Climate Risk Pre-Screening Summary Report Template

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DMS-FT-412

Form – Applicable to Infrastructure and Place

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| Divisional Management System | |
| Status: | Approved |
| Version: | 1.2 |
| Section: | Planning, Environment and Sustainability |
| Business unit: | Sustainability |
| Date of issue: | 30 September 2019 |
| Review date: | 07 May 2020 |
| Audience: | External TSR/External Reference Material |
| Asset classes: | Heavy Rail;  Light Rail;  Multi Sites;  Systems;  Fleets |
| Project delivery model: | Rail Project/Alliance/Novo Rail |
| Project type: | For all project types |
| Project lifecycle: | Feasibility;  Scoping;  Definition;  Construction readiness;  Implementation;  Finalisation;  Not applicable |
| Process owner: | Director Planning, Environment and Sustainability |
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Document History

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| Version | Date of approval | Doc. control no. | Summary of change |
| 1.0 | 27 June 2018 | DS# 6091458\_1 | Initial document |
| 1.1 | 26 Nov 2018 |  | Rebranded to IP |
| 1.2 | 30 Sep 2019 |  | Prefix added to document number. |

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# Background and approach

This report presents the findings of the initial climate risk pre-screening assessment for the [insert project name] using the pre-risk screening methodology outlined in the *TfNSW Climate Risk Assessment Guidelines version 2*.

Considering climate risk during the needs analysis stage of the project can help with the early identification of those challenges and opportunities likely to have a longer term impact on the project across the lifecycle of the asset. At this preliminary stage it is most relevant to consider those climate risks associated with extreme events (e.g. bushfires, heatwaves, flooding, storms etc.) to provide a high-level appreciation of impacts that might have a material impact on the project. While not anticipated to be a full review of all climate risks, this early consideration can help avoid future design constraints and allow the early integration of appropriate adaptation and potential mitigation measures.

# Exposure to extreme events

The following considers whether the project is likely to be exposed to extreme climate events. Where extreme events are identified as likely to impact the project, it is anticipated that further work will be undertaken to understand the extent of this impact and identify appropriate adaptation measures to reduce the associated impact.

## Exposure to natural hazards

*Provide brief summary and/or references to previous events if relevant.*

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| --- | --- |
| **Guidance** | **Supporting information** |
| Have past extreme events caused physical damage or impacted the site? Have past extreme events caused physical damage or impacted the operations and maintenance of similar assets or supporting infrastructure within the project location? To what extent? | Consideration should be given to whether the project site has been impacted by extreme events previously and the frequency of these occurrences. Useful information may include:  Media (including social media) reports and or alerts such as those provided by news agencies; emergency response organisations; government agencies etc.  Warnings and updates provided by the relevant local government authority.  Any preliminary modelling or technical studies that may have been undertaken e.g. flood modelling, bushfire risk, drainage designs etc.  Additionally, if available and/or appropriate consultation with local stakeholders (e.g. council) can be useful in providing historical context for a site regarding past and current impacts. Provide a summary of any feedback / outreach as relevant. |

## Transport mode tolerance

*Provide brief summary about level of tolerance of mode choice if relevant.*

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| --- | --- |
| **Guidance** | **Supporting information** |
| Does the mode of transport selected contain an inherent level of tolerance to extreme events or is it likely that service levels will be impacted in extreme events? | Different modes of transport have varying tolerances to extreme events. For instance light rail services can be impacted by minimal flooding e.g. 50mm, whereas heavy rail is able to maintain service at much higher levels of inundation and buses present arguably the most versatile mode of transport as they are able divert and change routes to maintain service. |

## Future climate risk

*Provide a qualitative brief summary about future changes in climate and how that may impact upon the project based on the previous sections.*

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| --- | --- |
| **Guidance** | **Supporting information** |
| If any past or current impacts from extreme events have been identified, consider whether projected changes in the climate might worsen in the future and the potential impact this may have on the project | A summary of high-level climate risk data including impacts from extreme events are easily accessible through the following resources:  Adapt NSW:  <http://climatechange.environment.nsw.gov.au/Climate-projections-for-NSW/Interactive-map>  CoastAdapt:  <https://coastadapt.com.au/how-to-pages/use-national-mapping-help-understand-flood-and-erosion-risk>  Regional Hazard Mapping: local councils have readily available hazard mapping data related to extreme events such as flooding, bushfire, storm surge which can be easily accessed. |

## Adaptation and mitigation considerations

*Identify the processes and/or procedures that will be implemented to enable effective climate risk mitigation and/or identify the mechanisms that will enable cost effective adaptation measures to be retrofitted at a future stage of project delivery.*

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| --- | --- |
| Guidance | Supporting information |
| If the project location has previously recorded impacts, to what extent is it anticipated that the future project design will avoid or mitigate the risks from those impacts, and can adaptation responses be cost effectively retrofitted in future? | Based on available project information is there confidence that the project will be able to avoid or mitigate the risks from extreme events in future? Identify the processes and/or procedures that will be implemented to enable effective climate risk mitigation and/or identify the mechanisms that will enable cost effective adaptation measures to be retrofitted at a future stage of project delivery. |

# Summary

*Select and expand as appropriate.*

Based on a review of the project location, previous events that may have impacted the site, and an understanding of how future climate may compound any risks, it was determined that:

* *Based on a number of identified risks, it is recommended that the Project should undertake a climate risk assessment; or*
* *Based on the Project’s location, the risk exposure in relation to climate change was assed as being low. Therefore, no further assessment is required.*

Key risks (extreme or high), based on the Project’s location and scope of works, include:

* *Insert as relevant and/or assessed*

Appendix A – climate risk pre-screening

Table 1 - Climate Pre-Screening Questions

|  |  |  |
| --- | --- | --- |
| Question | Comment / Response | |
| Are any of the following events (extreme events) likely to impact the project?  Please note: occurrence of a climate event does not immediately trigger the need for a climate risk assessment. | Heatwave | Yes  No |
| Bushfire | Yes  No |
| Extreme Precipitation & Flooding | Yes  No |
| Storm Surge | Yes  No |
| Storms & Strong Winds | Yes  No |
| Does the site/route include areas that have been impacted by extreme events in the past? |  | Yes  No |
| What past or current trends can be observed regarding the frequency and intensity of extreme events? |  | |
| Does the mode of transport selected contain an inherent level of tolerance to extreme events or is it likely that service levels will be impacted in extreme events? |  | Yes  No |
| If any past or current impacts form extreme events have been identified, consider whether projected changes in the climate might worsen in the future and the potential impact this may have on the project. |  | |
| Have past extreme events caused physical damage or impacted the operations and maintenance of similar assets or supporting infrastructure within the project location? To what extent? |  | Yes  No |
| If the project location has previously recorded impacts, is it anticipated that the future project design will avoid or mitigate the risks from those impacts, and can adaptation responses be cost effectively retrofitted in future? |  | |

Appendix B – climate risk pre-screening checklist

Table 2 Pre-Screening Climate Risk Checklist

|  |  |
| --- | --- |
| Climate Risk | Relevant to Project (Y/N) |
| Heatwave resulting in… |  |
| 1. Delays, cancellations & reliability implications to network due to speed restrictions |  |
| 1. Heat stress impacts to staff and passengers, leading to dehydration and/or illness resulting in possible hospitalisation and/or fatality |  |
| 1. Overload and/or interruption to mains power impacting service provision and the customer experience (e.g. signal failure and/or reduced functionality) |  |
| Bushfire resulting in… | |
| 1. Delays and cancellations due to fire (direct) and/or smoke (indirect) or bushfire warnings |  |
| 1. Direct heat and fire damage to supporting infrastructure (e.g. wiring, electrical equipment etc.) |  |
| Extreme Precipitation & Flooding resulting in… | |
| 1. Flooding/scour of stabling/maintenance yards, tracks, depots, bridges, tunnels, stations, stops, electrical/signalling, car parks, etc. |  |
| 1. Landslides, slope failures and embankment instability/failure / collapse or failure of rock cuttings / collapse or failure of earth cuttings |  |
| 1. Delays, cancellations & reliability implications due to inundation of supporting infrastructure (e.g. tracks, stations, stops, roads, wharves etc.) |  |
| 1. Increased localised flooding resulting in reduced activity in affected areas [access and egress] |  |
| Storm Surge resulting in… | |
| 1. Inundation of low-lying infrastructure (track, wharves, stops), erosion and effects on coastal defences |  |
| 1. An increase in erosion of shorelines and damage to near shore assets |  |
| 1. Storm water drain inundation leading to increased pressures on drainage capacity and impacting operations |  |
| Storms and Strong Winds resulting in… | |
| 1. Delays, cancellations, safety & reliability implications due to storm impacts including wind and lightning |  |
| 1. Impact to substations, electronic and communication systems and other equipment vulnerable to storm and lightning damage impacting energy supply, communications and emergency response management etc. |  |
| 1. An increase in frequency of extreme wind above thresholds known to correspond to damage to assets, electricity network and overhead cables (usually from flying debris) resulting in asset damage and power failure |  |