glenorchy City	1	1	0	1
Hobart City	0	0	0	1
Huon Valley	0	0	0	0
Kingborough	1	1	1	2
King Island	0	0	0	0
Latrobe	0	0	0	0
Launceston City	2	2	4	4
Sorell	0	0	0	0
Tasman	0	0	0	0
Waratah/Wynyard	2	2	2	2
West Coast	0	0	0	0
West Tamar	0	0	0	2
LGA not defined				
TOTAL	13	13	16	25

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.

Table 18 Asset Type: Hall/Community Centre (number)

Description: A hall or community centre belonging to a particular community, council, group or organisation.

Local Government Area	2004 hazard	low 2100 hazard[1]	high 2100 hazard[1]	Cautionary buffer (+50m) [1]
Break O'Day	3	3	3	3
Brighton	0	0	0	0
Burnie City	0	0	0	0
Central Coast	1	1	1	3
Circular Head	0	0	0	0
Clarence City	2	2	2	3
Derwent Valley	0	0	0	1
Devonport City	0	0	0	0
Dorset	0	0	0	0
Flinders	0	0	0	0
George Town	1	1	1	3
Glamorgan/Spring Bay	0	0	0	1
Glenorchy City	0	0	0	1
Hobart City	0	0	0	1
Huon Valley	0	0	1	1
Kingborough	0	0	0	5
King Island	0	0	0	0
Latrobe	1	1	1	1
Launceston City	0	0	0	0
Sorell	0	0	0	1
Tasman	0	0	0	2
Waratah/Wynyard	0	0	0	0
West Coast	0	0	0	0
West Tamar	1	1	1	2
LGA not defined				
TOTAL	9	9	10	28

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.

Table 19 Asset Type: Cultural Areas (number)

Description: A cultural feature

Local Government Area	2004 hazard	Low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m) [1]
Break O'Day	0	0	0	0
Brighton	0	0	0	0
Burnie City	0	0	0	0
Central Coast	0	0	0	0
Circular Head	0	0	0	0
Clarence City	0	0	0	0
Derwent Valley	0	0	1	1
Devonport City	0	0	0	0
Dorset	0	0	0	0
Flinders	0	0	0	0
George Town	0	0	0	0
Glamorgan/Spring Bay	0	0	1	2
Glenorchy City	0	0	0	0
Hobart City	0	0	2	2
Huon Valley	0	0	0	1
Kingborough	0	0	0	0
King Island	0	0	0	0
Latrobe	0	0	0	0
Launceston City	0	0	0	0
Sorell	0	0	0	1
Tasman	0	0	0	0
Waratah/Wynyard	0	0	2	3
West Coast	0	0	1	2
West Tamar	0	0	0	0
LGA not defined				
TOTAL	0	0	7	12

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.

Table 20 Asset Type: Historical (number)

Description: A historical feature

Local Government Area	2004 hazard	Low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m) [1]
Break O'Day	0	0	0	0
Brighton	0	0	0	0
Burnie City	0	0	0	0
Central Coast	0	0	0	0
Circular Head	0	0	0	0
Clarence City	0	0	0	0
Derwent Valley	0	0	0	0
Devonport City	0	0	0	0
Dorset	0	0	0	0
Flinders	0	0	0	0
George Town	0	0	0	0
Glamorgan/Spring Bay	1	1	1	1
Glenorchy City	0	0	0	1
Hobart City	0	0	0	1
Huon Valley	0	0	0	0
Kingborough	1	1	1	3
King Island	0	0	0	0
Latrobe	0	0	0	0
Launceston City	0	0	0	1
Sorell	0	0	0	1
Tasman	0	0	0	1
Waratah/Wynyard	0	0	0	2
West Coast	0	0	0	0
West Tamar	0	0	0	0
LGA not defined				
TOTAL	2	2	2	11

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.

Table 21 Asset Type: Libraries (number)

Description: A place containing an organised collection of literary material, films, recordings, music, or other documents. Excludes private video library

Local Government Area	2004 hazard	low 2100 hazard[1]	high 2100 hazard[1]	Cautionary buffer (+50m) [1]
Break O'Day	1	1	1	1
Brighton	0	0	0	0
Burnie City	0	0	0	0
Central Coast	0	0	1	1
Circular Head	0	0	0	0
Clarence City	0	0	0	0
Derwent Valley	0	0	0	0
Devonport City	0	0	0	0
Dorset	0	0	0	0
Flinders	0	0	0	0
George Town	0	0	0	0
Glamorgan/Spring Bay	0	0	0	0
Glenorchy City	0	0	0	0
Hobart City	0	0	0	0
Huon Valley	0	0	0	0
Kingborough	0	0	0	0
King Island	0	0	0	0
Latrobe	0	0	0	0
Launceston City	0	0	0	0
Sorell	0	0	0	0
Tasman	0	0	0	0
Waratah/Wynyard	0	0	0	0
West Coast	0	0	0	0
West Tamar	0	0	0	0
LGA not defined				
TOTAL	1	1	2	2

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.

Table 22 Asset Type: Medical Services (number)

Description: A public or private establishment, other than a private medical or para-medical practice, that provides treatment, care, accommodation or insurance for the ill or injured

Local Government Area	2004 hazard	low 2100 hazard[1]	high 2100 hazard[1]	Cautionary buffer (+50m) [1]
Break O'Day	2	2	2	2
Brighton	0	0	0	0
Burnie City	1	1	2	2
Central Coast	0	0	0	0
Circular Head	1	1	1	1
Clarence City	0	0	1	4
Derwent Valley	0	0	0	0
Devonport City	0	0	0	0
Dorset	0	0	0	0
Flinders	0	0	0	0
George Town	0	0	0	0
Glamorgan/Spring Bay	1	1	1	1
Glenorchy City	0	0	0	0
Hobart City	0	0	1	1
Huon Valley	0	0	0	1
Kingborough	0	0	0	1
King Island	0	0	0	0
Latrobe	0	0	0	0
Launceston City	0	0	0	0
Sorell	0	0	0	0
Tasman	0	0	0	0
Waratah/Wynyard	0	0	0	0
West Coast	0	0	0	0
West Tamar	0	0	0	0
LGA not defined				
TOTAL	5	5	8	13

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.

Table 23 Asset Type: Museums and Galleries (number)

Description: Gallery - A place for exhibiting works of art and craft. Museum - A place for keeping, exhibiting and studying objects of scientific, artistic, and historical interest.

Local Government Area	2004 hazard	low 2100 hazard[1]	high 2100 hazard[1]	Cautionary buffer (+50m) [1]
Break O'Day	1	1	1	1
Brighton	0	0	0	0
Burnie City	0	0	0	0
Central Coast	0	0	0	0
Circular Head	0	0	0	0
Clarence City	0	0	0	0
Derwent Valley	0	0	0	0
Devonport City	1	1	1	1
Dorset	0	0	0	0
Flinders	0	0	0	1
George Town	1	1	1	1
Glamorgan/Spring Bay	0	0	0	0
Glenorchy City	0	0	0	1
Hobart City	0	0	0	2
Huon Valley	0	0	0	0
Kingborough	0	0	0	2
King Island	0	0	0	0
Latrobe	0	0	0	0
Launceston City	0	0	0	2
Sorell	0	0	0	1
Tasman	0	0	0	0
Waratah/Wynyard	0	0	0	0
West Coast	0	0	0	0
West Tamar	0	0	0	0
LGA not defined				
TOTAL	3	3	3	12

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.

Table 24 Asset Type: Natural (number)

Description: A natural feature

Local Government Area	2004 hazard	low 2100 hazard[1]	high 2100 hazard[1]	Cautionary buffer (+50m) [1]
Break O'Day	0	0	0	1
Brighton	0	0	0	0
Burnie City	0	0	0	0
Central Coast	0	0	0	0
Circular Head	0	0	0	1
Clarence City	0	0	0	0
Derwent Valley	0	0	0	0
Devonport City	0	0	0	1
Dorset	0	0	0	0
Flinders	0	0	0	0
George Town	0	0	0	0
Glamorgan/Spring Bay	1	0	1	2
Glenorchy City	0	0	0	0
Hobart City	0	0	0	0
Huon Valley	1	0	1	1
Kingborough	0	0	0	0
King Island	0	0	0	0
Latrobe	0	0	0	0
Launceston City	0	0	0	0
Sorell	0	0	0	0
Tasman	0	0	0	1
Waratah/Wynyard	0	0	0	0
West Coast	0	0	0	0
West Tamar	0	0	0	0
LGA not defined				
TOTAL	2	2	2	7

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.

Table 25 Asset Type: Park or Reserve (number)

Description: A small public ground for informal, outdoor recreation belonging to and/or maintained by a Council or community organisation

Local Government Area	2004 hazard	low 2100 hazard[1]	high 2100 hazard[1]	Cautionary buffer (+50m) [1]
Break O'Day	2	2	2	2
Brighton	0	0	0	0
Burnie City	1	1	1	1
Central Coast	10	10	14	18
Circular Head	4	4	4	6
Clarence City	4	4	6	15
Derwent Valley	1	1	2	3
Devonport City	1	1	1	1
Dorset	0	0	1	1
Flinders	0	0	0	0
George Town	1	1	2	2
Glamorgan/Spring Bay	0	0	1	2
Glenorchy City	2	2	5	10
Hobart City	1	1	2	6
Huon Valley	2	2	2	4
Kingborough	1	1	1	5
King Island	0	0	0	1
Latrobe	0	0	0	2
Launceston City	1	1	2	2
Sorell	0	0	0	0
Tasman	0	0	0	1
Waratah/Wynyard	1	1	3	3
West Coast	0	0	1	3
West Tamar	3	3	4	4
LGA not defined				
TOTAL	35	35	54	92

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.

Table 26 Asset Type: Picnic Area (number)

Description: A public amenity providing basic cooking or picnic facilities

Local Government Area	2004 hazard	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m) [1]
Break O'Day	6	6	6	12
Brighton	0	0	0	0
Burnie City	0	0	0	0
Central Coast	13	13	13	15
Circular Head	1	1	1	2
Clarence City	4	4	7	11
Derwent Valley	0	0	2	3
Devonport City	5	5	6	7
Dorset	0	0	0	2
Flinders	0	0	0	1
George Town	2	2	2	2
Glamorgan/Spring Bay	4	4	5	11
Glenorchy City	1	1	3	3
Hobart City	0	0	1	2
Huon Valley	2	2	5	8
Kingborough	4	4	4	11
King Island	0	0	0	1
Latrobe	5	5	5	5
Launceston City	1	1	1	1
Sorell	1	1	1	2
Tasman	0	0	0	3
Waratah/Wynyard	6	6	6	6
West Coast	1	1	1	2
West Tamar	9	9	10	12
LGA not defined				
TOTAL	65	65	79	122

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.

Table 27 Asset Type: Schools (number)

Description: An establishment for formal instruction. (but excluding university sites)

Local Government Area	2004 hazard	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m) [1]
Break O'Day	1	1	1	1
Brighton	0	0	0	0
Burnie City	0	0	1	1
Central Coast	0	0	0	1
Circular Head	2	2	2	2
Clarence City	0	0	0	0
Derwent Valley	0	0	0	0
Devonport City	0	0	0	0
Dorset	0	0	0	0
Flinders	0	0	0	0
George Town	0	0	0	0
Glamorgan/Spring Bay	0	0	0	0
Glenorchy City	0	0	0	0
Hobart City	0	0	0	0
Huon Valley	0	0	1	1
Kingborough	0	0	0	1
King Island	0	0	0	0
Latrobe	0	0	0	0
Launceston City	1	1	1	2
Sorell	0	0	0	1
Tasman	0	0	0	0
Waratah/Wynyard	0	0	0	0
West Coast	0	0	0	1
West Tamar	0	0	0	1
LGA not defined				
TOTAL	4	4	6	12

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.

Table 28 Asset Type: Scouts and Girl Guides (number)

Description: A meeting place of a scouting organisation or Guides Tasmania

Local Government Area	2004 hazard	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m) [1]
Break O'Day	0	0	0	1
Brighton	0	0	0	0
Burnie City	0	0	0	0
Central Coast	0	0	0	1
Circular Head	2	2	2	2
Clarence City	0	0	0	2
Derwent Valley	0	0	0	0
Devonport City	0	0	0	0
Dorset	0	0	0	0
Flinders	0	0	0	0
George Town	0	0	0	0
Glamorgan/Spring Bay	0	0	0	1
Glenorchy City	0	0	0	1
Hobart City	1	1	2	2
Huon Valley	0	0	0	0
Kingborough	0	0	0	1
King Island	0	0	0	0
Latrobe	1	1	1	1
Launceston City	2	2	2	2
Sorell	0	0	0	0
Tasman	0	0	0	0
Waratah/Wynyard	0	0	0	0
West Coast	0	0	0	0
West Tamar	3	3	3	3
LGA not defined				
TOTAL	9	9	10	17

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.

Table 29 Asset Type: Senior and Elderly Citizens (number)

Description: A meeting place of a club for senior and elderly citizens

Local Government Area	2004 hazard	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m) [1]
Break O'Day	1	1	1	1
Brighton	0	0	0	0
Burnie City	0	0	0	0
Central Coast	0	0	0	0
Circular Head	0	0	0	0
Clarence City	0	0	0	0
Derwent Valley	0	0	0	0
Devonport City	0	0	1	1
Dorset	0	0	0	0
Flinders	0	0	0	0
George Town	0	0	0	1
Glamorgan/Spring Bay	0	0	0	0
Glenorchy City	0	0	0	0
Hobart City	0	0	0	0
Huon Valley	0	0	0	0
Kingborough	0	0	0	0
King Island	0	0	0	0
Latrobe	0	0	0	0
Launceston City	0	0	1	1
Sorell	0	0	0	0
Tasman	0	0	0	0
Waratah/Wynyard	0	0	0	0
West Coast	0	0	0	0
West Tamar	0	0	0	0
LGA not defined				
TOTAL	1	1	3	4

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.

Table 30 Asset Type: Service Station (number)

Description: A retail fuel outlet

Local Government Area	2004 hazard	low 2100 hazard[1]	high 2100 hazard[1]	Cautionary buffer (+50m) [1]
Break O'Day	2	2	2	2
Brighton	0	0	0	0
Burnie City	0	0	0	6
Central Coast	1	1	1	3
Circular Head	1	1	1	1
Clarence City	4	4	4	4
Derwent Valley	0	0	0	0
Devonport City	0	0	0	1
Dorset	0	0	0	0
Flinders	0	0	0	0
George Town	0	0	0	1
Glamorgan/Spring Bay	0	0	0	2
Glenorchy City	0	0	0	1
Hobart City	0	0	0	0
Huon Valley	0	0	0	3
Kingborough	0	0	2	5
King Island	0	0	0	0
Latrobe	0	0	0	0
Launceston City	1	1	1	2
Sorell	0	0	0	1
Tasman	0	0	0	1
Waratah/Wynyard	2	2	2	3
West Coast	0	0	0	0
West Tamar	2	2	2	2
LGA not defined				
TOTAL	13	13	15	38

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.

Table 31 Asset Type: Sports Building (number)

Description: Building for Indoor cricket, Squash, for more than one sport, Swimming pools or a facility for any other particular sport

Local Government Area	2004 hazard	low 2100 hazard[1]	high 2100 hazard[1]	Cautionary buffer (+50m) [1]
Break O'Day	0	0	0	0
Brighton	0	0	0	0
Burnie City	0	0	0	1
Central Coast	1	1	1	3
Circular Head	1	1	1	3
Clarence City	0	0	0	1
Derwent Valley	1	1	1	2
Devonport City	2	2	2	4
Dorset	0	0	0	0
Flinders	0	0	0	0
George Town	0	0	0	1
Glamorgan/Spring Bay	1	1	1	3
Glenorchy City	0	0	0	2
Hobart City	3	3	3	13
Huon Valley	1	1	1	4
Kingborough	2	2	3	4
King Island	0	0	0	0
Latrobe	0	0	0	0
Launceston City	1	1	2	3
Sorell	0	0	0	0
Tasman	1	1	1	1
Waratah/Wynyard	0	0	0	0
West Coast	0	0	0	3
West Tamar	0	0	0	0
LGA not defined				
TOTAL	14	14	16	48

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.

Table 32 Asset Type: Sports Clubs (number)

Description: A meeting place of any type of sporting club, including Bowls, Cricket, Croquet, Football, Golf, Gun and rifle, Rugby, Soccer, Tennis or Other sporting club

Local Government Area	2004 hazard	low 2100 hazard[1]	high 2100 hazard[1]	Cautionary buffer (+50m) [1]
Break O'Day	2	2	2	2
Brighton	0	0	0	0
Burnie City	0	0	0	2
Central Coast	4	4	5	8
Circular Head	4	4	5	5
Clarence City	0	0	1	2
Derwent Valley	0	0	0	2
Devonport City	2	2	3	4
Dorset	0	0	0	0
Flinders	0	0	0	1
George Town	1	1	1	3
Glamorgan/Spring Bay	2	2	2	6
Glenorchy City	0	0	0	3
Hobart City	0	0	0	0
Huon Valley	1	1	1	3
Kingborough	1	1	2	5
King Island	0	0	0	0
Latrobe	2	2	2	2
Launceston City	3	3	4	4
Sorell	0	0	0	0
Tasman	0	0	1	2
Waratah/Wynyard	3	3	4	6
West Coast	0	0	0	0
West Tamar	2	2	2	3
LGA not defined				
TOTAL	27	27	35	63

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.

Table 33 Asset Type: Sports Ground (number)

Description: A ground used for a variety of sports, usually having grandstands for spectators and facilities for players

Local Government Area	2004 hazard	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m) [1]
Break O'Day	0	0	0	0
Brighton	0	0	0	0
Burnie City	0	0	0	0
Central Coast	1	1	1	1
Circular Head	0	0	0	0
Clarence City	0	0	0	1
Derwent Valley	0	0	0	0
Devonport City	0	0	1	1
Dorset	0	0	0	0
Flinders	0	0	0	0
George Town	0	0	0	0
Glamorgan/Spring Bay	0	0	0	0
Glenorchy City	0	0	0	1
Hobart City	0	0	0	1
Huon Valley	0	0	0	1
Kingborough	0	0	1	2
King Island	0	0	0	0
Latrobe	0	0	0	0
Launceston City	1	1	1	1
Sorell	0	0	0	0
Tasman	0	0	0	0
Waratah/Wynyard	0	0	1	1
West Coast	0	0	0	0
West Tamar	1	1	1	1
LGA not defined				
TOTAL	3	3	6	11

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.

Table 34 Asset Type: State Police and Emergency Services

Description: An establishment for an operational unit or service of a Tasmanian government police or emergency service (but not a headquarters or administration unit)

Local Government Area	2004 hazard	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m) [1]
Break O'Day	4	4	4	4
Brighton	0	0	0	0
Burnie City	0	0	0	0
Central Coast	1	1	1	2
Circular Head	1	1	1	3
Clarence City	0	0	1	3
Derwent Valley	0	0	0	0
Devonport City	0	0	0	2
Dorset	0	0	0	0
Flinders	0	0	0	3
George Town	0	0	0	1
Glamorgan/Spring Bay	2	2	2	3
Glenorchy City	0	0	0	0
Hobart City	0	0	0	0
Huon Valley	0	0	0	1
Kingborough	0	0	0	3
King Island	0	0	0	1
Latrobe	1	1	1	2
Launceston City	0	0	0	0
Sorell	0	0	0	0
Tasman	0	0	0	2
Waratah/Wynyard	0	0	0	0
West Coast	0	0	0	1
West Tamar	1	1	1	1
LGA not defined				
TOTAL	10	10	11	32

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.

Table 35 Asset Type: Sewage Treatment and Waster Water plants (number)

Description: Sites in the LIST Community Services layer that include ‘sewage’ or ‘wastewater’ in their description, and including lagoons, plants and works.

Local Government Area	2004 hazard	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m)[1]
Break O'Day	1	1	1	1
Brighton	0	0	0	0
Burnie City	1	1	2	2
Central Coast	2	2	2	3
Circular Head	1	1	1	2
Clarence City	0	0	0	1
Derwent Valley	0	0	0	0
Devonport City	1	1	1	1
Dorset	0	0	0	0
Flinders	0	0	0	0
George Town	0	0	0	0
Glamorgan/Spring Bay	0	0	1	1
Glenorchy City	0	0	0	1
Hobart City	0	0	0	1
Huon Valley	0	0	0	1
Kingborough	0	0	0	1
King Island	1	1	1	1
Latrobe	0	0	0	1
Launceston City	1	1	1	1
Sorell	0	0	0	2
Tasman	0	0	0	0
Waratah/Wynyard	1	1	1	1
West Coast	0	0	0	0
West Tamar	0	0	1	1
LGA not defined				
TOTAL	9	9	12	22

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.

Roads

Table 36 Asset Type: State/ National Highway (m)

Description: Roads which are of importance in a national sense, and/or are a major intrastate through route, and/or are principal connector roads between Capitals and/or major regions and/or key towns

Local Government Area	2004 hazard	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m) [1]
Break O'Day	2064	2163	2691	8398
Brighton	262	262	501	2049
Burnie City	3025	3301	5867	17891
Central Coast	2178	2224	3057	7528
Circular Head	3849	4032	5214	10229
Clarence City	735	798	1043	2879
Derwent Valley	1041	1095	1811	8064
Devonport City	2684	2425	3798	6209
Dorset	0	0	0	0
Flinders	0	0	0	0
George Town	41	41	29	657
Glamorgan/Spring Bay	1095	1295	3158	10315
Glenorchy City	1387	1417	1608	2151
Hobart City	305	310	432	3146
Huon Valley	2218	2362	3869	21910
Kingborough	615	677	1187	7824
King Island	0	0	0	0
Latrobe	0	0	0	0
Launceston City	5473	5586	7075	11457
Sorell	1047	1047	1379	3599
Tasman	199	228	1011	8732
Waratah/Wynyard	2476	2587	3318	5411
West Coast	0	0	0	127
West Tamar	0	0	3	1094
LGA not defined				
TOTAL				

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.

Table 37 Asset Type: Arterial Roads (Minor and Major) (m)

Description: A road that predominantly carries traffic from one region to another, forming a principal avenue of communication for traffic movements

Local Government Area	2004 hazard	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m) [1]
Break O'Day	3921	3957	5143	8803
Brighton	0	0	0	2710
Burnie City	458	474	804	2184
Central Coast	2124	2204	2803	7472
Circular Head	3873	3942	4858	5680
Clarence City	4937	4989	5955	8167
Derwent Valley	396	429	636	2318
Devonport City	1104	1104	1845	4874
Dorset	1044	1076	1382	1543
Flinders	3183	3399	4610	5654
George Town	2289	2401	2998	3797
Glamorgan/Spring Bay	0	0	5	1630
Glenorchy City	375	380	797	4904
Hobart City	175	184	328	2328
Huon Valley	1006	1040	1516	4738
Kingborough	2956	3007	3885	8706
King Island	101	120	479	1328
Latrobe	1173	1180	1288	2194
Launceston City	3166	3203	4297	6841
Sorell	643	663	809	3027
Tasman	9	9	43	1741
Waratah/Wynyard	5352	5356	5512	5640
West Coast	68	85	192	719
West Tamar	3301	3498	5347	13863
LGA not defined				
TOTAL				

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.

Table 38 Asset Type: Feeder Road (m)

Description: Commonly used roads that service urban networks, and/or rural communities, and/or resource areas. Normally connects access roads to higher classification roads

Local Government Area	2004 hazard	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m) [1]
Break O'Day	1303	1436	2215	5747
Brighton	46	46	46	612
Burnie City	18	24	86	565
Central Coast	4826	4957	5919	12299
Circular Head	1429	1459	1684	1965
Clarence City	3146	3259	4908	7726
Derwent Valley	0	0	0	0
Devonport City	1549	1581	2084	3348
Dorset	0	0	376	1085
Flinders	0	0	0	0
George Town	117	124	163	668
Glamorgan/Spring Bay	201	208	435	1426
Glenorchy City	85	96	172	479
Hobart City	64	78	317	2022
Huon Valley	949	1157	2201	20109
Kingborough	2648	2648	3829	9920
King Island	0	0	0	0
Latrobe	879	959	1318	4206
Launceston City	0	0	156	674
Sorell	3	3	80	2162
Tasman	1511	1578	2988	7863
Waratah/Wynyard	136	137	276	805
West Coast	105	105	186	3028
West Tamar	1869	1942	2507	4699
LGA not defined				
TOTAL				

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.

Table 39 Asset Type: Access Roads (m)

Description: Public or private road providing access to local properties, resources, facilities, or minor tourism destinations

Local Government Area	2004 hazard	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m) [1]
Break O'Day	16818	16818	19327	39141
Brighton	618	618	1071	4242
Burnie City	5846	6257	7741	15743
Central Coast	21669	22160	26855	45505
Circular Head	28266	29343	36761	49444
Clarence City	17879	19178	31225	66900
Derwent Valley	695	698	1406	7077
Devonport City	9864	9864	11296	23512
Dorset	1967	2069	3378	6906
Flinders	6764	7071	12605	19743
George Town	14237	14490	17801	33861
Glamorgan/Spring Bay	14068	14892	21837	46452
Glenorchy City	3058	3312	5253	18452
Hobart City	2238	2328	3492	10619
Huon Valley	5258	5698	10126	48066
King Island	4330	4415	5863	14603
Kingborough	10560	10614	13942	48126
Latrobe	19276	19276	20999	26405
Launceston City	19559	20073	26776	33498
Sorell	2618	2770	4978	19327
Tasman	3212	3346	7098	32178
Waratah/Wynyard	11202	11513	15472	26128
West Coast	881	1142	2433	8005
West Tamar	26367	26624	31695	61749
LGA not defined				
TOTAL				

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.

Table 40 Asset Type: Vehicular Track (m)

Description: Rougher roads, usually unpaved, for vehicular traffic

Local Government Area	2004 hazard	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m) [1]
Break O'Day	10051	10145	11449	21368
Brighton	170	208	357	2701
Burnie City	353	432	538	1185
Central Coast	2303	2331	3344	5833
Circular Head	47760	49753	64104	102592
Clarence City	3892	4291	6593	15493
Derwent Valley	26	26	61	560
Devonport City	222	222	222	349
Dorset	7342	7879	12604	17673
Flinders	15944	16861	33231	74217
George Town	2704	2779	3616	11717
Glamorgan/Spring Bay	20506	21502	31378	49595
Glenorchy City	375	387	492	1827
Hobart City	191	241	363	557
Huon Valley	2242	2490	3629	14129
King Island	7313	7682	10932	35515
Kingborough	3084	3207	6392	22425
Latrobe	2500	2514	3410	8070
Launceston City	1465	1484	1714	3147
Sorell	3833	3930	5095	12210
Tasman	922	952	1781	8980
Waratah/Wynyard	244	254	269	914
West Coast	959	1011	3282	16904
West Tamar	4445	3992	5727	8753
LGA not defined				
TOTAL				

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.

Parks and Wildlife Assets

Table 41 Asset Type: PWS Major Buildings (number)

Description: Houses, accommodation buildings and visitor centres

Local Government Area	2004 hazard	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m) [1]
Break O'Day	0	0	0	0
Brighton	0	0	0	0
Burnie City	0	0	0	0
Central Coast	0	0	0	0
Circular Head	0	0	0	1
Clarence City	0	0	1	1
Derwent Valley	0	0	0	0
Devonport City	0	0	0	0
Dorset	0	0	0	0
Flinders	0	0	0	0
George Town	6	6	7	7
Glamorgan/Spring Bay	1	1	1	1
Glenorchy City	0	0	0	0
Hobart City	0	0	0	0
Huon Valley	2	2	2	2
Kingborough	0	0	0	1
King Island	0	0	0	0
Latrobe	0	0	0	0
Launceston City	0	0	0	0
Sorell	0	0	0	0
Tasman	0	0	0	0
Waratah/Wynyard	0	0	0	0
West Coast	2	2	2	7
West Tamar	0	0	0	1
LGA not defined				
TOTAL	11	11	13	21

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.

Table 42 Asset Type: PWS Minor Buildings (number)

Description: Shelters, information booths, stores, workshops, walker accommodation huts

Local Government Area	2004 hazard	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m) [1]
Break O'Day	0	0	0	1
Brighton	0	0	0	0
Burnie City	0	0	0	0
Central Coast	0	0	0	0
Circular Head	0	0	0	2
Clarence City	1	1	2	4
Derwent Valley	0	0	0	0
Devonport City	0	0	0	0
Dorset	0	0	0	0
Flinders	0	0	0	0
George Town	14	14	15	15
Glamorgan/Spring Bay	4	4	5	8
Glenorchy City	0	0	0	0
Hobart City	0	0	0	0
Huon Valley	3	3	5	6
Kingborough	1	1	1	2
King Island	0	0	0	0
Latrobe	1	1	1	2
Launceston City	0	0	0	0
Sorell	0	0	0	0
Tasman	0	0	0	2
Waratah/Wynyard	0	0	0	0
West Coast	1	1	1	1
West Tamar	1	1	1	5
LGA not defined	3	3	3	7
TOTAL	29	29	34	55

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.

Table 43 Asset Type: PWS Camping Area (number)

Description: Camp sites (informal and defined)

Local Government Area	2004 hazard	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m) [1]
Break O'Day	1	1	1	1
Brighton	0	0	0	0
Burnie City	0	0	0	0
Central Coast	0	0	0	0
Circular Head	1	1	1	1
Clarence City	0	0	0	0
Derwent Valley	0	0	0	0
Devonport City	0	0	0	0
Dorset	2	2	5	12
Flinders	0	0	0	0
George Town	0	0	0	0
Glamorgan/Spring Bay	2	2	3	10
Glenorchy City	0	0	0	0
Hobart City	0	0	0	0
Huon Valley	6	6	8	14
Kingborough	1	1	1	1
King Island	0	0	0	0
Latrobe	1	1	3	3
Launceston City	0	0	0	0
Sorell	0	0	0	0
Tasman	0	0	0	2
Waratah/Wynyard	0	0	0	0
West Coast	0	0	0	0
West Tamar	0	0	0	0
LGA not defined	0	0	0	10
TOTAL	13	13	22	54

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.

Table 44 Asset Type: PWS Car Park (number)

Description: Car park (formed and informal)

Local Government Area	2004 hazard	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m) [1]
Break O'Day	0	0	0	2
Brighton	0	0	0	0
Burnie City	0	0	0	0
Central Coast	1	1	1	1
Circular Head	1	1	3	8
Clarence City	2	2	4	6
Derwent Valley	0	0	0	0
Devonport City	0	0	0	1
Dorset	1	1	2	2
Flinders	0	0	0	1
George Town	3	3	3	3
Glamorgan/Spring Bay	1	2	3	13
Glenorchy City	0	0	0	0
Hobart City	0	0	0	0
Huon Valley	0	0	0	0
Kingborough	0	1	1	5
King Island	0	0	0	0
Latrobe	4	4	5	6
Launceston City	0	0	0	0
Sorell	0	0	0	0
Tasman	0	0	0	3
Waratah/Wynyard	1	2	3	4
West Coast	1	1	1	1
West Tamar	0	0	0	2
LGA not defined	6	7	7	14
TOTAL	21	25	33	72

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.

Table 45 Asset Type: PWS Coastal Infrastructure (number)

Description: Boat ramps, slips and minor jetties

Local Government Area	2004 hazard	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m) [1]
Break O'Day	0	0	0	0
Brighton	0	0	0	0
Burnie City	0	0	0	0
Central Coast	0	0	0	0
Circular Head	1	1	2	2
Clarence City	0	0	0	0
Derwent Valley	0	0	0	0
Devonport City	0	0	0	0
Dorset	1	1	1	1
Flinders	0	0	0	0
George Town	0	0	0	0
Glamorgan/Spring Bay	0	0	0	0
Glenorchy City	0	0	0	0
Hobart City	0	0	0	0
Huon Valley	2	2	3	4
Kingborough	0	0	0	0
King Island	0	0	0	0
Latrobe	0	0	0	0
Launceston City	0	0	0	0
Sorell	0	0	0	0
Tasman	1	1	1	1
Waratah/Wynyard	0	0	0	0
West Coast	2	2	2	3
West Tamar	0	0	0	0
LGA not defined	5	5	5	6
TOTAL	12	12	14	17

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.

Table 46 Asset Type: PWS Picnic Areas or Facilities (number)

Description: Sites with barbeques and/or picnic tables

Local Government Area	2004 hazard	low 2100 hazard[1]	high 2100 hazard[1]	Cautionary buffer (+50m) [1]
Break O'Day	7	7	13	30
Brighton	0	0	0	0
Burnie City	0	0	0	0
Central Coast	0	0	0	0
Circular Head	4	4	4	4
Clarence City	4	4	4	4
Derwent Valley	0	0	0	0
Devonport City	0	0	1	1
Dorset	4	6	17	47
Flinders	2	2	2	6
George Town	0	0	0	0
Glamorgan/Spring Bay	0	0	1	7
Glenorchy City	0	0	0	0
Hobart City	0	0	0	0
Huon Valley	0	0	1	1
Kingborough	1	1	1	1
King Island	0	0	0	0
Latrobe	48	49	62	66
Launceston City	0	0	0	0
Sorell	0	0	0	0
Tasman	0	0	0	4
Waratah/Wynyard	0	0	0	0
West Coast	1	1	1	2
West Tamar	2	2	2	3
LGA not defined	14	15	19	28
TOTAL	87	90	128	204

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.

Table 47 Asset Type: PWS Toilet (number)

Description: Toilets (including septic, pit, contained)

Local Government Area	2004 hazard	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m) [1]
Break O'Day	2	2	2	20
Brighton	0	0	0	0
Burnie City	0	0	0	0
Central Coast	0	0	0	0
Circular Head	2	2	4	8
Clarence City	3	3	6	6
Derwent Valley	0	0	0	0
Devonport City	0	0	0	0
Dorset	4	4	10	17
Flinders	0	0	0	2
George Town	10	10	10	10
Glamorgan/Spring Bay	2	2	6	19
Glenorchy City	0	0	0	0
Hobart City	0	0	0	0
Huon Valley	5	5	7	14
Kingborough	3	3	3	5
King Island	1	1	1	1
Latrobe	3	3	3	4
Launceston City	0	0	0	0
Sorell	0	0	0	0
Tasman	0	0	0	4
Waratah/Wynyard	0	0	0	0
West Coast	3	3	4	6
West Tamar	0	0	0	1
LGA not defined	3	3	5	12
TOTAL	41	41	61	129

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.

Table 48 Asset Type: PWS Track (km)

Description: Track for walkers. Note that the rounding of figures means that numbers do not add exactly in total columns

Local Government Area	2004 hazard	low 2100 hazard[1]	high 2100 hazard[1]	Cautionary buffer (+50m) [1]
Break O'Day	3.3	3.5	5.9	17.1
Brighton	0	0	0	0
Burnie City	0	0	0	0
Central Coast	0	0	0	0
Circular Head	2.3	2.5	3.3	10.6
Clarence City	0	0	7	9.7
Derwent Valley	0	0	0	0
Devonport City	0	0	0	0
Dorset	0	0	0	.05
Flinders	1.3	1.3	2.7	9.5
George Town	0	0	0	0
Glamorgan/Spring Bay	5.5	5.9	9.7	20.9
Glenorchy City	0	0	.02	.5
Hobart City	0	0	0	0
Huon Valley	8	8.4	10.6	27
Kingborough	1	1.1	1.4	8.4
King Island	0.05	.07	.2	.6
Latrobe	0.1	0.1	0	0
Launceston City	0	0	0	0.1
Sorell	0	0	0	0
Tasman	0.5	0.6	1.4	12.2
Waratah/Wynyard	0.02	0.02	.07	1.4
West Coast	1.4	1.4	2.4	10.2
West Tamar	3.5	3.5	6.5	6.7
LGA not defined	7.9	7.9	7.5	34.5
TOTAL	35.0051	36.3910	58.4399	169.34545

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.

Table 49 Asset Type: PWS Track Infrastructure (number)

Description: Including bridges, walkways, duckboarding, and viewing platforms

Local Government Area	2004 hazard	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m) [1]
Break O'Day	0	0	0	0
Brighton	0	0	0	0
Burnie City	0	0	0	0
Central Coast	0	0	0	0
Circular Head	1	1	1	2
Clarence City	1	1	1	2
Derwent Valley	0	0	0	0
Devonport City	0	0	1	1
Dorset	0	0	0	0
Flinders	0	0	0	1
George Town	0	0	0	0
Glamorgan/Spring Bay	2	2	2	6
Glenorchy City	0	0	0	0
Hobart City	0	0	0	0
Huon Valley	0	0	0	1
Kingborough	1	1	2	2
King Island	0	0	0	0
Latrobe	0	0	1	1
Launceston City	0	0	0	0
Sorell	1	1	2	2
Tasman	0	0	0	5
Waratah/Wynyard	0	0	0	0
West Coast	4	4	4	11
West Tamar	1	1	1	3
LGA not defined	1	1	2	7
TOTAL	12	12	17	44

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.

Table 50 Asset Type: PWS Road (km)

Description: Roads for vehicles

Local Government Area	2004 hazard	low 2100 hazard[1]	high 2100 hazard[1]	Cautionary buffer (+50m) [1]
Break O'Day	0.6	0.8	0.9	1.4
Brighton	0	0	0	0
Burnie City	0	0	0	0
Central Coast	0.08	0.08	0.1	0.1
Circular Head	0	0	0	0
Clarence City	0.2	0.2	0.5	1.0
Derwent Valley	0	0	0	0
Devonport City	0	0	0	0
Dorset	0.6	0.7	1.0	2.2
Flinders	0	0	0	0
George Town	0.7	0.7	0.8	1.2
Glamorgan/Spring Bay	0.2	0.2	0.8	1.5
Glenorchy City	0	0	0	0
Hobart City	0	0	0	0
Huon Valley	0.6	0.6	0.9	0.9
Kingborough	0	0	0	0
King Island	0	0	0	0
Latrobe	1.1	1.2	1.4	2.0
Launceston City	0	0	0	0
Sorell	0	0	0	0
Tasman	0	0	0.6	0.6
Waratah/Wynyard	1.1	1.2	1.5	1.6
West Coast	0	0	0	0
West Tamar	0.6	0.6	0.6	0.6
LGA not defined	5.7	5.8	7.5	7.5
TOTAL	11.54	12.1	16.3	19.9

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.

Table 51 Asset Type: PWS Road Infrastructure (number)

Description: Includes barriers, bridges and cattle grids

Local Government Area	2004 hazard	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m) [1]
Break O'Day	0	0	0	0
Brighton	0	0	0	0
Burnie City	0	0	0	0
Central Coast	0	0	0	0
Circular Head	0	0	2	2
Clarence City	4	4	10	11
Derwent Valley	0	0	0	0
Devonport City	0	0	0	0
Dorset	1	1	1	1
Flinders	0	0	0	0
George Town	2	2	2	2
Glamorgan/Spring Bay	2	2	3	9
Glenorchy City	0	0	0	0
Hobart City	0	0	0	0
Huon Valley	1	1	1	2
Kingborough	0	0	0	0
King Island	0	0	0	0
Latrobe	3	3	3	3
Launceston City	0	0	0	0
Sorell	0	0	0	2
Tasman	0	0	0	4
Waratah/Wynyard	0	0	0	1
West Coast	0	0	0	0
West Tamar	0	0	0	0
LGA not defined	0	0	0	6
TOTAL	13	13	22	43

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.

Environmental Permit Sites
(Environment Division – Environmentally Relevant Land Use Register)

Table 52 Asset Type: Waste disposal sites (number)

Description: Sites for the disposal of waste, including both operating and closed sites. Does not include waste transfer stations.

Local Government Area	2004 hazard	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m) [1]
Break O'Day	0	0	0	0
Brighton	0	0	0	0
Burnie City	0	0	0	0
Central Coast	1	1	1	1
Circular Head	3	3	3	3
Clarence City	0	0	0	0
Derwent Valley	0	0	0	0
Devonport City	0	0	0	0
Dorset	0	0	0	0
Flinders	0	0	0	0
George Town	0	0	0	0
Glamorgan/Spring Bay	0	0	0	0
Glenorchy City	0	0	0	0
Hobart City	0	0	0	0
Huon Valley	0	0	0	1
Kingborough	0	0	0	0
King Island	0	0	0	0
Latrobe	0	0	0	0
Launceston City	0	0	0	0
Sorell	0	0	0	0
Tasman	0	0	1	1
Waratah/Wynyard	0	0	0	0
West Coast	0	0	0	0
West Tamar	0	0	0	0
LGA not defined				
TOTAL	4	4	5	6

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.

Table 53 Asset Type: Storage tanks or facility (number)

Description: Tanks or facilities storing materials such as explosives, gas and chemicals, either above or below ground.

Local Government Area	2004 hazard	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m) [1]
Break O'Day	2	2	4	5
Brighton	0	0	0	1
Burnie City	0	0	0	1
Central Coast	0	0	0	1
Circular Head	0	0	0	1
Clarence City	1	1	1	2
Derwent Valley	0	0	0	1
Devonport City	7	7	7	14
Dorset	0	0	0	0
Flinders	0	0	0	2
George Town	2	2	2	2
Glamorgan/Spring Bay	0	0	0	0
Glenorchy City	0	0	0	1
Hobart City	0	0	3	5
Huon Valley	0	0	1	3
Kingborough	0	0	0	3
King Island	0	0	0	0
Latrobe	0	0	0	1
Launceston City	11	11	16	19
Sorell	0	0	0	1
Tasman	0	0	0	0
Waratah/Wynyard	0	0	1	1
West Coast	1	1	1	2
West Tamar	0	0	0	1
LGA not defined				
TOTAL	24	24	36	67

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.

Appendix B: Vulnerability Assessment Data – by Municipality

This Appendix details the results of a desktop audit for the amount of various assets in four hazard zones. They are listed by asset type for each coastal municipality.

(For details of each of the assets, see Appendix A).

Table 54 Break O'Day

	Asset Type	2004 hazard[1]	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m)[1]
Land tenure (ha)	Commonwealth Land	0.11	0.11	0.11	0.11
	Historical Sites	0.49	0.57	0.86	6.97
	Natural Reserves	578.56	598.26	762.59	2326.13
	Other Public Land	45.02	45.62	52.08	115.03
	Private Reserves	48.73	49.15	53.65	62.35
	State Forest	0.15	0.16	0.27	6.39
	Unreserved Private	368.46	375.67	443.19	783.75
Facilities (number)	Boating & Surf Life Clubs	0	0	0	0
	Burial Sites	0	0	0	0
	Camping Ground/Caravan Park	0	0	0	0
	Car Park	0	0	0	0
	Church	4	4	4	5
	Community Care	4	4	4	4
	Hall/Community Centre	3	3	3	3
	Cultural Area	0	0	0	0
	Historical	0	0	0	0
	Libraries	1	1	1	1
	Medical Services	2	2	2	2
	Museums/Galleries	1	1	1	1
	Natural	0	0	0	1
	Park/Reserve	2	2	2	2
	Picnic Area	6	6	6	12
	Schools	1	1	1	1
	Scout/Girl Guide	0	0	0	1
	Senior/Elderly Citizens	1	1	1	1
	Service Station	2	2	2	2
	Sports Building	0	0	0	0
	Sports Clubs	2	2	2	2
	Sports Grounds	0	0	0	0
	State Police/Emergency Management Services	4	4	4	4
	Sewage Treatment and Waster Water plants	1	1	1	1
Roads (m)	National/State Highway	2064	2163	2691	8398
	Arterial Road	3921	3957	5143	8803
	Feeder	1303	1436	2215	5747
	Access Road	16818	16818	19327	39141
	Vehicular Track	10051	10145	11449	21368
PWS assets (number)	PWS Major Buildings	0	0	0	0
	PWS Minor Buildings	0	0	0	1
	PWS Camping Areas	1	1	1	1
	PWS Car Park	0	0	0	2
	PWS Coastal Infrastructure	0	0	0	0
	PWS Picnic Areas or Facilities	7	7	13	30
	PWS Toilet	2	2	2	20
	PWS Track Infrastructure	0	0	0	0
	PWS Road Infrastructure	0	0	0	0
	PWS Track (km in reserves)	3.3	3.5	5.9	17.1
	PWS Road (km in reserves)	0.6	0.8	0.9	1.4
EPS[2]	Waste disposal sites	0	0	0	0
	Storage tanks or facility	2	2	4	5

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.
[2] EPS = Environmental permit sites (number)

Table 55 Brighton

	Asset Type	2004 hazard[1]	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m)[1]
Land tenure (ha)	Commonwealth Land	0	0	0	0
	Historical Sites	0	0	0	0
	Natural Reserves	27.23	29.2	44.54	140.81
	Other Public Land	2.40	2.56	3.71	13.11
	Private Reserves	0	0	0	0
	State Forest	0	0	0	0
	Unreserved Private	14.21	14.42	22.20	100.27
Facilities (number)	Boating & Surf Life Clubs	0	0	0	0
	Burial Sites	0	0	0	0
	Camping Ground/Caravan Park	0	0	0	0
	Car Park	0	0	0	0
	Church	0	0	0	0
	Community Care	0	0	0	0
	Hall/Community Centre	0	0	0	0
	Cultural Area	0	0	0	0
	Historical	0	0	0	0
	Libraries	0	0	0	0
	Medical Services	0	0	0	0
	Museums/Galleries	0	0	0	0
	Natural	0	0	0	0
	Park/Reserve	0	0	0	0
	Picnic Area	0	0	0	0
	Schools	0	0	0	0
	Scout/Girl Guide	0	0	0	0
	Senior/Elderly Citizens	0	0	0	0
	Service Station	0	0	0	0
	Sports Building	0	0	0	0
	Sports Clubs	0	0	0	0
	Sports Grounds	0	0	0	0
	State Police/Emergency Management Services	0	0	0	0
	Sewage Treatment and Waster Water plants	0	0	0	0
Roads (m)	National/State Highway	262	262	501	2049
	Arterial Road	0	0	0	2710
	Feeder	46	46	46	612
	Access Road	618	618	1071	4242
	Vehicular Track	170	208	357	2701
PWS assets (number)	PWS Major Buildings	0	0	0	0
	PWS Minor Buildings	0	0	0	0
	PWS Camping Areas	0	0	0	0
	PWS Car Park	0	0	0	0
	PWS Coastal Infrastructure	0	0	0	0
	PWS Picnic Areas or Facilities	0	0	0	0
	PWS Toilet	0	0	0	0
	PWS Track Infrastructure	0	0	0	0
	PWS Road Infrastructure	0	0	0	0
	PWS Track (km in reserves)	0	0	0	0
	PWS Road (km in reserves)	0	0	0	0
EPS[2]	Waste disposal sites	0	0	0	0
	Storage tanks or facility	0	0	0	1

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.
[2] EPS = Environmental permit sites (number)

Table 56 Burnie City

	Asset Type	2004 hazard[1]	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m)[1]
Land tenure (ha)	Commonwealth Land	0	0	0	0.04
	Historical Sites	0	0	0	0
	Natural Reserves	21.57	22.81	30.29	68.31
	Other Public Land	25.79	25.98	28.16	43.95
	Private Reserves	0	0	0	0
	State Forest	0	0	0	0
	Unreserved Private	9.20	9.93	15.77	47.85
Facilities (number)	Boating & Surf Life Clubs	2	2	2	2
	Burial Sites	0	0	0	0
	Camping Ground/Caravan Park	0	0	0	0
	Car Park	1	1	1	1
	Church	0	0	0	0
	Community Care	0	0	0	0
	Hall/Community Centre	0	0	0	0
	Cultural Area	0	0	0	0
	Historical	0	0	0	0
	Libraries	0	0	0	0
	Medical Services	1	1	2	2
	Museums/Galleries	0	0	0	0
	Natural	0	0	0	0
	Park/Reserve	1	1	1	1
	Picnic Area	0	0	0	0
	Schools	0	0	1	1
	Scout/Girl Guide	0	0	0	0
	Senior/Elderly Citizens	0	0	0	0
	Service Station	0	0	0	6
	Sports Building	0	0	0	1
	Sports Clubs	0	0	0	2
	Sports Grounds	0	0	0	0
	State Police/Emergency Management Services	0	0	0	0
	Sewage Treatment and Waster Water plants	1	1	2	2
Roads (m)	National/State Highway	3025	3301	5867	17891
	Arterial Road	458	474	804	2184
	Feeder	18	24	86	565
	Access Road	5846	6257	7741	15743
	Vehicular Track	353	432	538	1185
PWS assets (number)	PWS Major Buildings	0	0	0	0
	PWS Minor Buildings	0	0	0	0
	PWS Camping Areas	0	0	0	0
	PWS Car Park	0	0	0	0
	PWS Coastal Infrastructure	0	0	0	0
	PWS Picnic Areas or Facilities	0	0	0	0
	PWS Toilet	0	0	0	0
	PWS Track Infrastructure	0	0	0	0
	PWS Road Infrastructure	0	0	0	0
	PWS Track (km in reserves)	0	0	0	0
	PWS Road (km in reserves)	0	0	0	0
EPS[2]	Waste disposal sites	0	0	0	0
	Storage tanks or facility	0	0	0	1

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.
[2] EPS = Environmental permit sites (number)

Table 57 Central Coast

	Asset Type	2004 hazard[1]	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m)[1]
Land tenure (ha)	Commonwealth Land	0	0	0	0
	Historical Sites	0	0	0	0
	Natural Reserves	147.64	149.73	173.66	300.61
	Other Public Land	80.51	82.55	101.90	149.21
	Private Reserves	0	0	0	0
	State Forest	0	0	0	0
	Unreserved Private	194.58	199.08	247.06	442.02
Facilities (number)	Boating & Surf Life Clubs	3	3	3	4
	Burial Sites	0	0	0	1
	Camping Ground/Caravan Park	4	4	4	5
	Car Park	0	0	0	2
	Church	0	0	1	2
	Community Care	3	3	3	4
	Hall/Community Centre	1	1	1	3
	Cultural Area	0	0	0	0
	Historical	0	0	0	0
	Libraries	0	0	1	1
	Medical Services	0	0	0	0
	Museums/Galleries	0	0	0	0
	Natural	0	0	0	0
	Park/Reserve	10	10	14	18
	Picnic Area	13	13	13	15
	Schools	0	0	0	1
	Scout/Girl Guide	0	0	0	1
	Senior/Elderly Citizens	0	0	0	0
	Service Station	1	1	1	3
	Sports Building	1	1	1	3
	Sports Clubs	4	4	5	8
	Sports Grounds	1	1	1	1
	State Police/Emergency Management Services	1	1	1	2
	Sewage Treatment and Waster Water plants	2	2	2	3
Roads (m)	National/State Highway	2178	2224	3057	7528
	Arterial Road	2124	2204	2803	7472
	Feeder	4826	4957	5919	12299
	Access Road	21669	22160	26855	45505
	Vehicular Track	2303	2331	3344	5833
PWS assets (number)	PWS Major Buildings	0	0	0	0
	PWS Minor Buildings	0	0	0	0
	PWS Camping Areas	0	0	0	0
	PWS Car Park	1	1	1	1
	PWS Coastal Infrastructure	0	0	0	0
	PWS Picnic Areas or Facilities	0	0	0	0
	PWS Toilet	0	0	0	0
	PWS Track Infrastructure	0	0	0	0
	PWS Road Infrastructure	0	0	0	0
	PWS Track (km in reserves)	0	0	0	0
	PWS Road (km in reserves)	0.08	0.08	0.1	0.1
EPS[2]	Waste disposal sites				
	Storage tanks or facility				

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.
[2] EPS = Environmental permit sites (number)

Table 58 Circular Head

	Asset Type	2004 hazard[1]	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m)[1]
Land tenure (ha)	Commonwealth Land	0.18	0.18	0.3	3.75
	Historical Sites	0	0	0	0
	Natural Reserves	1121.87	1145.73	1377.02	4334.6
	Other Public Land	407.50	416.14	502.30	722.41
	Private Reserves	0	0.01	0.43	11.19
	State Forest	0.75	0.75	0.75	0.75
	Unreserved Private	5827.61	5949.08	7182.99	8513.27
Facilities (number)	Boating & Surf Life Clubs	0	0	0	0
	Burial Sites	0	0	1	2
	Camping Ground/Caravan Park	1	1	1	3
	Car Park	0	0	0	0
	Church	0	0	0	0
	Community Care	0	0	0	1
	Hall/Community Centre	0	0	0	0
	Cultural Area	0	0	0	0
	Historical	0	0	0	0
	Libraries	0	0	0	0
	Medical Services	1	1	1	1
	Museums/Galleries	0	0	0	0
	Natural	0	0	0	1
	Park/Reserve	4	4	4	6
	Picnic Area	1	1	1	2
	Schools	2	2	2	2
	Scout/Girl Guide	2	2	2	2
	Senior/Elderly Citizens	0	0	0	0
	Service Station	1	1	1	1
	Sports Building	1	1	1	3
	Sports Clubs	4	4	5	5
	Sports Grounds	0	0	0	0
	State Police/Emergency Management Services	1	1	1	3
	Sewage Treatment and Waster Water plants	1	1	1	2
Roads (m)	National/State Highway	3849	4032	5214	10229
	Arterial Road	3873	3942	4858	5680
	Feeder	1429	1459	1684	1965
	Access Road	28266	29343	36761	49444
	Vehicular Track	47760	49753	64104	102592
PWS assets (number)	PWS Major Buildings	0	0	0	1
	PWS Minor Buildings	0	0	0	2
	PWS Camping Areas	1	1	1	1
	PWS Car Park	1	1	3	8
	PWS Coastal Infrastructure	1	1	2	2
	PWS Picnic Areas or Facilities	4	4	4	4
	PWS Toilet	2	2	4	8
	PWS Track Infrastructure	1	1	1	2
	PWS Road Infrastructure	0	0	2	2
	PWS Track (km in reserves)	2.3	2.5	3.3	10.6
	PWS Road (km in reserves)	0	0	0	0
EPS[2]	Waste disposal sites	3	3	3	3
	Storage tanks or facility	0	0	0	1

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.
[2] EPS = Environmental permit sites (number)

Table 59 Clarence City

	Asset Type	2004 hazard[1]	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m)[1]
Land tenure (ha)	Commonwealth Land	12.8	13.78	26.16	48.9
	Historical Sites	0	0	0	0.71
	Natural Reserves	163.96	172.8	254.26	720.12
	Other Public Land	99.20	104.81	161.50	405.39
	Private Reserves	37.43	37.99	42.07	53.17
	State Forest	0.13	0.13	0.17	0.21
	Unreserved Private	356.32	377.38	575.28	1166.92
Facilities (number)	Boating & Surf Life Clubs	0	0	1	5
	Burial Sites	0	0	0	0
	Camping Ground/Caravan Park	0	0	0	0
	Car Park	0	0	0	0
	Church	1	1	1	1
	Community Care	0	0	1	2
	Hall/Community Centre	2	2	2	3
	Cultural Area	0	0	0	0
	Historical	0	0	0	0
	Libraries	0	0	0	0
	Medical Services	0	0	1	4
	Museums/Galleries	0	0	0	0
	Natural	0	0	0	0
	Park/Reserve	4	4	6	15
	Picnic Area	4	4	7	11
	Schools	0	0	0	0
	Scout/Girl Guide	0	0	0	2
	Senior/Elderly Citizens	0	0	0	0
	Service Station	4	4	4	4
	Sports Building	0	0	0	1
	Sports Clubs	0	0	1	2
	Sports Grounds	0	0	0	1
	State Police/Emergency Management Services	0	0	1	3
	Sewage Treatment and Waster Water plants	0	0	0	1
Roads (m)	National/State Highway	735	798	1043	2879
	Arterial Road	4937	4989	5955	8167
	Feeder	3146	3259	4908	7726
	Access Road	17879	19178	31225	66900
	Vehicular Track	3892	4291	6593	15493
PWS assets (number)	PWS Major Buildings	0	0	1	1
	PWS Minor Buildings	1	1	2	4
	PWS Camping Areas	0	0	0	0
	PWS Car Park	2	2	4	6
	PWS Coastal Infrastructure	0	0	0	0
	PWS Picnic Areas or Facilities	4	4	4	4
	PWS Toilet	3	3	6	6
	PWS Track Infrastructure	1	1	1	2
	PWS Road Infrastructure	4	4	10	11
	PWS Track (km in reserves)	0	0	7	9.7
	PWS Road (km in reserves)	0.2	0.2	0.5	1.0
EPS[2]	Waste disposal sites	0	0	0	0
	Storage tanks or facility	1	1	1	2

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.
[2] EPS = Environmental permit sites (number)

Table 60 Derwent Valley

	Asset Type	2004 hazard[1]	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m)[1]
Land tenure (ha)	Commonwealth Land	0	0	0.02	1.19
	Historical Sites	0	0	0.06	0.06
	Natural Reserves	20.35	20.81	27.41	202.21
	Other Public Land	4.22	4.41	6.27	18.50
	Private Reserves	0	0	0	0
	State Forest	0	0	0	0
	Unreserved Private	34.02	35.76	57.55	171.13
Facilities (number)	Boating & Surf Life Clubs	0	0	0	2
	Burial Sites	0	0	0	0
	Camping Ground/Caravan Park	1	1	1	1
	Car Park	0	0	0	0
	Church	0	0	0	0
	Community Care	0	0	0	0
	Hall/Community Centre	0	0	0	1
	Cultural Area	0	0	1	1
	Historical	0	0	0	0
	Libraries	0	0	0	0
	Medical Services	0	0	0	0
	Museums/Galleries	0	0	0	0
	Natural	0	0	0	0
	Park/Reserve	1	1	2	3
	Picnic Area	0	0	2	3
	Schools	0	0	0	0
	Scout/Girl Guide	0	0	0	0
	Senior/Elderly Citizens	0	0	0	0
	Service Station	0	0	0	0
	Sports Building	1	1	1	2
	Sports Clubs	0	0	0	2
	Sports Grounds	0	0	0	0
	State Police/Emergency Management Services	0	0	0	0
	Sewage Treatment and Waster Water plants	0	0	0	0
Roads (m)	National/State Highway	1041	1095	1811	8064
	Arterial Road	396	429	636	2318
	Feeder	0	0	0	0
	Access Road	695	698	1406	7077
	Vehicular Track	26	26	61	560
PWS assets (number)	PWS Major Buildings	0	0	0	0
	PWS Minor Buildings	0	0	0	0
	PWS Camping Areas	0	0	0	0
	PWS Car Park	0	0	0	0
	PWS Coastal Infrastructure	0	0	0	0
	PWS Picnic Areas or Facilities	0	0	0	0
	PWS Toilet	0	0	0	0
	PWS Track Infrastructure	0	0	0	0
	PWS Road Infrastructure	0	0	0	0
	PWS Track (km in reserves)	0	0	0	0
	PWS Road (km in reserves)	0	0	0	0
EPS[2]	Waste disposal sites	0	0	0	0
	Storage tanks or facility	0	0	0	1

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.
[2] EPS = Environmental permit sites (number)

Table 61 Devonport City

	Asset Type	2004 hazard[1]	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m)[1]
Land tenure (ha)	Commonwealth Land	0	0	0.09	0.12
	Historical Sites	0	0	0	0
	Natural Reserves	50.94	51.65	59.03	115.44
	Other Public Land	61.95	63.66	80.96	137.08
	Private Reserves	0	0	0	0
	State Forest	0	0	0	0
	Unreserved Private	80.93	83.60	115.36	224.32
Facilities (number)	Boating & Surf Life Clubs	2	2	3	5
	Burial Sites	0	0	0	0
	Camping Ground/Caravan Park	1	1	3	3
	Car Park	0	0	1	1
	Church	0	0	0	0
	Community Care	0	0	0	1
	Hall/Community Centre	0	0	0	0
	Cultural Area	0	0	0	0
	Historical	0	0	0	0
	Libraries	0	0	0	0
	Medical Services	0	0	0	0
	Museums/Galleries	1	1	1	1
	Natural	0	0	0	1
	Park/Reserve	1	1	1	1
	Picnic Area	5	5	6	7
	Schools	0	0	0	0
	Scout/Girl Guide	0	0	0	0
	Senior/Elderly Citizens	0	0	1	1
	Service Station	0	0	0	1
	Sports Building	2	2	2	4
	Sports Clubs	2	2	3	4
	Sports Grounds	0	0	1	1
	State Police/Emergency Management Services	0	0	0	2
	Sewage Treatment and Waster Water plants	1	1	1	1
Roads (m)	National/State Highway	2684	2425	3798	6209
	Arterial Road	1104	1104	1845	4874
	Feeder	1549	1581	2084	3348
	Access Road	9864	9864	11296	23512
	Vehicular Track	222	222	222	349
PWS assets (number)	PWS Major Buildings	0	0	0	0
	PWS Minor Buildings	0	0	0	0
	PWS Camping Areas	0	0	0	0
	PWS Car Park	0	0	0	1
	PWS Coastal Infrastructure	0	0	0	0
	PWS Picnic Areas or Facilities	0	0	1	1
	PWS Toilet	0	0	0	0
	PWS Track Infrastructure	0	0	1	1
	PWS Road Infrastructure	0	0	0	0
	PWS Track (km in reserves)	0	0	0	0
	PWS Road (km in reserves)	0	0	0	0
EPS[2]	Waste disposal sites	0	0	0	0
	Storage tanks or facility	7	7	7	14

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.
[2] EPS = Environmental permit sites (number)

Table 62 Dorset

	Asset Type	2004 hazard[1]	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m)[1]
Land tenure (ha)	Commonwealth Land	0	0	0	0
	Historical Sites	0	0	0	0
	Natural Reserves	664.78	681.04	846.56	2141.5
	Other Public Land	77.74	79.69	97.58	203.00
	Private Reserves	17.24	17.94	25.17	58.77
	State Forest	0	0	0	0
	Unreserved Private	297.75	311.48	447.04	791.03
Facilities (number)	Boating & Surf Life Clubs	0	0	0	1
	Burial Sites	0	0	0	0
	Camping Ground/Caravan Park	0	0	0	2
	Car Park	0	0	0	0
	Church	0	0	0	0
	Community Care	0	0	0	0
	Hall/Community Centre	0	0	0	0
	Cultural Area	0	0	0	0
	Historical	0	0	0	0
	Libraries	0	0	0	0
	Medical Services	0	0	0	0
	Museums/Galleries	0	0	0	0
	Natural	0	0	0	0
	Park/Reserve	0	0	1	1
	Picnic Area	0	0	0	2
	Schools	0	0	0	0
	Scout/Girl Guide	0	0	0	0
	Senior/Elderly Citizens	0	0	0	0
	Service Station	0	0	0	0
	Sports Building	0	0	0	0
	Sports Clubs	0	0	0	0
	Sports Grounds	0	0	0	0
	State Police/Emergency Management Services	0	0	0	0
	Sewage Treatment and Waster Water plants	0	0	0	0
Roads (m)	National/State Highway	0	0	0	0
	Arterial Road	1044	1076	1382	1543
	Feeder	0	0	376	1085
	Access Road	1967	2069	3378	6906
	Vehicular Track	7342	7879	12604	17673
PWS assets (number)	PWS Major Buildings	0	0	0	0
	PWS Minor Buildings	0	0	0	0
	PWS Camping Areas	2	2	5	12
	PWS Car Park	1	1	2	2
	PWS Coastal Infrastructure	1	1	1	1
	PWS Picnic Areas or Facilities	4	6	17	47
	PWS Toilet	4	4	10	17
	PWS Track Infrastructure	0	0	0	0
	PWS Road Infrastructure	1	1	1	1
	PWS Track (km in reserves)	0	0	0	.05
	PWS Road (km in reserves)	0.6	0.7	1.0	2.2
EPS[2]	Waste disposal sites	0	0	0	0
	Storage tanks or facility	0	0	0	0

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.
[2] EPS = Environmental permit sites (number)

Table 63 Flinders

	Asset Type	2004 hazard[1]	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m)[1]
Land tenure (ha)	Commonwealth Land	0	0	0	0
	Historical Sites	5.02	5.31	7.14	29.66
	Natural Reserves	1914.41	2007.28	3154.56	6624.87
	Other Public Land	1057.91	1102.46	1638.28	4142.13
	Private Reserves	9.96	10.79	17.32	22.62
	State Forest	0	0	0	0
	Unreserved Private	632.63	691.94	1618.05	2490.77
Facilities (number)	Boating & Surf Life Clubs	0	0	0	0
	Burial Sites	0	0	0	0
	Camping Ground/Caravan Park	0	0	0	0
	Car Park	0	0	0	0
	Church	0	0	0	0
	Community Care	0	0	0	0
	Hall/Community Centre	0	0	0	0
	Cultural Area	0	0	0	0
	Historical	0	0	0	0
	Libraries	0	0	0	0
	Medical Services	0	0	0	0
	Museums/Galleries	0	0	0	1
	Natural	0	0	0	0
	Park/Reserve	0	0	0	0
	Picnic Area	0	0	0	1
	Schools	0	0	0	0
	Scout/Girl Guide	0	0	0	0
	Senior/Elderly Citizens	0	0	0	0
	Service Station	0	0	0	0
	Sports Building	0	0	0	0
	Sports Clubs	0	0	0	1
	Sports Grounds	0	0	0	0
	State Police/Emergency Management Services	0	0	0	3
	Sewage Treatment and Waster Water plants	0	0	0	0
Roads (m)	National/State Highway	0	0	0	0
	Arterial Road	3183	3399	4610	5654
	Feeder	0	0	0	0
	Access Road	6764	7071	12605	19743
	Vehicular Track	15944	16861	33231	74217
PWS assets (number)	PWS Major Buildings	0	0	0	0
	PWS Minor Buildings	0	0	0	0
	PWS Camping Areas	0	0	0	0
	PWS Car Park	0	0	0	1
	PWS Coastal Infrastructure	0	0	0	0
	PWS Picnic Areas or Facilities	2	2	2	6
	PWS Toilet	0	0	0	2
	PWS Track Infrastructure	0	0	0	1
	PWS Road Infrastructure	0	0	0	0
	PWS Track (km in reserves)	1.3	1.3	2.7	9.5
	PWS Road (km in reserves)	0	0	0	0
EPS[2]	Waste disposal sites	0	0	0	0
	Storage tanks or facility	0	0	0	2

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.
[2] EPS = Environmental permit sites (number)

Table 64 George Town

	Asset Type	2004 hazard[1]	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m)[1]
Land tenure (ha)	Commonwealth Land	8.02	8.45	11.56	59.78
	Historical Sites	2.35	2.35	2.68	13.47
	Natural Reserves	115.22	118.17	143.9	375.48
	Other Public Land	58.80	61.04	79.53	191.03
	Private Reserves	1.48	1.59	2.68	40.48
	State Forest	0	0	0	0
	Unreserved Private	129.54	134.81	183.95	488.00
Facilities (number)	Boating & Surf Life Clubs	2	2	2	2
	Burial Sites	0	0	0	0
	Camping Ground/Caravan Park	0	0	1	1
	Car Park	0	0	0	0
	Church	2	2	3	4
	Community Care	0	0	0	1
	Hall/Community Centre	1	1	1	3
	Cultural Area	0	0	0	0
	Historical	0	0	0	0
	Libraries	0	0	0	0
	Medical Services	0	0	0	0
	Museums/Galleries	1	1	1	1
	Natural	0	0	0	0
	Park/Reserve	1	1	2	2
	Picnic Area	2	2	2	2
	Schools	0	0	0	0
	Scout/Girl Guide	0	0	0	0
	Senior/Elderly Citizens	0	0	0	1
	Service Station	0	0	0	1
	Sports Building	0	0	0	1
	Sports Clubs	1	1	1	3
	Sports Grounds	0	0	0	0
	State Police/Emergency Management Services	0	0	0	1
	Sewage Treatment and Waster Water plants	0	0	0	0
Roads (m)	National/State Highway	41	41	29	657
	Arterial Road	2289	2401	2998	3797
	Feeder	117	124	163	668
	Access Road	14237	14490	17801	33861
	Vehicular Track	2704	2779	3616	11717
PWS assets (number)	PWS Major Buildings	6	6	7	7
	PWS Minor Buildings	14	14	15	15
	PWS Camping Areas	0	0	0	0
	PWS Car Park	3	3	3	3
	PWS Coastal Infrastructure	0	0	0	0
	PWS Picnic Areas or Facilities	0	0	0	0
	PWS Toilet	10	10	10	10
	PWS Track Infrastructure	0	0	0	0
	PWS Road Infrastructure	2	2	2	2
	PWS Track (km in reserves)	0	0	0	0
	PWS Road (km in reserves)	0.7	0.7	0.8	1.2
EPS[2]	Waste disposal sites	0	0	0	0
	Storage tanks or facility	2	2	2	2

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.
[2] EPS = Environmental permit sites (number)

Table 65 Glamorgan/Spring Bay

	Asset Type	2004 hazard[1]	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m)[1]
Land tenure (ha)	Commonwealth Land	0	0	0	0.01
	Historical Sites	0	0	0	0
	Natural Reserves	638.17	660.69	875.19	2577
	Other Public Land	47.91	48.97	60.00	121.39
	Private Reserves	384.40	391.46	454.72	538.96
	State Forest	0	0	0	0
	Unreserved Private	692.04	722.29	1031.40	2014.99
Facilities (number)	Boating & Surf Life Clubs	0	0	0	0
	Burial Sites	2	2	2	2
	Camping Ground/Caravan Park	1	1	2	6
	Car Park	0	0	0	0
	Church	0	0	0	0
	Community Care	0	0	0	0
	Hall/Community Centre	0	0	0	1
	Cultural Area	0	0	1	2
	Historical	1	1	1	1
	Libraries	0	0	0	0
	Medical Services	1	1	1	1
	Museums/Galleries	0	0	0	0
	Natural	1	1	1	2
	Park/Reserve	0	0	1	2
	Picnic Area	4	4	5	11
	Schools	0	0	0	0
	Scout/Girl Guide	0	0	0	1
	Senior/Elderly Citizens	0	0	0	0
	Service Station	0	0	0	2
	Sports Building	1	1	1	3
	Sports Clubs	2	2	2	6
	Sports Grounds	0	0	0	0
	State Police/Emergency Management Services	2	2	2	3
	Sewage Treatment and Waster Water plants	0	0	1	1
Roads (m)	National/State Highway	1095	1295	3158	10315
	Arterial Road	0	0	5	1630
	Feeder	201	208	435	1426
	Access Road	14068	14892	21837	46452
	Vehicular Track	20506	21502	31378	49595
PWS assets (number)	PWS Major Buildings	1	1	1	1
	PWS Minor Buildings	4	4	5	8
	PWS Camping Areas	2	2	3	10
	PWS Car Park	1	2	3	13
	PWS Coastal Infrastructure	0	0	0	0
	PWS Picnic Areas or Facilities	0	0	1	7
	PWS Toilet	2	2	6	19
	PWS Track Infrastructure	2	2	2	6
	PWS Road Infrastructure	2	2	3	9
	PWS Track (km in reserves)	5.5	5.9	9.7	20.9
	PWS Road (km in reserves)	0.2	0.2	0.8	1.5
EPS[2]	Waste disposal sites	0	0	0	0
	Storage tanks or facility	0	0	0	0

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.
[2] EPS = Environmental permit sites (number)

Table 66 Glenorchy City

	Asset Type	2004 hazard[1]	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m)[1]
Land tenure (ha)	Commonwealth Land	0.45	0.55	0.93	5.46
	Historical Sites	0	0	0	0
	Natural Reserves	2.24	2.32	2.77	17.12
	Other Public Land	23.02	24.02	33.73	84.98
	Private Reserves	0	0	0	0
	State Forest	0	0	0	0
	Unreserved Private	20.48	21.71	33.80	137.74
Facilities (number)	Boating & Surf Life Clubs	2	2	3	4
	Burial Sites	0	0	0	0
	Camping Ground/Caravan Park	1	1	1	1
	Car Park	0	0	0	0
	Church	0	0	0	0
	Community Care	0	0	0	1
	Hall/Community Centre	0	0	0	1
	Cultural Area	0	0	0	0
	Historical	0	0	0	1
	Libraries	0	0	0	0
	Medical Services	0	0	0	0
	Museums/Galleries	0	0	0	1
	Natural	0	0	0	0
	Park/Reserve	2	2	5	10
	Picnic Area	1	1	3	3
	Schools	0	0	0	0
	Scout/Girl Guide	0	0	0	1
	Senior/Elderly Citizens	0	0	0	0
	Service Station	0	0	0	1
	Sports Building	0	0	0	2
	Sports Clubs	0	0	0	3
	Sports Grounds	0	0	0	1
	State Police/Emergency Management Services	0	0	0	0
	Sewage Treatment and Waster Water plants	0	0	0	1
Roads (m)	National/State Highway	1387	1417	1608	2151
	Arterial Road	375	380	797	4904
	Feeder	85	96	172	479
	Access Road	3058	3312	5253	18452
	Vehicular Track	375	387	492	1827
PWS assets (number)	PWS Major Buildings	0	0	0	0
	PWS Minor Buildings	0	0	0	0
	PWS Camping Areas	0	0	0	0
	PWS Car Park	0	0	0	0
	PWS Coastal Infrastructure	0	0	0	0
	PWS Picnic Areas or Facilities	0	0	0	0
	PWS Toilet	0	0	0	0
	PWS Track Infrastructure	0	0	0	0
	PWS Road Infrastructure	0	0	0	0
	PWS Track (km in reserves)	0	0	.02	.5
	PWS Road (km in reserves)	0	0	0	0
EPS[2]	Waste disposal sites	0	0	0	0
	Storage tanks or facility	0	0	0	1

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.
[2] EPS = Environmental permit sites (number)

Table 67 Hobart City

	Asset Type	2004 hazard[1]	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m)[1]
Land tenure (ha)	Commonwealth Land	0.61	0.61	0.95	2.66
	Historical Sites	0	0	0	0
	Natural Reserves	0.10	0.1	0.4	1.33
	Other Public Land	25.90	27.16	34.89	78.09
	Private Reserves	0	0	0	0
	State Forest	0	0	0	0
	Unreserved Private	5.34	6.01	10.32	41.93
Facilities (number)	Boating & Surf Life Clubs	2	2	2	10
	Burial Sites	0	0	0	0
	Camping Ground/Caravan Park	0	0	0	0
	Car Park	2	2	2	3
	Church	0	0	0	1
	Community Care	0	0	0	1
	Hall/Community Centre	0	0	0	1
	Cultural Area	0	0	2	2
	Historical	0	0	0	1
	Libraries	0	0	0	0
	Medical Services	0	0	1	1
	Museums/Galleries	0	0	0	2
	Natural	0	0	0	0
	Park/Reserve	1	1	2	6
	Picnic Area	0	0	1	2
	Schools	0	0	0	0
	Scout/Girl Guide	1	1	2	2
	Senior/Elderly Citizens	0	0	0	0
	Service Station	0	0	0	0
	Sports Building	3	3	3	13
	Sports Clubs	0	0	0	0
	Sports Grounds	0	0	0	1
	State Police/Emergency Management Services	0	0	0	0
	Sewage Treatment and Waster Water plants	0	0	0	1
Roads (m)	National/State Highway	305	310	432	3146
	Arterial Road	175	184	328	2328
	Feeder	64	78	317	2022
	Access Road	2238	2328	3492	10619
	Vehicular Track	191	241	363	557
PWS assets (number)	PWS Major Buildings	0	0	0	0
	PWS Minor Buildings	0	0	0	0
	PWS Camping Areas	0	0	0	0
	PWS Car Park	0	0	0	0
	PWS Coastal Infrastructure	0	0	0	0
	PWS Picnic Areas or Facilities	0	0	0	0
	PWS Toilet	0	0	0	0
	PWS Track Infrastructure	0	0	0	0
	PWS Road Infrastructure	0	0	0	0
	PWS Track (km in reserves)	0	0	0	0
	PWS Road (km in reserves)	0	0	0	0
EPS[2]	Waste disposal sites	0	0	0	0
	Storage tanks or facility	0	0	3	5

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.
[2] EPS = Environmental permit sites (number)

Table 68 Huon Valley

	Asset Type	2004 hazard[1]	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m)[1]
Land tenure (ha)	Commonwealth Land	0	0	0	0
	Historical Sites	0.8	0.92	1.46	9.95
	Natural Reserves	1408.88	1465.06	2004.02	6616.71
	Other Public Land	116.00	116.36	121.89	177.08
	Private Reserves	0.24	0.24	0.28	2.70
	State Forest	7.99	8.52	13.83	62.97
	Unreserved Private	221.94	226.93	273.94	819.87
Facilities (number)	Boating & Surf Life Clubs	2	2	3	3
	Burial Sites	0	0	0	1
	Camping Ground/Caravan Park	0	0	0	1
	Car Park	0	0	0	0
	Church	0	0	0	0
	Community Care	0	0	0	1
	Hall/Community Centre	0	0	1	1
	Cultural Area	0	0	0	1
	Historical	0	0	0	0
	Libraries	0	0	0	0
	Medical Services	0	0	0	1
	Museums/Galleries	0	0	0	2
	Natural	1	1	1	1
	Park/Reserve	2	2	2	4
	Picnic Area	2	2	5	8
	Schools	0	0	1	1
	Scout/Girl Guide	0	0	0	0
	Senior/Elderly Citizens	0	0	0	0
	Service Station	0	0	0	3
	Sports Building	1	1	1	4
	Sports Clubs	1	1	1	3
	Sports Grounds	0	0	0	1
	State Police/Emergency Management Services	0	0	0	1
	Sewage Treatment and Waster Water plants	0	0	0	1
Roads (m)	National/State Highway	2218	2362	3869	21910
	Arterial Road	1006	1040	1516	4738
	Feeder	949	1157	2201	20109
	Access Road	5258	5698	10126	48066
	Vehicular Track	2242	2490	3629	14129
PWS assets (number)	PWS Major Buildings	2	2	2	2
	PWS Minor Buildings	3	3	5	6
	PWS Camping Areas	6	6	8	14
	PWS Car Park	0	0	0	0
	PWS Coastal Infrastructure	2	2	3	4
	PWS Picnic Areas or Facilities	0	0	1	1
	PWS Toilet	5	5	7	14
	PWS Track Infrastructure	0	0	0	1
	PWS Road Infrastructure	1	1	1	2
	PWS Track (km in reserves)	8	8.4	10.6	27
	PWS Road (km in reserves)	0.6	0.6	0.9	0.9
EPS[2]	Waste disposal sites	0	0	0	1
	Storage tanks or facility	0	0	1	3

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.
[2] EPS = Environmental permit sites (number)

Table 69 Kingborough

	Asset Type	2004 hazard[1]	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m)[1]
Land tenure (ha)	Commonwealth Land	0	0	0	0
	Historical Sites	0.18	0.18	0.22	0.83
	Natural Reserves	212.64	221.66	301.92	1328.76
	Other Public Land	32.11	32.85	40.02	98.60
	Private Reserves	17.76	18.01	20.09	55.91
	State Forest	0	0	0	0.75
	Unreserved Private	145.19	152.24	223.66	933.56
Facilities (number)	Boating & Surf Life Clubs	0	0	1	3
	Burial Sites				0
	Camping Ground/Caravan Park	2	2	2	3
	Car Park				0
	Church			1	1
	Community Care	1	1	1	2
	Hall/Community Centre	0	0	0	5
	Cultural Area				0
	Historical	1	1	1	3
	Libraries	0	0	0	0
	Medical Services	0	0	0	1
	Museums/Galleries	0	0	0	2
	Natural	0	0	0	0
	Park/Reserve	1	1	1	5
	Picnic Area	4	4	4	11
	Schools	0	0	0	1
	Scout/Girl Guide	0	0	0	1
	Senior/Elderly Citizens	0	0	0	0
	Service Station	0	0	2	5
	Sports Building	2	2	3	4
	Sports Clubs	1	1	2	5
	Sports Grounds	0	0	1	2
	State Police/Emergency Management Services	0	0	0	3
	Sewage Treatment and Waster Water plants	0	0	0	1
Roads (m)	National/State Highway	615	677	1187	7824
	Arterial Road	2956	3007	3885	8706
	Feeder	2648	2648	3829	9920
	Access Road	10560	10614	13942	48126
	Vehicular Track	3084	3207	6392	22425
PWS assets (number)	PWS Major Buildings	0	0	0	1
	PWS Minor Buildings	1	1	1	2
	PWS Camping Areas	1	1	1	1
	PWS Car Park	0	1	1	5
	PWS Coastal Infrastructure	0	0	0	0
	PWS Picnic Areas or Facilities	1	1	1	1
	PWS Toilet	3	3	3	5
	PWS Track Infrastructure	1	1	2	2
	PWS Road Infrastructure	0	0	0	0
	PWS Track (km in reserves)	1	1.1	1.4	8.4
	PWS Road (km in reserves)	0	0	0	0
EPS[2]	Waste disposal sites	0	0	0	0
	Storage tanks or facility	0	0	0	3

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.
[2] EPS = Environmental permit sites (number)

Table 70 King Island

	Asset Type	2004 hazard[1]	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m)[1]
Land tenure (ha)	Commonwealth Land	0	0	0	0
	Historical Sites	0	0	0	0
	Natural Reserves	293.22	305.53	460.28	1435.41
	Other Public Land	28.31	29.36	37.25	105.91
	Private Reserves	0	0	0	0
	State Forest	0	0	0	0
	Unreserved Private	56.66	59.04	80.78	478.12
Facilities (number)	Boating & Surf Life Clubs	0	0	0	0
	Burial Sites	0	0	0	0
	Camping Ground/Caravan Park	0	0	0	0
	Car Park	0	0	0	0
	Church	0	0	0	0
	Community Care	0	0	0	0
	Hall/Community Centre	0	0	0	0
	Cultural Area	0	0	0	0
	Historical	0	0	0	0
	Libraries	0	0	0	0
	Medical Services	0	0	0	0
	Museums/Galleries	0	0	0	0
	Natural	0	0	0	0
	Park/Reserve	0	0	0	1
	Picnic Area	0	0	0	1
	Schools	0	0	0	0
	Scout/Girl Guide	0	0	0	0
	Senior/Elderly Citizens	0	0	0	0
	Service Station	0	0	0	0
	Sports Building	0	0	0	0
	Sports Clubs	0	0	0	0
	Sports Grounds	0	0	0	0
	State Police/Emergency Management Services	0	0	0	1
	Sewage Treatment and Waster Water plants	1	1	1	1
Roads (m)	National/State Highway	0	0	0	0
	Arterial Road	101	120	479	1328
	Feeder	0	0	0	0
	Access Road	4330	4415	5863	14603
	Vehicular Track	7313	7682	10932	35515
PWS assets (number)	PWS Major Buildings	0	0	0	0
	PWS Minor Buildings	0	0	0	0
	PWS Camping Areas	0	0	0	0
	PWS Car Park	0	0	0	0
	PWS Coastal Infrastructure	0	0	0	0
	PWS Picnic Areas or Facilities	0	0	0	0
	PWS Toilet	1	1	1	1
	PWS Track Infrastructure	0	0	0	0
	PWS Road Infrastructure	0	0	0	0
	PWS Track (km in reserves)	0.05	.07	.2	.6
	PWS Road (km in reserves)	0	0	0	0
EPS[2]	Waste disposal sites	0	0	0	0
	Storage tanks or facility	0	0	0	0

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.
[2] EPS = Environmental permit sites (number)

Table 71 Latrobe

	Asset Type	2004 hazard[1]	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m)[1]
Land tenure (ha)	Commonwealth Land	0.29	0.29	0.29	0.39
	Historical Sites				
	Natural Reserves	356.11	363.5	416.37	801.7
	Other Public Land	59.29	61.32	79.21	115.16
	Private Reserves				
	State Forest	2.31	2.34	3.04	12.78
	Unreserved Private	340.84	348.98	415.24	677.23
Facilities (number)	Boating & Surf Life Clubs	0	0	0	0
	Burial Sites	0	0	0	0
	Camping Ground/Caravan Park	3	3	3	3
	Car Park	0	0	0	0
	Church	2	2	2	2
	Community Care	0	0	0	0
	Hall/Community Centre	1	1	1	1
	Cultural Area	0	0	0	0
	Historical	0	0	0	0
	Libraries	0	0	0	0
	Medical Services	0	0	0	0
	Museums/Galleries	0	0	0	0
	Natural	0	0	0	0
	Park/Reserve	0	0	0	2
	Picnic Area	5	5	5	5
	Schools	0	0	0	0
	Scout/Girl Guide	1	1	1	1
	Senior/Elderly Citizens	0	0	0	0
	Service Station	0	0	0	0
	Sports Building	0	0	0	0
	Sports Clubs	2	2	2	2
	Sports Grounds	0	0	0	0
	State Police/Emergency Management Services	1	1	1	2
	Sewage Treatment and Waster Water plants	0	0	0	1
Roads (m)	National/State Highway	0	0	0	0
	Arterial Road	1173	1180	1288	2194
	Feeder	879	959	1318	4206
	Access Road	19276	19276	20999	26405
	Vehicular Track	2500	2514	3410	8070
PWS assets (number)	PWS Major Buildings	0	0	0	0
	PWS Minor Buildings	1	1	1	2
	PWS Camping Areas	1	1	3	3
	PWS Car Park	4	4	5	6
	PWS Coastal Infrastructure	0	0	0	0
	PWS Picnic Areas or Facilities	48	49	62	66
	PWS Toilet	3	3	3	4
	PWS Track Infrastructure	0	0	1	1
	PWS Road Infrastructure	3	3	3	3
	PWS Track (km in reserves)	0.1	0.1	0	0
	PWS Road (km in reserves)	1.1	1.2	1.4	2.0
EPS[2]	Waste disposal sites	0	0	0	0
	Storage tanks or facility	0	0	0	1

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.
[2] EPS = Environmental permit sites (number)

Table 72 Launceston City

	Asset Type	2004 hazard[1]	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m)[1]
Land tenure (ha)	Commonwealth Land	0.04	0.04	0.43	0.59
	Historical Sites	0	0	0	0
	Natural Reserves	45.52	46.24	51.39	211.9
	Other Public Land	48.39	49.30	57.07	76.94
	Private Reserves	0	0	0	0
	State Forest	0	0	0	0
	Unreserved Private	313.93	322.32	401.23	562.36
Facilities (number)	Boating & Surf Life Clubs	2	2	3	3
	Burial Sites	0	0	0	0
	Camping Ground/Caravan Park	0	0	0	0
	Car Park	3	3	3	3
	Church	0	0	1	3
	Community Care	2	2	4	4
	Hall/Community Centre	0	0	0	0
	Cultural Area	0	0	0	0
	Historical	0	0	0	1
	Libraries	0	0	0	0
	Medical Services	0	0	0	0
	Museums/Galleries	0	0	0	2
	Natural	0	0	0	0
	Park/Reserve	1	1	2	2
	Picnic Area	1	1	1	1
	Schools	1	1	1	2
	Scout/Girl Guide	2	2	2	2
	Senior/Elderly Citizens	0	0	1	1
	Service Station	1	1	1	2
	Sports Building	1	1	2	3
	Sports Clubs	3	3	4	4
	Sports Grounds	1	1	1	1
	State Police/Emergency Management Services	0	0	0	0
	Sewage Treatment and Waster Water plants	1	1	1	1
Roads (m)	National/State Highway	5473	5586	7075	11457
	Arterial Road	3166	3203	4297	6841
	Feeder	0	0	156	674
	Access Road	19559	20073	26776	33498
	Vehicular Track	1465	1484	1714	3147
PWS assets (number)	PWS Major Buildings	0	0	0	0
	PWS Minor Buildings	0	0	0	0
	PWS Camping Areas	0	0	0	0
	PWS Car Park	0	0	0	0
	PWS Coastal Infrastructure	0	0	0	0
	PWS Picnic Areas or Facilities	0	0	0	0
	PWS Toilet	0	0	0	0
	PWS Track Infrastructure	0	0	0	0
	PWS Road Infrastructure	0	0	0	0
	PWS Track (km in reserves)	0	0	0	0.1
	PWS Road (km in reserves)	0	0	0	0
EPS[2]	Waste disposal sites	0	0	0	0
	Storage tanks or facility	11	11	16	19

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.
[2] EPS = Environmental permit sites (number)

Table 73 Sorell

	Asset Type	2004 hazard[1]	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m)[1]
Land tenure (ha)	Commonwealth Land	0	0	0	0
	Historical Sites	0	0	0	0
	Natural Reserves	86.99	90.14	121.34	318.49
	Other Public Land	6.07	6.73	12.77	84.37
	Private Reserves	40.88	42.08	53.11	89.59
	State Forest				
	Unreserved Private	121.05	128.33	207.40	623.69
Facilities (number)	Boating & Surf Life Clubs	0	0	0	2
	Burial Sites	0	0	0	1
	Camping Ground/Caravan Park	0	0	0	0
	Car Park	0	0	0	0
	Church	0	0	0	0
	Community Care	0	0	0	0
	Hall/Community Centre	0	0	0	1
	Cultural Area	0	0	0	1
	Historical	0	0	0	1
	Libraries	0	0	0	0
	Medical Services	0	0	0	0
	Museums/Galleries	0	0	0	1
	Natural	0	0	0	0
	Park/Reserve	0	0	0	0
	Picnic Area	1	1	1	2
	Schools	0	0	0	1
	Scout/Girl Guide	0	0	0	0
	Senior/Elderly Citizens	0	0	0	0
	Service Station	0	0	0	1
	Sports Building	0	0	0	0
	Sports Clubs	0	0	0	0
	Sports Grounds	0	0	0	0
	State Police/Emergency Management Services	0	0	0	0
	Sewage Treatment and Waster Water plants	0	0	0	2
Roads (m)	National/State Highway	1047	1047	1379	3599
	Arterial Road	643	663	809	3027
	Feeder	3	3	80	2162
	Access Road	2618	2770	4978	19327
	Vehicular Track	3833	3930	5095	12210
PWS assets (number)	PWS Major Buildings	0	0	0	0
	PWS Minor Buildings	0	0	0	0
	PWS Camping Areas	0	0	0	0
	PWS Car Park	0	0	0	0
	PWS Coastal Infrastructure	0	0	0	0
	PWS Picnic Areas or Facilities	0	0	0	0
	PWS Toilet	0	0	0	0
	PWS Track Infrastructure	1	1	2	2
	PWS Road Infrastructure	0	0	0	2
	PWS Track (km in reserves)	0	0	0	0
	PWS Road (km in reserves)	0	0	0	0
EPS[2]	Waste disposal sites	0	0	0	0
	Storage tanks or facility	0	0	0	1

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.
[2] EPS = Environmental permit sites (number)

Table 74 Tasman

	Asset Type	2004 hazard[1]	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m)[1]
Land tenure (ha)	Commonwealth Land	0	0	0	0
	Historical Sites	10.63	11.26	16.24	72.27
	Natural Reserves	131.85	139.4	212.63	1175.6
	Other Public Land	4.09	4.15	5.20	31.63
	Private Reserves	13.74	15.15	22.84	61.48
	State Forest	0.27	0.31	0.65	15.63
	Unreserved Private	33.64	36.72	69.08	468.76
Facilities (number)	Boating & Surf Life Clubs	0	0	0	0
	Burial Sites	0	0	0	0
	Camping Ground/Caravan Park	0	0	0	2
	Car Park	0	0	0	0
	Church	0	0	0	0
	Community Care	0	0	0	0
	Hall/Community Centre	0	0	0	2
	Cultural Area	0	0	0	0
	Historical	0	0	0	1
	Libraries	0	0	0	0
	Medical Services	0	0	0	0
	Museums/Galleries	0	0	0	0
	Natural	0	0	0	1
	Park/Reserve	0	0	0	1
	Picnic Area	0	0	0	3
	Schools	0	0	0	0
	Scout/Girl Guide	0	0	0	0
	Senior/Elderly Citizens	0	0	0	0
	Service Station	0	0	0	1
	Sports Building	1	1	1	1
	Sports Clubs	0	0	0	0
	Sports Grounds	0	0	0	0
	State Police/Emergency Management Services	0	0	0	2
	Sewage Treatment and Waster Water plants	0	0	0	0
Roads (m)	National/State Highway	199	228	1011	8732
	Arterial Road	9	9	43	1741
	Feeder	1511	1578	2988	7863
	Access Road	3212	3346	7098	32178
	Vehicular Track	922	952	1781	8980
PWS assets (number)	PWS Major Buildings	0	0	0	0
	PWS Minor Buildings	0	0	0	2
	PWS Camping Areas	0	0	0	2
	PWS Car Park	0	0	0	3
	PWS Coastal Infrastructure	1	1	1	1
	PWS Picnic Areas or Facilities	0	0	0	4
	PWS Toilet	0	0	0	4
	PWS Track Infrastructure	0	0	0	5
	PWS Road Infrastructure	0	0	0	4
	PWS Track (km in reserves)	0.5	0.6	1.4	12.2
	PWS Road (km in reserves)	0	0	0.6	0.6
EPS[2]	Waste disposal sites	0	0	1	1
	Storage tanks or facility	0	0	0	0

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.
[2] EPS = Environmental permit sites (number)

Table 75 Waratah/Wynyard

	Asset Type	2004 hazard[1]	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m)[1]
Land tenure (ha)	Commonwealth Land	0	0	0	0
	Historical Sites	0	0	0	0
	Natural Reserves	91.36	92.75	105.72	228.17
	Other Public Land	3.91	4.17	7.36	27.51
	Private Reserves	0	0	0	0
	State Forest	0	0	0	0
	Unreserved Private	87.82	90.96	129.27	229.87
Facilities (number)	Boating & Surf Life Clubs	2	2	2	3
	Burial Sites	0	0	0	1
	Camping Ground/Caravan Park	1	1	1	1
	Car Park	0	0	0	0
	Church	0	0	1	2
	Community Care	2	2	2	2
	Hall/Community Centre	0	0	0	0
	Cultural Area	0	0	2	3
	Historical	0	0	0	2
	Libraries	0	0	0	0
	Medical Services	0	0	0	0
	Museums/Galleries	0	0	0	0
	Natural	0	0	0	0
	Park/Reserve	1	1	3	3
	Picnic Area	6	6	6	6
	Schools	0	0	0	0
	Scout/Girl Guide	0	0	0	0
	Senior/Elderly Citizens	0	0	0	0
	Service Station	2	2	2	3
	Sports Building	0	0	0	0
	Sports Clubs	3	3	4	6
	Sports Grounds	0	0	1	1
	State Police/Emergency Management Services	0	0	0	0
	Sewage Treatment and Waster Water plants	1	1	1	1
Roads (m)	National/State Highway	2476	2587	3318	5411
	Arterial Road	5352	5356	5512	5640
	Feeder	136	137	276	805
	Access Road	11202	11513	15472	26128
	Vehicular Track	244	254	269	914
PWS assets (number)	PWS Major Buildings	0	0	0	0
	PWS Minor Buildings	0	0	0	0
	PWS Camping Areas	0	0	0	0
	PWS Car Park	1	2	3	4
	PWS Coastal Infrastructure	0	0	0	0
	PWS Picnic Areas or Facilities	0	0	0	0
	PWS Toilet	0	0	0	0
	PWS Track Infrastructure	0	0	0	0
	PWS Road Infrastructure	0	0	0	1
	PWS Track (km in reserves)	0.02	0.02	.07	1.4
	PWS Road (km in reserves)	1.1	1.2	1.5	1.6
EPS[2]	Waste disposal sites	0	0	0	0
	Storage tanks or facility	0	0	0	1

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.
[2] EPS = Environmental permit sites (number)

Table 76 West Coast

	Asset Type	2004 hazard[1]	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m)[1]
Land tenure (ha)	Commonwealth Land	0	0	0	0
	Historical Sites	88.28	91.92	127.63	611.76
	Natural Reserves	751.27	781.76	1102.31	5122.69
	Other Public Land	344.55	353.35	440.50	1137.10
	Private Reserves	0	0	0	0
	State Forest	128.48	130.23	150.77	327.54
	Unreserved Private	17.20	17.67	26.49	69.18
Facilities (number)	Boating & Surf Life Clubs	1	1	1	1
	Burial Sites	0	0	0	0
	Camping Ground/Caravan Park	0	0	0	1
	Car Park	0	0	0	0
	Church	0	0	0	0
	Community Care	0	0	0	0
	Hall/Community Centre	0	0	0	0
	Cultural Area	0	0	1	2
	Historical	0	0	0	0
	Libraries	0	0	0	0
	Medical Services	0	0	0	0
	Museums/Galleries	0	0	0	0
	Natural	0	0	0	0
	Park/Reserve	0	0	1	3
	Picnic Area	1	1	1	2
	Schools	0	0	0	1
	Scout/Girl Guide	0	0	0	0
	Senior/Elderly Citizens	0	0	0	0
	Service Station	0	0	0	0
	Sports Building	0	0	0	3
	Sports Clubs	0	0	0	0
	Sports Grounds	0	0	0	0
	State Police/Emergency Management Services	0	0	0	1
	Sewage Treatment and Waster Water plants	0	0	0	0
Roads (m)	National/State Highway	0	0	0	127
	Arterial Road	68	85	192	719
	Feeder	105	105	186	3028
	Access Road	881	1142	2433	8005
	Vehicular Track	959	1011	3282	16904
PWS assets (number)	PWS Major Buildings	2	2	2	7
	PWS Minor Buildings	1	1	1	1
	PWS Camping Areas	0	0	0	0
	PWS Car Park	1	1	1	1
	PWS Coastal Infrastructure	2	2	2	3
	PWS Picnic Areas or Facilities	1	1	1	2
	PWS Toilet	3	3	4	6
	PWS Track Infrastructure	4	4	4	11
	PWS Road Infrastructure	0	0	0	0
	PWS Track (km in reserves)	1.4	1.4	2.4	10.2
	PWS Road (km in reserves)	0	0	0	0
EPS[2]	Waste disposal sites	0	0	0	0
	Storage tanks or facility	1	1	1	2

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.
[2] EPS = Environmental permit sites (number)

Table 77 West Tamar

	Asset Type	2004 hazard[1]	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m)[1]
Land tenure (ha)	Commonwealth Land	0	0	0	0
	Historical Sites	6.31	6.52	6.76	11.68
	Natural Reserves	292.88	296.36	325.93	756.57
	Other Public Land	47.03	48.87	61.77	93.77
	Private Reserves	0	0	0	0
	State Forest	0	0	0	0
	Unreserved Private	0	0	0	0
Facilities (number)	Boating & Surf Life Clubs	1	1	1	3
	Burial Sites	0	0	0	0
	Camping Ground/Caravan Park	1	1	2	3
	Car Park	0	0	0	0
	Church	0	0	0	1
	Community Care	0	0	0	2
	Hall/Community Centre	1	1	1	2
	Cultural Area	0	0	0	0
	Historical	0	0	0	0
	Libraries	0	0	0	0
	Medical Services	0	0	0	0
	Museums/Galleries	0	0	0	0
	Natural	0	0	0	0
	Park/Reserve	3	3	4	4
	Picnic Area	9	9	10	12
	Schools	0	0	0	1
	Scout/Girl Guide	3	3	3	3
	Senior/Elderly Citizens	0	0	0	0
	Service Station	2	2	2	2
	Sports Building	0	0	0	0
	Sports Clubs	2	2	2	3
	Sports Grounds	1	1	1	1
	State Police/Emergency Management Services	1	1	1	1
	Sewage Treatment and Waster Water plants	0	0	1	1
Roads (m)	National/State Highway	0	0	3	1094
	Arterial Road	3301	3498	5347	13863
	Feeder	1869	1942	2507	4699
	Access Road	26367	26624	31695	61749
	Vehicular Track	4445	3992	5727	8753
PWS assets (number)	PWS Major Buildings	0	0	0	1
	PWS Minor Buildings	1	1	1	5
	PWS Camping Areas	0	0	0	0
	PWS Car Park	0	0	0	2
	PWS Coastal Infrastructure	0	0	0	0
	PWS Picnic Areas or Facilities	2	2	2	3
	PWS Toilet	0	0	0	1
	PWS Track Infrastructure	1	1	1	3
	PWS Road Infrastructure	0	0	0	0
	PWS Track (km in reserves)	3.5	3.5	6.5	6.7
	PWS Road (km in reserves)	0.6	0.6	0.6	0.6
EPS[2]	Waste disposal sites	0	0	0	0
	Storage tanks or facility	0	0	0	1

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.
[2] EPS = Environmental permit sites (number)

Table 78 LGA not defined

	Asset Type	2004 hazard[1]	low 2100 hazard[1]	high 2100 hazard[1]	cautionary buffer (+50m)[1]
Land tenure (ha)	Commonwealth Land	0	0	0	0
	Historical Sites	0	0	0	0
	Natural Reserves	0	0	0	0
	Other Public Land	0	0	0	0
	Private Reserves	0	0	0	0
	State Forest	0	0	0	0
	Unreserved Private	0	0	0	0
Facilities (number)	Boating & Surf Life Clubs	0	0	0	0
	Burial Sites	0	0	0	0
	Camping Ground/Caravan Park	0	0	0	0
	Car Park	0	0	0	0
	Church	0	0	0	0
	Community Care	0	0	0	0
	Hall/Community Centre	0	0	0	0
	Cultural Area	0	0	0	0
	Historical	0	0	0	0
	Libraries	0	0	0	0
	Medical Services	0	0	0	0
	Museums/Galleries	0	0	0	0
	Natural	0	0	0	0
	Park/Reserve	0	0	0	0
	Picnic Area	0	0	0	0
	Schools	0	0	0	0
	Scout/Girl Guide	0	0	0	0
	Senior/Elderly Citizens	0	0	0	0
	Service Station	0	0	0	0
	Sports Building	0	0	0	0
	Sports Clubs	0	0	0	0
	Sports Grounds	0	0	0	0
	State Police/Emergency Management Services	0	0	0	0
	Sewage Treatment and Waster Water plants	0	0	0	0
Roads (m)	National/State Highway	0	0	0	0
	Arterial Road	0	0	0	0
	Feeder	0	0	0	0
	Access Road	0	0	0	0
	Vehicular Track	0	0	0	0
PWS assets (number)	PWS Major Buildings	0	0	0	0
	PWS Minor Buildings	3	3	3	7
	PWS Camping Areas	0	0	0	10
	PWS Car Park	6	7	7	14
	PWS Coastal Infrastructure	5	5	5	6
	PWS Picnic Areas or Facilities	14	15	19	28
	PWS Toilet	3	3	5	12
	PWS Track Infrastructure	1	1	2	7
	PWS Road Infrastructure	0	0	0	6
	PWS Track (km in reserves)	7.9	7.9	7.5	34.5
	PWS Road (km in reserves)	5.7	5.8	7.5	7.5
EPS[2]	Waste disposal sites	0	0	0	0
	Storage tanks or facility	0	0	0	0

Note:
[1] Totals are cumulative as inundation of a zone inherently implies inundation of previous zones.
[2] EPS = Environmental permit sites (number)


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