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GRIP5: Flood Risk Assessment: CFSA Modelling Report (Langford Brook)

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EWR Alliance

Langford Brook

CFSA Modelling Report

EWR Phase 2

19 December 2019

Notice

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Executive Summary

This report sets out the hydrological and hydraulic modelling approach adopted to assess the potential flood risk effects of the East West Rail Phase 2 project (EWR2) on Route Section 2A, north-east of Bicester at National Grid Reference (NGR) 460286, 223307, on the Langford Brook.

The existing PBA hydrological and hydraulic model has been used to assess flood risk to EWR2, the potential impacts of the Scheme and mitigation options. The potential impacts of climate change were assessed by increasing flows by 70%.

An assessment of the temporary floodplain losses arising from the temporary Charbridge Lane diversion works, along with an assessment of the permanent floodplain volume losses arising from railway earthwork embankment widening and highway overbridge works has been undertaken. The model DTM has been modified to include the proposed backwater channel located in the existing floodplain on the left bank of the Langford Brook.

The hydrological and hydraulic model has been updated to include the combined (permanent and temporary) With Scheme proposal and used to size the proposed CFSA. The proposed CFSA has been designed to compensate for the combined temporary and permanent works in line with CIRIA 624 and provides a total floodplain volume of 1313m³.

The results from both the With Scheme (temporary and permanent) model and the With Scheme (permanent) scenario show generally negligible changes in peak water levels and extents across the modelled reach. The CFSA mitigates for both the temporary and permanent works. Once construction is complete and the temporary Charbridge Lane diversion is removed from the floodplain there will be an additional floodplain storage volume >600m³ provided by the Scheme under the permanent scenario. There is therefore a betterment provided by the Scheme.

1. Introduction

This report sets out the hydrological and hydraulic modelling approach adopted to assess the potential flood risk effects of the East West Rail Phase 2 project (EWR2) on Route Section 2A, north-east of Bicester at National Grid Reference (NGR) 460286, 223307, on the Langford Brook.

Placing structures in the floodplain takes up space where floodwaters should flow or be stored and therefore results in a loss of floodplain storage. In order to ensure the risk of flooding is not increased elsewhere, where the consequences may be more severe, floodplain compensation is necessary. This is where new areas of land, in close proximity to the area of floodplain loss, are lowered to compensate for that loss. Compensatory Flood Storage Areas (CFSAs) should preferably be located on the edge of the floodplain, but need to be hydraulically connected, so water can flow or be stored in the compensation areas during times of flooding.

The location and maximum extent of the CFSAs were identified in the Flood Risk Assessment (FRA) and Environmental Statement (ES).

Objectives

This report sets out the location of the floodplain loss and CFSAs; the methods used to calculate losses and gains in the floodplain for earthworks associated with railway embankment widening and Charbridge Lane Road Overbridge (OXD/36AA). The objectives of this assessment and report are as follows:

- To develop a hydrological and hydraulic model of the river channel and floodplain system to understand potential flood risk mechanisms more clearly;
- To test and inform the design of the earthworks, Compound, culvert works and CFSA works to ensure risks to EWR2 and receptors upstream and downstream are understood, including an allowance for climate change; and
- Document this work and seek approval from the regulator, in this case the Environment Agency.

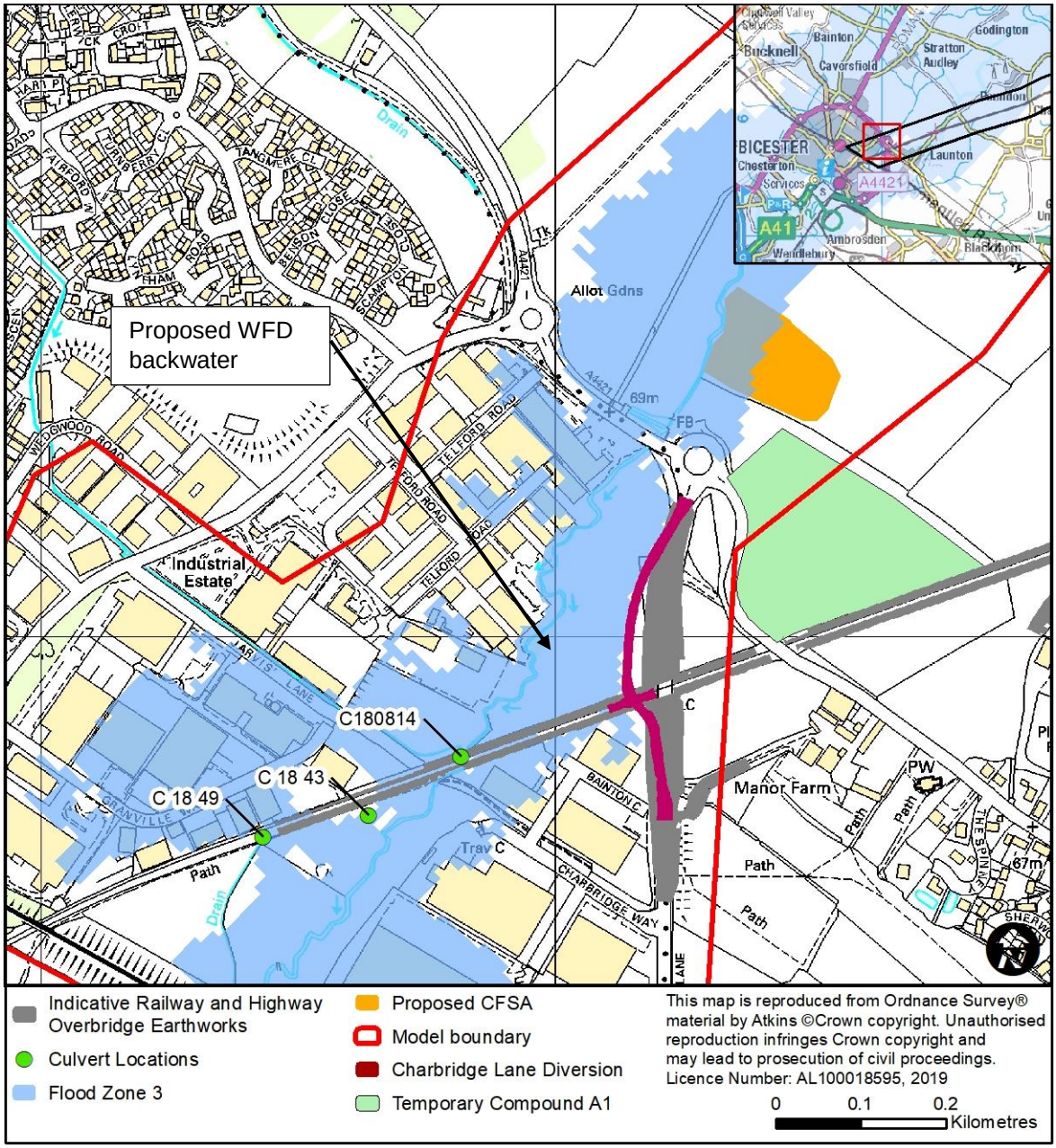
Site Description

The study area is located north-east of Bicester on Route Section 2A, adjacent Charbridge Lane Overbridge (OXD/36AA). The LLFA is Oxfordshire County Council (OCC) and the site falls within the Thames River Basin District. It is a rural setting to the north and east of the EWR2 route but is on the outskirts of the town of Bicester to the south and west. EWR2 is on embankment in this reach. Flood risk in this area is from the Langford Brook, which flows from north to south through the existing EWR2 route. The Langford Brook is defined as a Main River in this reach. There is an existing culvert (C180814, brick arch culvert 1800mm by 1450mm) which conveys the Langford Brook through the EWR2 route.

There is extensive fluvial flooding in this area affecting both banks throughout the study reach. Assets within the floodplain are Network Rail land, parts of the road network, agricultural land and a number of properties in Bicester and the industrial area in the eastern extent of the town.

The figure below displays the site location, key features and Environment Agency flood outlines.

Figure 1-1 Site Location



EWR2 Scheme

At this site the following EWR2 works are proposed:

- New highway overbridge (OXD/36AA Charbridge Lane);
- Temporary Construction Compound A1 (in place for no more than 5-years);
- Temporary highway diversion of Charbridge Lane (in place for between 12-14 months);
- Creation of a backwater on the left bank of the Langford Brook as part of the Water Framework Directive mitigation works, approximately 160m upstream of culvert C180814;

- Improvements to the railway embankments; and
- Liner rehabilitation to culvert C180814.

Previous Work

The following documents / assessments have been used to inform this modelling study:

- A Flood Risk Mapping Study of Langford Village and Bicester was undertaken by Peter Brett Associates (PBA) in December 2009 (Project Ref 15945/006) on behalf of the Environment Agency, Thames Region (West Area);
- Project Wide Flood Risk Assessment (FRA, reference: The Network Rail (East West Rail Bicester to Bedford Improvements) Order, Environmental Statement, Volume 3, Appendix 13.1); and
- Drainage Strategy (reference: The Network Rail (East West Rail Bicester to Bedford Improvements) Order, Environmental Statement, Volume 3, Appendix 13.1H).

2. Method

Data

The table below sets out the data that was available and applied in developing the hydrological and hydraulic model for this site. The model build summary containing further details is provided in Appendix E.

Table 2-1 Key Data Sources

Data Name	Description
Topographic Survey	Topographic survey of the culverts is available. The hydraulic model is predominantly based on topographic survey collected by PBA. Additional topographic survey was collected in August 2019 to check and supplement the existing survey data, and the model updated with recent LiDAR data with an improved model resolution adjacent EWR2 and for the proposed CFSA.
LiDAR	A combination of LiDAR flown for the project at 0.2m resolution and 1m data downloaded from gov.uk available. There is very little difference in elevation (generally less than +/-0.1m) between the 2 datasets.
Culvert site photos	Available for all of the culverts.
Other	The main source of information for this assessment was the existing Environment Agency approved PBA hydrological and hydraulic model.

Sensitivity

As the incoming model has been calibrated and verified by the Environment Agency, sensitivity runs on the baseline model were not appropriate. Sensitivity tests were however carried out on key components of the With Scheme case to ensure robust results were obtained from the modelling.

Scenarios

A range of scenarios were simulated in the hydrological and hydraulic model; these are set out in the table below.

Table 2-2 Model Scenarios

Scenario Number	Description
1	Updated Baseline Model
2	With Scheme Temporary and Permanent works - railway earthworks, Charbridge Lane overbridge and temporary diversion, WFD backwater, culvert liner and proposed CFSA.

Scenario Number	Description
3	Permanent works only (CFSA, the railway embankment earthworks, the permanent Charbridge Lane Overbridge, WFD backwater, and the proposed culvert liner).

CFSA Approach

Overview

As described above compensatory flood storage works are required where the Project would otherwise reduce the available volume of flood storage.

CIRIA 624 (Development and flood risk – guidance for the construction industry - Section A.3.3.10, 2004) states that:

"*compensatory flood storage must become effective at the same point in a flood event as the lost storage would have done (McPherson 2002). It should therefore provide the same volume, and be at the same level relative to flood level, as the lost storage. This requirement is often referred to as "level for level" or "direct" compensation".*

Therefore, CIRIA 624 classes level for level based on a flood frequency approach as direct level for level compensation. Where absolute level of level is not possible i.e. where the CFSA cannot be sited in the immediate vicinity of the loss the CIRIA approach will be adopted. This approach was discussed and agreed with the Environment Agency at a meeting 23/10/2018.

The Environment Agency preference is that the CFSA should expand rather than lower the existing floodplain, therefore only areas on the edge of the maximum design flood extent were considered for compensation. Each CFSA connects hydraulically to the watercourse. The flood frequency/volume relationship defines the level at which a specific volume of storage needs to be provided based on a flood frequency approach.

GRIP5 Approach

This approach assesses the frequency of flooding to then apply a level-for-level assessment as described above in CIRIA 624:

- The hydraulic model will be used to calculate the volume lost for a range of return periods;
- Volumes for each flood frequency band will be calculated, giving a frequency volume relationship;
- The threshold of flooding for these return periods will be calculated at the proposed CFSA site and the corresponding volumes provided for each return period;
- A CAD/GIS approach will be used to shape the storage area; and
- This shape will be incorporated into the hydraulic model and run for a range of return periods.

The CFSA will be designed to replace the lost floodplain volume and will seek to minimise the changes in peak water levels, flows and extents, taking into account modelling tolerances and localised changes in flood levels as set out in the "GRIP5: Modelling Technical Note: Interpreting Hydrological and Hydraulic Modelling Results" (Document Reference: 133735_2A-EWR-OXD-XX-RP-DC-000018).

Langford Brook CFSA

The proposed Langford Brook CFSA is located approximately 500m north east of the railway embankment loss, and approximately 175m north east of the temporary highway diversion floodplain loss. In order to locate the CFSA upstream of the loss area, avoid existing floodplain areas and utilities, this was the closest available location for the CFSA. The CFSA will drain back into Langford Brook by virtue of excavated ground levels. The CFSA will compensate for both the temporary and permanent losses of the proposed works.

The topography slopes up from the loss location to the CFSA with ground levels ranging from 68m AOD to 70.2m AOD at the proposed CFSA location.

3. Baseline Modelling

Overview

A Flood Risk Mapping Study of Langford Village and Bicester was undertaken by Peter Brett Associates (PBA) in December 2009 (Project Ref 15945/006) on behalf of the Environment Agency, Thames Region (West Area). This study included the Langford Brook. The baseline model was reviewed by the Alliance team, with limited changes to the model made as set out below. The updated baseline model has been modified to test the proposed EWR2 scheme and associated compensation measures at the Langford Brook.

Hydrology

The existing PBA (2009) hydrology was reviewed and it was recommended that the flows be compared using new data and methods (including Flood Estimation Handbook (FEH) 2013 data, Revitalised Flood Hydrograph 2 (ReFH2), WINFAP4 and an updated Annual Maximum (AMAX) series. The Alliance recalculated the flows for the Langford Brook using the most current methods and data available (WINFAP4 using peak flow data to October 2018, ReFH2 and ReFH). The flows generated from this assessment were lower than the existing PBA (2009) estimates.

It was proposed and agreed with the Environment Agency (see email from Clark Gordon 23/05/2019, provided in Appendix C) that for EWR2 the project would use the existing PBA (2009) flows because these are the most conservative, and therefore provides a precautionary assessment of flood risk.

As a result no changes to the existing hydrology have been made, aside from to apply the latest available climate change allowance. The following flood events were simulated in the model:

- 50% annual chance event;
- 5% annual chance event;
- 1% annual chance event;
- 1% annual chance event plus climate change (70% flow in line with guidance from https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances);
- 0.5% annual chance event; and
- 0.1% annual chance event.

Updated Hydraulic model

The existing baseline model has remained unchanged from that produced by PBA in 2009, with the exception of the following changes:

- Upon review of the Environment Agency model, it was determined that the 10m grid size used for the 2D domain would likely be too coarse to allow for a detailed assessment of floodplain volume gains and losses to be assessed. To allow for this a multi domain 2D approach was used with the immediate study area modelled using a 2m grid resolution rather than the 10m grid used elsewhere within the model. The boundary between the 2m and 10m domains is located along the Chiltern Main Line railway. This location was chosen as it acts as a natural topographic boundary to flow as the railway does not overtop during the highest magnitude event modelled (0.1% annual chance event);
- The model within the 2m domain was updated to utilise the LiDAR flown since the 2009 study, additional cross section survey undertaken as part of the project, and floodplain survey in the location of the proposed CFSA;
- 1D cross sections added/updated at LA.4748, LA.4663, LA.4560, LA.4517;
- Changed 1D/2D boundary alignment to better follow bank top and updated bank elevations where required, in particular left bank immediately downstream of A4421 road bridge; and

- No changes have been made to the 10m model domain ground levels when compared to the 2009 model. Updates to ground levels in this area were not deemed necessary as it would not increase model accuracy due to the coarseness of the grid, the model had already been calibrated and verified in 2009, and the potential increase in model instability in areas of the model which are not critical to this study as a result of changing ground levels.

Critical Storm Duration

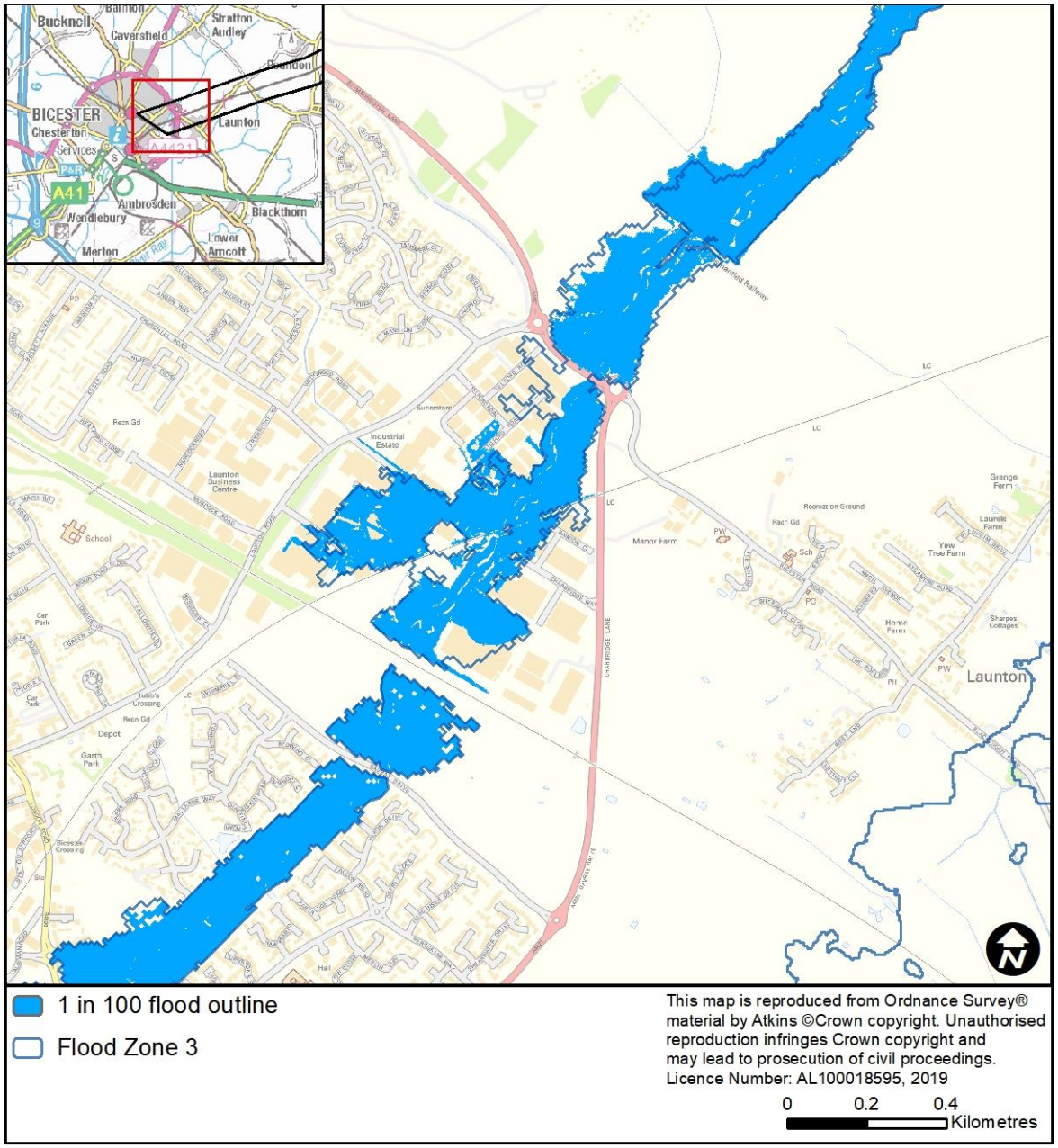
The minor changes in the hydraulic model have not changed the critical storm duration which is consistent with the original PBA (2009) model at 17.5-hours.

Verification

Existing Flood Outlines

The incoming model has been provided by the Environment Agency as calibrated and verified to historical events. The updates to the baseline hydraulic model have increased the resolution of the topography therefore providing a finer delineation of the flood outline. Whilst this change to the model shows some areas with greater flooding and others with less, the general trend of flooding remains similar throughout the study area. The model results have been compared with the Environment Agency Flood Zone 3, as shown in the figure below.

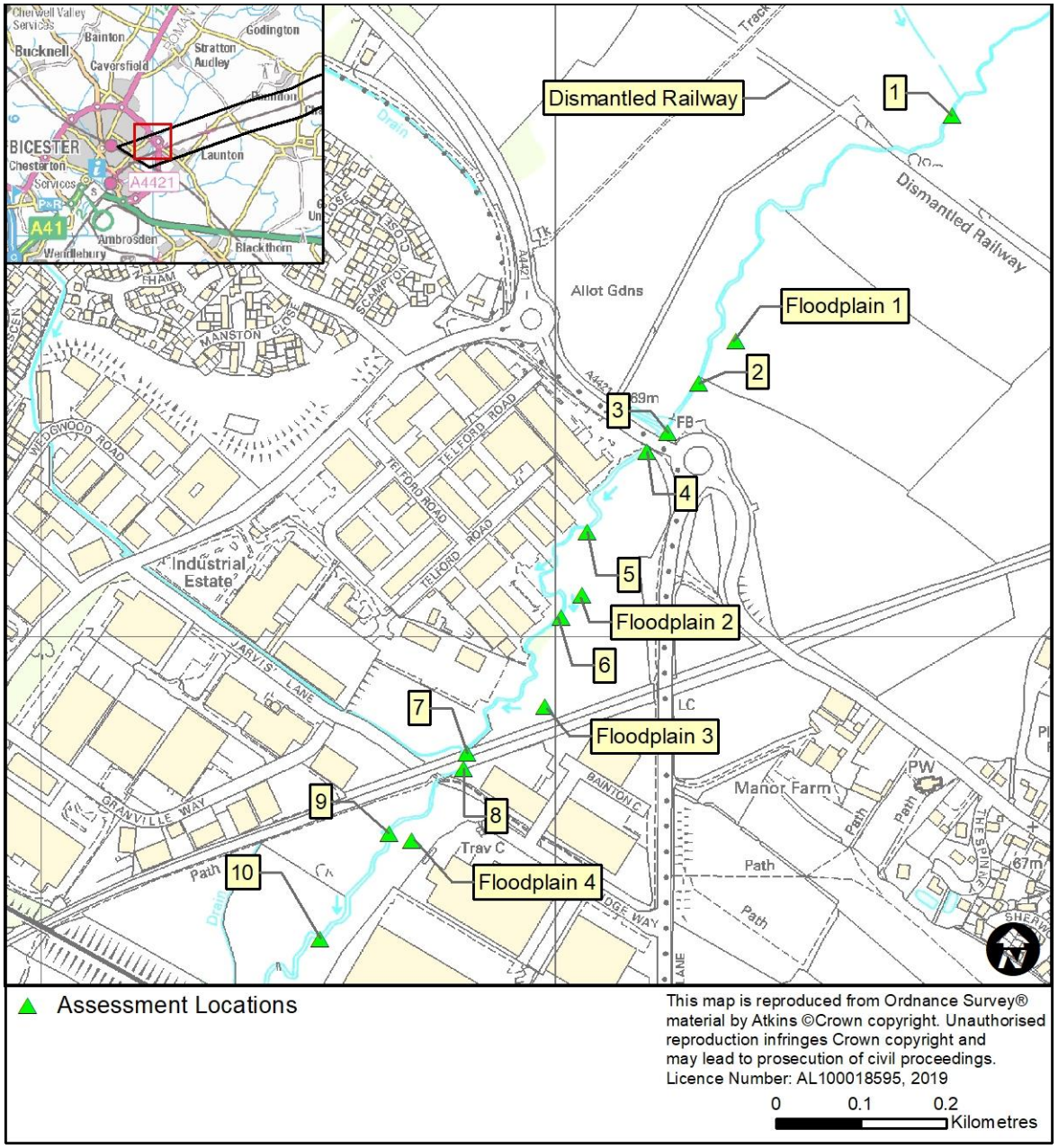
Figure 3-1 Comparison of Flood Zones and modelled 1% annual chance event



Comparison with Environment Agency baseline

A selection of key assessment points have been defined to compare the original Environment Agency baseline results and the updated baseline, these locations are shown in the figure below.

Figure 3-2 Key Assessment Point Locations



The updated baseline peak water levels are compared with the Environment Agency original baseline model in the table below. This shows minor changes in peak water levels with the exception of the cross section upstream of the dismantled railway (LA.5098), where there is a 0.23m increase at the 1% annual chance event in the updated baseline. This increase in baseline flood level is as a result of the increase in model resolution and better representation of the existing dismantled railway embankment.

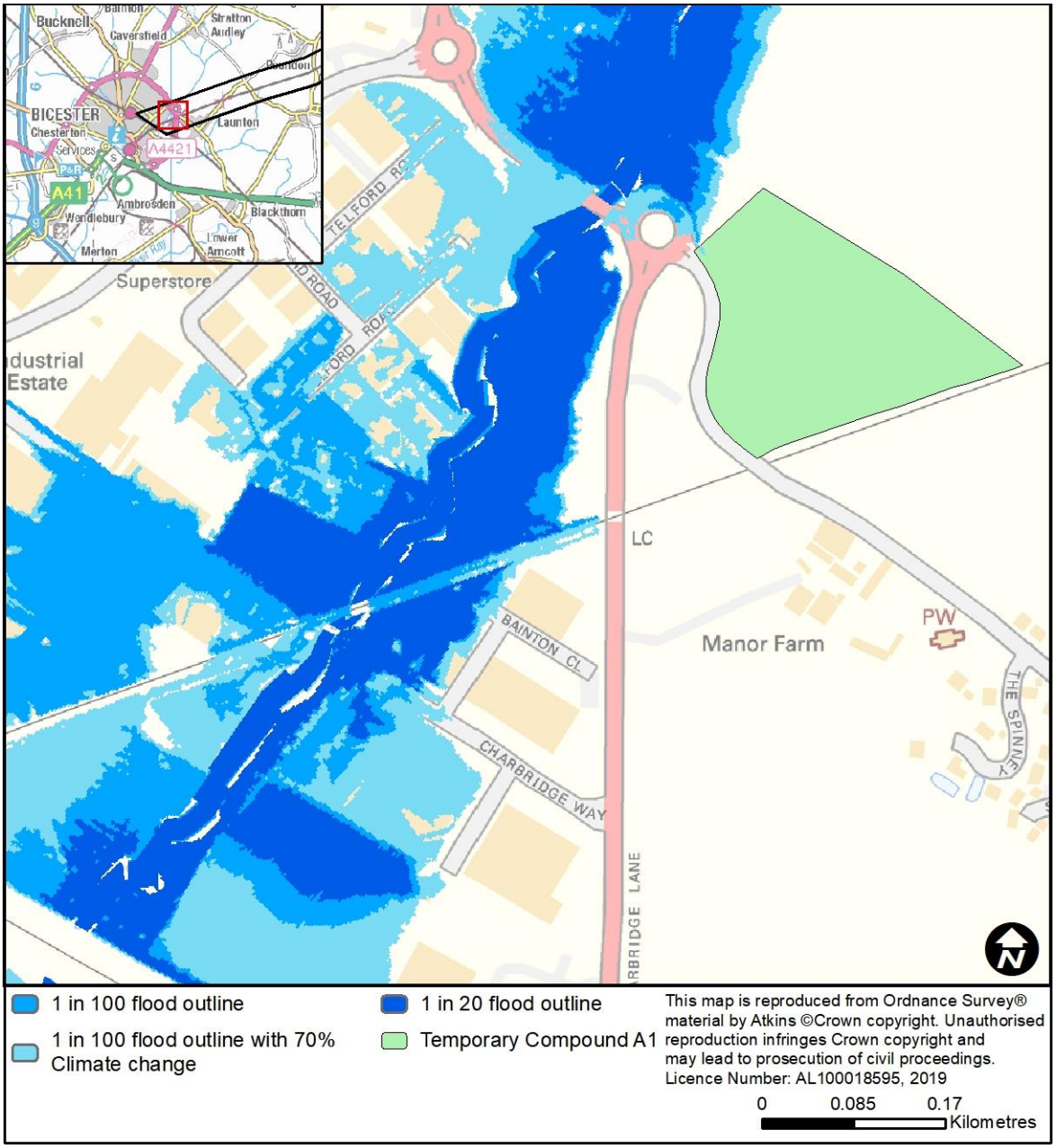
Table 3-1 Peak Water Level Comparison Environment Agency Baseline model and Updated Baseline model (1% annual chance event)

Assessment Point	Location Description	1% annual chance event Peak Water Level EA Baseline (m AOD)	1% annual chance event Peak Water Level Updated Baseline (m AOD)	Difference (m)
1	Upstream of dismantled railway (LA.5098)	70.17	70.41	0.23
Floodplain 1	Floodplain adjacent to CFSA	69.63	69.53	-0.1
2	Proposed CFSA (LA.4560)	N/A (Baseline has no sections in 481m reach)	69.53	N/A
3	Upstream of Bicester Road A4421 (LA.4493)	69.54	69.52	-0.01
4	Downstream of Bicester Road A4421 (LA4458)	69.27	69.23	-0.04
5	Adjacent to Telford Road (LA.4323)	69.20	69.21	0.01
Floodplain 2	Floodplain adjacent to temporary works	69.18	69.20	0.02
6	200m upstream of EWR2 culvert (LA.4157)	69.17	69.20	0.03
Floodplain 3	Floodplain adjacent to soil storage	69.17	69.20	0.03
7	Directly upstream of EWR2 route (LA.3919)	69.16	69.19	0.03
8	Directly downstream of EWR2 route (LA.3894)	68.27	68.25	-0.02
9	100m downstream EWR2 (LA.3764)	67.857	67.86	0.00
Floodplain 4	Floodplain downstream of EWR2	67.88	67.87	-0.01
10	200m downstream EWR2 (LA.3597)	67.662	67.65	-0.01

Floodplain Storage Loss Assessment

The layout of temporary Compound A1 has been adjusted to avoid floodplain areas and is now located entirely outside of the 1% annual chance event including climate change (70%) floodplain; therefore, no compensation is required for the Compound, this is shown in the following figure.

Figure 3-3 Compound A1 Boundary and 1% annual chance event including climate change

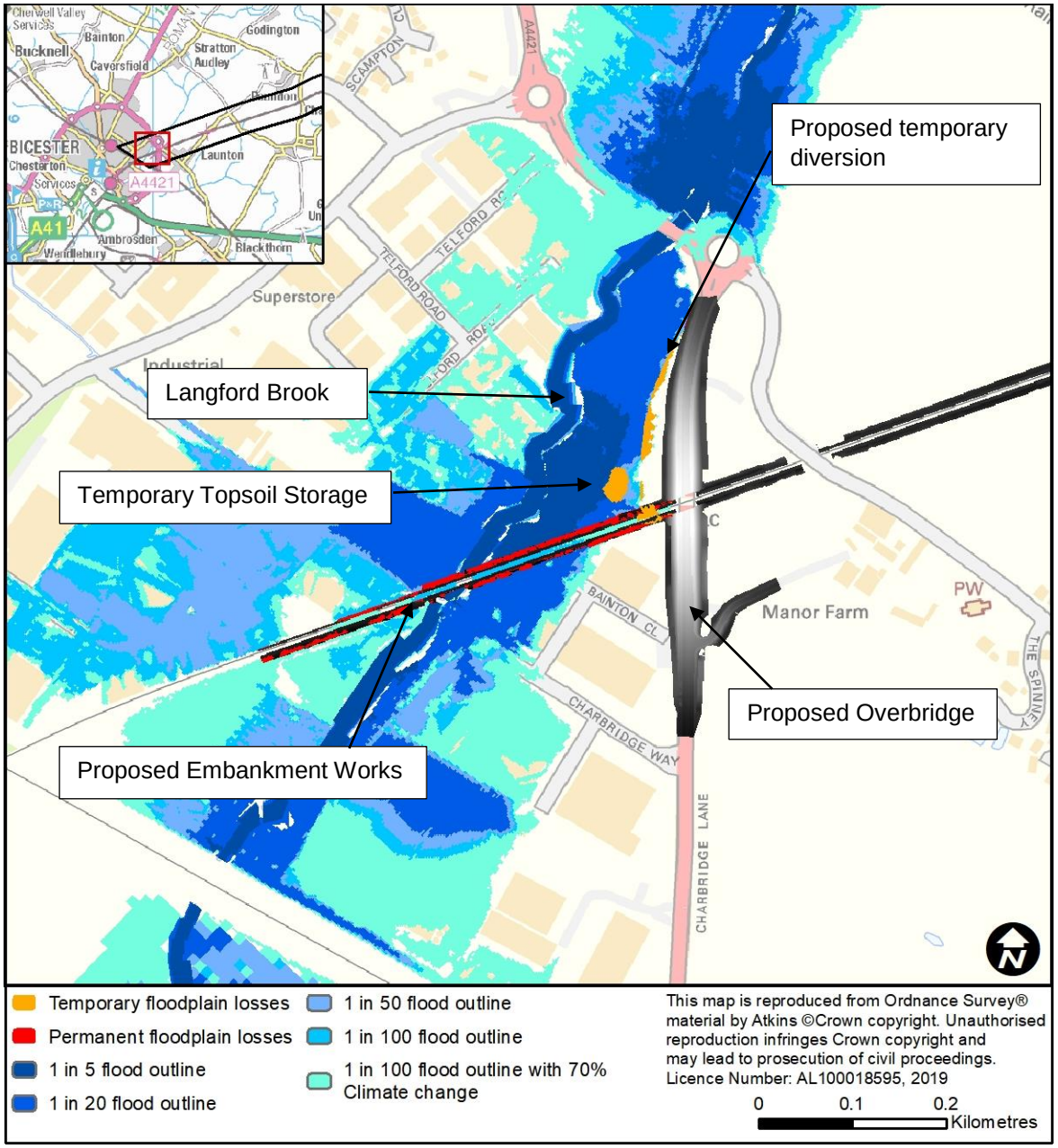


The temporary Charbridge Lane road diversion will be in place for 12-14 months. This will pass through floodplain areas and therefore compensation will be required. Due to the duration of the works the CFSA will not incorporate an allowance for climate change.

There are two aspects to the proposed works that will impact the floodplain of Langford Brook, these are shown in the location plan below, namely:

- The temporary works required to divert the road during construction of the proposed new overbridge, and temporary topsoil storage; and
- The permanent works comprising the proposed embankment works, the proposed overbridge, and the proposed backwater channel.

Figure 3-4 Potential floodplain loss locations



A loss assessment was completed to show the volume of floodplain losses due to the works proposed. All raster data was resampled to a 0.2m cell size in order to produce an accurate loss estimate due to the small size of the loss area. The following data was used in this assessment:

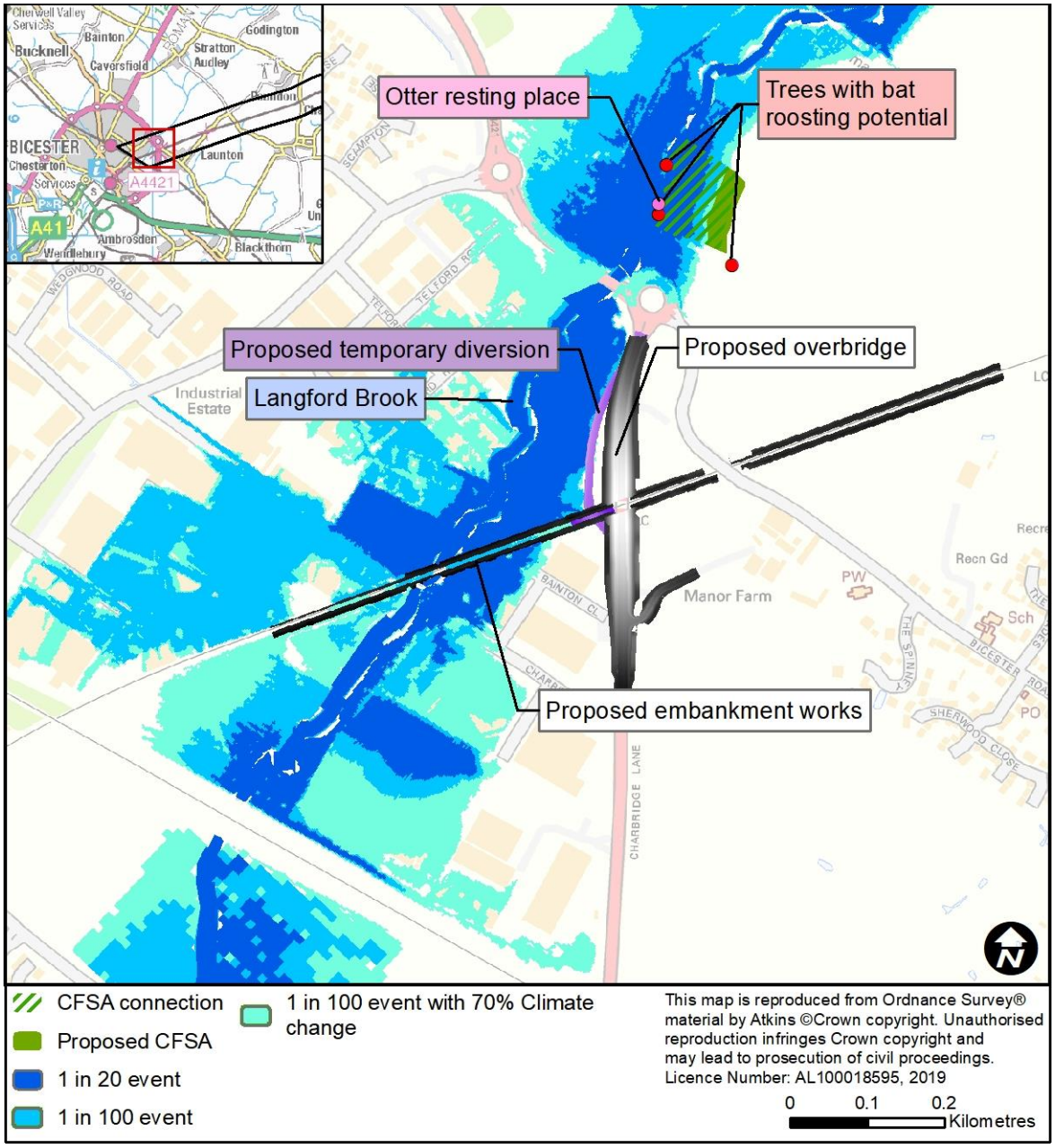
- Existing ground model;
- Proposed ground model; and
- Flood level grid for all return periods.

The calculated losses are based on comparison of the baseline and With Scheme ground models compared against modelled flood levels. The location of floodplain losses is shown below in Figure 3-5.

The 0.1% annual chance event has similar peak levels to the 1% annual chance event with an allowance for climate change and has been used for this analysis. For example, peak water levels at assessment point two for the 0.1% annual chance event and 1% annual chance event with an allowance for climate change are 69.76 mAOD and 69.77 mAOD respectively, and for assessment point six are 69.30 mAOD and 69.31 mAOD, respectively.

Three trees have been identified as having potential for bat roosting, these trees will not directly impact the floodplain mitigation area but may require small reductions to the proposed watercourse connection to provide a sufficient buffer. An otter resting place has also been identified.

Figure 3-5 Potential floodplain loss locations and proposed CFSA



Both the permanent and temporary cases have been assessed for floodplain volume losses separately. The proposed CFSA will provide compensation for all floodplain losses prior to their construction, therefore both the temporary and permanent works will be compensated for during construction.

The volume of floodplain lost during each flood event is tabulated below based upon 0.2m increments. The total cumulative floodplain compensation volume to be provided by the CFSA is 1313m³.

Table 3-2 Losses from permanent works

Annual Chance Event	Total Volume lost (m³)	Flood level at gain site (mAOD)	Volume lost at Increment (m³)
20%	83	69.16	83
5%	309	69.30	226
2%	373	69.41	64
1%	425	69.55	51
1% + 70% climate change	639	69.78	214

Table 3-3 Losses from permanent and temporary works (including topsoil storage) combined

Flood Event	Total Volume lost (m³)	Flood level at gain site (mAOD)	Volume lost at Increment (m³)
20%	83	69.16	83
5%	346	69.30	263
2%	555	69.41	209
1%	751	69.55	196
1% + 70% climate change	1115	69.78	364

The differences in peak flood levels shown above are too small to construct a viable compensation area at such fine scale, therefore the total losses have been condensed into 200mm bands deemed the minimum feasible for construction, as shown in the table below.

Table 3-4 CFSA Gains

Increment (at/up to level) based on loss level (mAOD)	Volume lost at dissolved Increment (m³)	Volume Gained at increment (m³)
69.16	83	92
69.36	263	290
69.56	404	444
69.78	363	487
Total (m³)	1113	1313

This provides a total CFSA storage volume of 1313m^3 giving an overprovision in storage for most level bands. This storage will remain in place when the temporary works are removed providing permanent additional floodplain storage for the catchment >600m^3.

4. With Scheme Modelling

With Scheme (temporary and permanent)

Representation in the Hydraulic Model

The With Scheme model was used to assess the potential impacts of the proposed works for a range of return period events. The peak water levels were extracted from the model for all assessment points for comparison to the baseline model runs to understand any impact of The Project on flood risk. To represent a worst-case scenario both the temporary and permanent works were included in the hydraulic model. The With Scheme model was updated with the following changes:

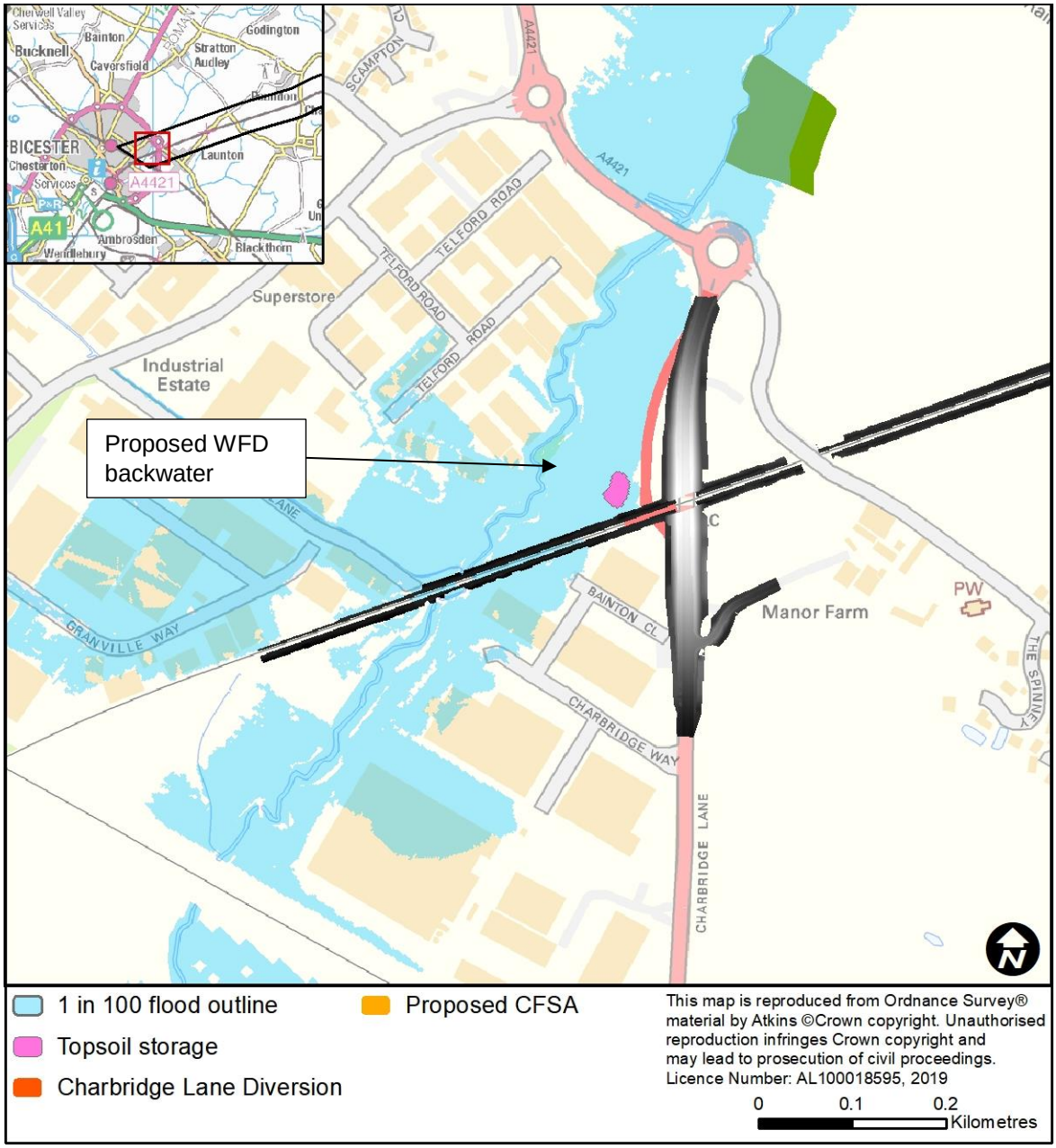
- The temporary diversion of Charbridge Lane has been added to the Digital Terrain Model (DTM), along with the proposed temporary topsoil storage area;
- The proposed CFSA adjacent the EWR2 route has been represented by adding the proposed CFSA DTM to the hydraulic model;
- The model DTM has been modified to include the proposed backwater channel located in the existing floodplain on the left bank of the Langford Brook, approximately 160m upstream of culvert C180814;
- The model DTM has been modified to include the proposed rail embankment works; and
- Culvert C180814 has been modelled with a reduced diameter to represent the 22mm liner proposal and a reduced mannings n roughness coefficient.

The CFSA was designed based upon the combined level area relationship described in Section 3. The existing ground levels at the CFSA site were reviewed and the CFSA area defined at GRIP 4 used as a basis for the location, ensuring the CFSA falls outside of existing floodplains but connecting back into the floodplain area to allow flood water to flow from the watercourse freely into the CFSA, and back into the watercourse following the event. This will enable the CFSA to operate without the need for control structures.

As stated in section 3 temporary construction Compound A1 is located outside of the 1% annual chance event (including an allowance for climate change) floodplain and has therefore not been represented in the hydraulic model.

The following figure shows the location of these works.

Figure 4-1 With Scheme (temporary and permanent) model changes



Results

The peak water levels for the 20% annual chance event, 1% annual chance event, and 1% annual chance event (including an allowance for climate change) are presented below for the key assessment points, comparing the baseline and With Scheme (permanent and temporary) scenario.

Table 4-1 Peak Water Level Comparison baseline and With Scheme (temporary and permanent)

Assessment Point	Location Description	Baseline			Permanent and temporary works			Difference		
		20% Peak Water Level (m AOD)	1% Peak Water Level (m AOD)	1% + Climate Change Peak Water Level (m AOD)	20% Peak Water Level (m AOD)	1% Peak Water Level (m AOD)	1% + Climate Change Peak Water Level (m AOD)	20% Difference (m)	1% Difference (m)	1% + Climate Change Difference (m)
1	Upstream of dismantled railway (LA.5098)	69.81	70.41	70.50	69.81	70.39	70.50	0	-0.02	0
Floodplain 1	Floodplain adjacent to CFSA	69.07	69.53	69.78	69.07	69.52	69.78	0	-0.01	0
2	CFSA (LA.4560)	69.01	69.53	69.77	69.01	69.52	69.77	0	-0.01	0
3	Upstream of Bicester Road A4421 (LA.4493)	68.97	69.52	69.77	68.96	69.51	69.77	-0.01	-0.01	0
4	Downstream of Bicester Road A4421 (LA.4458)	68.81	69.23	69.35	68.80	69.22	69.35	-0.01	-0.01	0
5	Adjacent to Telford Road (LA.4323)	68.63	69.21	69.32	68.62	69.19	69.31	-0.01	-0.02	-0.01
Floodplain 2	Floodplain adjacent to temporary works	68.40	69.20	69.31	68.36	69.19	69.31	-0.04	-0.01	0
6	200m upstream of EWR2 culvert (LA.4157)	68.43	69.20	69.31	68.41	69.19	69.31	0	0	0
Floodplain 3	Floodplain adjacent to soil storage	68.38	69.20	69.30	68.34	69.19	69.30	-0.04	-0.01	0
7	Directly upstream of EWR2 route (LA.3919)	68.34	69.19	69.30	68.27	69.18	69.30	0	0	0
8	Directly downstream of EWR2 route (LA.3894)	68.00	68.25	68.38	67.98	68.25	68.37	-0.02	0	-0.01
9	100m downstream EWR2 (LA.3764)	67.61	67.86	68.33	67.60	67.85	68.33	-0.01	-0.01	0
Floodplain 4	Floodplain downstream of EWR2	67.62	67.87	68.33	67.61	67.87	68.33	-0.01	0	0
10	200m downstream EWR2 (LA.3597)	67.26	67.65	68.32	67.25	67.64	68.31	-0.01	0	-0.01

The changes in peak water levels shown above are either no change, negligible or a low beneficial change under the With Scheme (permanent and temporary) scenario. The following figure shows the baseline and With Scheme flood extents for the 1% annual chance event (including climate change allowance); this demonstrates negligible differences in flood extents between the two scenarios.

Figure 4-3 shows the difference grid between the baseline and With Scheme (permanent and temporary), and supports the results in the table with generally negligible changes in peak water levels shown.

Figure 4-2 With Scheme (temporary and permanent works) flood outlines (1% annual chance event plus climate change)

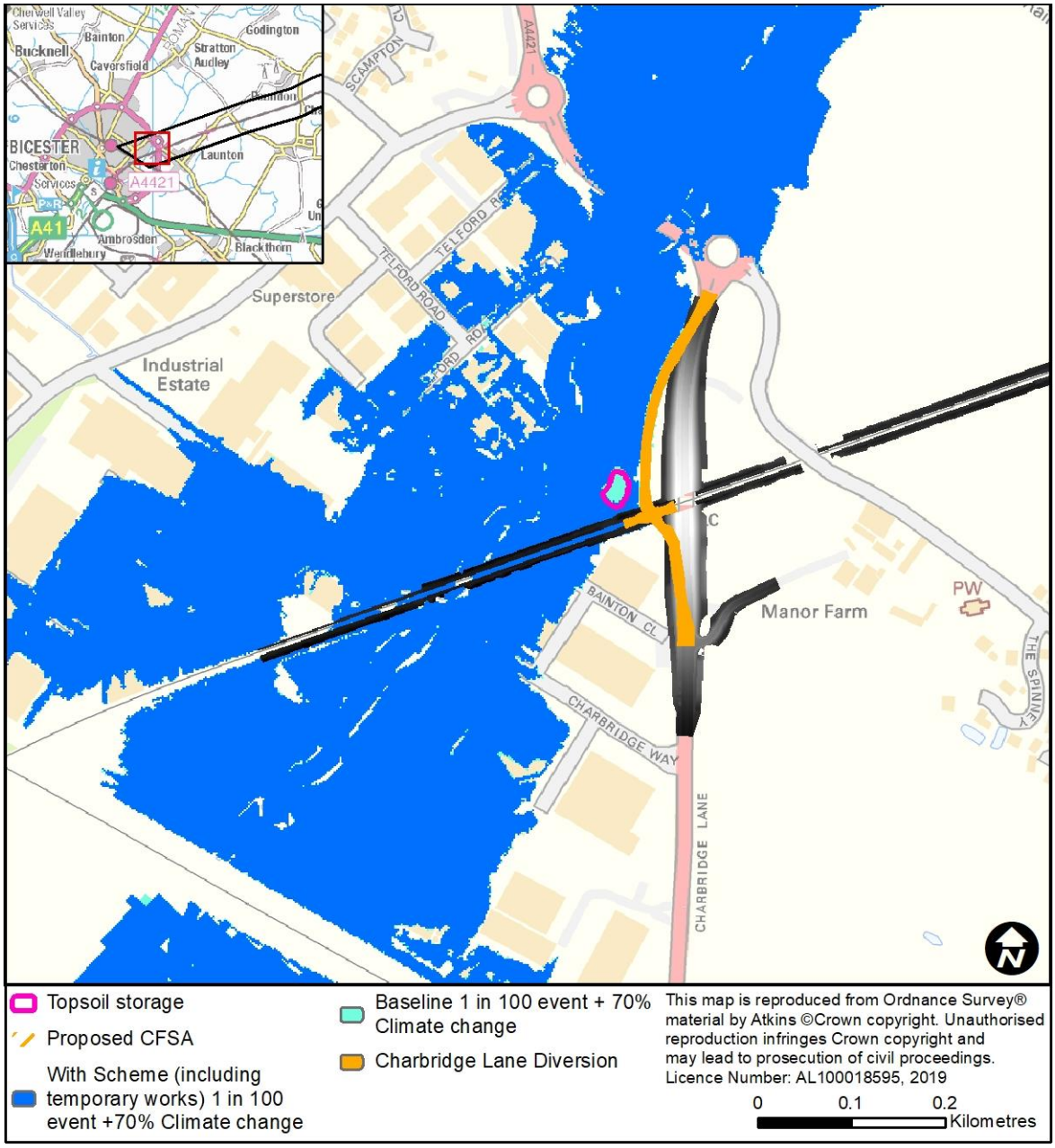


Figure 4-3 With Scheme (temporary and permanent) and Baseline difference grid (1% annual chance event plus climate change)

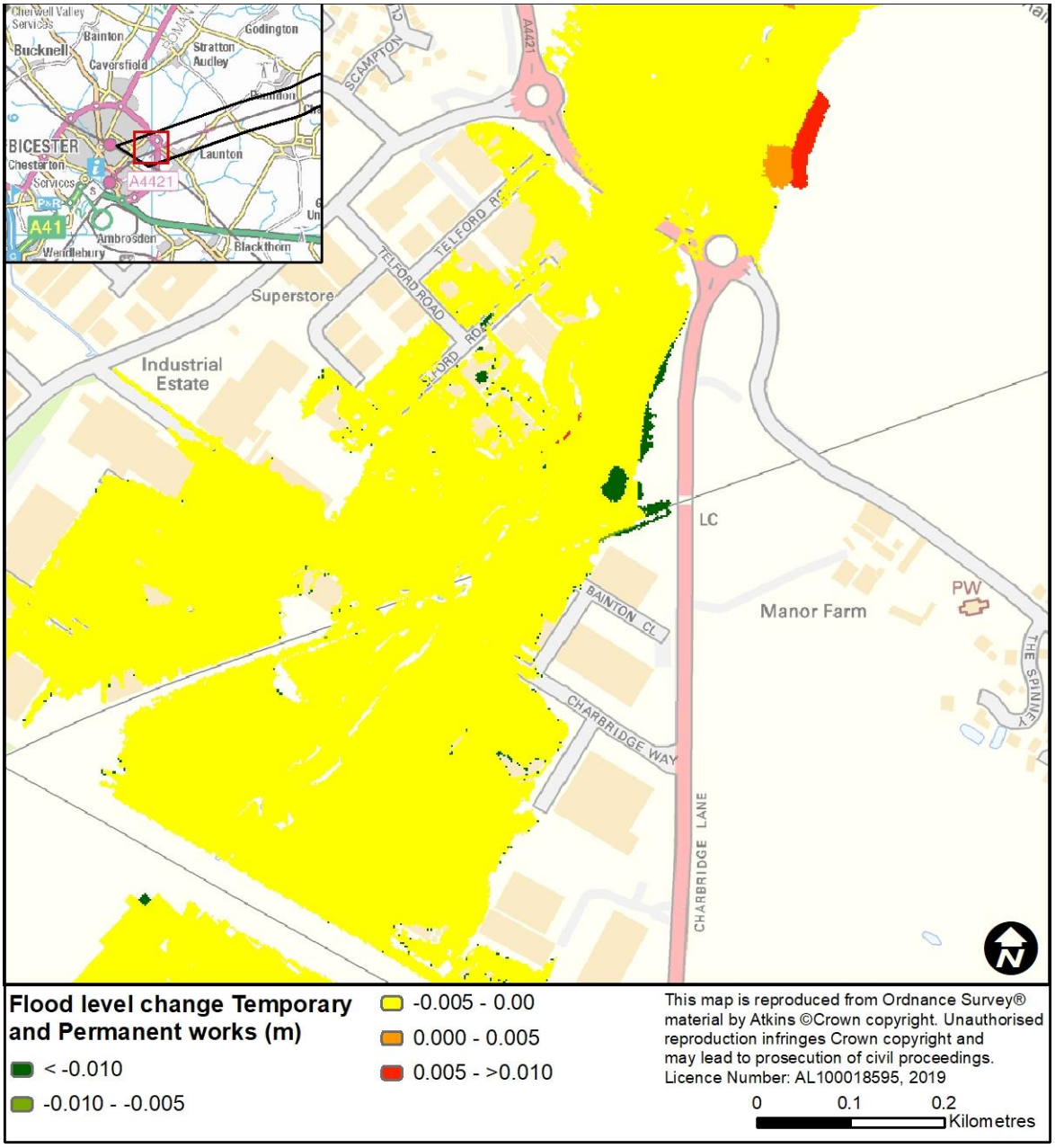
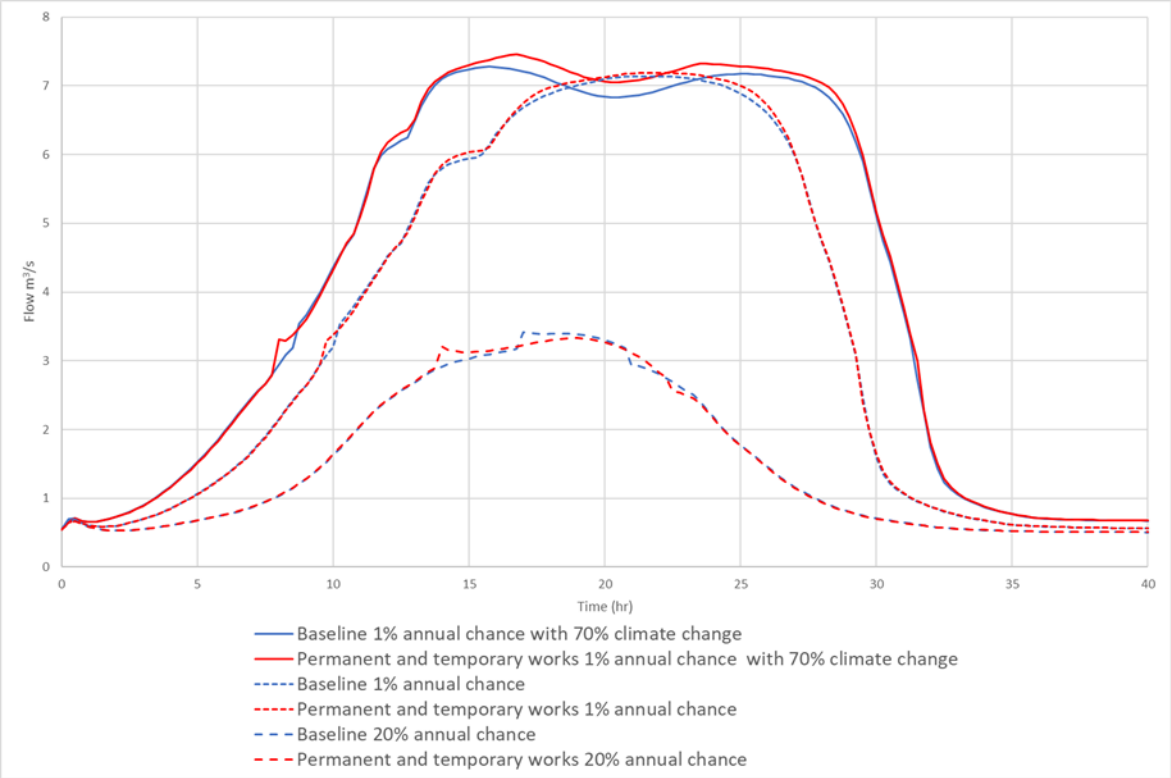


Figure 4-4 shows a comparison of the flows downstream of the scheme for the 1% annual chance event, 1% annual chance event with 70% climate change allowance, and the 20% annual chance event. The figure shows negligible differences in pass forward flow during the 20% and 1% annual chance events. The dip in the hydrograph for the 1% annual chance with 70% climate change is caused by a change in flow regime at the structure downstream once flows reach a given threshold. The baseline results for this event shows peak flows approximately 0.2m^3/s greater throughout the peak of the event, mostly likely due to the performance of the new culvert under the railway. However, this does not translate into an increase in flood extents or levels downstream.

Figure 4-4 Flow hydrographs comparison of baseline and With Scheme (temporary and permanent)



With Scheme (permanent)

Representation in the Hydraulic Model

The With Scheme temporary and permanent model was updated to remove the temporary diversion of Charbridge Lane and associated topsoil storage to represent the permanent works case. The peak water levels were extracted from the model for all assessment points for comparison to the baseline model runs to understand any impact of the Project on flood risk.

Results

The following table compares the baseline and With Scheme (permanent) peak water levels for a range of flood events.

Table 4-2 Peak Water Level Comparison baseline and With Scheme (permanent)

Assessment Point	Location Description	Baseline			Permanent works			Difference		
		20% Peak Water Level (m AOD)	1% Peak Water Level (m AOD)	1% + Climate Change Peak Water Level (m AOD)	20% Peak Water Level (m AOD)	1% Peak Water Level (m AOD)	1% + Climate Change Peak Water Level (m AOD)	20% difference (m)	1% difference (m)	1% + Climate Change difference (m)
1	Upstream of dismantled railway (LA.5098)	69.81	70.41	70.50	69.81	70.39	70.50	0	-0.02	0
Floodplain 1	Floodplain adjacent to CFSA	69.07	69.53	69.78	69.07	69.52	69.78	0	-0.01	0
2	CFSA (LA.4560)	69.01	69.53	69.77	69.01	69.52	69.77	0	-0.01	0
3	Upstream of Bicester Road A4421 (LA.4493)	68.97	69.52	69.77	68.96	69.51	69.77	-0.01	-0.01	0
4	Downstream of Bicester Road A4421 (LA.4458)	68.81	69.23	69.35	68.80	69.22	69.35	-0.01	-0.01	0
5	Adjacent to Telford Road (LA.4323)	68.63	69.21	69.32	68.62	69.19	69.32	-0.01	-0.02	0
Floodplain 2	Floodplain adjacent to temporary works	68.40	69.20	69.31	68.36	69.19	69.31	-0.04	-0.01	0
6	200m upstream of EWR2 culvert (LA.4157)	68.43	69.20	69.31	68.41	69.19	69.31	-0.02	-0.01	0
Floodplain 3	Floodplain adjacent to soil storage	68.38	69.20	69.30	68.34	69.19	69.30	-0.04	-0.01	0
7	Directly upstream of EWR2 route (LA.3919)	68.34	69.19	69.30	68.27	69.18	69.30	-0.07	-0.01	0
8	Directly downstream of EWR2 route (LA.3894)	68.00	68.25	68.38	67.98	68.25	68.37	-0.02	0	-0.01
9	100m downstream EWR2 (LA.3764)	67.61	67.86	68.33	67.60	67.85	68.33	-0.01	-0.01	0
Floodplain 4	Floodplain downstream of EWR2	67.62	67.87	68.33	67.61	67.87	68.33	-0.01	0	0
10	200m downstream EWR2 (LA.3597)	67.26	67.65	68.32	67.25	67.64	68.31	-0.01	-0.01	-0.01

The table shows either no change, negligible, or low to medium beneficial changes across the model reach for the flood events tested.

The following figures show the baseline and With Scheme (permanent) flood extents for the 1% annual chance event (including climate change allowance); this demonstrates limited differences in flood extents between the two scenarios. Figure 4-5 shows the modelled flood outline for the proposed permanent works scenario, and Figure 4-6 the difference grid. This will be the level of risk once the temporary works have been removed. Minor reductions to flood levels seen in Table 4-2 translate to limited reductions in flood extents.

The CFSA is suitably sized to mitigate for both the temporary and permanent works. Once construction is complete there will be significant extra floodplain storage on removal of the temporary works in the floodplain. This will provide betterment of >600m^3 in additional floodplain storage in the long term.

Figure 4-5 With Scheme (permanent works) flood outlines (1% annual chance event plus climate change)

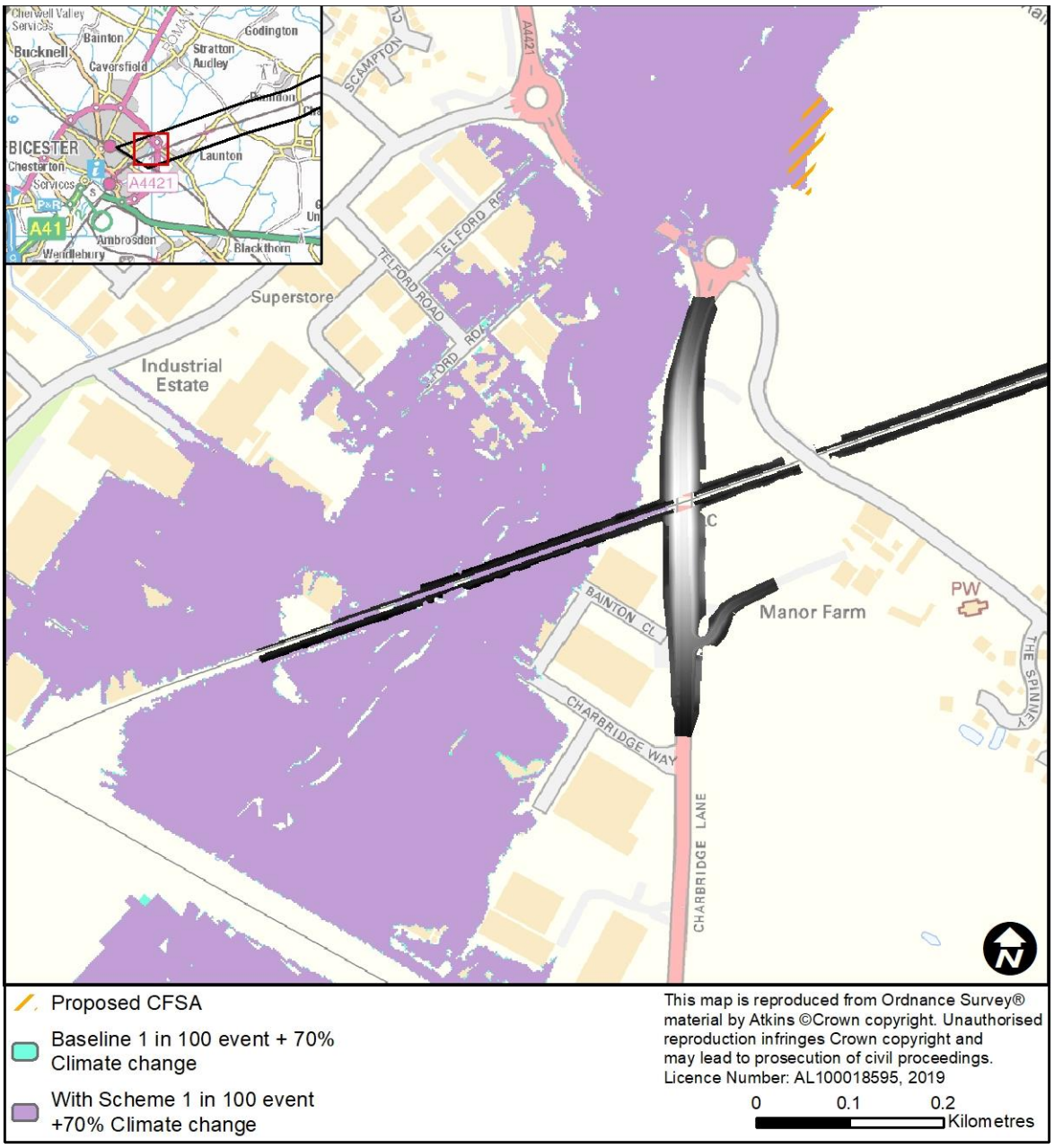


Figure 4-6 With Scheme (permanent) and Baseline difference grid (1% annual chance event plus climate change)

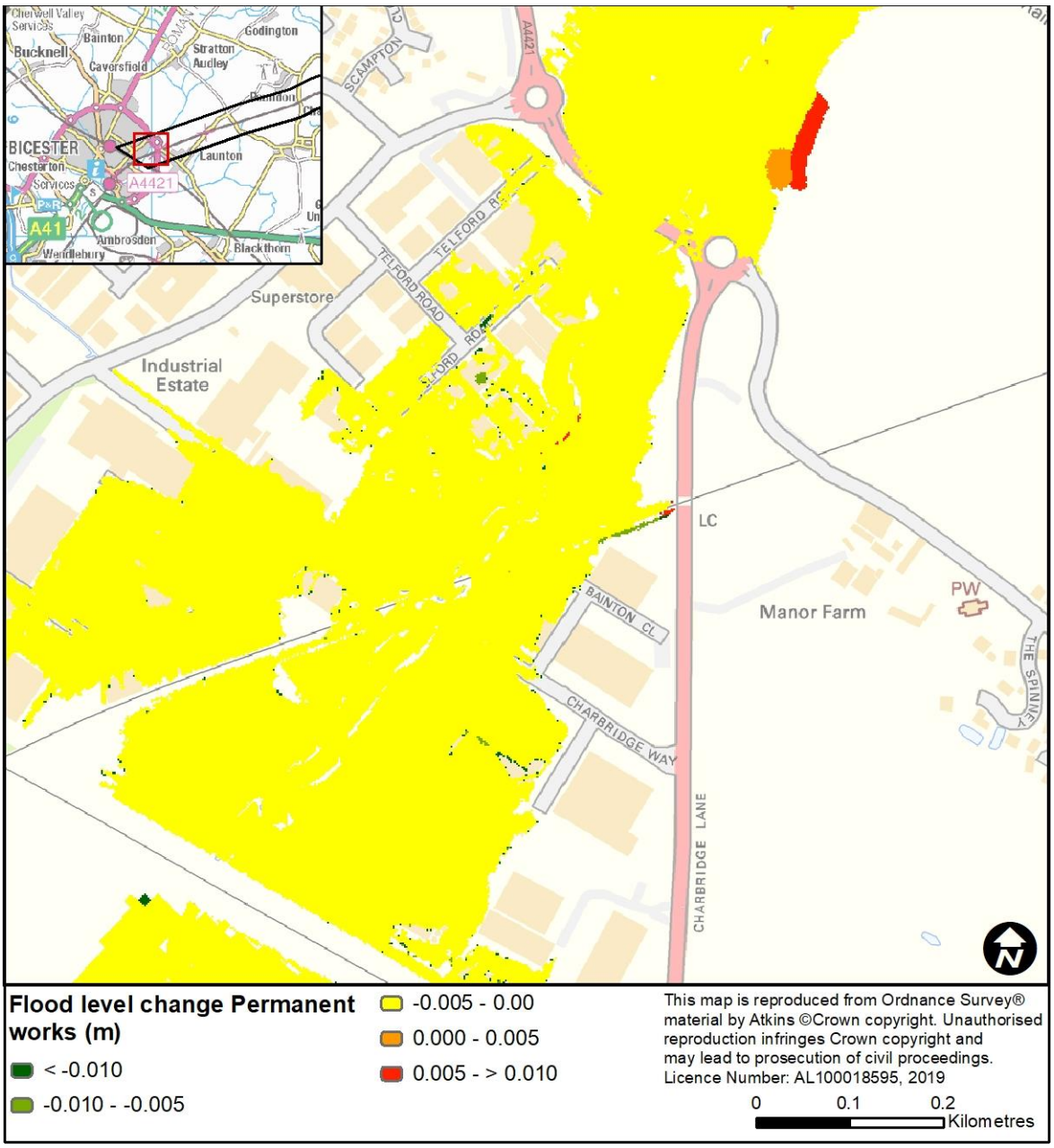
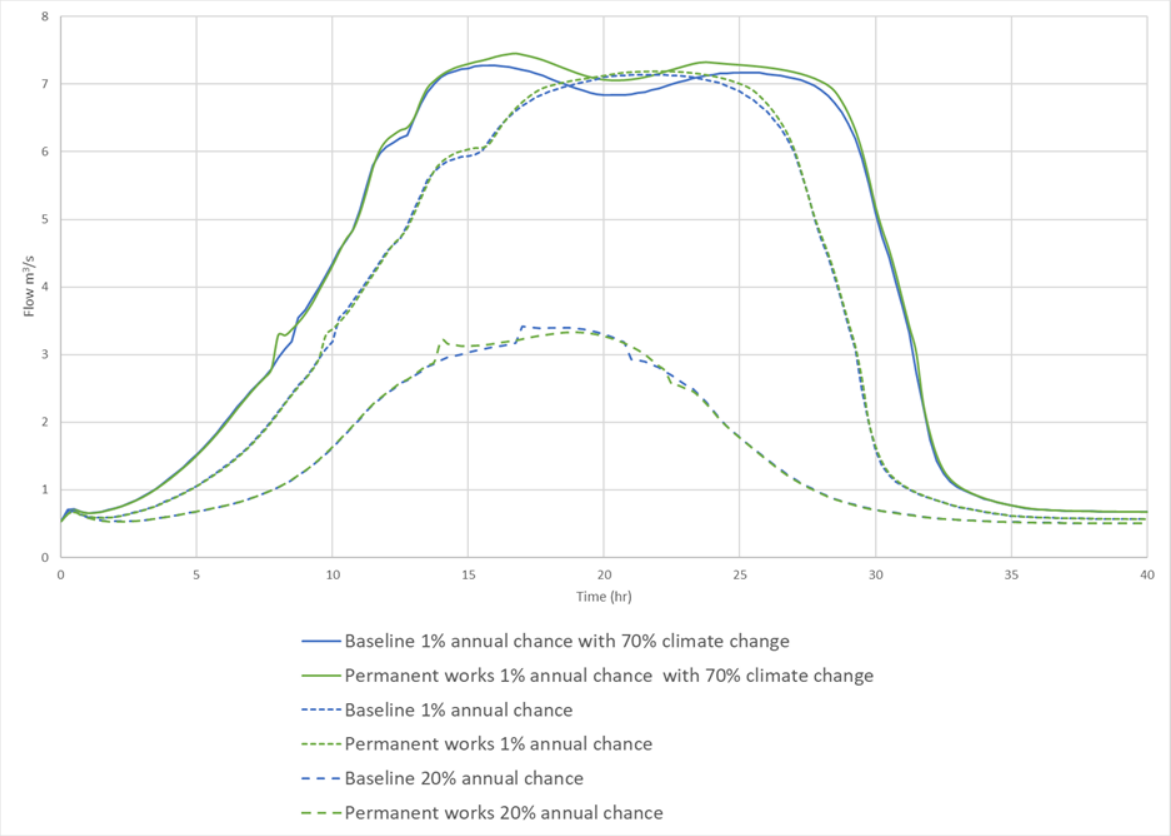


Figure 4-7 shows a comparison of the flows downstream of the scheme for the 1% annual chance, 1% annual chance with 70% climate change allowance and the 20% annual chance events. The figure shows small differences in pass forward flow during the 20% and 1% annual chance events. The dip in the hydrograph for the 1% annual chance with 70% climate change is caused by a change in flow regime at the structure downstream once flows reach a given threshold. The baseline results for this event shows peak flows approximately 0.2m^3/s greater throughout the peak of the event, mostly likely due to the performance of the rehabilitated culvert under the railway. However, this does not translate into an increase in flood extents or levels downstream.

Figure 4-7 Flow hydrographs comparison between baseline and With Scheme (permanent)



The following table compares peak flows at the 1D model cross section locations between the baseline and With Scheme (permanent) scenarios. Differences in flow are limited with most differences in flow less than 0.1m³/s. Directly downstream of the EWR2 route at a 1% annual chance event plus 70% climate change flood event, flow is 0.17m³/s higher with the scheme in place compared to the baseline, but 200m upstream of culvert C180814 there is a reduction of 0.32m³/s. Appendix G contains the full model results including peak flow comparisons.

Table 4-3 Peak Flow Comparison baseline and With Scheme (permanent)

No	Location Description	Peak Flow (m³/s)					
		20% annual chance event		1% annual chance event		1% annual chance + climate change event	
		Baseline	With Scheme	Baseline	With Scheme	Baseline	With Scheme
1	Upstream of dismantled railway (LA.5098)	2.14	2.14	2.32	2.33	2.35	2.36
2	CFSA (LA.4560)	2.66	2.71	2.66	2.69	2.66	2.68
3	Upstream of Bicester Road A4421 (LA.4493)	2.75	2.75	4.06	4.09	3.99	4.01

No	Location Description	Peak Flow (m³/s)					
		20% annual chance event		1% annual chance event		1% annual chance + climate change event	
		Baseline	With Scheme	Baseline	With Scheme	Baseline	With Scheme
4	Downstream of Bicester Road A4421 (LA.4458)	3.07	3.04	7.79	7.8	9.70	9.72
5	Adjacent to Telford Road (LA.4323)	3.07	3.04	3.36	3.39	3.26	3.26
6	200m upstream of EWR2 culvert (LA.4157)	2.91	2.98	2.34	2.34	3.56	3.24
7	Directly upstream of EWR2 route (LA.3919)	3.12	3.07	5.04	5.14	5.01	5.07
8	Directly downstream of EWR2 route (LA.3894)	3.42	3.33	7.14	7.19	7.28	7.45
9	100m downstream EWR2 (LA.3764)	3.40	3.33	6.30	6.21	8.42	8.48
10	200m downstream EWR2 (LA.3597)	3.39	3.32	5.41	5.44	5.74	5.66

Blockage Assessment

The Project Wide FRA has indicated that a blockage assessment is required for culvert C180814 and that a quantitative assessment using the hydraulic model was considered necessary. This section will be completed in the final issue of this report.

5. Conclusion

This CFSA Modelling Report has the following conclusions:

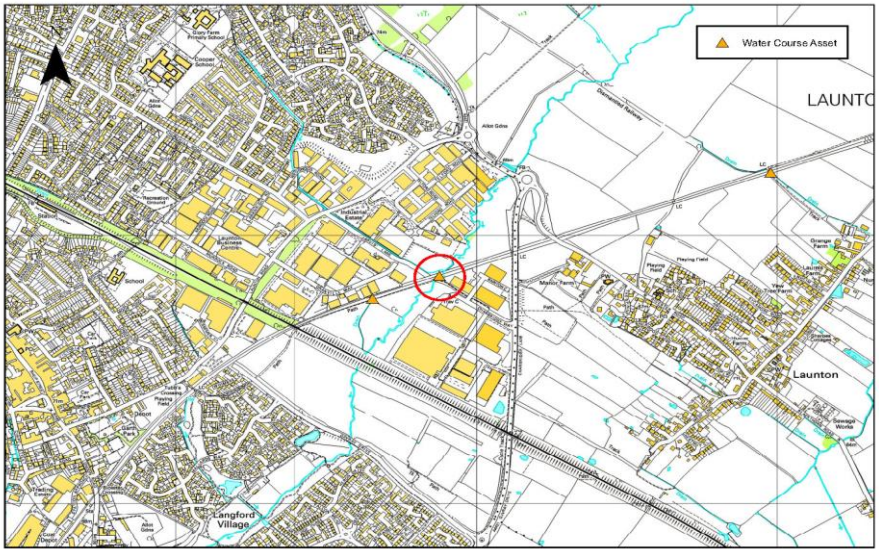
- The existing PBA hydrological and hydraulic model has been used to assess flood risk to EWR2, the potential impacts of the Scheme and mitigation options. The potential impacts of climate change were assessed by increasing flows by 70%;
- An assessment of the temporary floodplain losses arising from the temporary Charbridge Lane diversion works, along with an assessment of the permanent floodplain volume losses arising from railway earthwork embankment widening and highway overbridge works has been undertaken;
- The model DTM has been modified to include the proposed backwater channel located in the existing floodplain on the left bank of the Langford Brook, approximately 160m upstream of culvert C180814;
- The hydrological and hydraulic model has been updated to include the combined (permanent and temporary) With Scheme proposal, and used to size the proposed CFSA. The proposed CFSA has been designed to compensate for the combined temporary and permanent works in line with CIRIA 624, and provides a total floodplain volume of 1313m^3;
- The results from both the With Scheme (temporary and permanent) model and the With Scheme (permanent) scenario show generally negligible changes in peak water levels and extents across the modelled reach; and
- The CFSA mitigates for both the temporary and permanent works. Once construction is complete and the temporary Charbridge Lane diversion is removed from the floodplain there will be an additional floodplain storage volume >600m^3 provided by the Scheme under the permanent scenario. There is therefore a betterment provided by the Scheme.

Appendix A. Project Wide FRA Site Summary

Summary Flood Risk Assessment

Asset Information

Site Location Map



Crossing reference/floodplain	2	
Route Section	2A	
Culvert ID	C180814	
NGR	459889, 222859	
EWR-ELR	OXD	
Lead Local Flood Authority	Oxfordshire County Council	
Environment Agency Region	Thames	
River Basin District	Thames	
Watercourse Type	Main River	
Water ES Chapter Watercourse Reference	2A 001	
Existing Culvert/Crossing Size	1450	(mm)
Existing Culvert/Crossing Length	12	(m)
Existing Culvert/Crossing Type	Brick Arch with Flat Bottom	

Proposed Works

Culvert Recommendation	CIPP liner for the entire length of the culvert. Existing headwalls to be repaired on both ends	
Track Level (at crossing point)	69.42	(mAOD)

Hydrological and Hydraulic Analysis

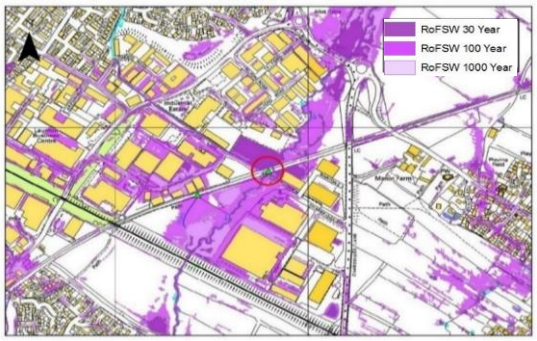
Climate Change allowance: 70 (%)

	Flows (m³/s)	Embankment PWL (mAOD)	Freeboard to track (m)
100-year	6.96	69.08	0.34
100-year + 70% CC	6.98	69.01	0.42
1000-year	7.00	69.14	0.28

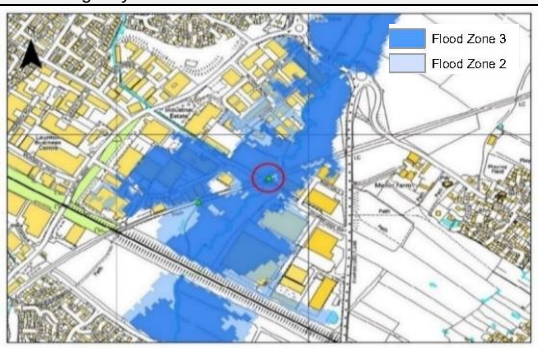
Performance Code	N/A	
Performance Code description	N/A	
Freeboard at 100-year event	<0.6	(m)

Floodplain Maps

RoFSW



Environment Agency Flood Zones



Description of groundwater flooding	Very low / Limited flood risk
Groundwater flood risk	This zone is deemed as having a negligible risk from groundwater flooding due to the nature of the geological deposits.

Proposed Mitigation	CFSA
Principal Flood Risk Source	Fluvial
Blockage Assessment Required	Yes

Sensitivity of Receptors

1) Floodplain or defence protecting more than 100 residential properties from flooding	No
2) Areas where highly vulnerable development is at risk of flooding - such as essential infrastructure, emergency services and basement dwellings.	No
	N/A
1) Floodplain or defence protecting between 1 and 100 residential properties or industrial premises from flooding.	Yes
2) Areas where development that is more vulnerable is at risk of flooding; hospitals, residential units, educational facilities and waste management sites.	Yes
	High
1) Floodplain or defence protecting 10 or fewer industrial properties from flooding.	No
2) Areas where less vulnerable development is at risk of flooding - such as retail, commercial and general industrial units, agricultural/forestry sites	No
	N/A
1) Floodplain with limited constraints and a low probability of flooding of residential and industrial properties.	No
2) Areas that are considered to be water-compatible; flood control infrastructure, docks/marinas, pumping stations and landscape/recreational areas	No
	N/A

Sensitivity of Receptor:	High

Magnitude of Impact

Construction

Excluding Mitigation	High Adverse

	Rating	Definition
Yes	High Adverse	· Increase in peak flood level (1% annual probability event) > 100mm. · Loss of functional floodplain flood storage areas.- Increases flood risk to property and/or infrastructure
No	Medium Adverse	· Increase in peak flood level (1% annual probability event) > 50mm. - increases flood risk to third party farm land/open space
No	Low Adverse	· Increase in peak flood level (1% annual probability event) > 10mm. - increases flood risk to Network Rail land
No	Very Low Adverse	· Negligible change in peak flood level (1% annual probability event) < 10mm. - very minor increase in flood risk to Network Rail land
No	No Change	· No predicted adverse or beneficial impact to the receptor.
No	High Beneficial	· Reduction in peak flood level (1% annual probability event) > 100mm. -Decreases flood risk to property and/or infrastructure
No	Medium Beneficial	· Reduction in peak flood level (1% annual probability event) > 50mm. - Decreases flood risk to third party farm land/open space
No	Low Beneficial	· Reduction in peak flood level (1% annual probability event) > 10mm. -Decreases flood risk to Network Rail land
No	Very Low Beneficial	· Negligible change in peak flood level (1% annual probability event) < 10mm. - very minor decrease in flood risk to Network Rail land

Including Mitigation	Very Low Adverse

	Rating	Definition
No	High Adverse	· Increase in peak flood level (1% annual probability event) > 100mm. · Loss of functional floodplain flood storage areas.- Increases flood risk to property and/or infrastructure
No	Medium Adverse	· Increase in peak flood level (1% annual probability event) > 50mm. - increases flood risk to third party farm land/open space
No	Low Adverse	· Increase in peak flood level (1% annual probability event) > 10mm. - increases flood risk to Network Rail land
Yes	Very Low Adverse	· Negligible change in peak flood level (1% annual probability event) < 10mm. - very minor increase in flood risk to Network Rail land
No	No Change	· No predicted adverse or beneficial impact to the receptor.
No	High Beneficial	· Reduction in peak flood level (1% annual probability event) > 100mm. -Decreases flood risk to property and/or infrastructure
No	Medium Beneficial	· Reduction in peak flood level (1% annual probability event) > 50mm. - Decreases flood risk to third party farm land/open space
No	Low Beneficial	· Reduction in peak flood level (1% annual probability event) > 10mm. -Decreases flood risk to Network Rail land
No	Very Low Beneficial	· Negligible change in peak flood level (1% annual probability event) < 10mm. - very minor decrease in flood risk to Network Rail land

Operation

Excluding Mitigation	High Adverse

	Rating	Definition
Yes	High Adverse	· Increase in peak flood level (1% annual probability event) > 100mm. · Loss of functional floodplain flood storage areas.- Increases flood risk to property and/or infrastructure
No	Medium Adverse	· Increase in peak flood level (1% annual probability event) > 50mm. - increases flood risk to third party farm land/open space
No	Low Adverse	· Increase in peak flood level (1% annual probability event) > 10mm. - increases flood risk to Network Rail land
No	Very Low Adverse	· Negligible change in peak flood level (1% annual probability event) < 10mm. - very minor increase in flood risk to Network Rail land
No	No Change	· No predicted adverse or beneficial impact to the receptor.
No	High Beneficial	· Reduction in peak flood level (1% annual probability event) > 100mm. -Decreases flood risk to property and/or infrastructure
No	Medium Beneficial	· Reduction in peak flood level (1% annual probability event) > 50mm. - Decreases flood risk to third party farm land/open space

No	Low Beneficial	· Reduction in peak flood level (1% annual probability event) > 10mm. -Decreases flood risk to Network Rail land
No	Very Low Beneficial	· Negligible change in peak flood level (1% annual probability event) < 10mm. - very minor decrease in flood risk to Network Rail land

Including Mitigation	Very Low Adverse

	Rating	Definition
No	High Adverse	· Increase in peak flood level (1% annual probability event) > 100mm. · Loss of functional floodplain flood storage areas.- Increases flood risk to property and/or infrastructure
No	Medium Adverse	· Increase in peak flood level (1% annual probability event) > 50mm. - increases flood risk to third party farm land/open space
No	Low Adverse	· Increase in peak flood level (1% annual probability event) > 10mm. - increases flood risk to Network Rail land
Yes	Very Low Adverse	· Negligible change in peak flood level (1% annual probability event) < 10mm. - very minor increase in flood risk to Network Rail land
No	No Change	· No predicted adverse or beneficial impact to the receptor.
No	High Beneficial	· Reduction in peak flood level (1% annual probability event) > 100mm. -Decreases flood risk to property and/or infrastructure
No	Medium Beneficial	· Reduction in peak flood level (1% annual probability event) > 50mm. - Decreases flood risk to third party farm land/open space
No	Low Beneficial	· Reduction in peak flood level (1% annual probability event) > 10mm. -Decreases flood risk to Network Rail land
No	Very Low Beneficial	· Negligible change in peak flood level (1% annual probability event) < 10mm. - very minor decrease in flood risk to Network Rail land

Significance of Effect

Construction

Sensitivity of Receptor	High
Magnitude (beneficial/adverse) (excluding mitigation)	High Adverse
Potential Significance of Effect (excluding mitigation)	Major
Magnitude (beneficial/adverse) (including mitigation)	Very Low Adverse
Residual Significance of Effect (including mitigation)	Minor
Include in Environmental Statement Main Body	YES

Operation

Sensitivity of Receptor	High
Magnitude (beneficial/adverse) (excluding mitigation)	High Adverse
Potential Significance of Effect (excluding mitigation)	Major
Magnitude (beneficial/adverse) (including mitigation)	Very Low Adverse
Residual Significance of Effect (including mitigation)	Minor
Include in Environmental Statement Main Body	YES

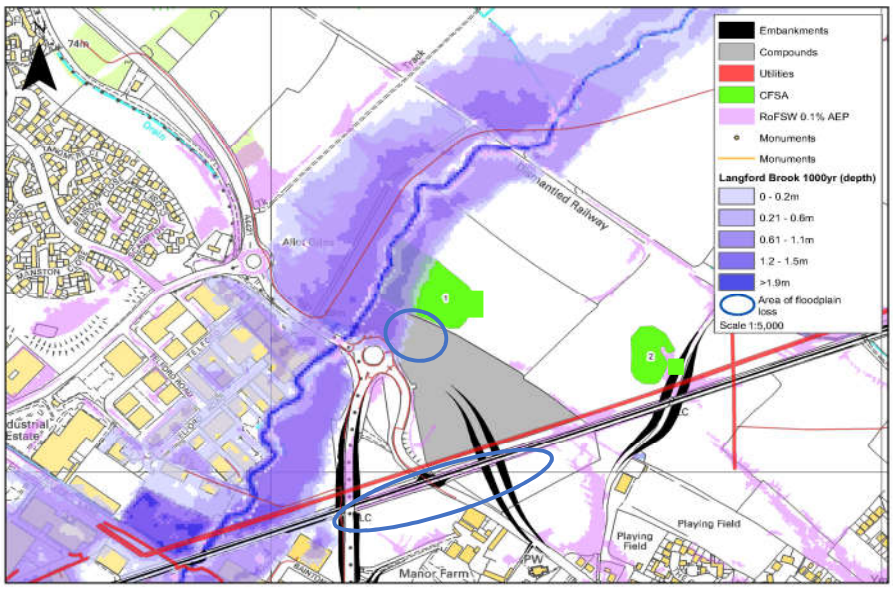
Summary

This assessment has been based on existing Environment Agency RoFSW flooding and Flood Zones 2 and 3, and the Langford Brook Hydraulic Model (ISIS/TUFLOW). In this location, the flood risk is fluvial and surface water related, with the track shown to lie in Flood Zone 2 and 3 and be at risk from surface water by the 30-year event upwards. Assets within the floodplain are the Network Rail land, more than 10 adjoining industrial/commercial properties, and several urban roads. There is limited groundwater flood risk in this area. Works comprise - embankment works limited to a restricted area at the crossing point; a level crossing to be closed and replaced with stepped footbridge with provision for cycle channel; new footpath proposed to create a formalised footpath crossing; a new overbridge to replace existing highway (A4421) crossing, 250m away from this location. Existing culvert to be rehabilitated using CIPP liner for the entire length of the culvert. The overbridge embankment falls outside the edge of the floodplain. The Langford Brook 1D/2D model indicates that the culvert is under capacity (the head water elevation is higher than the culvert soffit level), and that the track is flooded from the 100-year event upwards. The 100-year, 100-year plus 70% climate change, and 1000-year return periods have been modelled. A CFSA is proposed to mitigate the impact of the works. As a CFSA has been proposed to provide storage for the flood water displaced by the widening of the railway embankment footprint and for the works to the culvert, the change in flood risk is considered to be minimal. The works compound A1 Bicester lies in the Flood Zone 2 and 3 and in an area shown to be at risk of surface water flooding for the 30-year event; there is a potential for an increase in runoff from increased hardstanding areas as a result of the compound; a surface water management plan will be developed to manage this. The compound should be organised so that infrastructure and storage within the floodplain is minimised. Further information is required on the compound layout to help inform the level of mitigation required since this compensation would be for temporary works. The increase in impermeable area from the bridge will be mitigated for. A haul road is proposed in this location, which crosses an area at risk of fluvial (Flood Zone 2 and 3) and surface water flooding. The proposed haul road route does not cross any watercourse, and therefore will not require a new culvert crossing. The haul road route will be at existing ground level and will not therefore result in a loss of floodplain storage.

Appendix B. CFSA Summary Report

CFSA Summary

Site Location Map



CFSA Number	2A0061 / 5.2 / FH
Route Section	2A
NGR	460286, 223307
EWR-ELR	OXD
Lead Local Flood Authority	Oxfordshire County Council
Environment Agency Region	Thames
Flood Risk Source	Fluvial and Surface water
Works requiring CFSA	Compound, railway and overbridge embankment works

Floodplain Loss Information	Losses at embankment		Losses at compound	
Area of proposed works in the 1000-year event floodplain	532	m^2	4960	m^2
Indicative floodplain volume loss (1000-year)	296	m^3	1810	m^3

		Minimum Elevation (m AOD)	Maximum Elevation (m AOD)	Difference in level (m)
Existing ground levels at the loss (LiDAR)	Embankment	66.9	69.2	2.3
	Compound	68.5	69.8	1.3

Proposed CFSA

Estimated area required based on floodplain loss	1928	m^2
Proposed CFSA area	7273	m^2
Minimum Indicative CFSA Volume (0.1m excavation depth)	364	m^3
Maximum Indicative CFSA Volume (excavation to maximum available depth)	7273	m^3

	Minimum Elevation (m AOD)	Maximum Elevation (m AOD)	Difference in level (m)
Existing levels at proposed CFSA (LiDAR)	68.0	70.2	2.2

Summary

This assessment has been based on the existing Environment Agency RoFSW maps and the Langford Brook hydraulic modelling results. The proposed CFSA has been designed to provide storage for losses arising from embankment widening and works compound A1 Bicester. The CFSA is located approximately 10m north of the main floodplain loss (the compound); this location avoids committed development and high voltage exclusion zones. The CFSA will drain back into the Langford Brook.

Loss of floodplain Storage calculation

1) At the loss of floodplain – in order to derive the level-area relationship for the land lost as floodplain the following steps are undertaken:
   a) Calculate the area (m^2) under the footprint of the Project that is flooded during a 1 in 1000-year event (using modelled data/RoFSW 1 in 1000-year outline / Environment Agency Flood Zone 2).
   b) An automated depth/area Arc GIS tool was used to calculate the level area relationship, to derive an estimate of floodplain volume lost.

a) Floodpain loss (m²)	532.00
Peak Water Level (mAOD)	69.20
b) Floodplain Volume Loss (m³)	296.19

Water Level Source: Langford Brook hydraulic model

Level Area relationship embankment

WetArea (m²)	Elevation (mAOD)	DryArea (m²)	Volume (m³)
0.00	66.00	672.00	0.00
0.00	66.10	672.00	0.00
0.00	66.20	672.00	0.00
0.00	66.30	672.00	0.00
0.00	66.40	672.00	0.00
0.00	66.50	672.00	0.00
0.00	66.60	672.00	0.00
0.00	66.70	672.00	0.00
0.00	66.80	672.00	0.00
12.00	66.90	660.00	0.45
28.00	67.00	644.00	2.32
44.00	67.10	628.00	5.57
56.00	67.20	616.00	10.59
60.00	67.30	612.00	16.36
68.00	67.40	604.00	22.76
76.00	67.50	596.00	29.92
80.00	67.60	592.00	37.63
80.00	67.70	592.00	45.63
96.00	67.80	576.00	54.38
116.00	67.90	556.00	65.16
144.00	68.00	528.00	78.38
160.00	68.10	512.00	93.47
172.00	68.20	500.00	110.09
176.00	68.30	496.00	127.30
176.00	68.40	496.00	144.90
180.00	68.50	492.00	162.75
188.00	68.60	484.00	181.13
192.00	68.70	480.00	200.19
192.00	68.80	480.00	219.39
192.00	68.90	480.00	238.59
192.00	69.00	480.00	257.79
192.00	69.10	480.00	276.99
192.00	**69.20**	**480.00**	**296.19**
212.00	69.30	460.00	316.43
224.00	69.40	448.00	337.91
312.00	69.50	360.00	363.43
408.00	69.60	264.00	399.24
508.00	69.70	164.00	7273.00
516.00	69.80	156.00	496.90
532.00	69.90	140.00	548.77
624.00	70.00	48.00	606.40
664.00	70.10	8.00	671.35
672.00	70.20	0.00	738.43
672.00	70.30	0.00	805.63
672.00	70.40	0.00	872.83
672.00	70.50	0.00	940.03
672.00	70.60	0.00	1007.23
672.00	70.70	0.00	1074.43
672.00	70.80	0.00	1141.63
672.00	70.90	0.00	1208.83
672.00	71.00	0.00	1276.03

a) Floodpain loss (m²)	4960.00
Peak Water Level (mAOD)	69.80
b) Floodplain Volume Loss (m³)	1809.82

Water Level Source: Langford Brook hydraulic model

Level Area relationship compund

WetArea (m²)	Elevation (mAOD)	DryArea (m²)	Volume (m³)
0.00	68.00	4960.00	0.00
0.00	68.10	4960.00	0.00
0.00	68.20	4960.00	0.00
0.00	68.30	4960.00	0.00
0.00	68.40	4960.00	0.00
20.00	68.50	4940.00	0.78
20.00	68.60	4940.00	2.78
52.00	68.70	4908.00	6.61
112.00	68.80	4848.00	13.84
204.00	68.90	4756.00	29.62
292.00	69.00	4668.00	54.50
424.00	69.10	4536.00	89.77
1080.00	69.20	3880.00	157.13
1840.00	69.30	3120.00	308.23
2320.00	69.40	2640.00	515.45
2844.00	69.50	2116.00	774.91
3304.00	69.60	1656.00	1084.43
3684.00	69.70	1276.00	1436.62
3768.00	**69.80**	**1192.00**	**1809.82**
3800.00	69.90	1160.00	2188.71
3812.00	70.00	1148.00	2569.42
3824.00	70.10	1136.00	2951.12
3844.00	70.20	1116.00	3334.51
3856.00	70.30	1104.00	3719.60
3864.00	70.40	1096.00	4105.72
3868.00	70.50	1092.00	4492.45
3868.00	70.60	1092.00	4879.24
3868.00	70.70	1092.00	5266.04
3868.00	70.80	1092.00	5652.86
3936.00	70.90	1024.00	6042.43
4084.00	71.00	876.00	6442.30
4284.00	71.10	676.00	6864.55
4328.00	71.20	632.00	7295.77
4344.00	71.30	616.00	7729.27
4372.00	71.40	588.00	8165.52
4484.00	71.50	476.00	8607.12
4652.00	71.60	308.00	9063.33
4928.00	71.70	32.00	9540.25
4960.00	71.80	0.00	10035.86
4960.00	71.90	0.00	10531.85
4960.00	72.00	0.00	11027.84

At proposed CFSA (see Figure for further detail)

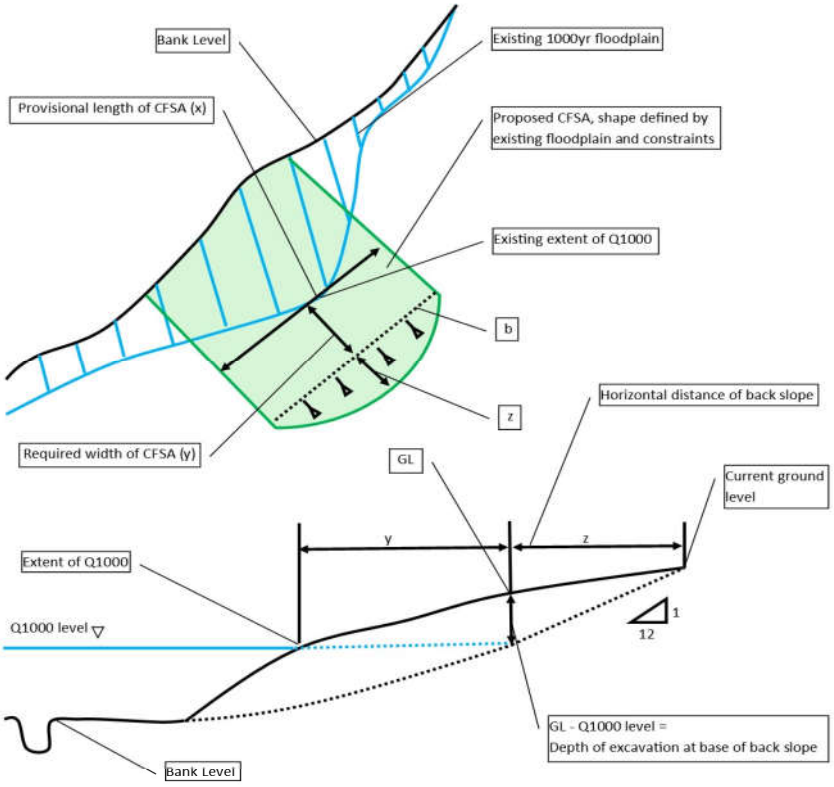
2) At the CFSA location - identify a location outside the existing floodplain where this level-area can be provided in accordance with the following criteria:
   a) The location was positioned outside the 1 in 1000-year flood outlines but would include for excavation to the bank level of an existing watercourse, drain or flood outline extent, in order to remain hydraulically connected and allow for level for level replacement where possible. Constraints such as existing infrastructure were avoided and the number of landowners minimised.
   b) The level of the 1 in 1000-year flood outline (whether modelled flood extent, Flood Zones or RoFSW) was taken at the CFSA location. This, and the local bank level, provides the depth of flood water over which storage could be provided, by extending the flooded area outside the current flood extents.
   c) The required storage will have a zero depth of water at its most inland point (away from the watercourse) with the maximum depth adjacent to the existing 1 in 1000-year flood extent. Hence a wedge shape with maximum depth at the existing extent of the flood outline and zero depth at the inland end requires double the plan area to provide the same volume.
   d) The width of the CFSA along the watercourse was measured. The required CFSA area (calculated above) was divided by this length which gave the width of the CFSA area inland. The difference between the existing ground level and the 1 in 1000-year water level is the depth of excavation required at this point. The level at the back of the CFSA, where water depth will be zero, would be the existing 1 in 1000-year flood level.

Bank level at CFSA location (m AOD)	1000yr WL at CFSA (m AOD)	Max storage depth 1000yr WL- Bank level (m)	Average area required (Volume/max storage depth) (m²)	Required storage area (Average area *2) (m²)	Proposed CFSA Area (m²)	Length along CFSA x (m)
68.00	70.18	2.18	135.61 828.61	1928.43	7273.43	107.04

Back slope for excavation calculation

3) Make adequate provision for earthworks to tie the excavated area to existing ground levels in the proposed CFSA:
   a) The depth (m) of excavation is derived based on the difference between the ground level (m AOD), taken from LiDAR, at the rear (landward) side of the CFSA before back slope, and the 1 in 1000-year flood level (m AOD).
   b) Assume a 1 in 12 cut slope to obtain a horizontal length (m) of excavation.
   c) Apply that distance (m) as an offset to the rear (landward) boundary of the defined CFSA to describe the full area of land to be allowed for the CFSA.

Offset y (m)	Ground level GL (mAOD)	Depth of excavation (GL-1000yr WL) (m)	Backslope length (m)	Does this fit inside the drawn area?
18.02	70.72	0.53	6.40	Y



1) Bank level, assumed to be threshold at which flooding occurs.

2) 1000yr level taken from Flood Zone 2 or RoFSW 1000yr map at CFSA location.

3) x = distance of CFSA adjacent to the watercourse.

4) y = the flood free area of CFSA divided by distance x (CFSA Area /x = y).

5) Take ground level (GL) midway along line b.

6) Depth of excavation at base of back slope of storage area is GL midway along line b - Q1000 (GL - Q1000 elevation = depth of excavation).

7) z = Depth of excavation at the base of back slope x12

*All levels based on LiDAR.

Appendix C. Environment Agency correspondence

creating a better place

Environment Agency

Andrew Cox
Atkins
The Hub
500 Park Avenue
Aztec West
Bristol
BS32 4RZ

Our ref: WA/2019/126657/02-L01
Your ref: 133735-2A-EWR-OXD-XX-RP-DC-000012

Date: 30 September 2019

Dear Andrew,

East West Rail Phase 2 - review of Langford Brook Modelling and CFSA Briefing Note

Thank you for sending us the Langford Brook Compensatory Flood Storage Area (CFSA) Briefing Note (reference: 133735-2A-EWR-OXD-XX-RP-DC-000012; dated: 16 September 2019; revision: B01), which we received from you on 16 September.

As we caveated in our response for the Launton Brook CFSA Briefing Note (our reference: WA/2019/126905/01-L01; dated: 21 August 2019), we welcome that you have updated the existing approved modelling to better understand flood risk. We note this includes updated topographic survey data and the inclusion of new culvert features. We will need to review and sign off the updates to this modelling before we are in a position to approve the final details of the CFSA. Therefore, please submit all model files for us to review. Until we have signed off these updates we will not be able to sign off the model outputs as fit for purpose. Therefore, any further comments below come with the caveat that the updated modelling has not yet been signed off.

Following our review, and subject to the submission of acceptable updated modelling:

We agree that if the modelling confirms that the temporary compound is outside of the 1 in 100 plus 70% then it does not need to be compensated for.

We agree that the temporary road diversion (Charbridge) will only need to provide compensation up to the 1 in 100 year level. This is because of the temporary nature of the works.

We are pleased that compensation is being provided for all permanent works up to the 1 in 100 plus 70% event. We expect this to be on a level for level basis.

Reference is made to temporary culvert(s) under the road. These must be designed to accommodate existing flood flows. If this is not possible then an assessment of the impacts of altering flood flow routes must be carried out to ensure there is no increase in flood risk.

We welcome the opportunity to further discuss your query around providing compensation for temporary and permanent losses whilst minimising impacts. However, this may be an issue that we first discuss at the forthcoming regulators workshop, which

Cont/d..

you're aware I'm in the process of setting up. However, if there is a site-specific query that you have in the meantime, we would be happy to discuss this further.

If you have any queries about this response, please do not hesitate to contact me.

Yours sincerely,

Clark Gordon
Strategic Planning Specialist

Direct dial 0203 025 8998
E-mail clark.gordon@environment-agency.gov.uk

cc Adrian Rose – Atkins
Wayne Barker – Oxfordshire County Council

End

From: Gordon, Clark P <clark.gordon@environment-agency.gov.uk>
Sent: 23 May 2019 16:18
To: Cox, Andrew (Water Management Consultancy); Moeran, Jack
Subject: RE: EWR2 - Langford Brook Flows

Dear Andrew,

Thank you for your query in relation to the modelling of flows on the Langford Brook.

We agree with the proposed approach, including the use of the PBA Langford Brook (2009) flows. Please note that we will expect you to make an assessment of the most current and relevant climate change scenarios.

If you have any further queries, please do not hesitate to contact me.

**Our comments are based on our available records and the information as submitted to us. Please note that any views expressed in this response by the Environment Agency, are a response to a pre-application enquiry only and do not represent our final views in relation to any future planning application made in relation to this site. We reserve the right to change our position in relation to any such application. You should seek your own expert advice in relation to technical matters relevant to any planning application before submission.*

Kind regards,

Clark Gordon
Strategic Planning Specialist, Strategic Planning & Engagement (Thames)
Environment Agency | Red Kite House, Howbery Park, Wallingford, Oxon, OX10 8BD

clark.gordon@environment-agency.gov.uk
External: 0203 025 8998 | Mobile: 07557 846789

Speak to us early about environmental issues and opportunities - We can provide a free pre-application advice note or for more detailed advice / meetings / reviews we can provide a project manager to coordinate specialist advice / meetings which costs £100 per hour (plus VAT). For more information email us at planning_THM@environment-agency.gov.uk

---

From: Cox, Andrew (Water Management Consultancy) [mailto:Andrew.Cox@atkinsglobal.com]
Sent: 17 May 2019 14:18
To: Moeran, Jack <jack.moeran@environment-agency.gov.uk>
Cc: Gordon, Clark P <clark.gordon@environment-agency.gov.uk>
Subject: EWR2 - Langford Brook Flows

Dear Jack,

I hope you're well? We would be grateful for your response on the below.

The purpose of this email is to propose a method for estimating flows in the Langford Brook for the Network Rail, East West Rail Phase 2 (EWR2) Bedford to Bicester Improvements project, and to seek Environment Agency approval of the proposed approach.

A Flood Risk Mapping Study of Langford Village and Bicester was undertaken by Peter Brett Associates (PBA) in December 2009 (Project Ref 15945/006) on behalf of the Environment Agency, Thames Region (West Area). This study included the Langford Brook. The hydrology was reviewed by Atkins and it was recommended that the flows be compared using new data and methods (including FEH13, ReFH2, WINFAP4 and an updated AMAX series).

We have recalculated flows for the Langford Brook using the most up to date methods and data available (WINFAP4 using peak flow data to October 2018, ReFH2 and ReFH). It should be noted that we have not used the rating to calculate flows because the gauge is an Environment Agency Flood Warning gauge; a rating was developed by PBA for the 2009 event, but all check gaugings were carried out at low flows and these did not fit the rating very well. A comparison of the QMED and 100-year flow estimates at the Langford Brook flood warning gauge, just downstream of the railway crossing is shown below.

	Peak flow (m^3/s)			
Return period (years)	PBA Study (2009)	EWR2 (2019) - FEH Statistical	EWR2 (2019) - ReFH2	EWR2 (2019) - ReFH
QMED	2.25	1.2	1.3	1.7
100	7.02	3.5	3.6	4.5

We are proposing for EWR2 that we use the existing PBA (2009) flows because these are the most conservative. We are seeking Environment Agency approval on the proposed approach described above, before proceeding further with the flood modelling and Compensatory Flood Storage Area design.

If you would like to discuss please let me know.

Kind regards,

Andrew Cox *C.WEM, C.Sci, C.Env, MCIWEM, C.Geog*
Principal Consultant
UK & Europe
Engineering, Design and Project Management

+44 1454 662289 +44 78123 18631

The Hub, 500 Park Avenue, Aztec West, Bristol, BS32 4RZ

Company

Appendix D. Topographic Survey

Millimetres 0 10 100

DO NOT SCALE

N

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following:

CONSTRUCTION

MAINTENANCE/CLEANING

DECOMMISSIONING/DEMOLITION

It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement

Rev.	Date	Description	By	Chk'd	App'd

Drawing Status: FOR INFORMATION

Suitability: S0

ATKINS
Amlin House
90-96 Victoria Road
Chelmsford
Essex
CM1 1QU
Tel: +44 (0)1245 245245
Fax: +44 (0)1245 345010
www.atkinsglobal.com

Client: EWR Alliance

Project Title: EAST WEST RAIL SECTION 2A
LANGFORD BROOK
WATERCOURSE CROSS SECTIONS

Drawing Title: LANGFORD BROOK
WATERCOURSE
SECTION KEYPLAN

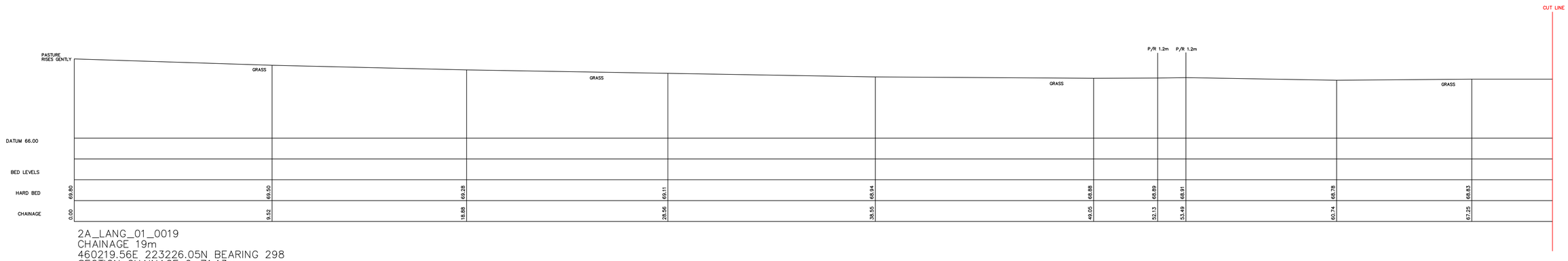
Scale	Designed	Drawn	Checked	Reviewed
1:1250	--	B.MAAS	G.COLDWELL	N.MENDHAM
Original Size	**Date**	**Date**	**Date**	**Date**
A1	--/--/--	26/07/19	26/07/19	26/07/19

Drawing Number: 13375_RW-EWR-XX-2A_LANG-M2-G-010001

Revision: P01

DO NOT SCALE

Millimetres 0 10 100



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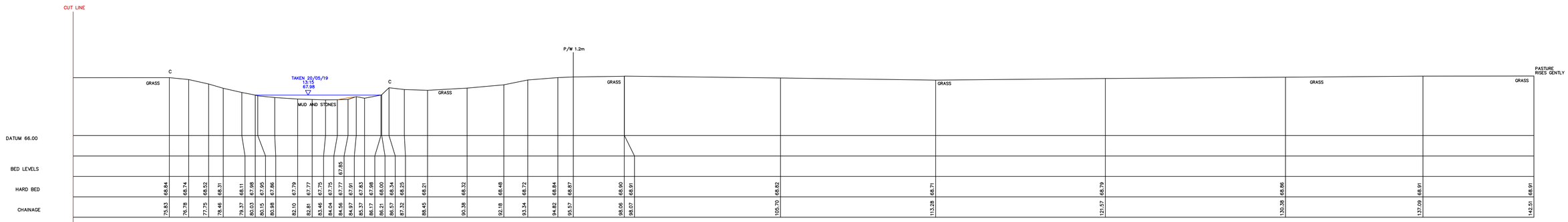
SECTION CHAINAGE 0–71.13m



2A_LANG_01_0019 (CONTINUED)
CHAINAGE 19m
460219.56E 223226.05N BEARING 298
SECTION CHAINAGE 71.13–142.51m

All cross sections viewed looking downstream

SURVEY LEGEND

C	Bank Crest
C/B	Fence – Close Boarded
C/I	Fence – Corrugated Iron
C/L	Fence – Chain Link
C/P	Fence – Chestnut
FP	Fence – Parapet Fence
FPG	Fence – Pedestrian Rail
FSF	Fence – Safety Fence
I/R	Fence – Iron Railings
I/W	Fence – Wattle/Interwoven
L/L	Fence – Larch Lap
P/BW	Fence – Post & Barbed Wire
P/R	Fence – Post & Rail
P/S	Fence – Pale & Space
P/W	Fence – Post & Wire
S/R	Fence – Steel Railings
TSR	Fence – Tubular Steel Railings

Refer to drawing 133735_RW-EWR-XX-2B_WATE-M2-G-010001 for section location information

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following:

CONSTRUCTION

MAINTENANCE/CLEANING

DECOMMISSIONING/DEMOLITION

It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement

Rev.	Date	Description	By	Chk'd	App'd

Drawing Status: FOR INFORMATION
Suitability: S0

ATKINS
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90-96 Victoria Road
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CM1 1QU
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www.atkinsglobal.com

Client: EWR Alliance

Project Title: EAST WEST RAIL SECTION 2A
LANGFORD BROOK
WATERCOURSE CROSS SECTIONS

Drawing Title: CHANNEL NO.1
CROSS SECTIONS
CHAINAGE 19m

Scale	Designed	Drawn	Checked	Reviewed
1:100	--	B.MAAS	G.COLDWELL	N.MENDHAM
Original Size	**Date**	**Date**	**Date**	**Date**
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Drawing Number: 13375_RW-EWR-XX-2A_LANG-M2-G-010002
Revision: P01

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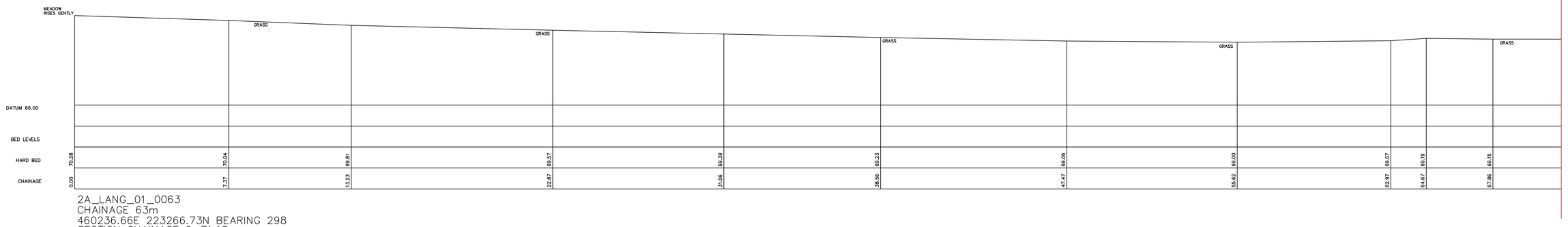

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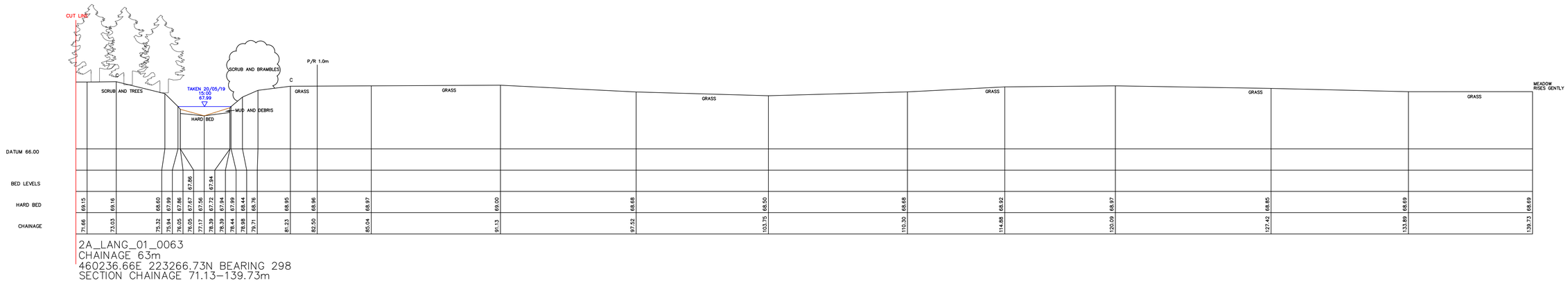

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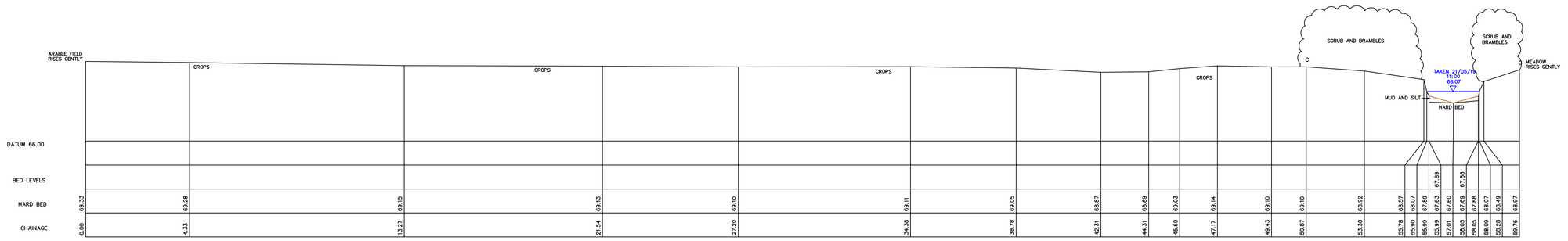
SECTION CHAINAGE 71.13–139.73m



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SECTION CHAINAGE 0–59.76m

All cross sections viewed looking downstream

SURVEY LEGEND

C	Bank Crest
C/B	Fence – Close Boarded
C/I	Fence – Corrugated Iron
C/L	Fence – Chain Link
C/P	Fence – Chestnut
FP	Fence – Parapet Fence
FPG	Fence – Pedestrian Rail
FSF	Fence – Safety Fence
I/R	Fence – Iron Railings
I/W	Fence – Wattle/Interwoven
L/L	Fence – Larch Lap
P/BW	Fence – Post & Barbed Wire
P/R	Fence – Post & Rail
P/S	Fence – Pale & Space
P/W	Fence – Post & Wire
S/R	Fence – Steel Railings
TSR	Fence – Tubular Steel Railings

Refer to drawing 133735_RW-EWR-XX-2B_WATE-M2-G-010001 for section location information

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

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CONSTRUCTION

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Suitability: S0

ATKINS
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CM1 1QU
Tel: +44 (0)1245 245245
Fax: +44 (0)1245 345010
www.atkinsglobal.com

Client: EWR Alliance

Project Title: EAST WEST RAIL SECTION 2A
LANGFORD BROOK
WATERCOURSE CROSS SECTIONS

Drawing Title: CHANNEL NO.1
CROSS SECTIONS
CHAINAGE 63-160m

Scale	Designed	Drawn	Checked	Reviewed
1:100	--	B.MAAS	G.COLDWELL	N.MENDHAM
Original Size	**Date**	**Date**	**Date**	**Date**
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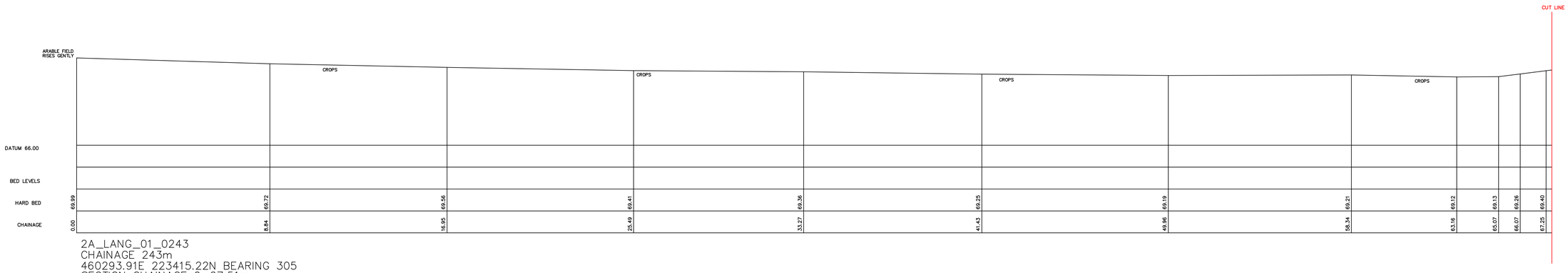
Drawing Number: 13375_RW-EWR-XX-2A_LANG-M2-G-010003
Revision: P01

DO NOT SCALE

Millimetres 0 10 100



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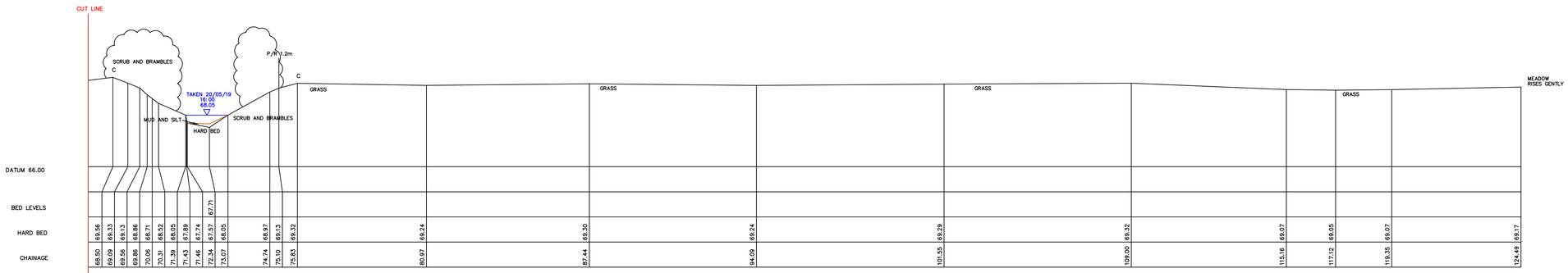
SECTION CHAINAGE 0–67.51m



2A_LANG_01_0243
CHAINAGE 243m
460293.91E 223415.22N BEARING 305
SECTION CHAINAGE 67.51–124.49m

All cross sections viewed looking downstream

SURVEY LEGEND

C	Bank Crest
C/B	Fence – Close Boarded
C/I	Fence – Corrugated Iron
C/L	Fence – Chain Link
C/P	Fence – Chestnut
FP	Fence – Parapet Fence
FPG	Fence – Pedestrian Rail
FSF	Fence – Safety Fence
I/R	Fence – Iron Railings
I/W	Fence – Wattle/Interwoven
L/L	Fence – Larch Lap
P/BW	Fence – Post & Barbed Wire
P/R	Fence – Post & Rail
P/S	Fence – Pale & Space
P/W	Fence – Post & Wire
S/R	Fence – Steel Railings
TSR	Fence – Tubular Steel Railings

Refer to drawing 133735_RW-EWR-XX-2B_WATE-M2-G-010001 for section location information

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

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Suitability: S0

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Project Title: EAST WEST RAIL SECTION 2A
LANGFORD BROOK
WATERCOURSE CROSS SECTIONS

Drawing Title: CHANNEL NO.1
CROSS SECTIONS
CHAINAGE 243m

Scale	Designed	Drawn	Checked	Reviewed
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Original Size	**Date**	**Date**	**Date**	**Date**
A1	--/--/--	26/07/19	26/07/19	26/07/19

Drawing Number: 13375_RW-EWR-XX-2A_LANG-M2-G-010004
Revision: P01

DO NOT SCALE

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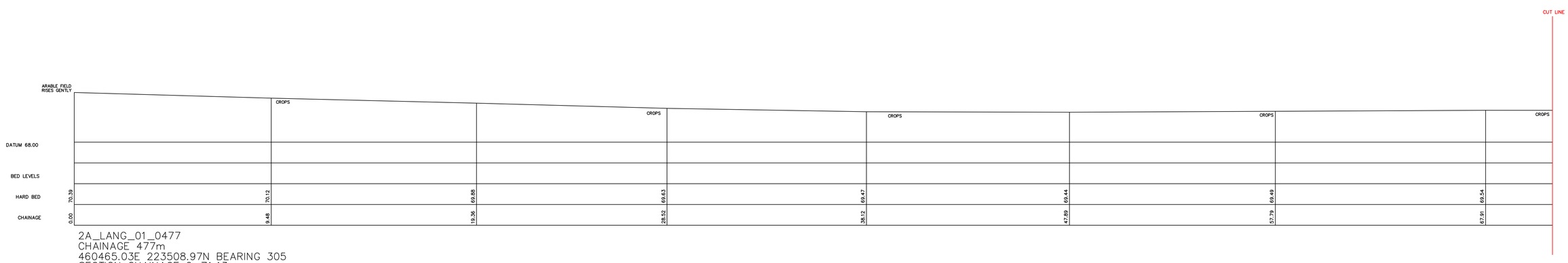

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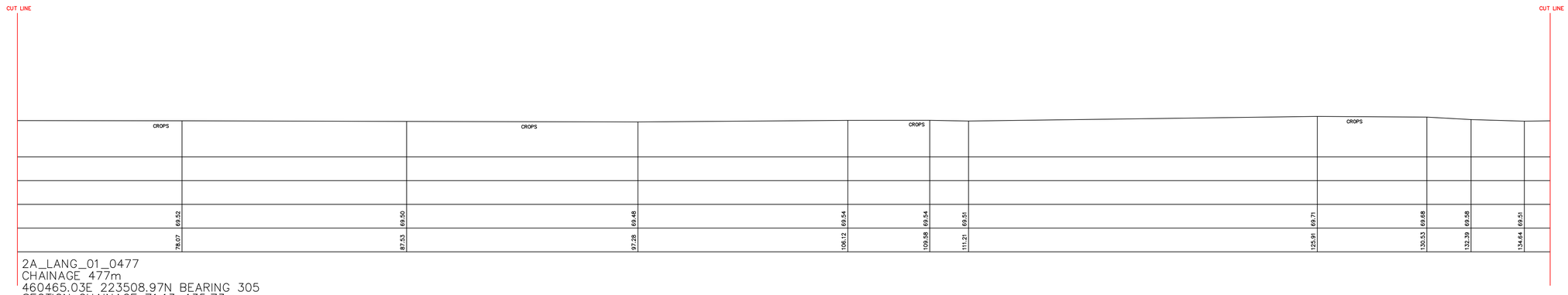
SECTION CHAINAGE 0–71.13m



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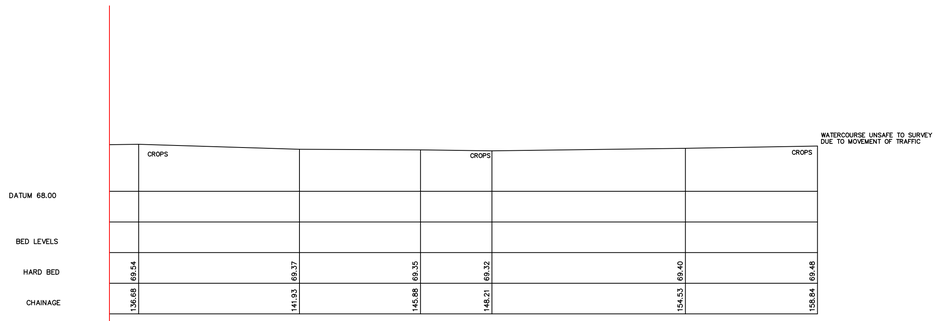
SECTION CHAINAGE 71.13–135.73m



2A_LANG_01_0477
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460465.03E 223508.97N BEARING 305
SECTION CHAINAGE 135.73–158.84m

All cross sections viewed looking downstream

SURVEY LEGEND

C	Bank Crest
C/B	Fence – Close Boarded
C/I	Fence – Corrugated Iron
C/L	Fence – Chain Link
C/P	Fence – Chestnut
FP	Fence – Parapet Fence
FPG	Fence – Pedestrian Rail
FSF	Fence – Safety Fence
I/R	Fence – Iron Railings
I/W	Fence – Wattle/Interwoven
L/L	Fence – Larch Lap
P/BW	Fence – Post & Barbed Wire
P/R	Fence – Post & Rail
P/S	Fence – Pale & Space
P/W	Fence – Post & Wire
S/R	Fence – Steel Railings
TSR	Fence – Tubular Steel Railings

Refer to drawing 133735_RW-EWR-XX-2B_WATE-M2-G-010001 for section location information

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following:

CONSTRUCTION

MAINTENANCE/CLEANING

DECOMMISSIONING/DEMOLITION

It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement

Rev.	Date	Description	By	Chk'd	App'd

Drawing Status: FOR INFORMATION
Suitability: S0

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Client: EWR Alliance

Project Title: EAST WEST RAIL SECTION 2A
LANGFORD BROOK
WATERCOURSE CROSS SECTIONS

Drawing Title: CHANNEL NO.1
CROSS SECTIONS
CHAINAGE 477m

Scale	Designed	Drawn	Checked	Reviewed
1:100	--	B.MAAS	G.COLDWELL	N.MENDHAM
Original Size	**Date**	**Date**	**Date**	**Date**
A1	--/--/--	26/07/19	26/07/19	26/07/19

Drawing Number: 13375_RW-EWR-XX-2A_LANG-M2-G-010005
Revision: P01

Appendix E. Model Build Summary

1. Introduction

The purpose of this Appendix is to provide a brief overview of the hydrological and hydraulic modelling undertaken as part of the EWR2 project on the Langford Brook to accompany the submission of the model to the Environment Agency (EA). It includes details of modelled scenarios and key changes made to the approved and calibrated EA model.

The model used for the Bicester Flood Risk Mapping study in 2009 was provided by the EA for the purposes of this assessment. The model is a calibrated and verified 1D/2D ISIS-TUFLOW model. It was agreed with the EA that the modelling and hydrology used for the 2009 study was a suitable basis for this assessment. Minor updates were made to the hydraulic model baseline, as described below. Therefore, the model review should focus on the With Scheme scenarios as the baseline is largely unchanged.

2. Model Build

Upon receipt of the model, the model was run in the latest version of FM-TUFLOW (2018-03-AE) as the version used for the 2009 study (2008-08-AH) is no longer supported and do not benefit from the advances made in the software in recent years. The results from the modelling provided by the EA and results from the same model run using the updated software showed that there was no significant change in results due to change in software version.

Baseline

Upon review of the EA model, it was determined that the 10m grid size used for the 2D domain would be too coarse to allow a detailed assessment of floodplain volume gains and losses to be assessed. To allow for this a multi 2D domain approach was used, with the areas around the EWR2 crossing and Compensatory Flood Storage Area (CFSA) modelled using a 2m grid resolution rather than the 10m grid used elsewhere within the model. The boundary between the 2m and 10m domains is located along the Chiltern Main Line railway. This location was chosen as it acts as a natural topographic boundary to flow as the railway does not overtop during the highest magnitude event modelled (the 0.1% annual chance event).

2m Model Domain

The model within the 2m domain was updated to utilise the LiDAR flown since the 2009 study, additional cross section survey undertaken as part of the project, and floodplain survey in the location of the proposed CFSA.

Cross sections were added/updated at LA.4748, LA.4663, LA.4560, LA.4517.

The 1D/2D boundary alignment was amended to better follow bank top and updated bank elevations where required, in particular the left bank immediately downstream of the A4421 road bridge.

10m Model Domain

No changes have been made to the 10m 2D model domain ground levels when compared to the 2009 model.

The extent of the domain was updated to reduce the number of redundant cells and to ensure no overlap with the 2m domain. These changes resulted in a significant reduction in run time.

The original model setup meant that the 2D domain extents and resolution could not be changed as the model read in elevation data directly from Zpts. When the DTM provided with the model was used instead the resultant cell elevations did not match those generated from the Zpts, causing the model to crash. To correct this a dummy ground model was created using the original model Zpts to ensure that the model reads in the exact same elevations as the 2009 model. This change in approach ensured that the 2D domain extent could be amended to reduce the number of redundant cells (significantly reducing model run time) whilst maintaining the same elevations from the calibrated model.

3. Model Hydrology and Boundaries

The hydrology remains unchanged from the original 2008 study other than the application of updated climate change allowances applied to the 1% annual chance event (70% increase).

In total there are 8 FEH inflow boundaries, 3 of which are point inflows at the upstream extents of Langford Brook, Bure Brook and Pringle Brook. Lateral inflows have applied to provide inflow for the intermediate catchment.

The minor changes in the hydraulic model have not changed the critical storm duration which is consistent with the original (2009) model at 17.5-hours.

The downstream model boundary is a normal depth boundary with a specified bed slope.

4. Model Scenarios

Temporary Works

This model represents the scenario where the temporary works are in place prior to construction of the permanent works. Key changes from the baseline model include changes to the DTM to represent the earthworks associated with the temporary Charbridge Lane diversion road, temporary storage of topsoil within the floodplain, and inclusion of a CFSA upstream of the proposed works to compensate for the loss of floodplain due to the temporary road and topsoil storage.

Temporary and Permanent Works

As the temporary works scenario but includes changes to the railway embankment, the permanent Charbridge Lane Overbridge, the proposed Water Framework Directive (WFD) backwater, and the proposed lining of the culvert (C180814) through the EWR2 embankment. To model the culvert liner, the dimensions of the culvert and the Mannings roughness values have been reduced.

Permanent Works Only

This scenario represents the post scheme arrangement, and includes the CFSA, the railway embankment earthworks, the permanent Charbridge Lane Overbridge, and the proposed culvert (C180814) liner.

Model Scenario Summary

The table below lists the model scenarios undertaken. The model hydrology remains unchanged with minor updates made to the hydraulic model baseline. Therefore, the model review should focus on the With Scheme scenarios as the baseline is largely unchanged.

Table 4-1 Model Scenarios

Model Scenario Number	Model Name (s)	Scenario Description and Comments
1	Bicester_001- Bicester_005	Initial model runs refining the baseline model – *not provided for review.*
2	Bicester_006	Updated Baseline model (refinements to the model domain, inclusion of latest topographic data).
3	Bicester_007- Bicester_009	Model runs of now superseded design scenarios - *not provided in model package for review.*
4	Bicester_010_XXX_Temp_works	Temporary works – Charbridge Lane diversion works (earthworks, topsoil storage) and CFSA.

Model Scenario Number	Model Name (s)	Scenario Description and Comments
5	Bicester_010_XXX_Temp_and_Perm_Works	Temporary and Permanent works - WFD backwater channel, railway earthworks, Charbridge Lane overbridge and temporary diversion (including topsoil storage), culvert liner and proposed CFSA.
6	Bicester_010_XXX_ Perm_Works_Only	Permanent works only - CFSA, WFD backwater channel, the railway embankment earthworks, the permanent Charbridge Lane Overbridge, and the proposed culvert liner.

Appendix F. CFSA Calculation Record

Appendix F: CFSA Calculation Record

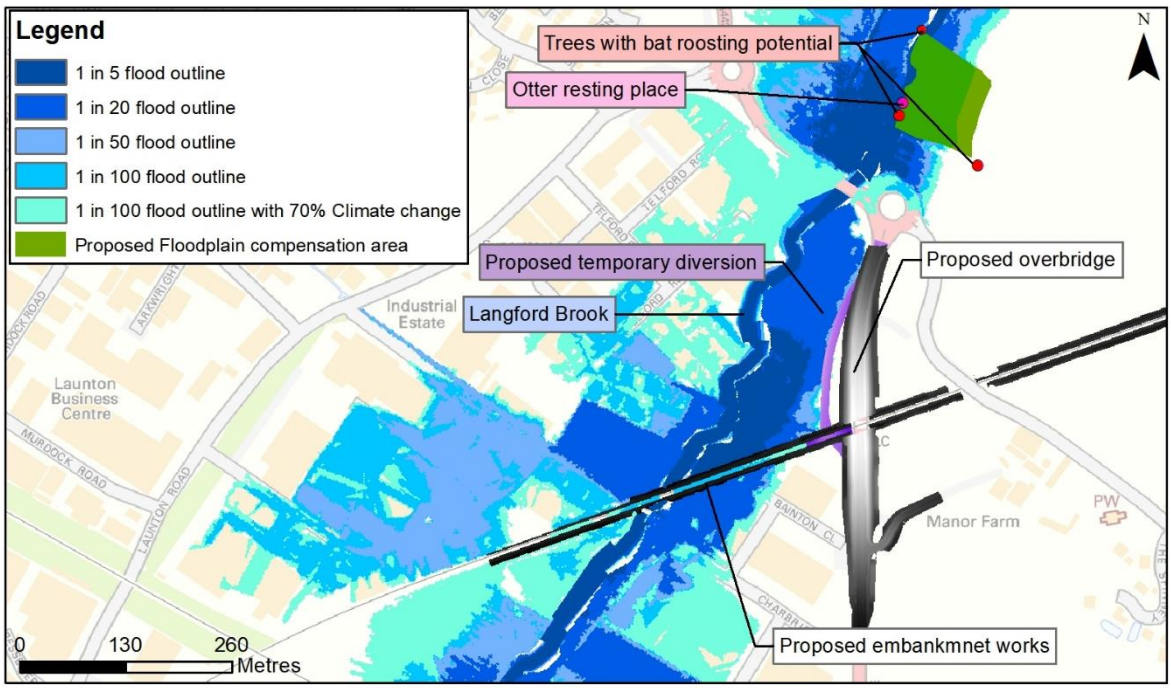
This assessment has been undertaken to show the volume of floodplain losses due to the EWR2 scheme and size the proposed Compensatory Flood Storage Areas (CFSA). A frequency-for-frequency approach has been adopted where volumes lost during a given flood event are replaced at the same event in the flood hydrograph. The following data was used in this assessment:

- Existing ground model;
- Proposed ground model;
- Indicative extent of 2m high temporary topsoil mound; and
- Flood level grids from the Langford Brook hydraulic model.

General Layout

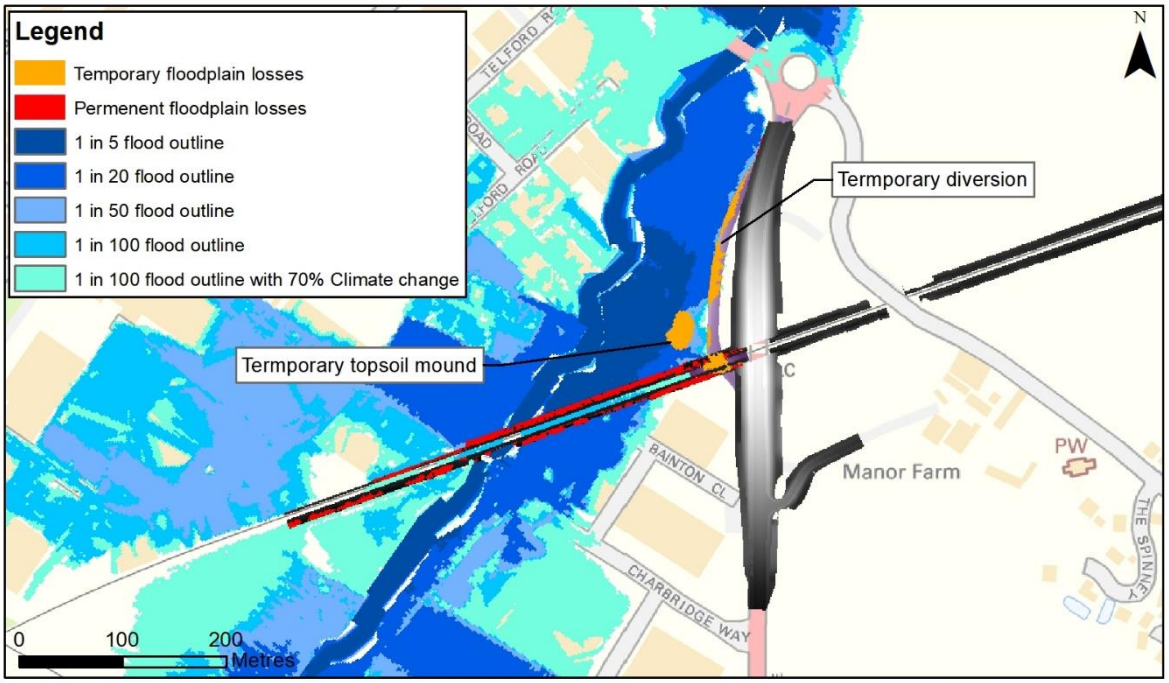
There are two aspects to the proposed works that will impact the floodplain of Langford Brook, shown in the location plan below:

1. The temporary works required to divert the road during construction of the proposed new overbridge. This includes temporary topsoil storage which will need to be stored within the floodplain, west of the temporary diversion and north of the railway.
2. The permanent works comprising the proposed railway embankment works and the proposed overbridge.



Floodplain Losses

Both the temporary and permanent elements have been assessed for floodplain volume losses separately with a combined CFSA proposed to compensate for the volume losses. The volume of floodplain lost during each flood event over-and-above the previous assessed event is listed in the fourth column in the tables below for each 0.2m increment.



Losses from permanent works:

Flood Event (% annual chance event)	Total Volume lost (m^3)	Flood level at gain site (mAOD)	Volume lost at Increment (m^3)
20%	83	69.16	83
5%	309	69.30	226
2%	373	69.41	64
1%	425	69.55	51
1%+ 70%	**639**	69.78	214

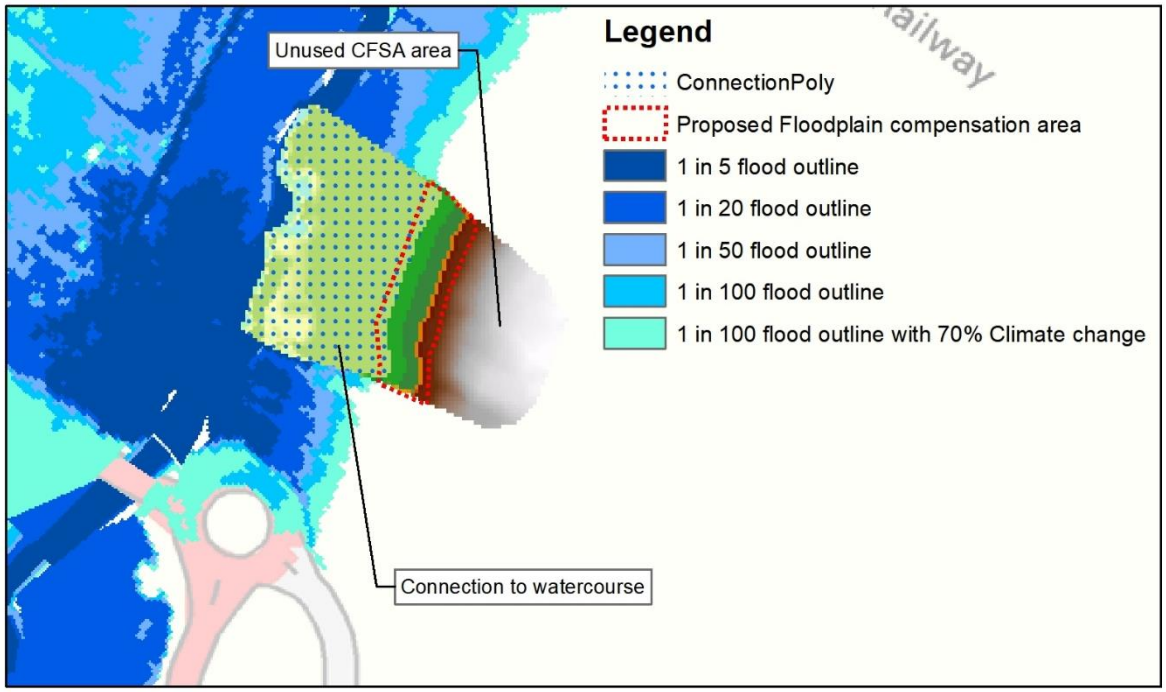
Losses from temporary works and permanent works:

Flood Event (% annual chance event)	Total Volume lost (m^3)	Flood level at gain site (mAOD)	Volume lost at Increment (m^3)
20%	83	69.16	83
5%	346	69.30	263
2%	555	69.41	209
1%	751	69.55	196
1%+ 70%	1115	69.78	364

CFSA

The differences in peak flood levels shown above are too small to construct a viable CFSA at such a fine scale, therefore the total losses have been condensed into a single 0.2m band deemed the minimum feasible for construction, shown below.

Proposed CFSA:



CFSA gains for temporary and permanent works

Increment (at/up to level) based on loss level (mAOD)	Volume lost at dissolved Increment (m^3)	Volume Gained at increment (m^3)
69.16	83	92
69.36	263	290
69.56	404	444
69.78*	363	487
Total excavated (m^3)		**1313**

** increased band by 20mm to accommodate all volume in upper level. It would not be correct to lump all losses for top band in a higher one when only 20mm will be used in 1% annual chance plus climate change event.*

Appendix G. All Model Results

Node Reference	Peak Flow (m^3/s)																	
	Annual Chance Events																	
	20%			5%			2%			1%			1%+CC70%			0.1%		
	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works
LA.6715	2.73	2.73	2.73	4.6	4.6	4.6	6.2	6.2	6.2	7.22	7.22	7.22	11.99	11.99	11.99	11.32	11.32	11.32
LA.0000	6.22	6.24	6.24	7.98	7.99	7.99	8.61	8.62	8.62	9.17	9.17	9.17	10.69	10.68	10.68	10.59	10.58	10.58
LA.6482	2.73	2.73	2.73	4.29	4.29	4.29	5.16	5.16	5.16	5.61	5.61	5.61	5.98	5.98	5.98	5.98	5.98	5.98
LA.6239	2.73	2.73	2.73	3.53	3.53	3.53	3.64	3.64	3.64	3.63	3.63	3.63	4.2	4.2	4.2	4.07	4.07	4.07
LA.5966	2.73	2.73	2.73	2.97	2.97	2.97	3.12	3.13	3.13	3.27	3.27	3.27	3.77	3.77	3.76	3.71	3.71	3.71
LA.5734	2.77	2.77	2.77	3.42	3.42	3.42	3.79	3.8	3.8	4.14	4.14	4.14	5.54	5.54	5.54	5.36	5.36	5.35
LA.5527	1.52	1.52	1.52	1.78	1.78	1.78	1.88	1.88	1.88	1.94	1.93	1.93	2.36	2.36	2.36	2.28	2.28	2.28
LA.5522	1.52	1.52	1.52	1.78	1.78	1.78	1.88	1.88	1.88	1.94	1.93	1.93	2.36	2.36	2.36	2.28	2.28	2.28
LA.5112	2.14	2.14	2.14	2.25	2.26	2.26	2.28	2.3	2.3	2.32	2.33	2.33	2.35	2.36	2.36	2.34	2.35	2.35
LA.5112_O1U	0.51	0.51	0.51	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
LA.5107_O1D	0.51	0.51	0.51	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
LA.5107_O2D	0.51	0.51	0.51	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
LA.5107_O3D	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.39	0.39	0.39	0.39	0.39	0.39
LA.5098	2.14	2.14	2.14	2.25	2.26	2.26	2.28	2.3	2.3	2.32	2.33	2.33	2.35	2.36	2.36	2.34	2.35	2.35
LA.4998	3.02	3.03	3.03	5.05	5.04	5.04	6.53	6.25	6.26	7.73	7.42	7.42	8.97	8.96	8.97	8.86	8.86	8.86
LA.4998BU	3.02	3.03	3.03	5.05	5.04	5.04	6.48	6.2	6.22	7.72	7.41	7.41	7.84	7.84	7.85	7.82	7.82	7.82
LA.4998BD	3.02	3.03	3.03	5.05	5.04	5.04	6.48	6.2	6.22	7.72	7.41	7.41	7.84	7.84	7.85	7.82	7.82	7.82
LA.4998D	3.02	3.03	3.03	5.05	5.04	5.04	6.53	6.25	6.26	7.73	7.42	7.42	8.97	8.96	8.97	8.86	8.86	8.86
LA.4748	3.02	3.03	3.03	5.05	5.04	5.04	6.24	6.47	6.53	6.23	6.31	6.31	6.55	6.52	6.53	6.29	6.51	6.52
LA.4663	3.02	2.32	2.33	3.88	2.58	2.58	3.96	2.64	2.64	4	2.67	2.67	8.19	8.14	8.13	7.77	7.72	7.71
LA.4560	2.66	2.71	2.71	2.65	2.71	2.71	2.65	2.69	2.69	2.66	2.69	2.69	2.66	2.68	2.68	2.65	2.67	2.68
LA.4505	2.67	2.69	2.69	3.56	3.47	3.47	3.95	3.99	3.99	4.2	4.25	4.25	4.88	5.08	5.08	4.8	4.99	4.98
LA.5527BU	1.5	1.5	1.49	1.51	1.5	1.5	1.5	1.51	1.5	1.5	1.51	1.51	1.51	1.51	1.51	1.51	1.51	1.51
LA.5527SU	0.11	0.11	0.11	0.3	0.3	0.3	0.52	0.52	0.52	0.69	0.69	0.7	1.37	1.37	1.37	1.28	1.28	1.28
LA.5522BD	1.5	1.5	1.49	1.51	1.5	1.5	1.5	1.51	1.5	1.5	1.51	1.51	1.51	1.51	1.51	1.51	1.51	1.51
LA.5522SD	0.11	0.11	0.11	0.3	0.3	0.3	0.52	0.52	0.52	0.69	0.69	0.7	1.37	1.37	1.37	1.28	1.28	1.28
LA.5112SU	1.17	1.16	1.16	1.64	1.66	1.66	1.72	1.73	1.73	1.68	1.69	1.69	1.74	1.77	1.77	1.72	1.71	1.71
LA.5112_O2U	0.51	0.51	0.51	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
LA.5112_O3U	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.39	0.39	0.39	0.39	0.39	0.39
LA.5107SD	1.17	1.16	1.16	1.64	1.66	1.66	1.72	1.73	1.73	1.68	1.69	1.69	1.74	1.77	1.77	1.72	1.71	1.71
LA.4493	2.76	2.75	2.75	3.84	3.66	3.66	4.17	4.15	4.15	4.06	4.09	4.09	3.99	4.01	4.01	3.98	4	4
LA.4493D	2.76	2.75	2.75	3.84	3.66	3.66	4.17	4.15	4.15	4.06	4.09	4.09	3.99	4.01	4.01	3.98	4	4
LA.4474	3.07	3.04	3.04	5.35	5.14	5.14	6.55	6.51	6.51	7.79	7.8	7.8	9.7	9.71	9.72	9.63	9.65	9.66
LA.4458	3.07	3.04	3.04	5.35	5.14	5.14	6.55	6.51	6.51	7.79	7.8	7.8	9.7	9.71	9.72	9.63	9.65	9.66
LA.4323	3.07	3.04	3.04	3.61	3.66	3.66	3.42	3.45	3.45	3.36	3.39	3.39	3.26	3.26	3.26	3.28	3.31	3.31
LA.4157	2.91	2.98	2.98	2.36	2.42	2.41	2.34	2.34	2.34	2.34	2.34	2.34	3.56	3.34	3.24	3.44	3.24	3.15
LA.4005	2.54	2.62	2.63	2.55	2.65	2.65	2.37	2.55	2.55	2.44	2.47	2.46	3	3.14	3.16	2.89	3.02	3.04
LA.3919	3.12	3.07	3.07	4.89	4.88	4.89	5.08	5.17	5.17	5.04	5.14	5.14	5.01	5.08	5.07	5.01	5.09	5.11
LA.3905	3.42	3.33	3.33	5.33	5.29	5.29	6.58	6.67	6.67	7.14	7.19	7.19	7.28	7.46	7.45	7.28	7.45	7.45
LA.3905CU	3.42	3.33	3.33	5.33	5.29	5.29	6.58	6.67	6.67	7.14	7.19	7.19	7.28	7.46	7.45	7.28	7.45	7.45
LA.3894CD	3.42	3.33	3.33	5.33	5.29	5.29	6.58	6.67	6.67	7.14	7.19	7.19	7.28	7.46	7.45	7.28	7.45	7.45
LA.3894	3.42	3.33	3.33	5.33	5.29	5.29	6.58	6.67	6.67	7.14	7.19	7.19	7.28	7.46	7.45	7.28	7.45	7.45
LA.3876	3.42	3.33	3.33	4.94	4.91	4.91	5.82	5.88	5.88	6.23	6.27	6.27	6.28	6.33	6.33	6.28	6.33	6.33
LA.3865	3.42	3.33	3.33	4.06	4.06	4.06	4.17	4.18	4.19	4.23	4.25	4.25	4.26	4.26	4.26	4.25	4.26	4.26
LA.3858	3.42	3.33	3.33	4.06	4.06	4.06	4.17	4.18	4.19	4.23	4.25	4.25	4.26	4.26	4.26	4.25	4.26	4.26
LA.3848	3.4	3.31	3.31	4.13	4.11	4.11	4.45	4.47	4.46	4.61	4.62	4.62	4.91	4.94	4.94	4.91	4.93	4.92
LA.3764	3.4	3.33	3.33	4.9	4.87	4.87	5.64	5.7	5.69	6.3	6.22	6.21	8.42	8.48	8.48	8.33	8.34	8.34
LA.3597	3.39	3.32	3.32	4.61	4.59	4.59	5.32	5.35	5.35	5.41	5.44	5.44	5.74	5.68	5.66	5.7	5.63	5.63
LA.3503	3.39	3.32	3.32	4.1	4.11	4.11	4.13	4.13	4.12	4.12	4.13	4.13	4.14	4.14	4.14	4.14	4.14	4.14
LA.3500_R	3.39	3.32	3.32	4.1	4.11	4.11	4.13	4.13	4.12	4.12	4.13	4.13	4.14	4.14	4.14	4.14	4.14	4.14
LA.3905SU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LA.3894SD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LA.3894_OUT	3.42	3.33	3.33	5.33	5.29	5.29	6.58	6.67	6.67	7.14	7.19	7.19	7.28	7.46	7.45	7.28	7.45	7.45
LA.3905_IN	3.42	3.33	3.33	5.33	5.29	5.29	6.58	6.67	6.67	7.14	7.19	7.19	7.28	7.46	7.45	7.28	7.45	7.45
LA.4474BU	3.07	3.04	3.04	5.35	5.14	5.14	6.55	6.51	6.51	7.79	7.8	7.8	9.7	9.71	9.72	9.63	9.65	9.66
LA.4474SU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Node Reference	Peak Flow (m^3/s)																	
	Annual Chance Events																	
	20%			5%			2%			1%			1%+CC70%			0.1%		
	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works
LA.4462BD	3.07	3.04	3.04	5.35	5.14	5.14	6.55	6.51	6.51	7.79	7.8	7.8	9.7	9.71	9.72	9.63	9.65	9.66
LA.4462SD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LA.3865BU	3.42	3.33	3.33	3.93	3.93	3.93	3.97	3.97	3.97	3.98	3.98	3.98	4.01	4.01	4.01	4.01	4.02	4.02
LA.3865SU	0	0	0	0.2	0.2	0.2	0.37	0.39	0.39	0.48	0.48	0.48	1.2	1.19	1.19	1.02	1.01	1.01
LA.3858BD	3.42	3.33	3.33	3.93	3.93	3.93	3.97	3.97	3.97	3.98	3.98	3.98	4.01	4.01	4.01	4.01	4.02	4.02
LA.3858SD	0	0	0	0.2	0.2	0.2	0.37	0.39	0.39	0.48	0.48	0.48	1.2	1.19	1.19	1.02	1.01	1.01
LA.3439	3.39	3.32	3.32	4.72	4.7	4.7	5.46	5.5	5.51	6	5.94	5.94	6.77	6.79	6.79	6.77	6.79	6.77
LA.3428	3.39	3.32	3.32	5.15	5.13	5.13	6.48	6.57	6.57	7.53	7.39	7.38	13.83	13.79	13.78	13.32	13.27	13.27
LA.3372	3.39	3.32	3.32	5.15	5.13	5.13	6.51	6.58	6.58	7.53	7.39	7.38	13.83	13.79	13.78	13.32	13.27	13.27
LA.3352	3.39	3.32	3.32	5.15	5.13	5.13	6.49	6.55	6.55	7.44	7.31	7.3	12.95	12.92	12.91	12.52	12.49	12.48
LA.3272	3.39	3.32	3.32	5.16	5.13	5.13	6.34	6.39	6.4	6.97	6.88	6.87	9.57	9.6	9.63	9.52	9.49	9.49
LA.3178	3.39	3.32	3.32	4.97	4.96	4.96	5.47	5.48	5.53	5.6	5.56	5.53	5.83	5.76	5.8	5.81	5.71	5.79
LA.3109	3.39	3.32	3.32	4.66	4.65	4.65	5.14	5.16	5.16	5.29	5.29	5.26	6.93	6.92	6.92	6.83	6.83	6.82
LA.3503SU	0	0	0	0.03	0.03	0.03	0.21	0.21	0.21	0.21	0.21	0.21	0.22	0.22	0.22	0.22	0.22	0.21
LA.3503BU	3.39	3.32	3.32	4.1	4.11	4.11	4.13	4.13	4.12	4.12	4.12	4.12	4.14	4.14	4.14	4.14	4.14	4.14
LA.3500_RBD	3.39	3.32	3.32	4.1	4.11	4.11	4.13	4.13	4.12	4.12	4.12	4.12	4.14	4.14	4.14	4.14	4.14	4.14
LA.3500_RSD	0	0	0	0.03	0.03	0.03	0.21	0.21	0.21	0.21	0.21	0.21	0.22	0.22	0.22	0.22	0.22	0.21
LA.3428_IN	3.39	3.32	3.32	5.15	5.13	5.13	6.48	6.57	6.57	7.53	7.39	7.38	13.83	13.79	13.78	13.32	13.27	13.27
LA.3428CU	3.39	3.32	3.32	5.15	5.13	5.13	6.48	6.57	6.57	7.53	7.39	7.38	13.83	13.79	13.78	13.32	13.27	13.27
LA.3372CD	3.39	3.32	3.32	5.15	5.13	5.13	6.51	6.58	6.58	7.53	7.39	7.38	13.83	13.79	13.78	13.32	13.27	13.27
LA.3372_OUT	3.39	3.32	3.32	5.15	5.13	5.13	6.51	6.58	6.58	7.53	7.39	7.38	13.83	13.79	13.78	13.32	13.27	13.27
LA.3088	3.39	3.32	3.32	5.15	5.13	5.13	6.62	6.69	6.68	7.51	7.38	7.37	13.65	13.61	13.61	13.16	13.12	13.11
LA.3070	3.39	3.32	3.32	5.15	5.13	5.13	6.6	6.67	6.68	7.51	7.38	7.37	13.65	13.61	13.61	13.16	13.12	13.11
LA.3057	3.39	3.32	3.32	5.15	5.13	5.13	6.56	6.66	6.64	7.51	7.38	7.37	12.73	12.7	12.7	12.41	12.38	12.37
LA.2933	3.36	3.3	3.31	4.14	4.13	4.13	4.45	4.47	4.47	4.54	4.52	4.52	4.97	4.97	4.97	4.99	4.99	4.99
LA.2930	3.36	3.3	3.31	4.14	4.13	4.13	4.45	4.47	4.47	4.54	4.52	4.52	4.97	4.97	4.97	4.99	4.99	4.99
LA.3088SU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LA.3088_IN	2.85	2.8	2.8	4	3.98	3.98	4.87	4.92	4.92	5.59	5.49	5.48	10.3	10.27	10.27	9.92	9.89	9.88
LA.3088_O1U	0.18	0.17	0.17	0.34	0.34	0.34	0.58	0.59	0.59	0.64	0.63	0.63	1.12	1.11	1.11	1.08	1.08	1.08
LA.3088_O2U	0.18	0.18	0.18	0.47	0.47	0.47	0.58	0.59	0.59	0.64	0.63	0.63	1.12	1.11	1.11	1.08	1.08	1.08
LA.3088_O3U	0.18	0.17	0.17	0.34	0.34	0.34	0.58	0.59	0.59	0.64	0.63	0.63	1.12	1.11	1.11	1.08	1.08	1.08
LA.3088CU	2.85	2.8	2.8	4	3.98	3.98	4.87	4.92	4.92	5.59	5.49	5.48	10.3	10.27	10.27	9.92	9.89	9.88
LA.3070CD	2.85	2.8	2.8	4	3.98	3.98	4.91	4.98	4.98	5.59	5.49	5.48	10.3	10.27	10.27	9.92	9.89	9.88
LA.3070_OUT	2.85	2.8	2.8	4	3.98	3.98	4.91	4.98	4.98	5.59	5.49	5.48	10.3	10.27	10.27	9.92	9.89	9.88
LA.3070SD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LA.3070_O1D	0.18	0.17	0.17	0.34	0.34	0.34	0.58	0.59	0.59	0.64	0.63	0.63	1.12	1.11	1.11	1.08	1.08	1.08
LA.3070_O2D	0.18	0.18	0.18	0.47	0.47	0.47	0.58	0.59	0.59	0.64	0.63	0.63	1.12	1.11	1.11	1.08	1.08	1.08
LA.3070_O3D	0.18	0.17	0.17	0.34	0.34	0.34	0.58	0.59	0.59	0.64	0.63	0.63	1.12	1.11	1.11	1.08	1.08	1.08
LA.2933SU	0.25	0.22	0.22	0.86	0.86	0.86	1.29	1.31	1.31	1.56	1.53	1.52	2.5	2.5	2.5	2.48	2.48	2.48
LA.2933BU	3.12	3.09	3.09	3.28	3.28	3.28	3.29	3.3	3.28	3.23	3.23	3.25	3.17	3.14	3.14	3.18	3.15	3.15
LA.2930BD	3.12	3.09	3.09	3.28	3.28	3.28	3.29	3.3	3.28	3.23	3.23	3.25	3.17	3.14	3.14	3.18	3.15	3.15
LA.2930SD	0.25	0.22	0.22	0.86	0.86	0.86	1.29	1.31	1.31	1.56	1.53	1.52	2.5	2.5	2.5	2.48	2.48	2.48
LA.2733	3.22	3.2	3.2	3.8	3.79	3.8	4.24	4.27	4.26	4.53	4.48	4.47	5.92	5.92	5.92	5.94	5.92	5.92
LA.2626	3.34	3.28	3.28	4.44	4.43	4.43	4.82	4.8	4.8	4.61	4.61	4.62	4	4	4	4.11	4.11	4.11
LA.2532	3.49	3.49	3.49	4.06	4.07	4.07	4.22	4.22	4.22	4.3	4.3	4.3	4.44	4.46	4.45	4.4	4.4	4.39
LA.2448	3.3	3.34	3.34	3.48	3.48	3.48	3.51	3.52	3.52	3.52	3.53	3.53	3.53	3.53	3.53	3.53	3.53	3.53
LA.2444	3.3	3.34	3.34	3.48	3.48	3.48	3.51	3.52	3.52	3.52	3.53	3.53	3.53	3.53	3.53	3.53	3.53	3.53
LA.2366	3.26	3.27	3.27	3.37	3.39	3.39	3.39	3.41	3.41	3.43	3.42	3.42	3.52	3.5	3.5	3.52	3.5	3.5
LA.2248	3.08	3.11	3.11	3.36	3.36	3.36	3.45	3.45	3.45	3.46	3.47	3.47	3.48	3.51	3.51	3.5	3.51	3.51
LA.2832	3.26	3.22	3.22	3.84	3.84	3.84	4.26	4.28	4.28	4.45	4.41	4.41	5.26	5.27	5.27	5.27	5.27	5.29
LA.2626SU	0	0	0	0	0	0	0.16	0.18	0.18	0.33	0.31	0.31	1.31	1.3	1.3	1.24	1.23	1.23
LA.2626BU	3.34	3.28	3.28	4.44	4.43	4.43	4.79	4.77	4.77	4.59	4.58	4.58	3.68	3.67	3.65	3.7	3.73	3.73
LA.2625_R	3.34	3.28	3.28	4.44	4.43	4.43	4.82	4.8	4.8	4.61	4.61	4.62	4	4	4	4.11	4.11	4.11
LA.2625_RBD	3.34	3.28	3.28	4.44	4.43	4.43	4.79	4.77	4.77	4.59	4.58	4.58	3.68	3.67	3.65	3.7	3.73	3.73
LA.2625_RSD	0	0	0	0	0	0	0.16	0.18	0.18	0.33	0.31	0.31	1.31	1.3	1.3	1.24	1.23	1.23
LA.2448SU	0.11	0.11	0.11	0.43	0.42	0.43	0.77	0.79	0.79	0.97	0.94	0.94	1.31	1.3	1.3	1.26	1.26	1.26

Node Reference	Peak Flow (m^3/s)																	
	Annual Chance Events																	
	20%			5%			2%			1%			1%+CC70%			0.1%		
	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works
LA.2448BU	3.22	3.25	3.25	3.34	3.36	3.36	3.37	3.38	3.38	3.38	3.39	3.39	3.38	3.39	3.39	3.39	3.39	3.39
LA.2444BD	3.22	3.25	3.25	3.34	3.36	3.36	3.37	3.38	3.38	3.38	3.39	3.39	3.38	3.39	3.39	3.39	3.39	3.39
LA.2444SD	0.11	0.11	0.11	0.43	0.42	0.43	0.77	0.79	0.79	0.97	0.94	0.94	1.31	1.3	1.3	1.26	1.26	1.26
LA.2190	2.87	2.85	2.85	2.59	2.55	2.55	2.53	2.54	2.54	2.55	2.54	2.54	2.56	2.55	2.55	2.53	2.52	2.52
LA.2060	3.56	3.53	3.53	4.29	4.3	4.29	4.42	4.43	4.42	4.38	4.36	4.36	4.25	4.28	4.28	4.28	4.25	4.25
LA.2021	3.68	3.67	3.67	5.54	5.53	5.54	6.72	6.79	6.79	7.63	7.56	7.55	13.19	13.17	13.18	12.82	12.78	12.78
LA.2011	3.68	3.67	3.67	5.54	5.53	5.54	6.73	6.79	6.79	7.63	7.56	7.55	13.59	13.55	13.55	13.03	12.97	12.96
LA.1990	3.68	3.67	3.67	5.54	5.53	5.54	6.74	6.79	6.78	7.63	7.56	7.55	13.59	13.55	13.55	13.03	12.97	12.96
LA.1983	3.68	3.67	3.67	5.54	5.53	5.54	6.73	6.79	6.78	7.63	7.56	7.55	13.59	13.56	13.55	13.03	12.97	12.96
LA.1882	3.69	3.67	3.67	5.54	5.54	5.54	6.73	6.79	6.79	7.63	7.56	7.55	9.21	9.21	9.21	9.08	9.07	9.07
LA.2190SU	0.54	0.54	0.54	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.51	0.51	1.51	1.5	1.51	1.47	1.47	1.47
LA.2190BU	2.82	2.82	2.82	2.58	2.55	2.55	2.48	2.48	2.48	2.49	2.49	2.49	2.51	2.51	2.51	2.49	2.49	2.49
LA.2188_R	2.87	2.85	2.85	2.59	2.55	2.55	2.53	2.54	2.54	2.55	2.54	2.54	2.56	2.55	2.55	2.53	2.52	2.52
LA.2188_RSD	0.54	0.54	0.54	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.51	0.51	1.51	1.5	1.51	1.47	1.47	1.47
LA.2188_RBD	2.82	2.82	2.82	2.58	2.55	2.55	2.48	2.48	2.48	2.49	2.49	2.49	2.51	2.51	2.51	2.49	2.49	2.49
LA.2011SU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LA.2011_IN	3.68	3.67	3.67	5.54	5.53	5.54	6.73	6.79	6.79	7.63	7.56	7.55	13.59	13.55	13.55	13.03	12.97	12.96
LA.2011CU	3.68	3.67	3.67	5.54	5.53	5.54	6.73	6.79	6.79	7.63	7.56	7.55	13.59	13.55	13.55	13.03	12.97	12.96
LA.1990CD	3.68	3.67	3.67	5.54	5.53	5.54	6.74	6.79	6.78	7.63	7.56	7.55	13.59	13.55	13.55	13.03	12.97	12.96
LA.1990_OUT	3.68	3.67	3.67	5.54	5.53	5.54	6.74	6.79	6.78	7.63	7.56	7.55	13.59	13.55	13.55	13.03	12.97	12.96
LA.1990SD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LA.1873	3.69	3.67	3.67	5.55	5.54	5.54	6.73	6.79	6.79	7.62	7.55	7.55	9	9.02	9.03	8.87	8.78	8.78
LA.1840	3.69	3.67	3.67	5.55	5.54	5.54	6.74	6.79	6.79	7.62	7.55	7.55	9	9.02	9.03	8.83	8.78	8.93
LA.1832	3.82	3.89	3.89	5.7	5.7	5.7	7.01	7.04	7.04	7.67	7.62	7.61	9.02	9.04	9.04	8.83	8.89	9.14
LA.1786	3.82	3.9	3.89	5.7	5.7	5.7	7.01	7.04	7.04	7.67	7.61	7.61	9.03	9.05	9.05	8.99	9.4	8.8
LA.1777	3.82	3.9	3.89	5.7	5.7	5.7	7.01	7.04	7.03	7.67	7.61	7.61	9.03	9.05	9.05	9.03	9.3	8.8
LA.1589	3.98	4.05	4.05	5.32	5.32	5.32	5.76	5.77	5.77	6.08	6.05	6.04	6.33	6.3	6.29	6.28	6.3	6.3
LA.1589d	5.99	6.06	6.06	7.91	7.92	7.92	8.55	8.55	8.55	8.73	8.72	8.71	8.96	8.98	8.98	8.81	8.83	8.83
LA.1503	6.02	6.05	6.05	6.57	6.56	6.56	6.65	6.59	6.59	6.65	6.66	6.66	6.67	6.67	6.67	6.73	6.74	6.74
LA.1497	6.02	6.05	6.05	6.56	6.56	6.55	6.65	6.59	6.59	6.65	6.65	6.65	6.66	6.67	6.67	6.73	6.74	6.74
LA.1497BU	6.02	6.05	6.05	6.56	6.56	6.55	6.65	6.59	6.59	6.65	6.65	6.65	6.66	6.67	6.67	6.73	6.74	6.74
LA.1497SU	0	0	0	0	0	0	0	0	0	0	0	0	0.34	0.34	0.33	0.31	0.31	0.31
LA.1497SD	0	0	0	0	0	0	0	0	0	0	0	0	0.34	0.34	0.33	0.31	0.31	0.31
LA.1497BD	6.02	6.05	6.05	6.56	6.56	6.55	6.65	6.59	6.59	6.65	6.65	6.65	6.66	6.67	6.67	6.73	6.74	6.74
LA.1873_IN	3.69	3.67	3.67	5.55	5.54	5.54	6.73	6.79	6.79	7.62	7.55	7.55	9	9.02	9.03	8.87	8.78	8.78
LA.1497D	6.02	6.05	6.05	6.56	6.56	6.55	6.65	6.59	6.59	6.65	6.65	6.65	6.66	6.67	6.67	6.73	6.74	6.74
LA.1408	6.02	6.05	6.05	7.18	7.19	7.19	7.53	7.52	7.52	7.54	7.54	7.54	7.88	7.88	7.88	7.88	7.88	7.88
LA.1362	6.02	6.05	6.05	8.97	8.98	8.98	10.78	10.81	10.8	12.33	12.33	12.33	18.64	18.57	18.56	18.14	18.06	18.05
LA.1350	6.02	6.05	6.05	8.97	8.98	8.98	10.77	10.8	10.8	12.33	12.33	12.33	18.64	18.57	18.56	18.14	18.07	18.05
LA.1350BU	6.02	6.05	6.05	8.97	8.98	8.98	10.77	10.8	10.8	12.33	12.33	12.33	18.64	18.57	18.56	18.14	18.07	18.05
LA.1350BD	6.02	6.05	6.05	8.97	8.98	8.98	10.77	10.8	10.8	12.33	12.33	12.33	18.64	18.57	18.56	18.14	18.07	18.05
LA.1873CU	3.69	3.67	3.67	5.55	5.54	5.54	6.73	6.79	6.79	7.62	7.55	7.55	9	9.02	9.03	8.87	8.78	8.78
LA.1350D	6.02	6.05	6.05	8.97	8.98	8.98	10.77	10.8	10.8	12.33	12.33	12.33	18.64	18.57	18.56	18.14	18.07	18.05
LA.0957	6.19	6.2	6.2	6.68	6.68	6.68	6.67	6.67	6.66	6.67	6.67	6.68	6.68	6.68	6.68	6.66	6.66	6.66
LA.0865	6.18	6.2	6.2	6.72	6.73	6.73	6.91	6.91	6.91	7.11	7.11	7.11	7.4	7.4	7.4	7.44	7.4	7.49
LA.0767	6.18	6.2	6.2	8.05	8.06	8.06	8.98	8.99	8.99	9.51	9.51	9.51	9.53	9.53	9.53	9.52	9.52	9.52
LA.0737	6.18	6.2	6.2	8.78	8.79	8.79	10.14	10.15	10.15	11.11	11.11	11.11	12.34	12.34	12.34	12.29	12.3	12.3
LA.0726	6.18	6.2	6.2	8.78	8.79	8.79	10.14	10.16	10.15	11.11	11.12	11.11	12.34	12.34	12.34	12.3	12.3	12.3
LA.0726BU	6.18	6.2	6.2	8.78	8.79	8.79	10.14	10.16	10.15	11.11	11.12	11.11	12.34	12.34	12.34	12.3	12.3	12.3
LA.0720BD	6.18	6.2	6.2	8.78	8.79	8.79	10.14	10.16	10.15	11.11	11.12	11.11	12.34	12.34	12.34	12.3	12.3	12.3
LA.0720	6.18	6.2	6.2	8.78	8.79	8.79	10.14	10.16	10.15	11.11	11.12	11.11	12.34	12.34	12.34	12.3	12.3	12.3
LA.0711	6.18	6.2	6.2	8.49	8.5	8.5	9.71	9.73	9.73	10.55	10.56	10.55	11.59	11.59	11.59	11.55	11.55	11.55
LA.0469	6.17	6.19	6.19	6.88	6.88	6.88	7.07	7.06	7.07	7.15	7.15	7.15	7.31	7.31	7.31	7.33	7.34	7.34
LA.0210	6.15	6.17	6.17	6.82	6.81	6.81	6.92	6.93	6.93	6.96	6.96	6.96	6.96	6.97	6.97	7.02	7.02	7.02
LA.0017	5.26	5.26	5.26	5.82	5.82	5.82	6.04	6.05	6.05	6.26	6.27	6.27	6.86	6.85	6.85	6.83	6.83	6.83
LA.1840CD	3.69	3.67	3.67	5.55	5.54	5.54	6.74	6.79	6.79	7.62	7.55	7.55	9	9.02	9.03	8.83	8.78	8.93

Node Reference	Peak Flow (m^3/s)																	
	Annual Chance Events																	
	20%			5%			2%			1%			1%+CC70%			0.1%		
	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works
LA.1840_OUT	3.69	3.67	3.67	5.55	5.54	5.54	6.74	6.79	6.79	7.62	7.55	7.55	9	9.02	9.03	8.83	8.78	8.93
LA.1777SU	0	0	0	0	0	0	0	0	0	0	0	0	0.88	0.86	0.86	0.75	0.73	0.73
LA.1777BU	3.82	3.9	3.89	5.7	5.7	5.7	7.01	7.04	7.03	7.67	7.61	7.61	9.03	9.05	9.05	9.03	9.3	8.8
LA.1773_RBD	3.82	3.9	3.89	5.7	5.7	5.7	7.01	7.04	7.03	7.67	7.61	7.61	9.03	9.05	9.05	9.03	9.3	8.8
LA.1773_R	3.82	3.9	3.89	5.7	5.7	5.7	7.01	7.04	7.03	7.67	7.61	7.61	9.03	9.05	9.05	9.03	9.3	8.8
LA.1773_RSD	0	0	0	0	0	0	0	0	0	0	0	0	0.88	0.86	0.86	0.75	0.73	0.73
LA.4998SU	0	0	0	0	0	0	0.24	0.29	0.29	0.49	0.55	0.55	1.13	1.13	1.13	1.05	1.05	1.05
LA.4998SD	0	0	0	0	0	0	0.24	0.29	0.29	0.49	0.55	0.55	1.13	1.13	1.13	1.05	1.05	1.05
LA.4493BU	2.4	2.45	2.45	2.33	2.34	2.34	2.32	2.31	2.31	2.3	2.31	2.31	2.29	2.3	2.3	2.29	2.28	2.28
LA.4493SU	0.58	0.53	0.53	2.48	2.4	2.4	3.01	3	3.01	3.23	3.25	3.25	3.35	3.37	3.37	3.34	3.35	3.35
LA.4493SD	0.58	0.53	0.53	2.48	2.4	2.4	3.01	3	3.01	3.23	3.25	3.25	3.35	3.37	3.37	3.34	3.35	3.35
LA.4493BD	2.4	2.45	2.45	2.33	2.34	2.34	2.32	2.31	2.31	2.3	2.31	2.31	2.29	2.3	2.3	2.29	2.28	2.28
LA.0726SU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LA.0726SD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BU.00d	2.45	2.44	2.44	2.59	2.6	2.6	2.81	2.81	2.81	2.97	2.98	2.98	4.18	4.16	4.15	4.02	3.99	3.99
BU.3507	1.76	1.76	1.76	2.56	2.56	2.56	3.07	3.07	3.07	3.54	3.54	3.54	5.92	5.92	5.92	6.52	6.52	6.52
BA.sweet_ii	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2
BU.3501	1.76	1.76	1.76	2.56	2.56	2.56	3.07	3.07	3.07	3.54	3.54	3.54	5.92	5.92	5.92	6.41	6.41	6.41
BU.3501u	1.76	1.76	1.76	2.56	2.56	2.56	3.07	3.07	3.07	3.54	3.54	3.54	5.92	5.92	5.92	6.41	6.41	6.41
BU.3501Sp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BU.3501d	1.76	1.76	1.76	2.56	2.56	2.56	3.07	3.07	3.07	3.54	3.54	3.54	5.92	5.92	5.92	6.41	6.41	6.41
BU.3471u	1.76	1.76	1.76	2.56	2.56	2.56	3.07	3.07	3.07	3.54	3.54	3.54	5.92	5.92	5.92	6.41	6.41	6.41
BU.3471d	1.76	1.76	1.76	2.56	2.56	2.56	3.07	3.07	3.07	3.54	3.54	3.54	5.92	5.92	5.92	6.41	6.41	6.41
BU.3471	1.76	1.76	1.76	2.56	2.56	2.56	3.07	3.07	3.07	3.54	3.54	3.54	5.92	5.92	5.92	6.41	6.41	6.41
BU.3471Sp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BU.3452	1.76	1.76	1.76	2.56	2.56	2.56	3.07	3.07	3.07	3.54	3.54	3.54	5.92	5.92	5.93	6.41	6.41	6.41
BU.3352	1.77	1.77	1.77	2.57	2.57	2.57	3.07	3.07	3.07	3.55	3.55	3.55	5.94	5.94	5.94	6.46	6.46	6.46
BU.3264	1.77	1.77	1.77	2.57	2.57	2.57	3.08	3.08	3.08	3.55	3.55	3.55	5.95	5.95	5.95	6.41	6.4	6.41
BU.3222	1.77	1.77	1.77	2.58	2.57	2.58	3.08	3.08	3.08	3.56	3.56	3.56	5.95	5.95	5.95	6.48	6.48	6.48
BU.3222u	1.77	1.77	1.77	2.58	2.57	2.58	3.08	3.08	3.08	3.56	3.56	3.56	5.95	5.95	5.95	6.48	6.48	6.48
BU.3222Sp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BU.3220d	1.77	1.77	1.77	2.58	2.57	2.58	3.08	3.08	3.08	3.56	3.56	3.56	5.95	5.95	5.95	6.48	6.48	6.48
BU.3220	1.77	1.77	1.77	2.58	2.57	2.58	3.08	3.08	3.08	3.56	3.56	3.56	5.95	5.95	5.95	6.48	6.48	6.48
BU.3220Sp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BU.3203	1.77	1.77	1.77	2.58	2.58	2.58	3.08	3.08	3.08	3.56	3.56	3.56	5.96	5.96	5.96	6.48	6.48	6.48
BU.3134	1.78	1.78	1.78	2.58	2.58	2.58	3.09	3.09	3.09	3.56	3.56	3.56	5.97	5.97	5.97	6.49	6.49	6.49
BU.3056	1.78	1.78	1.78	2.46	2.46	2.46	2.8	2.8	2.8	3.11	3.11	3.11	4.51	4.51	4.5	4.76	4.76	4.76
BU.3056u	1.78	1.78	1.78	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.9	1.9	1.9	1.9	1.9	1.9
BU.3056Sp	0	0	0	0.55	0.55	0.55	0.89	0.89	0.89	1.21	1.21	1.21	2.87	2.87	2.87	3.21	3.21	3.21
BU.3056d	1.78	1.78	1.78	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.9	1.9	1.9	1.9	1.9	1.9
BU.3049u	1.78	1.78	1.78	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.9	1.9	1.9	1.9	1.9	1.9
BU.3049d	1.78	1.78	1.78	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.9	1.9	1.9	1.9	1.9	1.9
BU.3049	1.78	1.78	1.78	2.46	2.46	2.46	2.8	2.8	2.8	3.11	3.11	3.11	4.51	4.51	4.5	4.76	4.76	4.76
BU.3049Sp	0	0	0	0.55	0.55	0.55	0.89	0.89	0.89	1.21	1.21	1.21	2.87	2.87	2.87	3.21	3.21	3.21
BU.3042	1.78	1.78	1.78	2.46	2.46	2.46	2.8	2.8	2.8	3.11	3.11	3.11	4.5	4.5	4.5	4.76	4.76	4.76
BU.2914	1.79	1.79	1.79	2.61	2.61	2.61	3.12	3.12	3.12	3.6	3.6	3.6	5.1	5.1	5.1	5.24	5.23	5.24
BU.2897	1.79	1.79	1.79	2.61	2.61	2.61	3.13	3.12	3.13	3.6	3.6	3.6	5.69	5.69	5.69	6.1	6.09	6.09
BU.2897u	1.79	1.79	1.79	2.61	2.61	2.61	3.12	3.12	3.12	3.59	3.59	3.59	4.9	4.9	4.9	5.03	5.03	5.02
BU.2897Sp	0	0	0	0	0	0	0.02	0.02	0.02	0.05	0.05	0.05	3.18	3.17	3.17	3.62	3.62	3.61
BU.2893d	1.79	1.79	1.79	2.61	2.61	2.61	3.12	3.12	3.12	3.59	3.59	3.59	4.9	4.9	4.9	5.03	5.03	5.02
BU.2893	1.79	1.79	1.79	2.61	2.61	2.61	3.13	3.12	3.13	3.6	3.6	3.6	5.69	5.69	5.69	6.1	6.09	6.09
BU.2893Sp	0	0	0	0	0	0	0.02	0.02	0.02	0.05	0.05	0.05	3.18	3.17	3.17	3.62	3.62	3.61
BU.2801	1.79	1.79	1.79	2.62	2.61	2.62	3.13	3.13	3.13	3.61	3.61	3.61	4.37	4.37	4.37	4.48	4.48	4.48
BU.2710	1.79	1.79	1.8	2.45	2.44	2.44	2.49	2.48	2.48	2.48	2.48	2.48	2.63	2.63	2.63	3	3.01	3.01
BU.2621	1.8	1.8	1.8	2.58	2.59	2.59	2.98	2.99	2.99	3.35	3.35	3.36	5.33	5.33	5.33	6.1	6.09	6.08
BU.2612	1.8	1.8	1.8	2.58	2.59	2.58	2.98	2.98	2.98	3.34	3.34	3.34	5.37	5.37	5.36	6.15	6.14	6.14

Node Reference	Peak Flow (m^3/s)																	
	Annual Chance Events																	
	20%			5%			2%			1%			1%+CC70%			0.1%		
	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works
BU.2612u	1.8	1.8	1.8	2.58	2.59	2.58	2.94	2.95	2.94	3.01	3.02	3.02	3.16	3.16	3.16	3.19	3.19	3.19
BU.2612Sp	0	0	0	0	0	0	0.29	0.33	0.33	1.42	1.41	1.41	4.02	4.03	4.02	4.62	4.61	4.6
BU.2609d	1.8	1.8	1.8	2.58	2.59	2.58	2.94	2.95	2.94	3.01	3.02	3.02	3.16	3.16	3.16	3.19	3.19	3.19
BU.2609	1.8	1.8	1.8	2.58	2.59	2.58	2.98	2.98	2.98	3.34	3.34	3.34	5.37	5.37	5.36	6.15	6.14	6.14
BU.2609Sp	0	0	0	0	0	0	0.29	0.33	0.33	1.42	1.41	1.41	4.02	4.03	4.02	4.62	4.61	4.6
BU.2588	1.8	1.8	1.8	2.57	2.57	2.57	2.95	2.96	2.96	3.31	3.31	3.31	5.65	5.66	5.64	6.48	6.48	6.49
BU.2560	1.79	1.79	1.79	2.55	2.56	2.56	2.94	2.94	2.94	3.28	3.28	3.28	4.66	4.67	4.65	5.08	5.08	5.09
BU.2533	1.79	1.79	1.79	2.54	2.55	2.55	2.92	2.93	2.93	3.27	3.26	3.26	4.56	4.56	4.56	4.78	4.77	4.78
BU.2514	1.79	1.79	1.79	2.54	2.55	2.55	2.92	2.93	2.93	3.26	3.26	3.26	4.25	4.25	4.25	4.46	4.46	4.46
BU.2514u	1.79	1.79	1.79	2.54	2.55	2.55	2.92	2.93	2.93	3.26	3.26	3.26	4.25	4.25	4.25	4.46	4.46	4.46
BU.2514d	1.79	1.79	1.79	2.54	2.55	2.55	2.92	2.93	2.93	3.26	3.26	3.26	4.25	4.25	4.25	4.46	4.46	4.46
BU.2461u	1.79	1.79	1.79	2.54	2.55	2.55	2.92	2.93	2.93	3.26	3.26	3.26	4.25	4.25	4.25	4.46	4.46	4.46
BU.2461d	1.79	1.79	1.79	2.54	2.55	2.55	2.92	2.93	2.93	3.26	3.26	3.26	4.25	4.25	4.25	4.46	4.46	4.46
BU.2461	1.79	1.79	1.79	2.54	2.55	2.55	2.92	2.93	2.93	3.26	3.26	3.26	4.25	4.25	4.25	4.46	4.46	4.46
BU.2408	1.79	1.79	1.79	2.55	2.55	2.55	2.92	2.93	2.93	3.26	3.26	3.26	4.26	4.26	4.26	4.46	4.46	4.46
BU.2408u	1.79	1.79	1.79	2.55	2.55	2.55	2.92	2.93	2.93	3.26	3.26	3.26	4.26	4.26	4.26	4.46	4.46	4.46
BU.2408Sp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BU.2397d	1.79	1.79	1.79	2.55	2.55	2.55	2.92	2.93	2.93	3.26	3.26	3.26	4.26	4.26	4.26	4.46	4.46	4.46
BU.2397	1.79	1.79	1.79	2.55	2.55	2.55	2.92	2.93	2.93	3.26	3.26	3.26	4.26	4.26	4.26	4.46	4.46	4.46
BU.2397Sp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BU.2250	1.8	1.8	1.8	2.56	2.56	2.56	2.93	2.94	2.94	3.27	3.27	3.27	4.27	4.27	4.27	4.47	4.47	4.47
BU.2229	1.8	1.8	1.8	2.56	2.56	2.56	2.93	2.94	2.94	3.27	3.27	3.27	4.27	4.27	4.27	4.47	4.47	4.47
BU.2229Lu	0.61	0.61	0.61	0.9	0.9	0.9	1.03	1.04	1.04	1.16	1.16	1.16	1.51	1.51	1.51	1.58	1.58	1.58
BU.2229Cu	0.61	0.61	0.61	0.89	0.89	0.89	1.03	1.03	1.03	1.15	1.15	1.15	1.51	1.51	1.51	1.58	1.58	1.58
BU.2229Ru	0.57	0.57	0.57	0.77	0.77	0.77	0.87	0.87	0.87	0.96	0.96	0.96	1.24	1.24	1.24	1.31	1.31	1.31
BU.2229Sp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BU.2229Ld	0.61	0.61	0.61	0.9	0.9	0.9	1.03	1.04	1.04	1.16	1.16	1.16	1.51	1.51	1.51	1.58	1.58	1.58
BU.2216Lu	0.61	0.61	0.61	0.9	0.9	0.9	1.03	1.04	1.04	1.16	1.16	1.16	1.51	1.51	1.51	1.58	1.58	1.58
BU.2216Ld	0.61	0.61	0.61	0.9	0.9	0.9	1.03	1.04	1.04	1.16	1.16	1.16	1.51	1.51	1.51	1.58	1.58	1.58
BU.2216	1.8	1.8	1.8	2.56	2.56	2.56	2.93	2.94	2.94	3.27	3.27	3.27	4.27	4.27	4.27	4.47	4.47	4.47
BU.2229Cd	0.61	0.61	0.61	0.89	0.89	0.89	1.03	1.03	1.03	1.15	1.15	1.15	1.51	1.51	1.51	1.58	1.58	1.58
BU.2216Cu	0.61	0.61	0.61	0.89	0.89	0.89	1.03	1.03	1.03	1.15	1.15	1.15	1.51	1.51	1.51	1.58	1.58	1.58
BU.2216Cd	0.61	0.61	0.61	0.89	0.89	0.89	1.03	1.03	1.03	1.15	1.15	1.15	1.51	1.51	1.51	1.58	1.58	1.58
BU.2229Rd	0.57	0.57	0.57	0.77	0.77	0.77	0.87	0.87	0.87	0.96	0.96	0.96	1.24	1.24	1.24	1.31	1.31	1.31
BU.2216Ru	0.57	0.57	0.57	0.77	0.77	0.77	0.87	0.87	0.87	0.96	0.96	0.96	1.24	1.24	1.24	1.31	1.31	1.31
BU.2216Rd	0.57	0.57	0.57	0.77	0.77	0.77	0.87	0.87	0.87	0.96	0.96	0.96	1.24	1.24	1.24	1.31	1.31	1.31
BU.2216Sp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BU.2209	1.8	1.8	1.8	2.56	2.56	2.56	2.93	2.94	2.94	3.27	3.27	3.27	4.27	4.27	4.27	4.47	4.47	4.47
BU.2134	1.8	1.81	1.8	2.56	2.56	2.56	2.94	2.94	2.94	3.28	3.28	3.28	4.27	4.27	4.27	4.47	4.47	4.47
BU.2111	1.81	1.81	1.81	2.56	2.57	2.57	2.94	2.94	2.95	3.28	3.28	3.28	4.27	4.27	4.27	4.47	4.47	4.47
BU.2111Lu	0.92	0.92	0.92	1.3	1.3	1.3	1.49	1.49	1.49	1.66	1.66	1.66	2.16	2.16	2.16	2.26	2.26	2.26
BU.2111Ru	0.88	0.88	0.88	1.26	1.26	1.26	1.45	1.45	1.45	1.62	1.62	1.62	2.12	2.12	2.12	2.21	2.21	2.21
BU.2111Sp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BU.2111Ld	0.92	0.92	0.92	1.3	1.3	1.3	1.49	1.49	1.49	1.66	1.66	1.66	2.16	2.16	2.16	2.26	2.26	2.26
BU.2092Lu	0.92	0.92	0.92	1.3	1.3	1.3	1.49	1.49	1.49	1.66	1.66	1.66	2.16	2.16	2.16	2.26	2.26	2.26
BU.2092Ld	0.92	0.92	0.92	1.3	1.3	1.3	1.49	1.49	1.49	1.66	1.66	1.66	2.16	2.16	2.16	2.26	2.26	2.26
BU.2092	1.81	1.81	1.81	2.56	2.57	2.57	2.94	2.94	2.95	3.28	3.28	3.28	4.27	4.27	4.27	4.47	4.47	4.47
BU.2111Rd	0.88	0.88	0.88	1.26	1.26	1.26	1.45	1.45	1.45	1.62	1.62	1.62	2.12	2.12	2.12	2.21	2.21	2.21
BU.2092Ru	0.88	0.88	0.88	1.26	1.26	1.26	1.45	1.45	1.45	1.62	1.62	1.62	2.12	2.12	2.12	2.21	2.21	2.21
BU.2092Rd	0.88	0.88	0.88	1.26	1.26	1.26	1.45	1.45	1.45	1.62	1.62	1.62	2.12	2.12	2.12	2.21	2.21	2.21
BU.2092Sp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BU.2089	1.81	1.81	1.81	2.56	2.57	2.57	2.94	2.94	2.95	3.28	3.28	3.28	4.27	4.27	4.27	4.47	4.47	4.47
BU.1986	1.81	1.81	1.81	2.57	2.57	2.57	2.94	2.99	2.95	3.29	3.29	3.29	4.28	4.28	4.28	4.48	4.48	4.48
BU.1986u	1.81	1.81	1.81	2.57	2.57	2.57	2.94	2.99	2.95	3.1	3.1	3.1	3.11	3.11	3.11	3.11	3.11	3.11
BU.1986Sp	0	0	0	0	0	0	0	0	0	0.19	0.19	0.19	1.43	1.43	1.43	1.74	1.74	1.74
BU.1983d	1.81	1.81	1.81	2.57	2.57	2.57	2.94	2.99	2.95	3.1	3.1	3.1	3.11	3.11	3.11	3.11	3.11	3.11

Node Reference	Peak Flow (m^3/s)																	
	Annual Chance Events																	
	20%			5%			2%			1%			1%+CC70%			0.1%		
	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works
BU.1983	1.81	1.81	1.81	2.57	2.57	2.57	2.94	2.99	2.95	3.29	3.29	3.29	4.28	4.28	4.28	4.48	4.48	4.48
BU.1983Sp	0	0	0	0	0	0	0	0	0	0.19	0.19	0.19	1.43	1.43	1.43	1.74	1.74	1.74
BU.1965	1.81	1.81	1.81	2.57	2.57	2.57	2.99	2.95	2.95	3.29	3.29	3.29	4.28	4.28	4.28	4.48	4.48	4.48
BU.1965u	1.81	1.81	1.81	2.57	2.57	2.57	2.99	2.95	2.95	3.29	3.29	3.29	4.28	4.28	4.28	4.48	4.48	4.48
BU.1965Sp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BU.1960u	1.81	1.81	1.81	2.57	2.57	2.57	2.99	2.95	2.95	3.29	3.29	3.29	4.28	4.28	4.28	4.48	4.48	4.48
BU.1960	1.81	1.81	1.81	2.57	2.57	2.57	2.99	2.95	2.95	3.29	3.29	3.29	4.28	4.28	4.28	4.48	4.48	4.48
BU.1960d	1.81	1.81	1.81	2.57	2.57	2.57	2.99	2.95	2.95	3.29	3.29	3.29	4.28	4.28	4.28	4.48	4.48	4.48
BU.1960Sp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BU.1889	1.81	1.81	1.82	2.57	2.58	2.58	2.95	3	2.96	3.29	3.29	3.29	3.83	3.83	3.83	3.82	3.82	3.82
BU.1765	1.82	1.82	1.82	2.58	2.58	2.58	2.96	2.96	2.96	3.3	3.3	3.3	4.3	4.3	4.3	4.5	4.5	4.5
BU.1765u	1.82	1.82	1.82	2.58	2.58	2.58	2.96	2.96	2.96	3.3	3.3	3.3	4.3	4.3	4.3	4.5	4.5	4.5
BU.1765Sp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BU.1764d	1.82	1.82	1.82	2.58	2.58	2.58	2.96	2.96	2.96	3.3	3.3	3.3	4.3	4.3	4.3	4.5	4.5	4.5
BU.1764	1.82	1.82	1.82	2.58	2.58	2.58	2.96	2.96	2.96	3.3	3.3	3.3	4.3	4.3	4.3	4.5	4.5	4.5
BU.1764Sp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BU.1747	1.82	1.82	1.82	2.58	2.58	2.58	2.96	2.96	2.97	3.3	3.3	3.3	4.3	4.3	4.3	4.5	4.5	4.5
BU.1747u	1.82	1.82	1.82	2.46	2.47	2.47	2.65	2.65	2.65	2.77	2.77	2.77	2.99	2.99	2.99	2.98	2.99	2.98
BU.1747Sp	0	0	0	0.12	0.12	0.12	0.31	0.31	0.31	0.53	0.53	0.53	1.32	1.32	1.32	1.52	1.52	1.52
BU.1746d	1.82	1.82	1.82	2.46	2.47	2.47	2.65	2.65	2.65	2.77	2.77	2.77	2.99	2.99	2.99	2.98	2.99	2.98
BU.1738.r	1.82	1.82	1.82	2.58	2.58	2.58	2.96	2.96	2.97	3.3	3.3	3.3	4.3	4.3	4.3	4.5	4.5	4.5
BU.1746Sp	0	0	0	0.12	0.12	0.12	0.31	0.31	0.31	0.53	0.53	0.53	1.32	1.32	1.32	1.52	1.52	1.52
BU.1741	1.82	1.82	1.82	2.58	2.58	2.58	2.96	2.96	2.97	3.3	3.3	3.3	4.3	4.3	4.3	4.5	4.5	4.5
BU.1738	1.82	1.82	1.82	2.58	2.58	2.59	2.96	2.96	2.97	3.3	3.3	3.3	4.3	4.3	4.31	4.5	4.5	4.5
BU.1738u	1.82	1.82	1.82	2.58	2.58	2.59	2.96	2.96	2.97	3.3	3.3	3.3	4.3	4.3	4.31	4.5	4.5	4.5
BU.1738Sp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BU.1737d	1.82	1.82	1.82	2.58	2.58	2.59	2.96	2.96	2.97	3.3	3.3	3.3	4.3	4.3	4.31	4.5	4.5	4.5
BU.1737Sp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BU.1737	1.82	1.82	1.82	2.58	2.58	2.59	2.96	2.96	2.97	3.3	3.3	3.3	4.3	4.3	4.31	4.5	4.5	4.5
BU.1732	1.82	1.82	1.82	2.58	2.59	2.59	2.96	2.97	2.97	3.3	3.3	3.3	4.3	4.3	4.31	4.5	4.5	4.5
BU.1732u	1.82	1.82	1.82	2.58	2.59	2.59	2.96	2.97	2.97	3.3	3.3	3.3	4.3	4.3	4.31	4.5	4.5	4.5
BU.1732Sp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BU.1732d	1.82	1.82	1.82	2.58	2.59	2.59	2.96	2.97	2.97	3.3	3.3	3.3	4.3	4.3	4.31	4.5	4.5	4.5
BU.1708	1.82	1.82	1.82	2.58	2.59	2.59	2.96	2.97	2.97	3.3	3.3	3.3	4.3	4.3	4.31	4.5	4.5	4.5
BU.1708d	1.82	1.82	1.82	2.58	2.59	2.59	2.96	2.97	2.97	3.3	3.3	3.3	4.3	4.3	4.31	4.5	4.5	4.5
BU.1708Sp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BU.1614	1.82	1.82	1.82	2.59	2.59	2.59	2.96	2.97	2.97	3.3	3.31	3.3	4.31	4.31	4.31	4.51	4.51	4.51
BU.1552	1.82	1.83	1.83	2.59	2.59	2.6	2.97	2.98	2.98	3.31	3.31	3.31	4.32	4.32	4.32	4.51	4.51	4.51
BU.1552u	1.82	1.83	1.83	2.49	2.49	2.49	2.69	2.69	2.69	2.83	2.83	2.83	3.03	3.03	3.03	3.03	3.03	3.03
BU.1552Sp	0	0	0	0.1	0.11	0.11	0.28	0.29	0.29	0.48	0.48	0.48	1.29	1.29	1.29	1.54	1.54	1.54
BU.1548d	1.82	1.83	1.83	2.49	2.49	2.49	2.69	2.69	2.69	2.83	2.83	2.83	3.03	3.03	3.03	3.03	3.03	3.03
BU.1548	1.82	1.83	1.83	2.59	2.59	2.6	2.97	2.98	2.98	3.31	3.31	3.31	4.32	4.32	4.32	4.51	4.51	4.51
BU.1548Sp	0	0	0	0.1	0.11	0.11	0.28	0.29	0.29	0.48	0.48	0.48	1.29	1.29	1.29	1.54	1.54	1.54
BU.1475	1.83	1.83	1.83	2.59	2.6	2.6	2.97	2.98	2.98	3.31	3.31	3.31	4.32	4.32	4.32	4.51	4.51	4.51
BU.1475u	1.26	1.26	1.26	1.44	1.44	1.44	1.56	1.56	1.56	1.73	1.73	1.73	2.33	2.33	2.33	2.47	2.47	2.47
BU.1475Sp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BA.556u	0.57	0.57	0.57	1.15	1.16	1.16	1.42	1.43	1.43	1.59	1.59	1.59	1.99	1.99	1.99	2.05	2.05	2.05
BU.1475d	1.26	1.26	1.26	1.44	1.44	1.44	1.56	1.56	1.56	1.73	1.73	1.73	2.33	2.33	2.33	2.47	2.47	2.47
BU.1452u	1.26	1.26	1.26	1.44	1.44	1.44	1.56	1.56	1.56	1.73	1.73	1.73	2.33	2.33	2.33	2.47	2.47	2.47
BU.1452d	1.26	1.26	1.26	1.44	1.44	1.44	1.56	1.56	1.56	1.73	1.73	1.73	2.33	2.33	2.33	2.47	2.47	2.47
BU.1452	1.26	1.26	1.26	1.44	1.44	1.44	1.56	1.56	1.56	1.73	1.73	1.73	2.33	2.33	2.33	2.47	2.47	2.47
BU.1452Sp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BU.1442	1.26	1.26	1.26	1.44	1.44	1.44	1.56	1.56	1.56	1.73	1.73	1.73	2.33	2.33	2.33	2.47	2.47	2.47
BU.1347	1.26	1.26	1.26	1.45	1.45	1.45	1.56	1.56	1.56	1.73	1.73	1.73	2.33	2.33	2.33	2.47	2.47	2.47
BU.1337	1.26	1.26	1.26	1.45	1.45	1.45	1.56	1.56	1.56	1.73	1.73	1.73	2.33	2.33	2.33	2.48	2.47	2.48
BU.1337u	1.26	1.26	1.26	1.45	1.45	1.45	1.56	1.56	1.56	1.73	1.73	1.73	2.33	2.33	2.33	2.48	2.47	2.48

Node Reference	Peak Flow (m^3/s)																	
	Annual Chance Events																	
	20%			5%			2%			1%			1%+CC70%			0.1%		
	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works
BU.1337d	1.26	1.26	1.26	1.45	1.45	1.45	1.56	1.56	1.56	1.73	1.73	1.73	2.33	2.33	2.33	2.48	2.47	2.48
BU.1301u	1.26	1.26	1.26	1.45	1.45	1.45	1.56	1.56	1.56	1.73	1.73	1.73	2.33	2.33	2.33	2.48	2.47	2.48
BU.1301d	1.26	1.26	1.26	1.45	1.45	1.45	1.56	1.56	1.56	1.73	1.73	1.73	2.33	2.33	2.33	2.48	2.47	2.48
BU.1301	1.26	1.26	1.26	1.45	1.45	1.45	1.56	1.56	1.56	1.73	1.73	1.73	2.33	2.33	2.33	2.48	2.47	2.48
BU.1274	1.26	1.27	1.27	1.45	1.45	1.45	1.53	1.53	1.53	1.58	1.58	1.58	1.66	1.66	1.66	1.68	1.68	1.68
BU.1274u	1.26	1.27	1.27	1.45	1.45	1.45	1.53	1.53	1.53	1.58	1.58	1.58	1.66	1.66	1.66	1.68	1.68	1.68
BU.1274d	1.26	1.27	1.27	1.45	1.45	1.45	1.53	1.53	1.53	1.58	1.58	1.58	1.66	1.66	1.66	1.68	1.68	1.68
BU.1170u	1.26	1.27	1.27	1.45	1.45	1.45	1.53	1.53	1.53	1.58	1.58	1.58	1.66	1.66	1.66	1.68	1.68	1.68
BU.1170d	1.26	1.27	1.27	1.45	1.45	1.45	1.53	1.53	1.53	1.58	1.58	1.58	1.66	1.66	1.66	1.68	1.68	1.68
BU.1170	1.26	1.27	1.27	1.45	1.45	1.45	1.53	1.53	1.53	1.58	1.58	1.58	1.66	1.66	1.66	1.68	1.68	1.68
BU.1149	1.27	1.27	1.27	1.45	1.45	1.45	1.53	1.53	1.53	1.59	1.59	1.59	1.66	1.66	1.66	1.68	1.68	1.68
BU.1104	1.27	1.27	1.27	1.45	1.45	1.45	1.53	1.54	1.54	1.59	1.59	1.59	1.67	1.67	1.67	1.68	1.68	1.68
BU.1104u	1.27	1.27	1.27	1.45	1.45	1.45	1.53	1.54	1.54	1.59	1.59	1.59	1.67	1.67	1.67	1.68	1.68	1.68
BU.1104Sp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BU.1100d	1.27	1.27	1.27	1.45	1.45	1.45	1.53	1.54	1.54	1.59	1.59	1.59	1.67	1.67	1.67	1.68	1.68	1.68
BU.1100	1.27	1.27	1.27	1.45	1.45	1.45	1.53	1.54	1.54	1.59	1.59	1.59	1.67	1.67	1.67	1.68	1.68	1.68
BU.1100Sp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BU.1088	1.27	1.27	1.27	1.45	1.45	1.45	1.51	1.51	1.51	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52
BU.1080	1.27	1.27	1.27	1.45	1.45	1.45	1.51	1.51	1.51	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52
BU.1080u	1.27	1.27	1.27	1.45	1.45	1.45	1.51	1.51	1.51	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52
BU.1080Sp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BU.1072d	1.27	1.27	1.27	1.45	1.45	1.45	1.51	1.51	1.51	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52
BU.1072	1.27	1.27	1.27	1.45	1.45	1.45	1.51	1.51	1.51	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52
BU.1072Sp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BU.1061	1.27	1.27	1.27	1.45	1.45	1.45	1.51	1.51	1.51	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52
BU.1061u	1.27	1.27	1.27	1.45	1.45	1.45	1.51	1.51	1.51	1.52	1.52	1.52	1.51	1.51	1.51	1.5	1.5	1.5
BU.1061Sp	0	0	0	0	0	0	0	0	0	0	0	0	0.03	0.03	0.03	0.04	0.04	0.04
BU.1059d	1.27	1.27	1.27	1.45	1.45	1.45	1.51	1.51	1.51	1.52	1.52	1.52	1.51	1.51	1.51	1.5	1.5	1.5
BU.1059	1.27	1.27	1.27	1.45	1.45	1.45	1.51	1.51	1.51	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52
BU.1059Sp	0	0	0	0	0	0	0	0	0	0	0	0	0.03	0.03	0.03	0.04	0.04	0.04
BU.1031	1.27	1.27	1.27	1.45	1.45	1.45	1.52	1.52	1.52	1.52	1.52	1.52	1.53	1.53	1.53	1.53	1.53	1.53
BU.1031u	1.27	1.27	1.27	1.45	1.45	1.45	1.52	1.52	1.52	1.52	1.52	1.52	1.53	1.53	1.53	1.53	1.53	1.53
BU.1031Sp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BU.1025d	1.27	1.27	1.27	1.45	1.45	1.45	1.52	1.52	1.52	1.52	1.52	1.52	1.53	1.53	1.53	1.53	1.53	1.53
BU.1021	1.27	1.27	1.27	1.45	1.45	1.45	1.52	1.52	1.52	1.52	1.52	1.52	1.53	1.53	1.53	1.53	1.53	1.53
BU.1025Sp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BU.1025	1.27	1.27	1.27	1.45	1.45	1.45	1.52	1.52	1.52	1.52	1.52	1.52	1.53	1.53	1.53	1.53	1.53	1.53
BU.990	1.27	1.27	1.27	1.45	1.46	1.46	1.52	1.52	1.52	1.52	1.52	1.52	1.55	1.55	1.55	1.55	1.55	1.55
BU.970	1.27	1.27	1.27	1.46	1.46	1.46	1.52	1.52	1.52	1.53	1.53	1.53	1.56	1.56	1.56	1.56	1.56	1.56
BU.970u	1.27	1.27	1.27	1.46	1.46	1.46	1.52	1.52	1.52	1.53	1.53	1.53	1.56	1.56	1.56	1.56	1.56	1.56
BU.970Sp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BU.970d	1.27	1.27	1.27	1.46	1.46	1.46	1.52	1.52	1.52	1.53	1.53	1.53	1.56	1.56	1.56	1.56	1.56	1.56
BU.962u	1.27	1.27	1.27	1.46	1.46	1.46	1.52	1.52	1.52	1.53	1.53	1.53	1.56	1.56	1.56	1.56	1.56	1.56
BU.962d	1.27	1.27	1.27	1.46	1.46	1.46	1.52	1.52	1.52	1.53	1.53	1.53	1.56	1.56	1.56	1.56	1.56	1.56
BU.962	1.27	1.27	1.27	1.46	1.46	1.46	1.52	1.52	1.52	1.53	1.53	1.53	1.56	1.56	1.56	1.56	1.56	1.56
BU.962Sp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BU.959.i	1.27	1.27	1.27	1.46	1.46	1.46	1.52	1.52	1.52	1.53	1.53	1.53	1.56	1.56	1.56	1.56	1.56	1.56
BU.959u	1.27	1.27	1.27	1.46	1.46	1.46	1.52	1.52	1.52	1.53	1.53	1.53	1.56	1.56	1.56	1.56	1.56	1.56
BU.959d	1.27	1.27	1.27	1.46	1.46	1.46	1.52	1.52	1.52	1.53	1.53	1.53	1.56	1.56	1.56	1.56	1.56	1.56
BU.910u	1.27	1.27	1.27	1.46	1.46	1.46	1.52	1.52	1.52	1.53	1.53	1.53	1.56	1.56	1.56	1.56	1.56	1.56
BU.910d	1.27	1.27	1.27	1.46	1.46	1.46	1.52	1.52	1.52	1.53	1.53	1.53	1.56	1.56	1.56	1.56	1.56	1.56
BU.908.r	1.27	1.27	1.27	1.46	1.46	1.46	1.52	1.52	1.52	1.53	1.53	1.53	1.56	1.56	1.56	1.56	1.56	1.56
BU.903	1.27	1.27	1.27	1.46	1.46	1.46	1.52	1.52	1.52	1.53	1.53	1.53	1.56	1.56	1.56	1.56	1.56	1.56
BU.903u	1.27	1.27	1.27	1.46	1.46	1.46	1.52	1.52	1.52	1.53	1.53	1.53	1.56	1.56	1.56	1.56	1.56	1.56
BU.903d	1.27	1.27	1.27	1.46	1.46	1.46	1.52	1.52	1.52	1.53	1.53	1.53	1.56	1.56	1.56	1.56	1.56	1.56
BU.890u	1.27	1.27	1.27	1.46	1.46	1.46	1.52	1.52	1.52	1.53	1.53	1.53	1.56	1.56	1.56	1.56	1.56	1.56

Node Reference	Peak Flow (m^3/s)																	
	Annual Chance Events																	
	20%			5%			2%			1%			1%+CC70%			0.1%		
	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works
BU.890d	1.27	1.27	1.27	1.46	1.46	1.46	1.52	1.52	1.52	1.53	1.53	1.53	1.56	1.56	1.56	1.56	1.56	1.56
BU.890	1.27	1.27	1.27	1.46	1.46	1.46	1.52	1.52	1.52	1.53	1.53	1.53	1.56	1.56	1.56	1.56	1.56	1.56
BU.878	1.27	1.27	1.27	1.46	1.46	1.46	1.52	1.52	1.52	1.53	1.53	1.53	1.57	1.57	1.57	1.57	1.57	1.57
BU.878u	1.27	1.27	1.27	1.46	1.46	1.46	1.52	1.52	1.52	1.53	1.53	1.53	1.57	1.57	1.57	1.57	1.57	1.57
BU.878Sp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BU.874d	1.27	1.27	1.27	1.46	1.46	1.46	1.52	1.52	1.52	1.53	1.53	1.53	1.57	1.57	1.57	1.57	1.57	1.57
BU.874	1.27	1.27	1.27	1.46	1.46	1.46	1.52	1.52	1.52	1.53	1.53	1.53	1.57	1.57	1.57	1.57	1.57	1.57
BU.874Sp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BU.BA.Sp1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BU.853.LHS	1.27	1.27	1.27	1.46	1.46	1.46	1.52	1.52	1.52	1.53	1.53	1.53	1.58	1.58	1.58	1.59	1.59	1.59
BU.853	1.84	1.84	1.84	2.61	2.61	2.61	2.95	2.95	2.95	3.15	3.15	3.15	3.65	3.64	3.65	3.69	3.69	3.69
BA.00	0.77	0.77	0.77	1.35	1.36	1.36	1.63	1.64	1.64	1.82	1.82	1.82	2.28	2.28	2.28	2.33	2.33	2.33
PI.1.1871_IN	0.06	0.06	0.06	0.13	0.13	0.13	0.18	0.18	0.18	0.22	0.22	0.22	0.37	0.37	0.37	0.49	0.49	0.49
PI.1.1871_BF	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
BU.847	1.84	1.84	1.84	2.61	2.61	2.61	2.95	2.95	2.95	3.15	3.15	3.15	3.65	3.65	3.65	3.69	3.69	3.69
BU.747	1.84	1.85	1.85	2.61	2.62	2.62	2.95	2.96	2.96	3.16	3.16	3.16	3.66	3.66	3.66	3.7	3.7	3.7
BU.649	1.8	1.8	1.8	1.86	1.86	1.86	1.83	1.83	1.83	1.79	1.79	1.79	1.69	1.69	1.69	1.68	1.68	1.68
BU.622	1.85	1.85	1.85	2.03	2.03	2.02	1.98	1.98	1.98	1.97	1.97	1.97	1.84	1.84	1.84	1.81	1.81	1.81
BU.616	1.85	1.85	1.85	2.03	2.03	2.02	1.98	1.98	1.98	1.97	1.97	1.97	1.85	1.85	1.85	1.81	1.81	1.81
BU.616Or	1.85	1.85	1.85	2.03	2.03	2.02	1.98	1.98	1.98	1.97	1.97	1.97	1.85	1.85	1.85	1.81	1.81	1.81
BU.616Sp	0	0	0	0	0	0	0	0	0	0	0	0	0.05	0.05	0.05	0.06	0.06	0.06
BU.615Or	1.85	1.85	1.85	2.03	2.03	2.02	1.98	1.98	1.98	1.97	1.97	1.97	1.85	1.85	1.85	1.81	1.81	1.81
BU.615Sp	0	0	0	0	0	0	0	0	0	0	0	0	0.05	0.05	0.05	0.06	0.06	0.06
BU.615	1.85	1.85	1.85	2.03	2.03	2.02	1.98	1.98	1.98	1.97	1.97	1.97	1.85	1.85	1.85	1.81	1.81	1.81
BU.598	1.85	1.85	1.85	2.03	2.03	2.03	1.98	1.98	1.98	1.98	1.97	1.98	1.85	1.85	1.85	1.82	1.82	1.82
BU.598u	2.46	2.46	2.46	2.85	2.86	2.86	3	3	3	3.15	3.15	3.15	3.58	3.58	3.58	3.57	3.57	3.57
BU.598Sp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BU.598d	2.46	2.46	2.46	2.85	2.86	2.86	3	3	3	3.15	3.15	3.15	3.58	3.58	3.58	3.57	3.57	3.57
BU.576u	2.46	2.46	2.46	2.85	2.86	2.86	3	3	3	3.15	3.15	3.15	3.58	3.58	3.58	3.57	3.57	3.57
BU.576d	2.46	2.46	2.46	2.85	2.86	2.86	3	3	3	3.15	3.15	3.15	3.58	3.58	3.58	3.57	3.57	3.57
BU.576	2.46	2.46	2.46	2.85	2.86	2.86	3	3	3	3.15	3.15	3.15	3.58	3.58	3.58	3.57	3.57	3.57
BU.576Sp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BU.567	2.46	2.46	2.46	2.86	2.86	2.86	3	3	3	3.15	3.15	3.15	3.58	3.58	3.58	3.59	3.58	3.59
BU.520	2.47	2.47	2.47	2.88	2.88	2.88	3.02	3.02	3.02	3.17	3.17	3.17	3.61	3.61	3.61	3.6	3.6	3.6
BU.472	2.38	2.39	2.39	2.43	2.43	2.43	2.47	2.48	2.48	2.63	2.63	2.63	2.78	2.78	2.78	2.93	2.93	2.93
BU.426	2.49	2.51	2.51	2.98	3	3	3.44	3.46	3.46	3.92	3.91	3.91	5.95	5.96	5.96	6.28	6.28	6.28
BU.380	2.5	2.51	2.51	3	3.01	3.01	3.45	3.47	3.47	3.92	3.92	3.92	5.98	5.97	5.97	6.3	6.3	6.3
BU.370	2.5	2.51	2.51	3	3.01	3.01	3.45	3.47	3.47	3.92	3.92	3.92	5.98	5.97	5.97	6.3	6.3	6.3
BU.350	2.51	2.52	2.52	3	3.01	3.02	3.45	3.47	3.47	3.92	3.92	3.92	5.98	5.98	5.97	6.3	6.3	6.3
BU.301	2.51	2.52	2.52	3.02	3.03	3.03	3.45	3.47	3.47	3.92	3.93	3.93	5.59	5.59	5.59	5.72	5.72	5.72
BU.252	2.52	2.53	2.53	3.03	3.04	3.04	3.46	3.47	3.47	3.93	3.93	3.93	5.44	5.44	5.44	5.55	5.55	5.55
BU.229	2.52	2.53	2.53	3.03	3.05	3.05	3.44	3.45	3.45	3.86	3.86	3.86	5.02	5.02	5.02	5.15	5.15	5.15
BU.206	2.53	2.53	2.53	3.04	3.05	3.05	3.2	3.23	3.23	3.82	3.82	3.82	9.44	9.39	9.38	9.2	9.15	9.14
BU.200	2.53	2.53	2.53	3.04	3.06	3.05	3.2	3.23	3.23	3.82	3.82	3.82	9.44	9.39	9.39	9.2	9.15	9.14
BU.200u	2.53	2.53	2.53	3.04	3.06	3.05	3.2	3.23	3.23	3.82	3.82	3.82	9.44	9.39	9.39	9.2	9.15	9.14
BU.200d	2.53	2.53	2.53	3.04	3.06	3.05	3.2	3.23	3.23	3.82	3.82	3.82	9.44	9.39	9.39	9.2	9.15	9.14
BU.150u	2.52	2.53	2.53	3.04	3.05	3.05	3.21	3.23	3.23	3.82	3.82	3.82	9.44	9.39	9.39	9.2	9.15	9.14
BU.150d	2.52	2.53	2.53	3.04	3.05	3.05	3.21	3.23	3.23	3.82	3.82	3.82	9.44	9.39	9.39	9.2	9.15	9.14
BU.150	2.52	2.53	2.53	3.04	3.05	3.05	3.21	3.23	3.23	3.82	3.82	3.82	9.44	9.39	9.39	9.2	9.15	9.14
BU.139	2.53	2.53	2.53	3.04	3.06	3.06	3.21	3.23	3.23	3.8	3.8	3.8	8.23	8.21	8.2	8.12	8.08	8.08
BU.139.r	2.53	2.53	2.53	3.04	3.06	3.06	3.21	3.23	3.23	3.8	3.8	3.8	8.23	8.21	8.2	8.12	8.08	8.08
BU.139d	2.53	2.53	2.53	3.04	3.06	3.06	3.21	3.23	3.23	3.8	3.8	3.8	8.23	8.21	8.2	8.12	8.08	8.08
BU.64	2.53	2.54	2.54	2.91	2.92	2.92	2.9	2.89	2.89	2.92	2.92	2.92	2.89	2.89	2.89	2.96	2.96	2.96
BU.15	2.45	2.44	2.44	2.85	2.85	2.85	3.2	3.2	3.2	3.4	3.4	3.4	4.62	4.6	4.6	4.46	4.44	4.43
BU.00	2.45	2.44	2.44	2.59	2.6	2.6	2.81	2.81	2.81	2.97	2.98	2.98	4.18	4.16	4.15	4.02	3.99	3.99
BA.556	0.57	0.57	0.57	1.15	1.16	1.16	1.42	1.43	1.43	1.59	1.59	1.59	1.99	1.99	1.99	2.05	2.05	2.05

Node Reference	Peak Flow (m^3/s)																	
	Annual Chance Events																	
	20%			5%			2%			1%			1%+CC70%			0.1%		
	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works
BA.556d	0.77	0.77	0.77	1.35	1.36	1.36	1.62	1.63	1.63	1.79	1.79	1.79	2.19	2.19	2.19	2.25	2.25	2.25
BA.353u	0.77	0.77	0.77	1.35	1.36	1.36	1.62	1.62	1.62	1.79	1.79	1.79	2.2	2.2	2.19	2.25	2.25	2.25
BA.353d	0.77	0.77	0.77	1.35	1.36	1.36	1.62	1.62	1.62	1.79	1.79	1.79	2.2	2.2	2.19	2.25	2.25	2.25
BA.353	0.77	0.77	0.77	1.35	1.36	1.36	1.62	1.62	1.62	1.79	1.79	1.79	2.2	2.2	2.19	2.25	2.25	2.25
BA.324	0.77	0.77	0.77	1.35	1.36	1.36	1.62	1.62	1.62	1.79	1.79	1.79	2.06	2.06	2.06	2.08	2.11	2.1
BA.310	0.77	0.77	0.77	1.35	1.36	1.36	1.62	1.62	1.62	1.79	1.79	1.79	2.08	2.09	2.09	2.1	2.1	2.1
BA.310u	0.77	0.77	0.77	1.35	1.36	1.36	1.62	1.62	1.62	1.79	1.79	1.79	2.08	2.09	2.09	2.1	2.1	2.1
BA.310d	0.77	0.77	0.77	1.35	1.36	1.36	1.62	1.62	1.62	1.79	1.79	1.79	2.08	2.09	2.09	2.1	2.1	2.1
BA.274u	0.77	0.77	0.77	1.35	1.36	1.36	1.62	1.62	1.62	1.79	1.79	1.79	2.08	2.09	2.09	2.1	2.1	2.1
BA.274d	0.77	0.77	0.77	1.35	1.36	1.36	1.62	1.62	1.62	1.79	1.79	1.79	2.08	2.09	2.09	2.1	2.1	2.1
BA.274	0.77	0.77	0.77	1.35	1.36	1.36	1.62	1.62	1.62	1.79	1.79	1.79	2.08	2.09	2.09	2.1	2.1	2.1
BA.228	0.77	0.77	0.77	1.35	1.36	1.36	1.62	1.62	1.62	1.79	1.79	1.79	2.08	2.08	2.08	2.1	2.1	2.1
BA.228u	0.77	0.77	0.77	1.35	1.36	1.36	1.62	1.62	1.62	1.79	1.79	1.79	1.96	1.96	1.96	1.95	1.95	1.95
BA.228Sp	0	0	0	0	0	0	0	0	0	0	0	0	0.29	0.29	0.29	0.34	0.34	0.34
BA.221d	0.77	0.77	0.77	1.35	1.36	1.36	1.62	1.62	1.62	1.79	1.79	1.79	1.96	1.96	1.96	1.95	1.95	1.95
BA.221	0.77	0.77	0.77	1.35	1.36	1.36	1.62	1.62	1.62	1.79	1.79	1.79	2.08	2.08	2.08	2.1	2.1	2.1
BA.221Sp	0	0	0	0	0	0	0	0	0	0	0	0	0.29	0.29	0.29	0.34	0.34	0.34
BA.198	0.77	0.77	0.77	1.35	1.36	1.36	1.63	1.64	1.64	1.82	1.82	1.82	2.2	2.2	2.2	2.22	2.22	2.22
BA.198u	0.77	0.77	0.77	1.35	1.36	1.36	1.63	1.64	1.64	1.82	1.82	1.82	2.2	2.2	2.2	2.22	2.22	2.22
BA.198d	0.77	0.77	0.77	1.35	1.36	1.36	1.63	1.64	1.64	1.82	1.82	1.82	2.2	2.2	2.2	2.22	2.22	2.22
BA.128u	0.77	0.77	0.77	1.35	1.36	1.36	1.63	1.64	1.64	1.82	1.82	1.82	2.2	2.2	2.2	2.22	2.22	2.22
BA.128d	0.77	0.77	0.77	1.35	1.36	1.36	1.63	1.64	1.64	1.82	1.82	1.82	2.2	2.2	2.2	2.22	2.22	2.22
BA.128	0.77	0.77	0.77	1.35	1.36	1.36	1.63	1.64	1.64	1.82	1.82	1.82	2.2	2.2	2.2	2.22	2.22	2.22
BA.76	0.77	0.77	0.77	1.35	1.36	1.36	1.63	1.64	1.64	1.82	1.82	1.82	2.2	2.2	2.2	2.22	2.22	2.22
BA.76u	0.77	0.77	0.77	1.35	1.36	1.36	1.63	1.64	1.64	1.82	1.82	1.82	2.2	2.2	2.2	2.22	2.22	2.22
BA.76d	0.77	0.77	0.77	1.35	1.36	1.36	1.63	1.64	1.64	1.82	1.82	1.82	2.2	2.2	2.2	2.22	2.22	2.22
BA.22u	0.77	0.77	0.77	1.35	1.36	1.36	1.63	1.64	1.64	1.82	1.82	1.82	2.2	2.2	2.2	2.22	2.22	2.22
BA.22d	0.77	0.77	0.77	1.35	1.36	1.36	1.63	1.64	1.64	1.82	1.82	1.82	2.2	2.2	2.2	2.22	2.22	2.22
BA.22	0.77	0.77	0.77	1.35	1.36	1.36	1.63	1.64	1.64	1.82	1.82	1.82	2.2	2.2	2.2	2.22	2.22	2.22
BA.BU.Sp1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PI.1871	0.16	0.16	0.16	0.23	0.23	0.23	0.28	0.28	0.28	0.32	0.32	0.32	0.47	0.47	0.47	0.59	0.59	0.59
PI.1845	0.17	0.17	0.17	0.24	0.24	0.24	0.29	0.29	0.29	0.34	0.34	0.34	0.41	0.41	0.41	0.44	0.44	0.44
PI.1845BU	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
PI.1845SU	0	0	0	0.12	0.12	0.12	0.19	0.19	0.19	0.26	0.26	0.26	0.35	0.35	0.35	0.39	0.39	0.39
PI.1845SD	0	0	0	0.12	0.12	0.12	0.19	0.19	0.19	0.26	0.26	0.26	0.35	0.35	0.35	0.39	0.39	0.39
PI.1845BD	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
PI.1842	0.17	0.17	0.17	0.24	0.24	0.24	0.29	0.29	0.29	0.34	0.34	0.34	0.41	0.41	0.41	0.44	0.44	0.44
PI.1710	0.23	0.23	0.23	0.32	0.32	0.32	0.34	0.34	0.34	0.38	0.38	0.38	0.47	0.47	0.47	0.48	0.48	0.48
PI.1710SU	0	0	0	0.17	0.18	0.17	0.27	0.28	0.27	0.36	0.36	0.36	0.46	0.46	0.46	0.47	0.47	0.47
PI.1710BU	0.22	0.22	0.22	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23
PI.1710SD	0	0	0	0.17	0.18	0.17	0.27	0.28	0.27	0.36	0.36	0.36	0.46	0.46	0.46	0.47	0.47	0.47
PI.1710BD	0.22	0.22	0.22	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23
PI.1708	0.23	0.23	0.23	0.32	0.32	0.32	0.34	0.34	0.34	0.38	0.38	0.38	0.47	0.47	0.47	0.48	0.48	0.48
PI.1697	0.23	0.23	0.23	0.32	0.32	0.32	0.35	0.35	0.35	0.39	0.39	0.39	0.61	0.61	0.61	0.69	0.69	0.69
PI.1697SU	0	0	0	0	0	0	0	0	0	0.01	0.01	0.01	0.18	0.18	0.18	0.24	0.24	0.24
PI.1697BU	0.23	0.23	0.23	0.32	0.32	0.32	0.35	0.35	0.35	0.38	0.38	0.38	0.43	0.43	0.43	0.44	0.44	0.44
PI.1697SD	0	0	0	0	0	0	0	0	0	0.01	0.01	0.01	0.18	0.18	0.18	0.24	0.24	0.24
PI.1687BD	0.23	0.23	0.23	0.32	0.32	0.32	0.35	0.35	0.35	0.38	0.38	0.38	0.43	0.43	0.43	0.44	0.44	0.44
PI.1687	0.23	0.23	0.23	0.32	0.32	0.32	0.35	0.35	0.35	0.39	0.39	0.39	0.61	0.61	0.61	0.69	0.69	0.69
PI.1675	0.25	0.25	0.25	0.35	0.35	0.35	0.38	0.38	0.38	0.4	0.4	0.4	0.65	0.65	0.65	0.79	0.79	0.79
PI.1642	0.27	0.27	0.27	0.37	0.37	0.37	0.41	0.41	0.41	0.42	0.42	0.42	0.68	0.68	0.68	0.82	0.82	0.82
PI.1642SU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PI.1642BU	0.27	0.27	0.27	0.37	0.37	0.37	0.41	0.41	0.41	0.42	0.42	0.42	0.68	0.68	0.68	0.82	0.82	0.82
PI.1642SD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PI.1642BD	0.27	0.27	0.27	0.37	0.37	0.37	0.41	0.41	0.41	0.42	0.42	0.42	0.68	0.68	0.68	0.82	0.82	0.82
PI.1640	0.27	0.27	0.27	0.37	0.37	0.37	0.41	0.41	0.41	0.42	0.42	0.42	0.68	0.68	0.68	0.82	0.82	0.82

Node Reference	Peak Flow (m^3/s)																	
	Annual Chance Events																	
	20%			5%			2%			1%			1%+CC70%			0.1%		
	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works
PI.1580	0.29	0.29	0.29	0.41	0.41	0.41	0.46	0.46	0.46	0.47	0.47	0.47	0.75	0.75	0.75	0.89	0.89	0.89
PI.1580SU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PI.1580I	0.29	0.29	0.29	0.41	0.41	0.41	0.46	0.46	0.46	0.47	0.47	0.47	0.75	0.75	0.75	0.89	0.89	0.89
PI.1580SD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PI.1580CU	0.29	0.29	0.29	0.41	0.41	0.41	0.46	0.46	0.46	0.47	0.47	0.47	0.75	0.75	0.75	0.89	0.89	0.89
PI.1570CD	0.29	0.29	0.29	0.41	0.41	0.41	0.46	0.46	0.46	0.47	0.47	0.47	0.75	0.75	0.75	0.89	0.89	0.89
PI.1570U	0.29	0.29	0.29	0.41	0.41	0.41	0.46	0.46	0.46	0.47	0.47	0.47	0.75	0.75	0.75	0.89	0.89	0.89
PI.1570	0.29	0.29	0.29	0.41	0.41	0.41	0.46	0.46	0.46	0.47	0.47	0.47	0.75	0.75	0.75	0.89	0.89	0.89
PI.1455	0.35	0.35	0.35	0.48	0.48	0.48	0.55	0.55	0.55	0.57	0.57	0.57	0.89	0.89	0.89	1.02	1.02	1.02
PI.1410	0.37	0.37	0.37	0.51	0.51	0.51	0.58	0.58	0.58	0.62	0.62	0.62	0.94	0.94	0.94	1.05	1.05	1.05
PI.1410SU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PI.1410I	0.37	0.37	0.37	0.51	0.51	0.51	0.58	0.58	0.58	0.62	0.62	0.62	0.94	0.94	0.94	1.05	1.05	1.05
PI.1410SD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PI.1410CU	0.37	0.37	0.37	0.51	0.51	0.51	0.58	0.58	0.58	0.62	0.62	0.62	0.94	0.94	0.94	1.05	1.05	1.05
PI.1397CD	0.37	0.37	0.37	0.51	0.51	0.51	0.58	0.58	0.58	0.62	0.62	0.62	0.94	0.94	0.94	1.05	1.05	1.05
PI.1397U	0.37	0.37	0.37	0.51	0.51	0.51	0.58	0.58	0.58	0.62	0.62	0.62	0.94	0.94	0.94	1.05	1.05	1.05
PI.1397	0.37	0.37	0.37	0.51	0.51	0.51	0.58	0.58	0.58	0.62	0.62	0.62	0.94	0.94	0.94	1.05	1.05	1.05
PI.1389	0.37	0.37	0.37	0.52	0.52	0.52	0.59	0.59	0.59	0.62	0.62	0.62	0.95	0.95	0.95	1.05	1.05	1.05
PI.1389SU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PI.1389I	0.37	0.37	0.37	0.52	0.52	0.52	0.59	0.59	0.59	0.62	0.62	0.62	0.95	0.95	0.95	1.05	1.05	1.05
PI.1389SD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PI.1389CU	0.37	0.37	0.37	0.52	0.52	0.52	0.59	0.59	0.59	0.62	0.62	0.62	0.95	0.95	0.95	1.05	1.05	1.05
PI.1384CD	0.37	0.37	0.37	0.52	0.52	0.52	0.59	0.59	0.59	0.62	0.62	0.62	0.95	0.95	0.95	1.05	1.05	1.05
PI.1384U	0.37	0.37	0.37	0.52	0.52	0.52	0.59	0.59	0.59	0.62	0.62	0.62	0.95	0.95	0.95	1.05	1.05	1.05
PI.1384	0.37	0.37	0.37	0.52	0.52	0.52	0.59	0.59	0.59	0.62	0.62	0.62	0.95	0.95	0.95	1.05	1.05	1.05
PI.1147	0.48	0.48	0.48	0.67	0.67	0.67	0.77	0.77	0.77	0.84	0.84	0.84	1.26	1.26	1.26	1.36	1.36	1.36
PI.0896	0.6	0.6	0.6	0.83	0.84	0.84	0.97	0.97	0.97	1.06	1.06	1.06	1.61	1.61	1.61	1.73	1.72	1.73
PI.0620	0.72	0.72	0.72	1.01	1.01	1.02	1.18	1.18	1.19	1.31	1.31	1.31	2.02	2.02	2.02	2.15	2.15	2.15
PI.0620SU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PI.0620I	0.72	0.72	0.72	1.01	1.01	1.02	1.18	1.18	1.19	1.31	1.31	1.31	2.02	2.02	2.02	2.15	2.15	2.15
PI.0620SD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PI.0620CU	0.72	0.72	0.72	1.01	1.01	1.02	1.18	1.18	1.19	1.31	1.31	1.31	2.02	2.02	2.02	2.15	2.15	2.15
PI.0595CD	0.72	0.72	0.72	1.01	1.01	1.02	1.18	1.18	1.19	1.31	1.31	1.31	2.02	2.02	2.02	2.15	2.15	2.15
PI.0595U	0.72	0.72	0.72	1.01	1.01	1.02	1.18	1.18	1.19	1.31	1.31	1.31	2.02	2.02	2.02	2.15	2.15	2.15
PI.0595	0.72	0.72	0.72	1.01	1.01	1.02	1.18	1.18	1.19	1.31	1.31	1.31	2.02	2.02	2.02	2.15	2.15	2.15
PI.0493	0.77	0.77	0.77	1.08	1.08	1.08	1.26	1.26	1.26	1.4	1.4	1.4	2.17	2.16	2.16	2.3	2.3	2.3
PI.0400	0.81	0.81	0.81	1.14	1.14	1.14	1.33	1.34	1.34	1.49	1.49	1.49	2.28	2.28	2.28	2.37	2.37	2.37
PI.0400SU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PI.0400BU	0.81	0.81	0.81	1.14	1.14	1.14	1.33	1.34	1.34	1.49	1.49	1.49	2.41	2.41	2.41	2.54	2.54	2.53
PI.0400SD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PI.0400BD	0.81	0.81	0.81	1.14	1.14	1.14	1.33	1.34	1.34	1.49	1.49	1.49	2.41	2.41	2.41	2.54	2.54	2.53
PI.0399	0.81	0.81	0.81	1.14	1.14	1.14	1.33	1.34	1.34	1.49	1.49	1.49	2.28	2.28	2.28	2.37	2.37	2.37
PI.0292	0.86	0.86	0.86	1.21	1.21	1.21	1.42	1.42	1.42	1.58	1.58	1.58	2.43	2.43	2.43	2.54	2.54	2.54
PI.0185	0.91	0.91	0.91	1.28	1.28	1.28	1.5	1.5	1.5	1.68	1.68	1.68	2.58	2.58	2.58	2.68	2.68	2.67
PI.0169	0.91	0.91	0.92	1.29	1.29	1.29	1.51	1.51	1.51	1.69	1.69	1.69	2.61	2.6	2.61	2.7	2.7	2.7
PI.0169SU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PI.0169BU	0.91	0.91	0.92	1.29	1.29	1.29	1.51	1.51	1.51	1.69	1.69	1.69	2.61	2.6	2.61	2.7	2.7	2.7
PI.0169SD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PI.0169BD	0.91	0.91	0.92	1.29	1.29	1.29	1.51	1.51	1.51	1.69	1.69	1.69	2.61	2.6	2.61	2.7	2.7	2.7
PI.0165	0.91	0.91	0.92	1.29	1.29	1.29	1.51	1.51	1.51	1.69	1.69	1.69	2.61	2.6	2.61	2.7	2.7	2.7
PI.0020	0.97	0.97	0.97	1.33	1.33	1.33	1.52	1.53	1.53	1.73	1.73	1.73	1.93	1.93	1.93	1.94	1.93	1.94
PI.0000	0.97	0.98	0.98	1.34	1.34	1.34	1.51	1.5	1.5	1.71	1.71	1.71	2.53	2.53	2.53	2.62	2.62	2.62
LA.1.6715_IN	2.33	2.33	2.33	4.2	4.2	4.2	5.8	5.8	5.8	6.82	6.82	6.82	11.59	11.59	11.59	10.92	10.92	10.92
LA.1.6715_BF	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
LA.2_IN	0.44	0.44	0.44	0.88	0.88	0.88	1.28	1.28	1.28	1.55	1.55	1.55	2.64	2.64	2.64	2.78	2.78	2.78
LA.3_IN	2.21	2.21	2.21	3.97	3.97	3.97	5.47	5.47	5.47	6.43	6.43	6.43	10.93	10.93	10.93	10.25	10.25	10.25

Node Reference	Peak Flow (m^3/s)																	
	Annual Chance Events																	
	20%			5%			2%			1%			1%+CC70%			0.1%		
	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works
BA.sweet_i	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
PI.2_IN	0.86	0.86	0.86	1.22	1.22	1.22	1.45	1.45	1.45	1.66	1.66	1.66	2.83	2.83	2.83	2.99	2.99	2.99
BU.1.3507_IN	1.62	1.62	1.62	2.42	2.42	2.42	2.93	2.93	2.93	3.4	3.4	3.4	5.78	5.78	5.78	6.38	6.38	6.38
BU.1.3507_BF	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
BU.2_IN	0.71	0.71	0.71	1.02	1.02	1.02	1.21	1.21	1.21	1.39	1.39	1.39	2.37	2.37	2.37	2.53	2.53	2.53
LA.4_IN	1.02	1.02	1.02	1.8	1.8	1.8	2.47	2.47	2.47	2.89	2.89	2.89	4.9	4.9	4.9	4.52	4.52	4.52
PI.1871_L	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.04	0.04	0.04	0.04	0.04	0.04
PI.1842_L	0.06	0.06	0.06	0.09	0.09	0.09	0.11	0.11	0.11	0.12	0.12	0.12	0.2	0.2	0.2	0.22	0.22	0.22
PI.1708_L	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02
PI.1687_L	0.02	0.02	0.02	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.07	0.07	0.07	0.07	0.07	0.07
PI.1675_L	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.05	0.05	0.05	0.05	0.05	0.05
PI.1640_L	0.03	0.03	0.03	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.05	0.09	0.09	0.09	0.1	0.1	0.1
PI.1570_L	0.05	0.05	0.05	0.08	0.08	0.08	0.09	0.09	0.09	0.11	0.11	0.11	0.18	0.18	0.18	0.19	0.19	0.19
PI.1455_L	0.02	0.02	0.02	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.07	0.07	0.07	0.07	0.07	0.07
PI.1397_L	0	0	0	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
PI.1384_L	0.11	0.11	0.11	0.16	0.16	0.16	0.19	0.19	0.19	0.22	0.22	0.22	0.37	0.37	0.37	0.39	0.39	0.39
PI.1147_L	0.12	0.12	0.12	0.17	0.17	0.17	0.2	0.2	0.2	0.23	0.23	0.23	0.39	0.39	0.39	0.41	0.41	0.41
PI.0896_L	0.13	0.13	0.13	0.19	0.19	0.19	0.22	0.22	0.22	0.25	0.25	0.25	0.43	0.43	0.43	0.45	0.45	0.45
PI.0595_L	0.05	0.05	0.05	0.07	0.07	0.07	0.08	0.08	0.08	0.09	0.09	0.09	0.16	0.16	0.16	0.17	0.17	0.17
PI.0493_L	0.04	0.04	0.04	0.06	0.06	0.06	0.07	0.07	0.07	0.08	0.08	0.08	0.14	0.14	0.14	0.15	0.15	0.15
PI.0399_L	0.05	0.05	0.05	0.07	0.07	0.07	0.08	0.08	0.08	0.1	0.1	0.1	0.17	0.17	0.17	0.18	0.18	0.18
PI.0292_L	0.05	0.05	0.05	0.07	0.07	0.07	0.08	0.08	0.08	0.1	0.1	0.1	0.17	0.17	0.17	0.18	0.18	0.18
PI.0185_L	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.03	0.03	0.03
PI.0165_L	0.07	0.07	0.07	0.1	0.1	0.1	0.12	0.12	0.12	0.13	0.13	0.13	0.22	0.22	0.22	0.24	0.24	0.24
PI.0020_L	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.03
LA.1589d_L	0.41	0.41	0.41	0.72	0.72	0.72	0.99	0.99	0.99	1.15	1.15	1.15	1.96	1.96	1.96	1.81	1.81	1.81
LA.1350D_L	0.2	0.2	0.2	0.36	0.36	0.36	0.49	0.49	0.49	0.58	0.58	0.58	0.98	0.98	0.98	0.9	0.9	0.9
LA.0210_L	0.2	0.2	0.2	0.36	0.36	0.36	0.49	0.49	0.49	0.58	0.58	0.58	0.98	0.98	0.98	0.9	0.9	0.9
LA.0017_L	0.2	0.2	0.2	0.36	0.36	0.36	0.49	0.49	0.49	0.58	0.58	0.58	0.98	0.98	0.98	0.9	0.9	0.9
LA.1840_L	0.44	0.44	0.44	0.79	0.79	0.79	1.09	1.09	1.09	1.29	1.29	1.29	2.19	2.19	2.19	2.05	2.05	2.05
LA.2060_L	0.22	0.22	0.22	0.4	0.4	0.4	0.55	0.55	0.55	0.64	0.64	0.64	1.09	1.09	1.09	1.02	1.02	1.02
LA.2625_R_L	0.66	0.66	0.66	1.19	1.19	1.19	1.64	1.64	1.64	1.93	1.93	1.93	3.28	3.28	3.28	3.07	3.07	3.07
LA.3919_L	0.88	0.88	0.88	1.59	1.59	1.59	2.19	2.19	2.19	2.57	2.57	2.57	4.37	4.37	4.37	4.1	4.1	4.1
LA.4493D_L	0.09	0.09	0.09	0.18	0.18	0.18	0.26	0.26	0.26	0.31	0.31	0.31	0.53	0.53	0.53	0.56	0.56	0.56
LA.5098_L	0.31	0.31	0.31	0.62	0.62	0.62	0.9	0.9	0.9	1.09	1.09	1.09	1.85	1.85	1.85	1.94	1.94	1.94
LA.5966_L	0.04	0.04	0.04	0.09	0.09	0.09	0.13	0.13	0.13	0.16	0.16	0.16	0.26	0.26	0.26	0.28	0.28	0.28
BU.3507_L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0.01	0.01
BU.3471_L	0	0	0	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02
BU.3452_L	0.02	0.02	0.02	0.03	0.03	0.03	0.04	0.04	0.04	0.05	0.05	0.05	0.08	0.08	0.08	0.08	0.08	0.08
BU.3352_L	0.02	0.02	0.02	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.07	0.07	0.07	0.07	0.07	0.07
BU.3264_L	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.04	0.04	0.04
BU.3220_L	0	0	0	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
BU.3203_L	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.05	0.05	0.05	0.06	0.06	0.06
BU.3134_L	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.06	0.06	0.06	0.07	0.07	0.07
BU.3049_L	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0.01	0.01	0.01	0.01	0.01
BU.3042_L	0.03	0.03	0.03	0.04	0.04	0.04	0.05	0.05	0.05	0.06	0.06	0.06	0.1	0.1	0.1	0.11	0.11	0.11
BU.2914_L	0	0	0	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
BU.2893_L	0.02	0.02	0.02	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.07	0.07	0.07	0.08	0.08	0.08
BU.2801_L	0.02	0.02	0.02	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.07	0.07	0.07	0.08	0.08	0.08
BU.2710_L	0.02	0.02	0.02	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.07	0.07	0.07	0.08	0.08	0.08
BU.2621_L	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0.01	0.01	0.01	0.01	0.01
BU.2609_L	0	0	0	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02
BU.2588_L	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02
BU.2560_L	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02
BU.2533_L	0	0	0	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02
BU.2461_L	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.04	0.04	0.04	0.04	0.04	0.04

Node Reference	Peak Flow (m^3/s)																	
	Annual Chance Events																	
	20%			5%			2%			1%			1%+CC70%			0.1%		
	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works
BU.2397_L	0.03	0.03	0.03	0.05	0.05	0.05	0.06	0.06	0.06	0.07	0.07	0.07	0.12	0.12	0.12	0.12	0.12	0.12
BU.2250_L	0	0	0	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02
BU.2216_L	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0.01	0.01	0.01	0.01	0.01
BU.2209_L	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.06	0.06	0.06	0.06	0.06	0.06
BU.2134_L	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02
BU.2092_L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BU.2089_L	0.02	0.02	0.02	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.08	0.08	0.08	0.09	0.09	0.09
BU.1983_L	0	0	0	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02
BU.1960_L	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.06	0.06	0.06	0.06	0.06	0.06
BU.1889_L	0.03	0.03	0.03	0.04	0.04	0.04	0.05	0.05	0.05	0.06	0.06	0.06	0.1	0.1	0.1	0.11	0.11	0.11
BU.1764_L	0	0	0	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
BU.1738.r_L	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0.01	0.01	0.01	0.01	0.01
BU.1737_L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0.01	0.01
BU.1708_L	0.02	0.02	0.02	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.07	0.07	0.07	0.08	0.08	0.08
BU.1614_L	0.01	0.01	0.01	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.05	0.05	0.05	0.05	0.05	0.05
BU.1548_L	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.06	0.06	0.06	0.06	0.06	0.06
BU.1452_L	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0.01	0.01	0.01	0.01	0.01
BU.1442_L	0.02	0.02	0.02	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.08	0.08	0.08	0.08	0.08	0.08
BU.1347_L	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0.01	0.01	0.01	0.01	0.01
BU.1301_L	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02
BU.1170_L	0	0	0	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02
BU.1149_L	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.04	0.04	0.04	0.04	0.04	0.04
BU.1100_L	0	0	0	0	0	0	0	0	0	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
BU.1088_L	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0.01	0.01	0.01	0.01	0.01
BU.1072_L	0	0	0	0	0	0	0	0	0	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
BU.1059_L	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02
BU.1025_L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BU.1021_L	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.03	0.03	0.03
BU.990_L	0	0	0	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02
BU.962_L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BU.908.r_L	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0.01	0.01	0.01	0.01	0.01
BU.890_L	0	0	0	0	0	0	0	0	0	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
BU.874_L	0	0	0	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02
BU.853_L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0.01	0.01
BU.847_L	0.02	0.02	0.02	0.03	0.03	0.03	0.04	0.04	0.04	0.05	0.05	0.05	0.08	0.08	0.08	0.08	0.08	0.08
BU.747_L	0.02	0.02	0.02	0.03	0.03	0.03	0.04	0.04	0.04	0.05	0.05	0.05	0.08	0.08	0.08	0.08	0.08	0.08
BU.649_L	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02
BU.622_L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0.01	0.01
BU.615_L	0	0	0	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
BU.576_L	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0.01	0.01	0.01	0.01	0.01
BU.567_L	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.04	0.04	0.04	0.04	0.04	0.04
BU.520_L	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.04	0.04	0.04	0.04	0.04	0.04
BU.472_L	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.04	0.04	0.04	0.04	0.04	0.04
BU.426_L	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.04	0.04	0.04	0.04	0.04	0.04
BU.370_L	0	0	0	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02
BU.350_L	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.04	0.04	0.04	0.04	0.04	0.04
BU.301_L	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.04	0.04	0.04	0.04	0.04	0.04
BU.252_L	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02
BU.229_L	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02
BU.206_L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0.01	0.01
BU.150_L	0	0	0	0	0	0	0	0	0	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
BU.139.r_L	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.06	0.06	0.06	0.06	0.06	0.06
BU.64_L	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.04	0.04	0.04	0.04	0.04	0.04
BU.15_L	0	0	0	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
LA.4517	2.63	2.67	2.67	2.88	2.87	2.87	3.07	3.22	3.2	3.06	3.14	3.14	3.46	3.74	3.74	3.4	3.67	3.67

Node Reference	Peak Stage (mAOD)																	
	Annual Chance Events																	
	20%			5%			2%			1%			1%+CC70%			0.1%		
	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works
LA.6715	72.6	72.6	72.6	72.81	72.81	72.81	72.93	72.93	72.93	72.99	72.99	72.99	73.13	73.13	73.13	73.12	73.12	73.12
LA.0000	63.61	63.62	63.62	63.85	63.85	63.85	63.92	63.92	63.92	63.98	63.98	63.98	64.14	64.14	64.14	64.13	64.13	64.13
LA.6482	72.17	72.17	72.17	72.32	72.32	72.32	72.36	72.36	72.36	72.37	72.37	72.37	72.41	72.41	72.41	72.4	72.4	72.4
LA.6239	71.72	71.72	71.72	71.79	71.79	71.79	71.81	71.81	71.81	71.81	71.81	71.81	71.88	71.88	71.88	71.87	71.87	71.87
LA.5966	71.22	71.22	71.22	71.28	71.28	71.28	71.31	71.31	71.31	71.34	71.34	71.34	71.45	71.45	71.45	71.44	71.44	71.43
LA.5734	70.75	70.75	70.75	70.81	70.81	70.81	70.84	70.84	70.84	70.87	70.87	70.87	70.96	70.96	70.96	70.95	70.95	70.95
LA.5527	70.49	70.49	70.49	70.54	70.54	70.54	70.57	70.58	70.58	70.6	70.6	70.6	70.67	70.67	70.67	70.66	70.66	70.66
LA.5522	70.38	70.38	70.38	70.41	70.41	70.41	70.47	70.48	70.48	70.51	70.52	70.52	70.61	70.61	70.61	70.6	70.6	70.6
LA.5112	69.91	69.91	69.91	70.11	70.11	70.11	70.3	70.31	70.31	70.37	70.38	70.38	70.49	70.49	70.49	70.48	70.48	70.48
LA.5112_O1U	69.91	69.91	69.91	70.11	70.11	70.11	70.3	70.31	70.31	70.37	70.38	70.38	70.49	70.49	70.49	70.48	70.48	70.48
LA.5107_O1D	69.81	69.81	69.81	70.11	70.11	70.11	70.31	70.32	70.32	70.38	70.39	70.39	70.5	70.5	70.5	70.49	70.49	70.49
LA.5107_O2D	69.81	69.81	69.81	70.11	70.11	70.11	70.31	70.32	70.32	70.38	70.39	70.39	70.5	70.5	70.5	70.49	70.49	70.49
LA.5107_O3D	69.81	69.81	69.81	70.11	70.11	70.11	70.31	70.32	70.32	70.38	70.39	70.39	70.5	70.5	70.5	70.49	70.49	70.49
LA.5098	69.81	69.81	69.81	70.11	70.11	70.11	70.31	70.32	70.32	70.38	70.39	70.39	70.5	70.5	70.5	70.49	70.49	70.49
LA.4998	69.67	69.65	69.65	69.97	69.97	69.97	70.22	70.23	70.23	70.28	70.29	70.29	70.37	70.37	70.37	70.36	70.36	70.36
LA.4998BU	69.67	69.65	69.65	69.97	69.97	69.97	70.22	70.23	70.23	70.28	70.29	70.29	70.37	70.37	70.37	70.36	70.36	70.36
LA.4998BD	69.66	69.65	69.65	69.96	69.96	69.96	70.11	70.11	70.11	70.11	70.12	70.12	70.13	70.15	70.15	70.13	70.15	70.15
LA.4998D	69.66	69.65	69.65	69.96	69.96	69.96	70.11	70.11	70.11	70.11	70.12	70.12	70.13	70.15	70.15	70.13	70.15	70.15
LA.4748	69.23	69.18	69.18	69.38	69.34	69.34	69.44	69.42	69.42	69.55	69.54	69.54	69.76	69.76	69.76	69.75	69.75	69.75
LA.4663	69.11	69.1	69.1	69.26	69.25	69.25	69.38	69.36	69.36	69.53	69.52	69.52	69.78	69.78	69.78	69.77	69.77	69.77
LA.4560	69.01	69.01	69.01	69.22	69.23	69.23	69.37	69.36	69.36	69.53	69.52	69.52	69.77	69.77	69.77	69.76	69.76	69.76
LA.4505	69	69	69	69.22	69.22	69.22	69.37	69.35	69.35	69.53	69.52	69.51	69.77	69.77	69.77	69.76	69.76	69.76
LA.5527BU	70.49	70.49	70.49	70.54	70.54	70.54	70.57	70.58	70.58	70.6	70.6	70.6	70.67	70.67	70.67	70.66	70.66	70.66
LA.5527SU	70.49	70.49	70.49	70.54	70.54	70.54	70.57	70.58	70.58	70.6	70.6	70.6	70.67	70.67	70.67	70.66	70.66	70.66
LA.5522BD	70.38	70.38	70.38	70.41	70.41	70.41	70.47	70.48	70.48	70.51	70.52	70.52	70.61	70.61	70.61	70.6	70.6	70.6
LA.5522SD	70.38	70.38	70.38	70.41	70.41	70.41	70.47	70.48	70.48	70.51	70.52	70.52	70.61	70.61	70.61	70.6	70.6	70.6
LA.5112SU	69.91	69.91	69.91	70.11	70.11	70.11	70.3	70.31	70.31	70.37	70.38	70.38	70.49	70.49	70.49	70.48	70.48	70.48
LA.5112_O2U	69.91	69.91	69.91	70.11	70.11	70.11	70.3	70.31	70.31	70.37	70.38	70.38	70.49	70.49	70.49	70.48	70.48	70.48
LA.5112_O3U	69.91	69.91	69.91	70.11	70.11	70.11	70.3	70.31	70.31	70.37	70.38	70.38	70.49	70.49	70.49	70.48	70.48	70.48
LA.5107SD	69.81	69.81	69.81	70.11	70.11	70.11	70.31	70.32	70.32	70.38	70.39	70.39	70.5	70.5	70.5	70.49	70.49	70.49
LA.4493	68.97	68.96	68.96	69.2	69.2	69.2	69.35	69.34	69.34	69.52	69.51	69.51	69.77	69.77	69.77	69.76	69.76	69.76
LA.4493D	68.9	68.89	68.89	69.18	69.18	69.18	69.34	69.32	69.32	69.51	69.5	69.5	69.77	69.77	69.77	69.75	69.75	69.75
LA.4474	68.85	68.85	68.85	69.09	69.09	69.09	69.23	69.21	69.21	69.42	69.4	69.4	69.68	69.68	69.68	69.67	69.67	69.67
LA.4458	68.81	68.8	68.8	69.01	69.01	69.01	69.1	69.08	69.08	69.23	69.22	69.22	69.35	69.35	69.35	69.34	69.34	69.34
LA.4323	68.63	68.62	68.62	68.89	68.89	68.89	69.07	69.05	69.05	69.21	69.19	69.19	69.32	69.32	69.32	69.31	69.31	69.31
LA.4157	68.43	68.41	68.41	68.85	68.83	68.83	69.06	69.04	69.04	69.2	69.19	69.19	69.31	69.31	69.31	69.3	69.3	69.3
LA.4005	68.36	68.32	68.32	68.84	68.82	68.82	69.05	69.04	69.04	69.2	69.19	69.19	69.3	69.3	69.3	69.3	69.29	69.29
LA.3919	68.33	68.27	68.27	68.82	68.8	68.8	69.04	69.02	69.02	69.19	69.18	69.18	69.3	69.3	69.3	69.29	69.29	69.29
LA.3905	68.2	68.12	68.12	68.66	68.62	68.62	68.98	68.95	68.95	69.15	69.13	69.13	69.27	69.26	69.26	69.26	69.26	69.26
LA.3905CU	68.15	68.05	68.05	68.5	68.44	68.45	68.73	68.68	68.68	68.86	68.78	68.78	68.99	68.95	68.95	68.97	68.93	68.93
LA.3894CD	68.07	68	68	68.29	68.31	68.31	68.41	68.47	68.47	68.48	68.53	68.53	68.64	68.71	68.71	68.61	68.68	68.67
LA.3894	68	67.98	67.98	68.18	68.18	68.18	68.23	68.23	68.23	68.25	68.25	68.25	68.38	68.37	68.37	68.34	68.34	68.34
LA.3876	67.95	67.93	67.93	68.15	68.15	68.15	68.2	68.2	68.2	68.22	68.22	68.22	68.38	68.37	68.37	68.34	68.34	68.34
LA.3865	67.94	67.92	67.92	68.15	68.15	68.15	68.21	68.22	68.22	68.24	68.24	68.24	68.4	68.4	68.39	68.36	68.36	68.36
LA.3858	67.7	67.69	67.69	67.85	67.85	67.85	67.92	67.92	67.92	67.96	67.96	67.96	68.35	68.34	68.34	68.3	68.29	68.29
LA.3848	67.72	67.71	67.71	67.88	67.87	67.87	67.94	67.94	67.94	67.98	67.98	67.98	68.35	68.35	68.35	68.3	68.3	68.3
LA.3764	67.61	67.6	67.6	67.76	67.76	67.76	67.82	67.83	67.83	67.86	67.85	67.85	68.33	68.33	68.33	68.28	68.27	68.27
LA.3597	67.26	67.25	67.25	67.48	67.48	67.48	67.56	67.56	67.57	67.65	67.64	67.64	68.32	68.31	68.31	68.26	68.26	68.25
LA.3503	67.09	67.08	67.08	67.39	67.38	67.38	67.52	67.53	67.53	67.64	67.62	67.62	68.32	68.31	68.31	68.26	68.26	68.25
LA.3500_R	67.09	67.08	67.08	67.36	67.35	67.35	67.52	67.53	67.53	67.64	67.62	67.62	68.32	68.31	68.31	68.26	68.26	68.25
LA.3905SU	68.2	68.12	68.12	68.66	68.62	68.62	68.98	68.95	68.95	69.15	69.13	69.13	69.27	69.26	69.26	69.26	69.26	69.26
LA.3894SD	68	67.98	67.98	68.18	68.18	68.18	68.23	68.23	68.23	68.25	68.25	68.25	68.38	68.37	68.37	68.34	68.34	68.34
LA.3894_OUT	68	67.98	67.98	68.18	68.18	68.18	68.23	68.23	68.23	68.25	68.25	68.25	68.38	68.37	68.37	68.34	68.34	68.34
LA.3905_IN	68.2	68.12	68.12	68.66	68.62	68.62	68.98	68.95	68.95	69.15	69.13	69.13	69.27	69.26	69.26	69.26	69.26	69.26
LA.4474BU	68.85	68.85	68.85	69.09	69.09	69.09	69.23	69.21	69.21	69.42	69.4	69.4	69.68	69.68	69.68	69.67	69.67	69.67
LA.4474SU	68.85	68.85	68.85	69.09	69.09	69.09	69.23	69.21	69.21	69.42	69.4	69.4	69.68	69.68	69.68	69.67	69.67	69.67

Node Reference	Peak Stage (mAOD)																	
	Annual Chance Events																	
	20%			5%			2%			1%			1%+CC70%			0.1%		
	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works
LA.4462BD	68.81	68.8	68.8	69.01	69.01	69.01	69.1	69.08	69.08	69.23	69.22	69.22	69.35	69.35	69.35	69.34	69.34	69.34
LA.4462SD	68.81	68.8	68.8	69.01	69.01	69.01	69.1	69.08	69.08	69.23	69.22	69.22	69.35	69.35	69.35	69.34	69.34	69.34
LA.3865BU	67.94	67.92	67.92	68.15	68.15	68.15	68.21	68.22	68.22	68.24	68.24	68.24	68.4	68.4	68.39	68.36	68.36	68.36
LA.3865SU	67.94	67.92	67.92	68.15	68.15	68.15	68.21	68.22	68.22	68.24	68.24	68.24	68.4	68.4	68.39	68.36	68.36	68.36
LA.3858BD	67.7	67.69	67.69	67.85	67.85	67.85	67.92	67.92	67.92	67.96	67.96	67.96	68.35	68.34	68.34	68.3	68.29	68.29
LA.3858SD	67.7	67.69	67.69	67.85	67.85	67.85	67.92	67.92	67.92	67.96	67.96	67.96	68.35	68.34	68.34	68.3	68.29	68.29
LA.3439	67.05	67.04	67.04	67.33	67.32	67.32	67.49	67.5	67.5	67.62	67.6	67.6	68.31	68.31	68.31	68.25	68.25	68.25
LA.3428	66.98	66.97	66.97	67.23	67.23	67.23	67.37	67.38	67.38	67.47	67.46	67.46	68.09	68.08	68.08	68.03	68.03	68.03
LA.3372	66.84	66.83	66.83	67	66.99	66.99	67.06	67.06	67.06	67.08	67.08	67.08	67.26	67.26	67.26	67.24	67.23	67.23
LA.3352	66.82	66.81	66.81	66.99	66.99	66.99	67.07	67.07	67.07	67.1	67.1	67.1	67.27	67.26	67.26	67.25	67.25	67.25
LA.3272	66.74	66.73	66.73	66.9	66.89	66.89	66.95	66.96	66.96	66.98	66.98	66.98	67.15	67.15	67.15	67.13	67.13	67.13
LA.3178	66.64	66.64	66.64	66.78	66.78	66.78	66.85	66.85	66.85	66.88	66.88	66.88	67.13	67.12	67.12	67.1	67.1	67.1
LA.3109	66.58	66.57	66.57	66.71	66.71	66.71	66.78	66.78	66.78	66.82	66.82	66.82	67.09	67.09	67.09	67.06	67.06	67.06
LA.3503SU	67.09	67.08	67.08	67.39	67.38	67.38	67.52	67.53	67.53	67.64	67.62	67.62	68.32	68.31	68.31	68.26	68.26	68.25
LA.3503BU	67.09	67.08	67.08	67.39	67.38	67.38	67.52	67.53	67.53	67.64	67.62	67.62	68.32	68.31	68.31	68.26	68.26	68.25
LA.3500_RBD	67.09	67.08	67.08	67.36	67.35	67.35	67.52	67.53	67.53	67.64	67.62	67.62	68.32	68.31	68.31	68.26	68.26	68.25
LA.3500_RSD	67.09	67.08	67.08	67.36	67.35	67.35	67.52	67.53	67.53	67.64	67.62	67.62	68.32	68.31	68.31	68.26	68.26	68.25
LA.3428_IN	66.98	66.97	66.97	67.23	67.23	67.23	67.37	67.38	67.38	67.47	67.46	67.46	68.09	68.08	68.08	68.03	68.03	68.03
LA.3428CU	66.96	66.95	66.95	67.19	67.19	67.19	67.33	67.33	67.33	67.42	67.4	67.4	67.98	67.97	67.97	67.93	67.92	67.92
LA.3372CD	66.88	66.87	66.87	67.08	67.07	67.07	67.17	67.17	67.17	67.22	67.22	67.22	67.58	67.58	67.58	67.54	67.54	67.54
LA.3372_OUT	66.84	66.83	66.83	67	66.99	66.99	67.06	67.06	67.06	67.08	67.08	67.08	67.26	67.26	67.26	67.24	67.23	67.23
LA.3088	66.57	66.56	66.56	66.7	66.7	66.7	66.77	66.78	66.78	66.81	66.81	66.81	67.06	67.06	67.06	67.04	67.03	67.03
LA.3070	66.56	66.55	66.55	66.68	66.68	66.68	66.74	66.75	66.75	66.78	66.77	66.77	66.95	66.95	66.95	66.93	66.93	66.93
LA.3057	66.55	66.55	66.55	66.67	66.67	66.67	66.73	66.73	66.73	66.76	66.75	66.75	66.92	66.92	66.92	66.91	66.9	66.9
LA.2933	66.48	66.47	66.47	66.59	66.59	66.59	66.64	66.64	66.64	66.67	66.66	66.66	66.85	66.84	66.84	66.83	66.82	66.82
LA.2930	66.44	66.44	66.44	66.55	66.55	66.55	66.6	66.61	66.61	66.64	66.63	66.63	66.83	66.83	66.83	66.81	66.81	66.81
LA.3088SU	66.57	66.56	66.56	66.7	66.7	66.7	66.77	66.78	66.78	66.81	66.81	66.81	67.06	67.06	67.06	67.04	67.03	67.03
LA.3088_IN	66.57	66.56	66.56	66.7	66.7	66.7	66.77	66.78	66.78	66.81	66.81	66.81	67.06	67.06	67.06	67.04	67.03	67.03
LA.3088_O1U	66.57	66.56	66.56	66.7	66.7	66.7	66.77	66.78	66.78	66.81	66.81	66.81	67.06	67.06	67.06	67.04	67.03	67.03
LA.3088_O2U	66.57	66.56	66.56	66.7	66.7	66.7	66.77	66.78	66.78	66.81	66.81	66.81	67.06	67.06	67.06	67.04	67.03	67.03
LA.3088_O3U	66.57	66.56	66.56	66.7	66.7	66.7	66.77	66.78	66.78	66.81	66.81	66.81	67.06	67.06	67.06	67.04	67.03	67.03
LA.3088CU	66.57	66.56	66.56	66.7	66.7	66.7	66.76	66.77	66.77	66.8	66.8	66.79	67.03	67.02	67.02	67.01	67	67
LA.3070CD	66.57	66.56	66.56	66.69	66.69	66.69	66.76	66.76	66.76	66.79	66.79	66.79	67.01	67.01	67.01	66.99	66.99	66.99
LA.3070_OUT	66.56	66.55	66.55	66.68	66.68	66.68	66.74	66.75	66.75	66.78	66.77	66.77	66.95	66.95	66.95	66.93	66.93	66.93
LA.3070SD	66.56	66.55	66.55	66.68	66.68	66.68	66.74	66.75	66.75	66.78	66.77	66.77	66.95	66.95	66.95	66.93	66.93	66.93
LA.3070_O1D	66.56	66.55	66.55	66.68	66.68	66.68	66.74	66.75	66.75	66.78	66.77	66.77	66.95	66.95	66.95	66.93	66.93	66.93
LA.3070_O2D	66.56	66.55	66.55	66.68	66.68	66.68	66.74	66.75	66.75	66.78	66.77	66.77	66.95	66.95	66.95	66.93	66.93	66.93
LA.3070_O3D	66.56	66.55	66.55	66.68	66.68	66.68	66.74	66.75	66.75	66.78	66.77	66.77	66.95	66.95	66.95	66.93	66.93	66.93
LA.2933SU	66.48	66.47	66.47	66.59	66.59	66.59	66.64	66.64	66.64	66.67	66.66	66.66	66.85	66.84	66.84	66.83	66.82	66.82
LA.2933BU	66.48	66.47	66.47	66.59	66.59	66.59	66.64	66.64	66.64	66.67	66.66	66.66	66.85	66.84	66.84	66.83	66.82	66.82
LA.2930BD	66.44	66.44	66.44	66.55	66.55	66.55	66.6	66.61	66.61	66.64	66.63	66.63	66.83	66.83	66.83	66.81	66.81	66.81
LA.2930SD	66.44	66.44	66.44	66.55	66.55	66.55	66.6	66.61	66.61	66.64	66.63	66.63	66.83	66.83	66.83	66.81	66.81	66.81
LA.2733	66.33	66.32	66.32	66.44	66.44	66.44	66.5	66.5	66.5	66.53	66.53	66.53	66.77	66.77	66.77	66.74	66.74	66.74
LA.2626	66.26	66.26	66.26	66.34	66.34	66.34	66.39	66.4	66.4	66.45	66.44	66.44	66.75	66.75	66.75	66.72	66.72	66.72
LA.2532	66.19	66.19	66.19	66.27	66.27	66.27	66.32	66.33	66.33	66.37	66.37	66.37	66.73	66.73	66.73	66.7	66.7	66.7
LA.2448	66.11	66.11	66.11	66.22	66.22	66.22	66.29	66.29	66.29	66.35	66.34	66.34	66.73	66.73	66.73	66.7	66.69	66.69
LA.2444	66.05	66.05	66.05	66.19	66.18	66.18	66.26	66.27	66.27	66.34	66.33	66.33	66.73	66.73	66.73	66.69	66.69	66.69
LA.2366	65.99	65.99	65.99	66.15	66.15	66.15	66.25	66.25	66.25	66.33	66.32	66.32	66.73	66.72	66.72	66.69	66.69	66.69
LA.2248	65.93	65.93	65.93	66.13	66.13	66.13	66.23	66.24	66.24	66.32	66.31	66.31	66.72	66.72	66.72	66.69	66.68	66.68
LA.2832	66.37	66.37	66.37	66.48	66.48	66.48	66.54	66.54	66.54	66.57	66.57	66.57	66.8	66.8	66.8	66.77	66.77	66.77
LA.2626SU	66.26	66.26	66.26	66.34	66.34	66.34	66.39	66.4	66.4	66.45	66.44	66.44	66.75	66.75	66.75	66.72	66.72	66.72
LA.2626BU	66.26	66.26	66.26	66.34	66.34	66.34	66.39	66.4	66.4	66.45	66.44	66.44	66.75	66.75	66.75	66.72	66.72	66.72
LA.2625_R	66.26	66.26	66.26	66.34	66.34	66.34	66.38	66.38	66.38	66.42	66.41	66.41	66.74	66.74	66.74	66.71	66.71	66.71
LA.2625_RBD	66.26	66.26	66.26	66.34	66.34	66.34	66.38	66.38	66.38	66.42	66.41	66.41	66.74	66.74	66.74	66.71	66.71	66.71
LA.2625_RSD	66.26	66.26	66.26	66.34	66.34	66.34	66.38	66.38	66.38	66.42	66.41	66.41	66.74	66.74	66.74	66.71	66.71	66.71
LA.2448SU	66.11	66.11	66.11	66.22	66.22	66.22	66.29	66.29	66.29	66.35	66.34	66.34	66.73	66.73	66.73	66.7	66.69	66.69

Node Reference	Peak Stage (mAOD)																	
	Annual Chance Events																	
	20%			5%			2%			1%			1%+CC70%			0.1%		
	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works
LA.2448BU	66.11	66.11	66.11	66.22	66.22	66.22	66.29	66.29	66.29	66.35	66.34	66.34	66.73	66.73	66.73	66.7	66.69	66.69
LA.2444BD	66.05	66.05	66.05	66.19	66.18	66.18	66.26	66.27	66.27	66.34	66.33	66.33	66.73	66.73	66.73	66.69	66.69	66.69
LA.2444SD	66.05	66.05	66.05	66.19	66.18	66.18	66.26	66.27	66.27	66.34	66.33	66.33	66.73	66.73	66.73	66.69	66.69	66.69
LA.2190	65.92	65.92	65.92	66.13	66.13	66.13	66.23	66.24	66.24	66.32	66.31	66.31	66.72	66.72	66.72	66.69	66.68	66.68
LA.2060	65.8	65.81	65.81	66.08	66.08	66.08	66.21	66.22	66.22	66.3	66.29	66.29	66.72	66.72	66.72	66.69	66.68	66.68
LA.2021	65.75	65.76	65.76	66.01	66.01	66.01	66.13	66.14	66.14	66.21	66.21	66.2	66.62	66.61	66.61	66.58	66.58	66.58
LA.2011	65.75	65.76	65.76	66.01	66.01	66.01	66.13	66.13	66.13	66.21	66.2	66.2	66.59	66.59	66.59	66.56	66.55	66.55
LA.1990	65.73	65.74	65.74	65.98	65.98	65.98	66.09	66.09	66.09	66.15	66.15	66.15	66.43	66.43	66.43	66.41	66.41	66.41
LA.1983	65.72	65.73	65.73	65.96	65.96	65.96	66.07	66.07	66.07	66.13	66.12	66.12	66.39	66.39	66.39	66.37	66.37	66.37
LA.1882	65.67	65.68	65.68	65.88	65.88	65.88	65.98	65.98	65.98	66.03	66.04	66.04	66.3	66.29	66.29	66.28	66.27	66.27
LA.2190SU	65.92	65.92	65.92	66.13	66.13	66.13	66.23	66.24	66.24	66.32	66.31	66.31	66.72	66.72	66.72	66.69	66.68	66.68
LA.2190BU	65.92	65.92	65.92	66.13	66.13	66.13	66.23	66.24	66.24	66.32	66.31	66.31	66.72	66.72	66.72	66.69	66.68	66.68
LA.2188_R	65.91	65.91	65.91	66.13	66.13	66.13	66.23	66.24	66.24	66.32	66.31	66.31	66.72	66.72	66.72	66.69	66.68	66.68
LA.2188_RSD	65.91	65.91	65.91	66.13	66.13	66.13	66.23	66.24	66.24	66.32	66.31	66.31	66.72	66.72	66.72	66.69	66.68	66.68
LA.2188_RBD	65.91	65.91	65.91	66.13	66.13	66.13	66.23	66.24	66.24	66.32	66.31	66.31	66.72	66.72	66.72	66.69	66.68	66.68
LA.2011SU	65.75	65.76	65.76	66.01	66.01	66.01	66.13	66.13	66.13	66.21	66.2	66.2	66.59	66.59	66.59	66.56	66.55	66.55
LA.2011_IN	65.75	65.76	65.76	66.01	66.01	66.01	66.13	66.13	66.13	66.21	66.2	66.2	66.59	66.59	66.59	66.56	66.55	66.55
LA.2011CU	65.74	65.75	65.75	65.99	65.99	65.99	66.11	66.11	66.11	66.18	66.17	66.17	66.51	66.51	66.51	66.49	66.48	66.48
LA.1990CD	65.74	65.75	65.75	65.98	65.98	65.98	66.1	66.11	66.11	66.17	66.17	66.17	66.49	66.49	66.49	66.47	66.46	66.46
LA.1990_OUT	65.73	65.74	65.74	65.98	65.98	65.98	66.09	66.09	66.09	66.15	66.15	66.15	66.43	66.43	66.43	66.41	66.41	66.41
LA.1990SD	65.73	65.74	65.74	65.98	65.98	65.98	66.09	66.09	66.09	66.15	66.15	66.15	66.43	66.43	66.43	66.41	66.41	66.41
LA.1873	65.66	65.67	65.67	65.87	65.87	65.87	65.97	65.97	65.97	66.03	66.03	66.03	66.29	66.29	66.29	66.27	66.27	66.27
LA.1840	65.64	65.64	65.64	65.83	65.83	65.83	65.92	65.93	65.93	65.97	65.97	65.97	66.22	66.22	66.22	66.21	66.2	66.2
LA.1832	65.63	65.64	65.64	65.83	65.83	65.83	65.92	65.92	65.92	65.97	65.97	65.97	66.22	66.22	66.22	66.2	66.2	66.2
LA.1786	65.61	65.62	65.62	65.79	65.8	65.8	65.87	65.88	65.88	65.92	65.92	65.92	66.19	66.19	66.19	66.18	66.17	66.17
LA.1777	65.6	65.61	65.61	65.78	65.78	65.78	65.85	65.85	65.85	65.89	65.89	65.89	66.16	66.16	66.16	66.14	66.14	66.14
LA.1589	65.51	65.51	65.51	65.64	65.65	65.65	65.7	65.7	65.7	65.75	65.75	65.75	66	66	66	65.98	65.98	65.98
LA.1589d	65.51	65.51	65.51	65.64	65.65	65.65	65.7	65.7	65.7	65.75	65.75	65.75	66	66	66	65.98	65.98	65.98
LA.1503	65.4	65.41	65.41	65.6	65.6	65.6	65.68	65.68	65.68	65.74	65.74	65.74	66	66	66	65.98	65.98	65.98
LA.1497	65.38	65.39	65.39	65.58	65.58	65.58	65.67	65.67	65.67	65.74	65.74	65.74	66	66	66	65.98	65.98	65.98
LA.1497BU	65.38	65.39	65.39	65.58	65.58	65.58	65.67	65.67	65.67	65.74	65.74	65.74	66	66	66	65.98	65.98	65.98
LA.1497SU	65.38	65.39	65.39	65.58	65.58	65.58	65.67	65.67	65.67	65.74	65.74	65.74	66	66	66	65.98	65.98	65.98
LA.1497SD	65.38	65.39	65.39	65.58	65.58	65.58	65.67	65.67	65.67	65.73	65.74	65.74	66	66	65.99	65.98	65.97	65.97
LA.1497BD	65.38	65.39	65.39	65.58	65.58	65.58	65.67	65.67	65.67	65.73	65.74	65.74	66	66	65.99	65.98	65.97	65.97
LA.1873_IN	65.66	65.67	65.67	65.87	65.87	65.87	65.97	65.97	65.97	66.03	66.03	66.03	66.29	66.29	66.29	66.27	66.27	66.27
LA.1497D	65.38	65.39	65.39	65.58	65.58	65.58	65.67	65.67	65.67	65.73	65.74	65.74	66	66	65.99	65.98	65.97	65.97
LA.1408	65.23	65.23	65.23	65.45	65.45	65.45	65.56	65.56	65.56	65.64	65.64	65.64	65.95	65.95	65.95	65.93	65.92	65.92
LA.1362	65.14	65.14	65.14	65.3	65.31	65.31	65.37	65.38	65.38	65.43	65.43	65.43	65.68	65.68	65.68	65.66	65.66	65.66
LA.1350	65.12	65.12	65.12	65.27	65.27	65.27	65.33	65.34	65.34	65.38	65.38	65.38	65.57	65.57	65.57	65.55	65.55	65.55
LA.1350BU	65.12	65.12	65.12	65.27	65.27	65.27	65.33	65.34	65.34	65.38	65.38	65.38	65.57	65.57	65.57	65.55	65.55	65.55
LA.1350BD	65.12	65.12	65.12	65.27	65.27	65.27	65.33	65.34	65.34	65.38	65.38	65.38	65.57	65.57	65.57	65.55	65.55	65.55
LA.1873CU	65.65	65.66	65.66	65.85	65.85	65.85	65.95	65.95	65.95	66	66	66	66.26	66.26	66.26	66.24	66.24	66.24
LA.1350D	65.12	65.12	65.12	65.27	65.27	65.27	65.33	65.34	65.34	65.38	65.38	65.38	65.57	65.57	65.57	65.55	65.55	65.55
LA.0957	64.41	64.42	64.42	64.54	64.54	64.54	64.59	64.59	64.59	64.62	64.62	64.62	64.71	64.71	64.71	64.71	64.71	64.71
LA.0865	64.27	64.28	64.28	64.43	64.43	64.43	64.49	64.49	64.49	64.53	64.53	64.53	64.64	64.64	64.64	64.63	64.63	64.63
LA.0767	64.15	64.15	64.16	64.3	64.3	64.3	64.35	64.35	64.35	64.38	64.38	64.38	64.55	64.55	64.55	64.54	64.54	64.54
LA.0737	64.11	64.11	64.11	64.22	64.22	64.22	64.25	64.25	64.25	64.27	64.27	64.27	64.46	64.46	64.46	64.45	64.45	64.45
LA.0726	64.11	64.11	64.11	64.22	64.22	64.22	64.24	64.24	64.24	64.26	64.26	64.26	64.45	64.45	64.45	64.44	64.44	64.44
LA.0726BU	64.11	64.11	64.11	64.22	64.22	64.22	64.24	64.24	64.24	64.26	64.26	64.26	64.45	64.45	64.45	64.44	64.44	64.44
LA.0720BD	64.1	64.11	64.11	64.21	64.21	64.21	64.24	64.24	64.24	64.26	64.26	64.26	64.34	64.33	64.33	64.33	64.33	64.33
LA.0720	64.1	64.11	64.11	64.21	64.21	64.21	64.24	64.24	64.24	64.26	64.26	64.26	64.34	64.33	64.33	64.33	64.33	64.33
LA.0711	64.09	64.1	64.1	64.21	64.21	64.21	64.23	64.23	64.23	64.25	64.25	64.25	64.34	64.34	64.34	64.33	64.33	64.33
LA.0469	63.87	63.87	63.87	63.97	63.97	63.97	64.02	64.02	64.02	64.06	64.06	64.06	64.2	64.2	64.2	64.19	64.19	64.19
LA.0210	63.7	63.71	63.71	63.91	63.91	63.91	63.98	63.98	63.98	64.04	64.04	64.04	64.2	64.2	64.19	64.19	64.19	64.19
LA.0017	63.63	63.64	63.64	63.87	63.88	63.88	63.95	63.95	63.95	64.01	64.01	64.01	64.17	64.17	64.17	64.16	64.16	64.16
LA.1840CD	65.64	65.65	65.65	65.84	65.84	65.84	65.94	65.94	65.94	65.99	65.99	65.99	66.25	66.25	66.24	66.23	66.23	66.22

Node Reference	Peak Stage (mAOD)																	
	Annual Chance Events																	
	20%			5%			2%			1%			1%+CC70%			0.1%		
	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works
LA.1840_OUT	65.64	65.64	65.64	65.83	65.83	65.83	65.92	65.93	65.93	65.97	65.97	65.97	66.22	66.22	66.22	66.21	66.2	66.2
LA.1777SU	65.6	65.61	65.61	65.78	65.78	65.78	65.85	65.85	65.85	65.89	65.89	65.89	66.16	66.16	66.16	66.14	66.14	66.14
LA.1777BU	65.6	65.61	65.61	65.78	65.78	65.78	65.85	65.85	65.85	65.89	65.89	65.89	66.16	66.16	66.16	66.14	66.14	66.14
LA.1773_RBD	65.6	65.61	65.61	65.78	65.78	65.78	65.85	65.85	65.85	65.89	65.89	65.89	66.1	66.1	66.1	66.08	66.08	66.08
LA.1773_R	65.6	65.61	65.61	65.78	65.78	65.78	65.85	65.85	65.85	65.89	65.89	65.89	66.1	66.1	66.1	66.08	66.08	66.08
LA.1773_RSD	65.6	65.61	65.61	65.78	65.78	65.78	65.85	65.85	65.85	65.89	65.89	65.89	66.1	66.1	66.1	66.08	66.08	66.08
LA.4998SU	69.67	69.65	69.65	69.97	69.97	69.97	70.22	70.23	70.23	70.28	70.29	70.29	70.37	70.37	70.37	70.36	70.36	70.36
LA.4998SD	69.66	69.65	69.65	69.96	69.96	69.96	70.11	70.11	70.11	70.11	70.12	70.12	70.13	70.15	70.15	70.13	70.15	70.15
LA.4493BU	68.97	68.96	68.96	69.2	69.2	69.2	69.35	69.34	69.34	69.52	69.51	69.51	69.77	69.77	69.77	69.76	69.76	69.76
LA.4493SU	68.97	68.96	68.96	69.2	69.2	69.2	69.35	69.34	69.34	69.52	69.51	69.51	69.77	69.77	69.77	69.76	69.76	69.76
LA.4493SD	68.9	68.89	68.89	69.18	69.18	69.18	69.34	69.32	69.32	69.51	69.5	69.5	69.77	69.77	69.77	69.75	69.75	69.75
LA.4493BD	68.9	68.89	68.89	69.18	69.18	69.18	69.34	69.32	69.32	69.51	69.5	69.5	69.77	69.77	69.77	69.75	69.75	69.75
LA.0726SU	64.11	64.11	64.11	64.22	64.22	64.22	64.24	64.24	64.24	64.26	64.26	64.26	64.45	64.45	64.45	64.44	64.44	64.44
LA.0726SD	64.1	64.11	64.11	64.21	64.21	64.21	64.24	64.24	64.24	64.26	64.26	64.26	64.34	64.33	64.33	64.33	64.33	64.33
BU.00d	65.51	65.51	65.51	65.64	65.65	65.65	65.7	65.7	65.7	65.75	65.75	65.75	66	66	66	65.98	65.98	65.98
BU.3507	78.74	78.74	78.74	78.9	78.9	78.9	79	79	79	79.08	79.08	79.08	79.47	79.47	79.47	79.55	79.55	79.55
BA.sweet_ii	67.39	67.39	67.39	67.51	67.51	67.51	67.55	67.55	67.55	67.57	67.57	67.57	67.62	67.62	67.62	67.63	67.63	67.63
BU.3501	78.73	78.73	78.73	78.9	78.9	78.9	79	79	79	79.09	79.09	79.09	79.49	79.49	79.49	79.57	79.57	79.57
BU.3501u	78.73	78.73	78.73	78.9	78.9	78.9	79	79	79	79.09	79.09	79.09	79.49	79.49	79.49	79.57	79.57	79.57
BU.3501Sp	78.73	78.73	78.73	78.9	78.9	78.9	79	79	79	79.09	79.09	79.09	79.49	79.49	79.49	79.57	79.57	79.57
BU.3501d	78.68	78.68	78.68	78.84	78.84	78.84	78.93	78.93	78.93	79.01	79.01	79.01	79.33	79.33	79.33	79.4	79.4	79.4
BU.3471u	78.51	78.51	78.51	78.64	78.64	78.64	78.72	78.72	78.72	78.78	78.78	78.78	79	79	79	79.04	79.04	79.04
BU.3471d	78.44	78.44	78.44	78.55	78.55	78.55	78.62	78.62	78.62	78.66	78.66	78.66	78.8	78.8	78.8	78.82	78.82	78.82
BU.3471	78.44	78.44	78.44	78.55	78.55	78.55	78.62	78.62	78.62	78.66	78.66	78.66	78.8	78.8	78.8	78.82	78.82	78.82
BU.3471Sp	78.44	78.44	78.44	78.55	78.55	78.55	78.62	78.62	78.62	78.66	78.66	78.66	78.8	78.8	78.8	78.82	78.82	78.82
BU.3452	78.32	78.32	78.32	78.43	78.43	78.43	78.49	78.49	78.49	78.55	78.55	78.55	78.72	78.72	78.72	78.75	78.75	78.75
BU.3352	77.81	77.81	77.81	77.93	77.93	77.93	78	78	78	78.06	78.06	78.06	78.29	78.29	78.29	78.32	78.32	78.32
BU.3264	77.54	77.54	77.54	77.67	77.67	77.67	77.75	77.75	77.75	77.82	77.82	77.82	78.07	78.07	78.07	78.12	78.12	78.12
BU.3222	77.38	77.38	77.38	77.5	77.5	77.5	77.56	77.56	77.56	77.61	77.61	77.61	77.84	77.84	77.84	77.88	77.88	77.88
BU.3222u	77.38	77.38	77.38	77.5	77.5	77.5	77.56	77.56	77.56	77.61	77.61	77.61	77.84	77.84	77.84	77.88	77.88	77.88
BU.3222Sp	77.38	77.38	77.38	77.5	77.5	77.5	77.56	77.56	77.56	77.61	77.61	77.61	77.84	77.84	77.84	77.88	77.88	77.88
BU.3220d	77.37	77.37	77.37	77.48	77.48	77.48	77.55	77.55	77.55	77.6	77.6	77.6	77.82	77.82	77.82	77.86	77.86	77.86
BU.3220	77.37	77.37	77.37	77.48	77.48	77.48	77.55	77.55	77.55	77.6	77.6	77.6	77.82	77.82	77.82	77.86	77.86	77.86
BU.3220Sp	77.37	77.37	77.37	77.48	77.48	77.48	77.55	77.55	77.55	77.6	77.6	77.6	77.82	77.82	77.82	77.86	77.86	77.86
BU.3203	77.28	77.28	77.28	77.41	77.41	77.41	77.48	77.48	77.48	77.53	77.53	77.53	77.76	77.76	77.76	77.8	77.8	77.8
BU.3134	77.03	77.03	77.03	77.2	77.2	77.2	77.26	77.26	77.26	77.31	77.31	77.3	77.48	77.48	77.48	77.51	77.51	77.51
BU.3056	76.95	76.95	76.95	77.13	77.13	77.13	77.18	77.18	77.18	77.21	77.21	77.21	77.36	77.36	77.36	77.4	77.4	77.4
BU.3056u	76.95	76.95	76.95	77.13	77.13	77.13	77.18	77.18	77.18	77.21	77.21	77.21	77.36	77.36	77.36	77.4	77.4	77.4
BU.3056Sp	76.95	76.95	76.95	77.13	77.13	77.13	77.18	77.18	77.18	77.21	77.21	77.21	77.36	77.36	77.36	77.4	77.4	77.4
BU.3056d	76.93	76.93	76.93	77.1	77.1	77.1	77.15	77.15	77.15	77.19	77.19	77.19	77.34	77.34	77.34	77.39	77.39	77.39
BU.3049u	76.74	76.74	76.74	76.88	76.88	76.88	76.93	76.93	76.93	76.97	76.97	76.97	77.21	77.21	77.21	77.38	77.38	77.38
BU.3049d	76.58	76.58	76.58	76.69	76.69	76.69	76.73	76.73	76.73	76.77	76.77	76.77	77.12	77.12	77.12	77.37	77.37	77.37
BU.3049	76.58	76.58	76.58	76.69	76.69	76.69	76.73	76.73	76.73	76.77	76.77	76.77	77.12	77.12	77.12	77.37	77.37	77.37
BU.3049Sp	76.58	76.58	76.58	76.69	76.69	76.69	76.73	76.73	76.73	76.77	76.77	76.77	77.12	77.12	77.12	77.37	77.37	77.37
BU.3042	76.55	76.55	76.55	76.67	76.67	76.67	76.72	76.72	76.72	76.76	76.76	76.76	77.12	77.12	77.12	77.37	77.37	77.37
BU.2914	76.18	76.18	76.18	76.36	76.36	76.36	76.42	76.42	76.42	76.45	76.45	76.45	77.09	77.09	77.09	77.36	77.36	77.36
BU.2897	76.15	76.15	76.15	76.33	76.33	76.33	76.39	76.39	76.39	76.42	76.42	76.42	77.09	77.09	77.09	77.36	77.36	77.36
BU.2897u	76.15	76.15	76.15	76.33	76.33	76.33	76.39	76.39	76.39	76.42	76.42	76.42	77.09	77.09	77.09	77.36	77.36	77.36
BU.2897Sp	76.15	76.15	76.15	76.33	76.33	76.33	76.39	76.39	76.39	76.42	76.42	76.42	77.09	77.09	77.09	77.36	77.36	77.36
BU.2893d	76.15	76.15	76.15	76.32	76.32	76.32	76.38	76.38	76.38	76.41	76.41	76.41	77.09	77.09	77.09	77.36	77.36	77.36
BU.2893	76.15	76.15	76.15	76.32	76.32	76.32	76.38	76.38	76.38	76.41	76.41	76.41	77.09	77.09	77.09	77.36	77.36	77.36
BU.2893Sp	76.15	76.15	76.15	76.32	76.32	76.32	76.38	76.38	76.38	76.41	76.41	76.41	77.09	77.09	77.09	77.36	77.36	77.36
BU.2801	75.57	75.57	75.57	75.74	75.74	75.74	75.9	75.91	75.91	76.09	76.09	76.09	77.08	77.08	77.08	77.36	77.36	77.36
BU.2710	75.16	75.16	75.16	75.4	75.4	75.41	75.69	75.7	75.7	75.99	75.99	75.99	77.08	77.08	77.08	77.36	77.36	77.36
BU.2621	75.06	75.06	75.06	75.38	75.39	75.39	75.69	75.69	75.69	75.99	75.99	75.99	77.08	77.08	77.08	77.36	77.36	77.36
BU.2612	75.05	75.05	75.05	75.38	75.38	75.38	75.69	75.69	75.69	75.99	75.99	75.99	77.08	77.08	77.08	77.36	77.36	77.36

Node Reference	Peak Stage (mAOD)																	
	Annual Chance Events																	
	20%			5%			2%			1%			1%+CC70%			0.1%		
	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works
BU.2612u	75.05	75.05	75.05	75.38	75.38	75.38	75.69	75.69	75.69	75.99	75.99	75.99	77.08	77.08	77.08	77.36	77.36	77.36
BU.2612Sp	75.05	75.05	75.05	75.38	75.38	75.38	75.69	75.69	75.69	75.99	75.99	75.99	77.08	77.08	77.08	77.36	77.36	77.36
BU.2609d	75.05	75.05	75.05	75.37	75.38	75.38	75.68	75.69	75.69	75.99	75.99	75.99	77.08	77.08	77.08	77.36	77.36	77.36
BU.2609	75.05	75.05	75.05	75.37	75.38	75.38	75.68	75.69	75.69	75.99	75.99	75.99	77.08	77.08	77.08	77.36	77.36	77.36
BU.2609Sp	75.05	75.05	75.05	75.37	75.38	75.38	75.68	75.69	75.69	75.99	75.99	75.99	77.08	77.08	77.08	77.36	77.36	77.36
BU.2588	75.05	75.05	75.05	75.37	75.38	75.38	75.68	75.69	75.69	75.99	75.99	75.99	77.08	77.08	77.08	77.36	77.36	77.36
BU.2560	75.04	75.04	75.04	75.37	75.38	75.38	75.68	75.69	75.69	75.99	75.99	75.99	77.08	77.08	77.08	77.36	77.36	77.36
BU.2533	75.04	75.04	75.04	75.37	75.37	75.37	75.68	75.69	75.69	75.99	75.99	75.99	77.08	77.08	77.08	77.36	77.36	77.36
BU.2514	75.02	75.02	75.02	75.36	75.37	75.37	75.68	75.69	75.69	75.99	75.99	75.99	77.08	77.08	77.08	77.36	77.36	77.36
BU.2514u	75.02	75.02	75.02	75.36	75.37	75.37	75.68	75.69	75.69	75.99	75.99	75.99	77.08	77.08	77.08	77.36	77.36	77.36
BU.2514d	74.86	74.86	74.86	75.18	75.18	75.18	75.42	75.42	75.42	75.64	75.64	75.64	76.35	76.35	76.35	76.51	76.51	76.51
BU.2461u	74.63	74.63	74.63	74.88	74.88	74.88	75.02	75.03	75.03	75.15	75.15	75.15	75.51	75.51	75.51	75.59	75.59	75.59
BU.2461d	74.57	74.57	74.57	74.79	74.79	74.79	74.9	74.9	74.9	74.98	74.98	74.98	75.22	75.22	75.22	75.27	75.27	75.27
BU.2461	74.57	74.57	74.57	74.79	74.79	74.79	74.9	74.9	74.9	74.98	74.98	74.98	75.22	75.22	75.22	75.27	75.27	75.27
BU.2408	74.41	74.41	74.41	74.66	74.66	74.66	74.78	74.78	74.78	74.88	74.88	74.88	75.14	75.14	75.14	75.19	75.19	75.19
BU.2408u	74.41	74.41	74.41	74.66	74.66	74.66	74.78	74.78	74.78	74.88	74.88	74.88	75.14	75.14	75.14	75.19	75.19	75.19
BU.2408Sp	74.41	74.41	74.41	74.66	74.66	74.66	74.78	74.78	74.78	74.88	74.88	74.88	75.14	75.14	75.14	75.19	75.19	75.19
BU.2397d	74.36	74.36	74.36	74.6	74.6	74.6	74.71	74.71	74.71	74.8	74.8	74.8	75.04	75.04	75.04	75.09	75.09	75.09
BU.2397	74.36	74.36	74.36	74.6	74.6	74.6	74.71	74.71	74.71	74.8	74.8	74.8	75.04	75.04	75.04	75.09	75.09	75.09
BU.2397Sp	74.36	74.36	74.36	74.6	74.6	74.6	74.71	74.71	74.71	74.8	74.8	74.8	75.04	75.04	75.04	75.09	75.09	75.09
BU.2250	73.59	73.59	73.59	73.76	73.76	73.76	73.84	73.84	73.84	73.91	73.91	73.91	74.14	74.14	74.14	74.19	74.19	74.19
BU.2229	73.54	73.54	73.54	73.7	73.7	73.7	73.78	73.78	73.78	73.85	73.85	73.85	74.09	74.09	74.09	74.15	74.15	74.15
BU.2229Lu	73.54	73.54	73.54	73.7	73.7	73.7	73.78	73.78	73.78	73.85	73.85	73.85	74.09	74.09	74.09	74.15	74.15	74.15
BU.2229Cu	73.54	73.54	73.54	73.7	73.7	73.7	73.78	73.78	73.78	73.85	73.85	73.85	74.09	74.09	74.09	74.15	74.15	74.15
BU.2229Ru	73.54	73.54	73.54	73.7	73.7	73.7	73.78	73.78	73.78	73.85	73.85	73.85	74.09	74.09	74.09	74.15	74.15	74.15
BU.2229Sp	73.54	73.54	73.54	73.7	73.7	73.7	73.78	73.78	73.78	73.85	73.85	73.85	74.09	74.09	74.09	74.15	74.15	74.15
BU.2229Ld	73.52	73.52	73.52	73.68	73.68	73.68	73.76	73.76	73.76	73.83	73.83	73.83	74.06	74.06	74.06	74.1	74.1	74.1
BU.2216Lu	73.44	73.44	73.44	73.62	73.62	73.62	73.7	73.7	73.7	73.77	73.77	73.77	74	74	74	74.05	74.05	74.05
BU.2216Ld	73.37	73.37	73.37	73.54	73.54	73.54	73.62	73.62	73.62	73.68	73.68	73.68	73.89	73.89	73.89	73.94	73.94	73.94
BU.2216	73.37	73.37	73.37	73.54	73.54	73.54	73.62	73.62	73.62	73.68	73.68	73.68	73.89	73.89	73.89	73.94	73.94	73.94
BU.2229Cd	73.52	73.52	73.52	73.68	73.68	73.68	73.76	73.76	73.76	73.83	73.83	73.83	74.06	74.06	74.06	74.1	74.1	74.1
BU.2216Cu	73.44	73.44	73.44	73.62	73.62	73.62	73.7	73.7	73.7	73.77	73.77	73.77	74	74	74	74.05	74.05	74.05
BU.2216Cd	73.37	73.37	73.37	73.54	73.54	73.54	73.62	73.62	73.62	73.68	73.68	73.68	73.89	73.89	73.89	73.94	73.94	73.94
BU.2229Rd	73.52	73.52	73.52	73.69	73.69	73.69	73.77	73.77	73.77	73.84	73.84	73.84	74.07	74.07	74.07	74.12	74.12	74.12
BU.2216Ru	73.48	73.48	73.48	73.66	73.66	73.66	73.74	73.74	73.74	73.81	73.81	73.81	74.03	74.03	74.03	74.08	74.08	74.08
BU.2216Rd	73.37	73.37	73.37	73.54	73.54	73.54	73.62	73.62	73.62	73.68	73.68	73.68	73.89	73.89	73.89	73.94	73.94	73.94
BU.2216Sp	73.37	73.37	73.37	73.54	73.54	73.54	73.62	73.62	73.62	73.68	73.68	73.68	73.89	73.89	73.89	73.94	73.94	73.94
BU.2209	73.34	73.34	73.34	73.51	73.51	73.51	73.59	73.59	73.59	73.65	73.65	73.65	73.87	73.87	73.87	73.91	73.91	73.91
BU.2134	72.35	72.35	72.35	72.5	72.5	72.5	72.57	72.57	72.57	72.63	72.63	72.63	72.77	72.77	72.77	72.8	72.8	72.8
BU.2111	72.22	72.22	72.22	72.39	72.39	72.39	72.48	72.48	72.48	72.55	72.55	72.55	72.71	72.71	72.71	72.74	72.74	72.74
BU.2111Lu	72.22	72.22	72.22	72.39	72.39	72.39	72.48	72.48	72.48	72.55	72.55	72.55	72.71	72.71	72.71	72.74	72.74	72.74
BU.2111Ru	72.22	72.22	72.22	72.39	72.39	72.39	72.48	72.48	72.48	72.55	72.55	72.55	72.71	72.71	72.71	72.74	72.74	72.74
BU.2111Sp	72.22	72.22	72.22	72.39	72.39	72.39	72.48	72.48	72.48	72.55	72.55	72.55	72.71	72.71	72.71	72.74	72.74	72.74
BU.2111Ld	72.21	72.21	72.21	72.38	72.38	72.38	72.47	72.47	72.47	72.54	72.54	72.54	72.69	72.69	72.69	72.72	72.72	72.72
BU.2092Lu	72.21	72.21	72.21	72.38	72.38	72.38	72.47	72.47	72.47	72.54	72.54	72.54	72.69	72.69	72.69	72.72	72.72	72.72
BU.2092Ld	72.2	72.2	72.2	72.37	72.37	72.37	72.46	72.46	72.46	72.53	72.53	72.53	72.68	72.68	72.68	72.71	72.71	72.71
BU.2092	72.2	72.2	72.2	72.37	72.37	72.37	72.46	72.46	72.46	72.53	72.53	72.53	72.68	72.68	72.68	72.71	72.71	72.71
BU.2111Rd	72.21	72.21	72.21	72.38	72.38	72.38	72.47	72.47	72.47	72.54	72.54	72.54	72.69	72.69	72.69	72.72	72.72	72.72
BU.2092Ru	72.2	72.21	72.21	72.38	72.38	72.38	72.47	72.47	72.47	72.54	72.54	72.54	72.69	72.69	72.69	72.72	72.72	72.72
BU.2092Rd	72.2	72.2	72.2	72.37	72.37	72.37	72.46	72.46	72.46	72.53	72.53	72.53	72.68	72.68	72.68	72.71	72.71	72.71
BU.2092Sp	72.2	72.2	72.2	72.37	72.37	72.37	72.46	72.46	72.46	72.53	72.53	72.53	72.68	72.68	72.68	72.71	72.71	72.71
BU.2089	72.18	72.18	72.18	72.35	72.35	72.35	72.43	72.43	72.43	72.5	72.5	72.5	72.64	72.64	72.64	72.67	72.67	72.67
BU.1986	72	72	72	72.15	72.15	72.15	72.23	72.24	72.24	72.32	72.32	72.32	72.46	72.46	72.46	72.49	72.49	72.49
BU.1986u	72	72	72	72.15	72.15	72.15	72.23	72.24	72.24	72.32	72.32	72.32	72.46	72.46	72.46	72.49	72.49	72.49
BU.1986Sp	72	72	72	72.15	72.15	72.15	72.23	72.24	72.24	72.32	72.32	72.32	72.46	72.46	72.46	72.49	72.49	72.49
BU.1983d	71.97	71.97	71.97	72.09	72.09	72.09	72.16	72.16	72.16	72.23	72.23	72.23	72.39	72.39	72.39	72.42	72.42	72.42

Node Reference	Peak Stage (mAOD)																	
	Annual Chance Events																	
	20%			5%			2%			1%			1%+CC70%			0.1%		
	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works
BU.1983	71.97	71.97	71.97	72.09	72.09	72.09	72.16	72.16	72.16	72.23	72.23	72.23	72.39	72.39	72.39	72.42	72.42	72.42
BU.1983Sp	71.97	71.97	71.97	72.09	72.09	72.09	72.16	72.16	72.16	72.23	72.23	72.23	72.39	72.39	72.39	72.42	72.42	72.42
BU.1965	71.95	71.95	71.95	72.06	72.07	72.06	72.13	72.13	72.13	72.2	72.2	72.2	72.35	72.35	72.35	72.38	72.38	72.38
BU.1965u	71.95	71.95	71.95	72.06	72.07	72.06	72.13	72.13	72.13	72.2	72.2	72.2	72.35	72.35	72.35	72.38	72.38	72.38
BU.1965Sp	71.95	71.95	71.95	72.06	72.07	72.06	72.13	72.13	72.13	72.2	72.2	72.2	72.35	72.35	72.35	72.38	72.38	72.38
BU.1960u	71.95	71.95	71.95	72.07	72.07	72.07	72.12	72.12	72.12	72.16	72.16	72.16	72.29	72.29	72.29	72.31	72.31	72.31
BU.1960	71.61	71.62	71.61	71.79	71.79	71.79	71.85	71.85	71.85	71.9	71.9	71.9	72.01	72.01	72.01	72.03	72.03	72.03
BU.1960d	71.61	71.62	71.61	71.79	71.79	71.79	71.85	71.85	71.85	71.9	71.9	71.9	72.01	72.01	72.01	72.03	72.03	72.03
BU.1960Sp	71.61	71.62	71.61	71.79	71.79	71.79	71.85	71.85	71.85	71.9	71.9	71.9	72.01	72.01	72.01	72.03	72.03	72.03
BU.1889	71.37	71.37	71.37	71.56	71.56	71.56	71.63	71.63	71.63	71.7	71.7	71.7	71.85	71.85	71.85	71.87	71.87	71.87
BU.1765	71.04	71.05	71.05	71.26	71.26	71.26	71.33	71.34	71.34	71.45	71.45	71.45	71.65	71.65	71.65	71.69	71.69	71.69
BU.1765u	71.04	71.05	71.05	71.26	71.26	71.26	71.33	71.34	71.34	71.45	71.45	71.45	71.65	71.65	71.65	71.69	71.69	71.69
BU.1765Sp	71.04	71.05	71.05	71.26	71.26	71.26	71.33	71.34	71.34	71.45	71.45	71.45	71.65	71.65	71.65	71.69	71.69	71.69
BU.1764d	71.04	71.05	71.05	71.26	71.26	71.26	71.33	71.34	71.34	71.4	71.4	71.4	71.56	71.56	71.56	71.59	71.59	71.59
BU.1764	71.04	71.05	71.05	71.26	71.26	71.26	71.33	71.34	71.34	71.4	71.4	71.4	71.56	71.56	71.56	71.59	71.59	71.59
BU.1764Sp	71.04	71.05	71.05	71.26	71.26	71.26	71.33	71.34	71.34	71.4	71.4	71.4	71.56	71.56	71.56	71.59	71.59	71.59
BU.1747	71.02	71.02	71.02	71.23	71.23	71.23	71.31	71.31	71.31	71.36	71.36	71.36	71.52	71.52	71.52	71.55	71.55	71.55
BU.1747u	71.02	71.02	71.02	71.23	71.23	71.23	71.31	71.31	71.31	71.36	71.36	71.36	71.52	71.52	71.52	71.55	71.55	71.55
BU.1747Sp	71.02	71.02	71.02	71.23	71.23	71.23	71.31	71.31	71.31	71.36	71.36	71.36	71.52	71.52	71.52	71.55	71.55	71.55
BU.1746d	70.94	70.94	70.94	71.07	71.08	71.08	71.13	71.13	71.13	71.17	71.17	71.17	71.29	71.29	71.29	71.32	71.32	71.32
BU.1738.r	70.69	70.69	70.69	70.86	70.86	70.86	70.94	70.95	70.95	71.01	71.01	71.01	71.2	71.2	71.2	71.24	71.24	71.24
BU.1746Sp	70.94	70.94	70.94	71.07	71.08	71.08	71.13	71.13	71.13	71.17	71.17	71.17	71.29	71.29	71.29	71.32	71.32	71.32
BU.1741	70.94	70.94	70.94	71.07	71.08	71.08	71.13	71.13	71.13	71.17	71.17	71.17	71.29	71.29	71.29	71.32	71.32	71.32
BU.1738	70.66	70.66	70.66	70.82	70.82	70.82	70.9	70.91	70.91	70.97	70.97	70.97	71.17	71.17	71.17	71.21	71.21	71.21
BU.1738u	70.66	70.66	70.66	70.82	70.82	70.82	70.9	70.91	70.91	70.97	70.97	70.97	71.17	71.17	71.17	71.21	71.21	71.21
BU.1738Sp	70.66	70.66	70.66	70.82	70.82	70.82	70.9	70.91	70.91	70.97	70.97	70.97	71.17	71.17	71.17	71.21	71.21	71.21
BU.1737d	70.62	70.62	70.62	70.79	70.79	70.79	70.87	70.87	70.87	70.92	70.92	70.92	71.07	71.07	71.07	71.11	71.11	71.11
BU.1737Sp	70.62	70.62	70.62	70.79	70.79	70.79	70.87	70.87	70.87	70.92	70.92	70.92	71.07	71.07	71.07	71.11	71.11	71.11
BU.1737	70.62	70.62	70.62	70.79	70.79	70.79	70.87	70.87	70.87	70.92	70.92	70.92	71.07	71.07	71.07	71.11	71.11	71.11
BU.1732	70.62	70.62	70.62	70.81	70.81	70.81	70.89	70.89	70.89	70.94	70.94	70.94	71.09	71.09	71.09	71.12	71.12	71.12
BU.1732u	70.62	70.62	70.62	70.81	70.81	70.81	70.89	70.89	70.89	70.94	70.94	70.94	71.09	71.09	71.09	71.12	71.12	71.12
BU.1732Sp	70.62	70.62	70.62	70.81	70.81	70.81	70.89	70.89	70.89	70.94	70.94	70.94	71.09	71.09	71.09	71.12	71.12	71.12
BU.1732d	70.63	70.63	70.63	70.81	70.81	70.81	70.89	70.89	70.89	70.95	70.95	70.95	71.09	71.09	71.09	71.11	71.11	71.11
BU.1708	70.61	70.61	70.61	70.8	70.8	70.8	70.88	70.88	70.88	70.93	70.93	70.93	71.07	71.07	71.07	71.09	71.09	71.09
BU.1708d	70.61	70.61	70.61	70.8	70.8	70.8	70.88	70.88	70.88	70.93	70.93	70.93	71.07	71.07	71.07	71.09	71.09	71.09
BU.1708Sp	70.61	70.61	70.61	70.8	70.8	70.8	70.88	70.88	70.88	70.93	70.93	70.93	71.07	71.07	71.07	71.09	71.09	71.09
BU.1614	70.49	70.49	70.49	70.72	70.72	70.72	70.81	70.81	70.81	70.87	70.87	70.87	71.01	71.01	71.01	71.04	71.04	71.04
BU.1552	70.4	70.4	70.4	70.67	70.67	70.67	70.76	70.77	70.77	70.83	70.83	70.83	70.97	70.97	70.97	71	71	71
BU.1552u	70.4	70.4	70.4	70.67	70.67	70.67	70.76	70.77	70.77	70.83	70.83	70.83	70.97	70.97	70.97	71	71	71
BU.1552Sp	70.4	70.4	70.4	70.67	70.67	70.67	70.76	70.77	70.77	70.83	70.83	70.83	70.97	70.97	70.97	71	71	71
BU.1548d	70.4	70.4	70.4	70.63	70.64	70.64	70.73	70.73	70.73	70.78	70.78	70.78	70.92	70.92	70.92	70.95	70.95	70.95
BU.1548	70.4	70.4	70.4	70.63	70.64	70.64	70.73	70.73	70.73	70.78	70.78	70.78	70.92	70.92	70.92	70.95	70.95	70.95
BU.1548Sp	70.4	70.4	70.4	70.63	70.64	70.64	70.73	70.73	70.73	70.78	70.78	70.78	70.92	70.92	70.92	70.95	70.95	70.95
BU.1475	70.33	70.33	70.33	70.57	70.57	70.57	70.66	70.66	70.66	70.72	70.72	70.72	70.85	70.85	70.85	70.88	70.88	70.88
BU.1475u	70.33	70.33	70.33	70.57	70.57	70.57	70.66	70.66	70.66	70.72	70.72	70.72	70.85	70.85	70.85	70.88	70.88	70.88
BU.1475Sp	70.33	70.33	70.33	70.57	70.57	70.57	70.66	70.66	70.66	70.72	70.72	70.72	70.85	70.85	70.85	70.88	70.88	70.88
BA.556u	70.33	70.33	70.33	70.57	70.57	70.57	70.66	70.66	70.66	70.72	70.72	70.72	70.85	70.85	70.85	70.88	70.88	70.88
BU.1475d	70.32	70.32	70.32	70.56	70.56	70.56	70.66	70.66	70.66	70.71	70.71	70.71	70.84	70.84	70.84	70.87	70.87	70.87
BU.1452u	70.31	70.31	70.31	70.56	70.56	70.56	70.65	70.65	70.65	70.7	70.7	70.7	70.81	70.81	70.81	70.84	70.84	70.84
BU.1452d	70.3	70.3	70.3	70.55	70.55	70.55	70.65	70.65	70.65	70.7	70.7	70.7	70.81	70.81	70.81	70.83	70.83	70.83
BU.1452	70.3	70.3	70.3	70.55	70.55	70.55	70.65	70.65	70.65	70.7	70.7	70.7	70.81	70.81	70.81	70.83	70.83	70.83
BU.1452Sp	70.3	70.3	70.3	70.55	70.55	70.55	70.65	70.65	70.65	70.7	70.7	70.7	70.81	70.81	70.81	70.83	70.83	70.83
BU.1442	70.3	70.3	70.3	70.54	70.55	70.55	70.65	70.65	70.65	70.7	70.7	70.7	70.81	70.81	70.81	70.83	70.83	70.83
BU.1347	70.25	70.25	70.25	70.52	70.52	70.52	70.62	70.62	70.62	70.67	70.67	70.67	70.77	70.77	70.77	70.79	70.79	70.79
BU.1337	70.24	70.24	70.24	70.51	70.51	70.51	70.61	70.62	70.62	70.66	70.66	70.66	70.76	70.76	70.76	70.78	70.78	70.78
BU.1337u	70.24	70.24	70.24	70.51	70.51	70.51	70.61	70.62	70.62	70.66	70.66	70.66	70.76	70.76	70.76	70.78	70.78	70.78

Node Reference	Peak Stage (mAOD)																	
	Annual Chance Events																	
	20%			5%			2%			1%			1%+CC70%			0.1%		
	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works
BU.1337d	70.24	70.24	70.24	70.5	70.5	70.5	70.6	70.61	70.61	70.65	70.65	70.65	70.73	70.73	70.73	70.75	70.75	70.75
BU.1301u	70.23	70.23	70.23	70.49	70.49	70.49	70.59	70.59	70.59	70.63	70.63	70.63	70.7	70.7	70.7	70.71	70.71	70.71
BU.1301d	70.22	70.22	70.22	70.48	70.48	70.48	70.58	70.58	70.58	70.62	70.62	70.62	70.68	70.68	70.68	70.69	70.69	70.69
BU.1301	70.22	70.22	70.22	70.48	70.48	70.48	70.58	70.58	70.58	70.62	70.62	70.62	70.68	70.68	70.68	70.69	70.69	70.69
BU.1274	70.18	70.18	70.18	70.46	70.46	70.46	70.56	70.56	70.56	70.6	70.6	70.6	70.66	70.66	70.66	70.68	70.68	70.68
BU.1274u	70.18	70.18	70.18	70.46	70.46	70.46	70.56	70.56	70.56	70.6	70.6	70.6	70.66	70.66	70.66	70.68	70.68	70.68
BU.1274d	70.15	70.15	70.15	70.42	70.42	70.42	70.52	70.52	70.52	70.55	70.55	70.55	70.61	70.61	70.61	70.63	70.63	70.63
BU.1170u	69.98	69.98	69.98	70.2	70.2	70.2	70.27	70.27	70.27	70.29	70.29	70.29	70.32	70.32	70.32	70.33	70.33	70.33
BU.1170d	69.96	69.96	69.96	70.17	70.17	70.17	70.24	70.24	70.24	70.26	70.26	70.26	70.28	70.28	70.28	70.29	70.29	70.29
BU.1170	69.96	69.96	69.96	70.17	70.17	70.17	70.24	70.24	70.24	70.26	70.26	70.26	70.28	70.28	70.28	70.29	70.29	70.29
BU.1149	69.94	69.94	69.94	70.16	70.16	70.16	70.22	70.22	70.22	70.24	70.24	70.24	70.27	70.27	70.27	70.28	70.28	70.28
BU.1104	69.75	69.75	69.75	70.02	70.02	70.02	70.09	70.09	70.09	70.1	70.1	70.1	70.12	70.12	70.12	70.13	70.13	70.13
BU.1104u	69.75	69.75	69.75	70.02	70.02	70.02	70.09	70.09	70.09	70.1	70.1	70.1	70.12	70.12	70.12	70.13	70.13	70.13
BU.1104Sp	69.75	69.75	69.75	70.02	70.02	70.02	70.09	70.09	70.09	70.1	70.1	70.1	70.12	70.12	70.12	70.13	70.13	70.13
BU.1100d	69.77	69.77	69.77	69.94	69.94	69.94	70.01	70.01	70.01	70.01	70.01	70.01	70.02	70.02	70.02	70.02	70.02	70.02
BU.1100	69.77	69.77	69.77	69.94	69.94	69.94	70.01	70.01	70.01	70.01	70.01	70.01	70.02	70.02	70.02	70.02	70.02	70.02
BU.1100Sp	69.77	69.77	69.77	69.94	69.94	69.94	70.01	70.01	70.01	70.01	70.01	70.01	70.02	70.02	70.02	70.02	70.02	70.02
BU.1088	69.7	69.7	69.7	69.89	69.9	69.9	69.97	69.97	69.97	69.98	69.98	69.98	70	70	70	70	70	70
BU.1080	69.7	69.7	69.7	69.89	69.89	69.89	69.96	69.96	69.96	69.97	69.97	69.97	69.99	69.99	69.99	69.99	69.99	69.99
BU.1080u	69.7	69.7	69.7	69.89	69.89	69.89	69.96	69.96	69.96	69.97	69.97	69.97	69.99	69.99	69.99	69.99	69.99	69.99
BU.1080Sp	69.7	69.7	69.7	69.89	69.89	69.89	69.96	69.96	69.96	69.97	69.97	69.97	69.99	69.99	69.99	69.99	69.99	69.99
BU.1072d	69.7	69.7	69.7	69.86	69.86	69.86	69.92	69.92	69.92	69.93	69.93	69.93	69.96	69.96	69.96	69.96	69.96	69.96
BU.1072	69.7	69.7	69.7	69.86	69.86	69.86	69.92	69.92	69.92	69.93	69.93	69.93	69.96	69.96	69.96	69.96	69.96	69.96
BU.1072Sp	69.7	69.7	69.7	69.86	69.86	69.86	69.92	69.92	69.92	69.93	69.93	69.93	69.96	69.96	69.96	69.96	69.96	69.96
BU.1061	69.69	69.69	69.69	69.85	69.85	69.85	69.91	69.92	69.92	69.92	69.92	69.92	69.95	69.95	69.95	69.95	69.95	69.95
BU.1061u	69.69	69.69	69.69	69.85	69.85	69.85	69.91	69.92	69.92	69.92	69.92	69.92	69.95	69.95	69.95	69.95	69.95	69.95
BU.1061Sp	69.69	69.69	69.69	69.85	69.85	69.85	69.91	69.92	69.92	69.92	69.92	69.92	69.95	69.95	69.95	69.95	69.95	69.95
BU.1059d	69.67	69.67	69.67	69.82	69.82	69.82	69.89	69.89	69.89	69.89	69.89	69.89	69.92	69.92	69.92	69.92	69.92	69.92
BU.1059	69.67	69.67	69.67	69.82	69.82	69.82	69.89	69.89	69.89	69.89	69.89	69.89	69.92	69.92	69.92	69.92	69.92	69.92
BU.1059Sp	69.67	69.67	69.67	69.82	69.82	69.82	69.89	69.89	69.89	69.89	69.89	69.89	69.92	69.92	69.92	69.92	69.92	69.92
BU.1031	69.62	69.62	69.62	69.78	69.79	69.79	69.85	69.85	69.85	69.86	69.86	69.86	69.89	69.89	69.89	69.9	69.9	69.9
BU.1031u	69.62	69.62	69.62	69.78	69.79	69.79	69.85	69.85	69.85	69.86	69.86	69.86	69.89	69.89	69.89	69.9	69.9	69.9
BU.1031Sp	69.62	69.62	69.62	69.78	69.79	69.79	69.85	69.85	69.85	69.86	69.86	69.86	69.89	69.89	69.89	69.9	69.9	69.9
BU.1025d	69.58	69.58	69.58	69.72	69.72	69.72	69.78	69.79	69.79	69.79	69.79	69.79	69.83	69.83	69.83	69.83	69.83	69.83
BU.1021	69.59	69.59	69.59	69.73	69.73	69.73	69.79	69.79	69.79	69.8	69.8	69.8	69.84	69.84	69.84	69.84	69.84	69.84
BU.1025Sp	69.58	69.58	69.58	69.72	69.72	69.72	69.78	69.79	69.79	69.79	69.79	69.79	69.83	69.83	69.83	69.83	69.83	69.83
BU.1025	69.58	69.58	69.58	69.72	69.72	69.72	69.78	69.79	69.79	69.79	69.79	69.79	69.83	69.83	69.83	69.83	69.83	69.83
BU.990	69.55	69.55	69.55	69.7	69.7	69.7	69.76	69.76	69.76	69.77	69.77	69.77	69.81	69.81	69.81	69.81	69.81	69.81
BU.970	69.4	69.4	69.4	69.59	69.59	69.6	69.67	69.67	69.67	69.68	69.68	69.68	69.72	69.72	69.72	69.72	69.72	69.72
BU.970u	69.4	69.4	69.4	69.59	69.59	69.6	69.67	69.67	69.67	69.68	69.68	69.68	69.72	69.72	69.72	69.72	69.72	69.72
BU.970Sp	69.4	69.4	69.4	69.59	69.59	69.6	69.67	69.67	69.67	69.68	69.68	69.68	69.72	69.72	69.72	69.72	69.72	69.72
BU.970d	69.36	69.36	69.36	69.56	69.56	69.56	69.63	69.63	69.63	69.64	69.64	69.64	69.68	69.68	69.68	69.68	69.68	69.68
BU.962u	69.36	69.36	69.36	69.56	69.56	69.56	69.64	69.64	69.64	69.65	69.65	69.65	69.69	69.69	69.69	69.69	69.69	69.69
BU.962d	69.32	69.33	69.32	69.53	69.53	69.53	69.61	69.61	69.61	69.62	69.62	69.62	69.66	69.66	69.66	69.67	69.67	69.67
BU.962	69.32	69.33	69.32	69.53	69.53	69.53	69.61	69.61	69.61	69.62	69.62	69.62	69.66	69.66	69.66	69.67	69.67	69.67
BU.962Sp	69.32	69.33	69.32	69.53	69.53	69.53	69.61	69.61	69.61	69.62	69.62	69.62	69.66	69.66	69.66	69.67	69.67	69.67
BU.959.i	69.3	69.3	69.3	69.51	69.52	69.52	69.6	69.6	69.6	69.61	69.61	69.61	69.65	69.65	69.65	69.66	69.66	69.66
BU.959u	69.3	69.3	69.3	69.51	69.52	69.52	69.6	69.6	69.6	69.61	69.61	69.61	69.65	69.65	69.65	69.66	69.66	69.66
BU.959d	69.23	69.23	69.23	69.45	69.45	69.45	69.52	69.52	69.53	69.53	69.53	69.53	69.58	69.58	69.58	69.58	69.58	69.58
BU.910u	68.8	68.8	68.8	68.88	68.88	68.88	68.91	68.91	68.91	68.91	68.91	68.91	68.92	68.92	68.92	68.92	68.92	68.92
BU.910d	67.92	67.92	67.92	68.04	68.04	68.04	68.1	68.1	68.1	68.11	68.11	68.11	68.13	68.13	68.13	68.13	68.13	68.13
BU.908.r	67.92	67.92	67.92	68.04	68.04	68.04	68.1	68.1	68.1	68.11	68.11	68.11	68.13	68.13	68.13	68.13	68.13	68.13
BU.903	67.76	67.76	67.76	67.91	67.91	67.91	67.99	67.99	67.99	68	68	68	68.03	68.03	68.03	68.03	68.03	68.03
BU.903u	67.76	67.76	67.76	67.91	67.91	67.91	67.99	67.99	67.99	68	68	68	68.03	68.03	68.03	68.03	68.03	68.03
BU.903d	67.69	67.69	67.69	67.82	67.82	67.82	67.86	67.86	67.86	67.88	67.88	67.88	67.92	67.92	67.92	67.92	67.92	67.92
BU.890u	67.65	67.65	67.65	67.75	67.75	67.75	67.79	67.79	67.79	67.8	67.8	67.8	67.84	67.84	67.84	67.84	67.84	67.84

Node Reference	Peak Stage (mAOD)																	
	Annual Chance Events																	
	20%			5%			2%			1%			1%+CC70%			0.1%		
	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works
BU.890d	67.6	67.6	67.6	67.68	67.68	67.68	67.71	67.71	67.71	67.73	67.73	67.73	67.76	67.76	67.76	67.76	67.76	67.76
BU.890	67.6	67.6	67.6	67.68	67.68	67.68	67.71	67.71	67.71	67.73	67.73	67.73	67.76	67.76	67.76	67.76	67.76	67.76
BU.878	67.48	67.48	67.48	67.58	67.58	67.58	67.61	67.61	67.61	67.63	67.63	67.63	67.67	67.67	67.67	67.67	67.67	67.67
BU.878u	67.48	67.48	67.48	67.58	67.58	67.58	67.61	67.61	67.61	67.63	67.63	67.63	67.67	67.67	67.67	67.67	67.67	67.67
BU.878Sp	67.48	67.48	67.48	67.58	67.58	67.58	67.61	67.61	67.61	67.63	67.63	67.63	67.67	67.67	67.67	67.67	67.67	67.67
BU.874d	67.48	67.48	67.48	67.57	67.58	67.58	67.61	67.61	67.61	67.63	67.63	67.63	67.67	67.67	67.67	67.67	67.67	67.67
BU.874	67.48	67.48	67.48	67.57	67.58	67.58	67.61	67.61	67.61	67.63	67.63	67.63	67.67	67.67	67.67	67.67	67.67	67.67
BU.874Sp	67.48	67.48	67.48	67.57	67.58	67.58	67.61	67.61	67.61	67.63	67.63	67.63	67.67	67.67	67.67	67.67	67.67	67.67
BU.BA.Sp1	67.48	67.48	67.48	67.57	67.58	67.58	67.61	67.61	67.61	67.63	67.63	67.63	67.67	67.67	67.67	67.67	67.67	67.67
BU.853.LHS	67.39	67.39	67.39	67.51	67.51	67.51	67.55	67.55	67.55	67.57	67.57	67.57	67.62	67.62	67.62	67.63	67.63	67.63
BU.853	67.39	67.39	67.39	67.51	67.51	67.51	67.55	67.55	67.55	67.57	67.57	67.57	67.62	67.62	67.62	67.63	67.63	67.63
BA.00	67.39	67.39	67.39	67.51	67.51	67.51	67.55	67.55	67.55	67.57	67.57	67.57	67.62	67.62	67.62	67.63	67.63	67.63
PI.1.1871_IN	75.38	75.38	75.38	75.41	75.41	75.41	75.43	75.43	75.43	75.44	75.44	75.44	75.52	75.52	75.52	75.58	75.58	75.58
PI.1.1871_BF	75.38	75.38	75.38	75.41	75.41	75.41	75.43	75.43	75.43	75.44	75.44	75.44	75.52	75.52	75.52	75.58	75.58	75.58
BU.847	67.35	67.35	67.35	67.47	67.47	67.47	67.51	67.51	67.51	67.53	67.53	67.53	67.59	67.59	67.59	67.59	67.59	67.59
BU.747	67.02	67.02	67.02	67.09	67.09	67.09	67.11	67.11	67.11	67.12	67.12	67.12	67.2	67.2	67.2	67.21	67.21	67.21
BU.649	66.87	66.87	66.87	66.93	66.93	66.93	66.94	66.94	66.94	66.96	66.95	66.96	67.08	67.08	67.08	67.1	67.1	67.1
BU.622	66.86	66.86	66.86	66.91	66.91	66.91	66.93	66.93	66.93	66.95	66.95	66.95	67.08	67.08	67.08	67.1	67.1	67.1
BU.616	66.84	66.84	66.84	66.89	66.89	66.89	66.91	66.91	66.91	66.93	66.93	66.93	67.08	67.08	67.08	67.1	67.1	67.1
BU.616Or	66.84	66.84	66.84	66.89	66.89	66.89	66.91	66.91	66.91	66.93	66.93	66.93	67.08	67.08	67.08	67.1	67.1	67.1
BU.616Sp	66.84	66.84	66.84	66.89	66.89	66.89	66.91	66.91	66.91	66.93	66.93	66.93	67.08	67.08	67.08	67.1	67.1	67.1
BU.615Or	66.8	66.8	66.8	66.86	66.86	66.86	66.88	66.88	66.88	66.91	66.91	66.91	67.08	67.08	67.08	67.1	67.1	67.1
BU.615Sp	66.8	66.8	66.8	66.86	66.86	66.86	66.88	66.88	66.88	66.91	66.91	66.91	67.08	67.08	67.08	67.1	67.1	67.1
BU.615	66.8	66.8	66.8	66.86	66.86	66.86	66.88	66.88	66.88	66.91	66.91	66.91	67.08	67.08	67.08	67.1	67.1	67.1
BU.598	66.8	66.8	66.8	66.86	66.86	66.86	66.88	66.88	66.88	66.91	66.91	66.91	67.08	67.08	67.08	67.1	67.1	67.1
BU.598u	66.8	66.8	66.8	66.86	66.86	66.86	66.88	66.88	66.88	66.91	66.91	66.91	67.08	67.08	67.08	67.1	67.1	67.1
BU.598Sp	66.8	66.8	66.8	66.86	66.86	66.86	66.88	66.88	66.88	66.91	66.91	66.91	67.08	67.08	67.08	67.1	67.1	67.1
BU.598d	66.79	66.79	66.79	66.85	66.85	66.85	66.86	66.86	66.86	66.9	66.9	66.9	67.07	67.07	67.07	67.1	67.1	67.1
BU.576u	66.79	66.79	66.79	66.84	66.84	66.84	66.86	66.86	66.86	66.89	66.89	66.89	67.07	67.07	67.07	67.1	67.1	67.1
BU.576d	66.78	66.78	66.78	66.83	66.83	66.83	66.85	66.85	66.85	66.89	66.89	66.89	67.07	67.07	67.07	67.09	67.09	67.09
BU.576	66.78	66.78	66.78	66.83	66.83	66.83	66.85	66.85	66.85	66.89	66.89	66.89	67.07	67.07	67.07	67.09	67.09	67.09
BU.576Sp	66.78	66.78	66.78	66.83	66.83	66.83	66.85	66.85	66.85	66.89	66.89	66.89	67.07	67.07	67.07	67.09	67.09	67.09
BU.567	66.76	66.76	66.76	66.82	66.82	66.82	66.83	66.84	66.84	66.88	66.88	66.88	67.06	67.06	67.06	67.09	67.09	67.09
BU.520	66.69	66.7	66.7	66.75	66.75	66.75	66.8	66.8	66.8	66.85	66.85	66.85	67.06	67.06	67.06	67.09	67.09	67.09
BU.472	66.65	66.65	66.65	66.72	66.72	66.72	66.78	66.78	66.78	66.83	66.83	66.83	67.05	67.05	67.05	67.08	67.08	67.08
BU.426	66.59	66.59	66.59	66.65	66.66	66.66	66.71	66.71	66.71	66.77	66.77	66.77	66.99	66.99	66.99	67.02	67.02	67.02
BU.380	66.13	66.13	66.13	66.2	66.21	66.21	66.27	66.27	66.27	66.32	66.32	66.32	66.53	66.53	66.53	66.55	66.55	66.55
BU.370	66.12	66.12	66.12	66.19	66.19	66.19	66.24	66.24	66.24	66.29	66.29	66.29	66.44	66.44	66.44	66.46	66.46	66.46
BU.350	65.98	65.98	65.98	66.06	66.06	66.06	66.12	66.12	66.12	66.17	66.17	66.17	66.33	66.32	66.32	66.34	66.34	66.34
BU.301	65.81	65.81	65.81	65.89	65.89	65.89	65.95	65.96	65.96	66.01	66.01	66.01	66.3	66.29	66.29	66.28	66.27	66.27
BU.252	65.7	65.7	65.7	65.79	65.79	65.79	65.83	65.83	65.83	65.89	65.89	65.89	66.29	66.28	66.28	66.26	66.26	66.26
BU.229	65.66	65.66	65.66	65.76	65.76	65.76	65.8	65.8	65.8	65.87	65.87	65.87	66.29	66.28	66.28	66.27	66.26	66.26
BU.206	65.62	65.62	65.62	65.73	65.73	65.73	65.78	65.78	65.78	65.84	65.84	65.84	66.23	66.23	66.23	66.21	66.2	66.2
BU.200	65.62	65.62	65.62	65.72	65.73	65.73	65.77	65.77	65.77	65.82	65.82	65.82	66.2	66.2	66.2	66.18	66.17	66.17
BU.200u	65.62	65.62	65.62	65.72	65.73	65.73	65.77	65.77	65.77	65.82	65.82	65.82	66.2	66.2	66.2	66.18	66.17	66.17
BU.200d	65.6	65.61	65.61	65.71	65.71	65.71	65.75	65.75	65.75	65.8	65.8	65.8	66.11	66.11	66.11	66.09	66.09	66.09
BU.150u	65.6	65.6	65.6	65.71	65.71	65.71	65.75	65.75	65.75	65.8	65.8	65.8	66.1	66.1	66.1	66.08	66.07	66.07
BU.150d	65.6	65.6	65.6	65.71	65.71	65.71	65.74	65.74	65.74	65.79	65.79	65.79	66.04	66.04	66.04	66.03	66.02	66.02
BU.150	65.6	65.6	65.6	65.71	65.71	65.71	65.74	65.74	65.74	65.79	65.79	65.79	66.04	66.04	66.04	66.03	66.02	66.02
BU.139	65.6	65.6	65.6	65.7	65.7	65.7	65.74	65.74	65.74	65.79	65.79	65.79	66.05	66.05	66.04	66.03	66.02	66.02
BU.139.r	65.59	65.59	65.59	65.7	65.7	65.7	65.73	65.73	65.73	65.78	65.78	65.78	66.02	66.02	66.02	66	66	66
BU.139d	65.59	65.59	65.59	65.7	65.7	65.7	65.73	65.73	65.73	65.78	65.78	65.78	66.02	66.02	66.02	66	66	66
BU.64	65.54	65.54	65.54	65.67	65.67	65.67	65.73	65.73	65.73	65.78	65.78	65.78	66.03	66.02	66.02	66.01	66	66
BU.15	65.51	65.52	65.52	65.65	65.65	65.65	65.7	65.7	65.7	65.75	65.75	65.75	66	66	66	65.98	65.98	65.98
BU.00	65.51	65.51	65.51	65.65	65.65	65.65	65.7	65.7	65.7	65.75	65.75	65.75	66	66	66	65.98	65.98	65.98
BA.556	69.99	69.99	69.99	70.11	70.12	70.12	70.17	70.18	70.18	70.22	70.22	70.22	70.57	70.57	70.57	70.61	70.61	70.61

Node Reference	Peak Stage (mAOD)																	
	Annual Chance Events																	
	20%			5%			2%			1%			1%+CC70%			0.1%		
	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works
BA.556d	69.99	69.99	69.99	70.11	70.12	70.12	70.17	70.18	70.18	70.22	70.22	70.22	70.57	70.57	70.57	70.61	70.61	70.61
BA.353u	69.32	69.32	69.32	69.56	69.57	69.57	69.73	69.74	69.74	69.87	69.88	69.87	70.37	70.37	70.37	70.41	70.41	70.41
BA.353d	69.32	69.32	69.32	69.56	69.57	69.57	69.73	69.74	69.74	69.87	69.87	69.87	70.36	70.36	70.36	70.39	70.39	70.39
BA.353	69.32	69.32	69.32	69.56	69.57	69.57	69.73	69.74	69.74	69.87	69.87	69.87	70.36	70.36	70.36	70.39	70.39	70.39
BA.324	69.08	69.08	69.08	69.47	69.47	69.47	69.68	69.68	69.69	69.84	69.84	69.84	70.35	70.35	70.35	70.38	70.38	70.38
BA.310	69.02	69.02	69.02	69.43	69.44	69.44	69.65	69.66	69.66	69.82	69.82	69.82	70.33	70.33	70.33	70.37	70.37	70.37
BA.310u	69.02	69.02	69.02	69.43	69.44	69.44	69.65	69.66	69.66	69.82	69.82	69.82	70.33	70.33	70.33	70.37	70.37	70.37
BA.310d	69	69	69	69.4	69.4	69.4	69.61	69.61	69.61	69.76	69.76	69.76	70.26	70.26	70.26	70.29	70.29	70.29
BA.274u	68.95	68.95	68.95	69.3	69.31	69.31	69.47	69.47	69.47	69.59	69.59	69.59	70.03	70.03	70.03	70.06	70.06	70.06
BA.274d	68.95	68.95	68.95	69.28	69.29	69.29	69.43	69.43	69.43	69.54	69.54	69.54	69.94	69.94	69.94	69.97	69.97	69.97
BA.274	68.95	68.95	68.95	69.28	69.29	69.29	69.43	69.43	69.43	69.54	69.54	69.54	69.94	69.94	69.94	69.97	69.97	69.97
BA.228	68.85	68.85	68.85	69.17	69.18	69.18	69.32	69.32	69.32	69.43	69.43	69.43	69.87	69.87	69.87	69.9	69.9	69.9
BA.228u	68.85	68.85	68.85	69.17	69.18	69.18	69.32	69.32	69.32	69.43	69.43	69.43	69.87	69.87	69.87	69.9	69.9	69.9
BA.228Sp	68.85	68.85	68.85	69.17	69.18	69.18	69.32	69.32	69.32	69.43	69.43	69.43	69.87	69.87	69.87	69.9	69.9	69.9
BA.221d	68.83	68.83	68.83	69.12	69.12	69.12	69.24	69.24	69.24	69.34	69.34	69.34	69.77	69.77	69.77	69.81	69.81	69.81
BA.221	68.83	68.83	68.83	69.12	69.12	69.12	69.24	69.24	69.24	69.34	69.34	69.34	69.77	69.77	69.77	69.81	69.81	69.81
BA.221Sp	68.83	68.83	68.83	69.12	69.12	69.12	69.24	69.24	69.24	69.34	69.34	69.34	69.77	69.77	69.77	69.81	69.81	69.81
BA.198	68.82	68.82	68.82	69.11	69.12	69.12	69.23	69.24	69.24	69.33	69.33	69.33	69.77	69.77	69.77	69.8	69.8	69.8
BA.198u	68.82	68.82	68.82	69.11	69.12	69.12	69.23	69.24	69.24	69.33	69.33	69.33	69.77	69.77	69.77	69.8	69.8	69.8
BA.198d	68.81	68.81	68.81	69.1	69.1	69.1	69.21	69.21	69.22	69.31	69.31	69.31	69.73	69.73	69.73	69.76	69.76	69.76
BA.128u	68.25	68.25	68.25	68.47	68.47	68.47	68.57	68.58	68.58	68.66	68.66	68.66	68.95	68.95	68.95	68.97	68.97	68.97
BA.128d	68.18	68.18	68.18	68.37	68.37	68.37	68.47	68.47	68.47	68.54	68.54	68.54	68.79	68.79	68.79	68.8	68.8	68.8
BA.128	68.18	68.18	68.18	68.37	68.37	68.37	68.47	68.47	68.47	68.54	68.54	68.54	68.79	68.79	68.79	68.8	68.8	68.8
BA.76	67.69	67.69	67.69	67.99	67.99	67.99	68.14	68.14	68.14	68.26	68.26	68.26	68.63	68.63	68.63	68.65	68.65	68.65
BA.76u	67.69	67.69	67.69	67.99	67.99	67.99	68.14	68.14	68.14	68.26	68.26	68.26	68.63	68.63	68.63	68.65	68.65	68.65
BA.76d	67.67	67.67	67.67	67.96	67.96	67.96	68.1	68.1	68.1	68.21	68.22	68.21	68.57	68.57	68.57	68.6	68.6	68.6
BA.22u	67.47	67.47	67.47	67.64	67.64	67.64	67.71	67.72	67.72	67.76	67.76	67.76	67.88	67.88	67.88	67.89	67.89	67.89
BA.22d	67.44	67.45	67.45	67.59	67.59	67.59	67.64	67.64	67.64	67.67	67.67	67.67	67.73	67.73	67.73	67.74	67.74	67.74
BA.22	67.44	67.45	67.45	67.59	67.59	67.59	67.64	67.64	67.64	67.67	67.67	67.67	67.73	67.73	67.73	67.74	67.74	67.74
BA.BU.Sp1	67.44	67.45	67.45	67.59	67.59	67.59	67.64	67.64	67.64	67.67	67.67	67.67	67.73	67.73	67.73	67.74	67.74	67.74
PI.1871	75.38	75.38	75.38	75.41	75.41	75.41	75.43	75.43	75.43	75.44	75.44	75.44	75.52	75.52	75.52	75.58	75.58	75.58
PI.1845	75.32	75.32	75.32	75.36	75.36	75.36	75.38	75.38	75.38	75.39	75.39	75.39	75.51	75.51	75.51	75.57	75.57	75.57
PI.1845BU	75.32	75.32	75.32	75.36	75.36	75.36	75.38	75.38	75.38	75.39	75.39	75.39	75.51	75.51	75.51	75.57	75.57	75.57
PI.1845SU	75.32	75.32	75.32	75.36	75.36	75.36	75.38	75.38	75.38	75.39	75.39	75.39	75.51	75.51	75.51	75.57	75.57	75.57
PI.1845SD	75.28	75.28	75.28	75.34	75.34	75.34	75.36	75.36	75.36	75.39	75.39	75.39	75.51	75.51	75.51	75.57	75.57	75.57
PI.1845BD	75.28	75.28	75.28	75.34	75.34	75.34	75.36	75.36	75.36	75.39	75.39	75.39	75.51	75.51	75.51	75.57	75.57	75.57
PI.1842	75.28	75.28	75.28	75.34	75.34	75.34	75.36	75.36	75.36	75.39	75.39	75.39	75.51	75.51	75.51	75.57	75.57	75.57
PI.1710	74.95	74.95	74.95	75.15	75.15	75.15	75.19	75.19	75.19	75.28	75.28	75.28	75.5	75.5	75.5	75.56	75.56	75.56
PI.1710SU	74.95	74.95	74.95	75.15	75.15	75.15	75.19	75.19	75.19	75.28	75.28	75.28	75.5	75.5	75.5	75.56	75.56	75.56
PI.1710BU	74.95	74.95	74.95	75.15	75.15	75.15	75.19	75.19	75.19	75.28	75.28	75.28	75.5	75.5	75.5	75.56	75.56	75.56
PI.1710SD	74.84	74.84	74.84	75.1	75.1	75.1	75.18	75.18	75.18	75.28	75.28	75.28	75.5	75.5	75.5	75.56	75.56	75.56
PI.1710BD	74.84	74.84	74.84	75.1	75.1	75.1	75.18	75.18	75.18	75.28	75.28	75.28	75.5	75.5	75.5	75.56	75.56	75.56
PI.1708	74.84	74.84	74.84	75.1	75.1	75.1	75.18	75.18	75.18	75.28	75.28	75.28	75.5	75.5	75.5	75.56	75.56	75.56
PI.1697	74.77	74.77	74.77	75.05	75.05	75.05	75.14	75.14	75.14	75.25	75.25	75.25	75.49	75.49	75.49	75.55	75.55	75.55
PI.1697SU	74.77	74.77	74.77	75.05	75.05	75.05	75.14	75.14	75.14	75.25	75.25	75.25	75.49	75.49	75.49	75.55	75.55	75.55
PI.1697BU	74.77	74.77	74.77	75.05	75.05	75.05	75.14	75.14	75.14	75.25	75.25	75.25	75.49	75.49	75.49	75.55	75.55	75.55
PI.1697SD	74.01	74.01	74.01	74.07	74.07	74.07	74.08	74.08	74.08	74.09	74.09	74.09	74.21	74.21	74.21	74.29	74.29	74.29
PI.1687BD	74.01	74.01	74.01	74.07	74.07	74.07	74.08	74.08	74.08	74.09	74.09	74.09	74.21	74.21	74.21	74.29	74.29	74.29
PI.1687	74.01	74.01	74.01	74.07	74.07	74.07	74.08	74.08	74.08	74.09	74.09	74.09	74.21	74.21	74.21	74.29	74.29	74.29
PI.1675	73.8	73.8	73.8	73.86	73.86	73.86	73.87	73.87	73.87	73.88	73.88	73.88	74.04	74.04	74.04	74.17	74.17	74.17
PI.1642	73.59	73.59	73.59	73.65	73.65	73.65	73.67	73.67	73.67	73.68	73.68	73.68	73.95	73.95	73.95	74.11	74.11	74.11
PI.1642SU	73.59	73.59	73.59	73.65	73.65	73.65	73.67	73.67	73.67	73.68	73.68	73.68	73.95	73.95	73.95	74.11	74.11	74.11
PI.1642BU	73.59	73.59	73.59	73.65	73.65	73.65	73.67	73.67	73.67	73.68	73.68	73.68	73.95	73.95	73.95	74.11	74.11	74.11
PI.1642SD	73.59	73.59	73.59	73.65	73.65	73.65	73.67	73.67	73.67	73.68	73.68	73.68	73.96	73.96	73.96	74.11	74.11	74.11
PI.1642BD	73.59	73.59	73.59	73.65	73.65	73.65	73.67	73.67	73.67	73.68	73.68	73.68	73.96	73.96	73.96	74.11	74.11	74.11
PI.1640	73.59	73.59	73.59	73.65	73.65	73.65	73.67	73.67	73.67	73.68	73.68	73.68	73.96	73.96	73.96	74.11	74.11	74.11

Node Reference	Peak Stage (mAOD)																	
	Annual Chance Events																	
	20%			5%			2%			1%			1%+CC70%			0.1%		
	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works
PI.1580	73.35	73.35	73.35	73.43	73.43	73.43	73.46	73.46	73.46	73.48	73.48	73.48	73.89	73.89	73.89	74.07	74.07	74.07
PI.1580SU	73.35	73.35	73.35	73.43	73.43	73.43	73.46	73.46	73.46	73.48	73.48	73.48	73.89	73.89	73.89	74.07	74.07	74.07
PI.1580I	73.35	73.35	73.35	73.43	73.43	73.43	73.46	73.46	73.46	73.48	73.48	73.48	73.89	73.89	73.89	74.07	74.07	74.07
PI.1580SD	73.32	73.32	73.32	73.4	73.4	73.4	73.43	73.43	73.43	73.45	73.45	73.45	73.87	73.87	73.87	74.03	74.03	74.03
PI.1580CU	73.34	73.34	73.34	73.42	73.42	73.42	73.45	73.45	73.45	73.47	73.47	73.47	73.88	73.88	73.88	74.05	74.05	74.05
PI.1570CD	73.32	73.32	73.32	73.4	73.4	73.4	73.44	73.44	73.44	73.46	73.46	73.46	73.87	73.87	73.87	74.04	74.04	74.04
PI.1570U	73.32	73.32	73.32	73.4	73.4	73.4	73.43	73.43	73.43	73.45	73.45	73.45	73.87	73.87	73.87	74.03	74.03	74.03
PI.1570	73.32	73.32	73.32	73.4	73.4	73.4	73.43	73.43	73.43	73.45	73.45	73.45	73.87	73.87	73.87	74.03	74.03	74.03
PI.1455	72.98	72.98	72.98	73.1	73.1	73.1	73.17	73.17	73.17	73.23	73.23	73.23	73.82	73.82	73.82	74	74	74
PI.1410	72.88	72.88	72.88	73.02	73.02	73.02	73.11	73.11	73.11	73.18	73.18	73.18	73.81	73.81	73.81	74	74	74
PI.1410SU	72.88	72.88	72.88	73.02	73.02	73.02	73.11	73.11	73.11	73.18	73.18	73.18	73.81	73.81	73.81	74	74	74
PI.1410I	72.88	72.88	72.88	73.02	73.02	73.02	73.11	73.11	73.11	73.18	73.18	73.18	73.81	73.81	73.81	74	74	74
PI.1410SD	72.76	72.76	72.76	72.87	72.87	72.87	72.93	72.93	72.93	72.97	72.97	72.97	73.29	73.29	73.29	73.36	73.36	73.36
PI.1410CU	72.85	72.85	72.85	72.98	72.99	72.98	73.07	73.07	73.07	73.13	73.13	73.13	73.7	73.7	73.7	73.86	73.86	73.86
PI.1397CD	72.78	72.78	72.78	72.9	72.9	72.9	72.97	72.97	72.97	73.02	73.02	73.02	73.44	73.44	73.44	73.54	73.54	73.54
PI.1397U	72.76	72.76	72.76	72.87	72.87	72.87	72.93	72.93	72.93	72.97	72.97	72.97	73.29	73.29	73.29	73.36	73.36	73.36
PI.1397	72.76	72.76	72.76	72.87	72.87	72.87	72.93	72.93	72.93	72.97	72.97	72.97	73.29	73.29	73.29	73.36	73.36	73.36
PI.1389	72.71	72.71	72.71	72.84	72.84	72.84	72.9	72.91	72.91	72.94	72.94	72.94	73.28	73.28	73.28	73.36	73.36	73.36
PI.1389SU	72.71	72.71	72.71	72.84	72.84	72.84	72.9	72.91	72.91	72.94	72.94	72.94	73.28	73.28	73.28	73.36	73.36	73.36
PI.1389I	72.71	72.71	72.71	72.84	72.84	72.84	72.9	72.91	72.91	72.94	72.94	72.94	73.28	73.28	73.28	73.36	73.36	73.36
PI.1389SD	72.65	72.65	72.65	72.76	72.77	72.77	72.82	72.82	72.82	72.86	72.86	72.86	73.08	73.08	73.08	73.12	73.12	73.12
PI.1389CU	72.69	72.69	72.69	72.81	72.81	72.81	72.87	72.88	72.88	72.91	72.91	72.91	73.21	73.21	73.21	73.28	73.28	73.28
PI.1384CD	72.67	72.67	72.67	72.79	72.79	72.79	72.86	72.86	72.86	72.89	72.89	72.89	73.17	73.16	73.16	73.22	73.22	73.22
PI.1384U	72.65	72.65	72.65	72.76	72.77	72.77	72.82	72.82	72.82	72.86	72.86	72.86	73.08	73.08	73.08	73.12	73.12	73.12
PI.1384	72.65	72.65	72.65	72.76	72.77	72.77	72.82	72.82	72.82	72.86	72.86	72.86	73.08	73.08	73.08	73.12	73.12	73.12
PI.1147	71.51	71.51	71.51	71.58	71.58	71.58	71.61	71.61	71.61	71.63	71.63	71.63	71.69	71.69	71.69	71.71	71.71	71.71
PI.0896	69.44	69.44	69.44	69.52	69.52	69.52	69.56	69.56	69.56	69.58	69.58	69.58	69.68	69.68	69.68	69.7	69.69	69.69
PI.0620	68.22	68.23	68.22	68.37	68.37	68.37	68.45	68.45	68.46	68.51	68.51	68.51	68.82	68.82	68.82	68.86	68.86	68.86
PI.0620SU	68.22	68.23	68.22	68.37	68.37	68.37	68.45	68.45	68.46	68.51	68.51	68.51	68.82	68.82	68.82	68.86	68.86	68.86
PI.0620I	68.22	68.23	68.22	68.37	68.37	68.37	68.45	68.45	68.46	68.51	68.51	68.51	68.82	68.82	68.82	68.86	68.86	68.86
PI.0620SD	68.21	68.21	68.21	68.33	68.33	68.33	68.4	68.4	68.4	68.44	68.44	68.44	68.63	68.63	68.63	68.65	68.65	68.65
PI.0620CU	68.22	68.22	68.22	68.36	68.36	68.36	68.44	68.44	68.44	68.5	68.5	68.5	68.77	68.77	68.77	68.81	68.81	68.81
PI.0595CD	68.21	68.21	68.21	68.34	68.34	68.34	68.41	68.41	68.41	68.45	68.45	68.45	68.67	68.67	68.67	68.7	68.7	68.7
PI.0595U	68.21	68.21	68.21	68.33	68.33	68.33	68.4	68.4	68.4	68.44	68.44	68.44	68.63	68.63	68.63	68.65	68.65	68.65
PI.0595	68.21	68.21	68.21	68.33	68.33	68.33	68.4	68.4	68.4	68.44	68.44	68.44	68.63	68.63	68.63	68.65	68.65	68.65
PI.0493	68.09	68.09	68.09	68.21	68.21	68.21	68.27	68.27	68.27	68.31	68.31	68.31	68.48	68.48	68.48	68.5	68.5	68.5
PI.0400	67.81	67.81	67.81	67.91	67.92	67.92	67.97	67.97	67.97	68.01	68.01	68.01	68.16	68.16	68.16	68.18	68.18	68.18
PI.0400SU	67.81	67.81	67.81	67.91	67.92	67.92	67.97	67.97	67.97	68.01	68.01	68.01	68.16	68.16	68.16	68.18	68.18	68.18
PI.0400BU	67.81	67.81	67.81	67.91	67.92	67.92	67.97	67.97	67.97	68.01	68.01	68.01	68.16	68.16	68.16	68.18	68.18	68.18
PI.0400SD	67.81	67.81	67.81	67.91	67.91	67.91	67.97	67.97	67.97	68.01	68.01	68.01	68.17	68.17	68.16	68.18	68.18	68.18
PI.0400BD	67.81	67.81	67.81	67.91	67.91	67.91	67.97	67.97	67.97	68.01	68.01	68.01	68.17	68.17	68.16	68.18	68.18	68.18
PI.0399	67.81	67.81	67.81	67.91	67.91	67.91	67.97	67.97	67.97	68.01	68.01	68.01	68.17	68.17	68.16	68.18	68.18	68.18
PI.0292	67.42	67.43	67.43	67.51	67.51	67.51	67.55	67.55	67.55	67.58	67.58	67.58	67.71	67.71	67.71	67.72	67.72	67.72
PI.0185	67.14	67.14	67.14	67.23	67.23	67.23	67.26	67.26	67.26	67.29	67.29	67.29	67.41	67.41	67.41	67.42	67.42	67.42
PI.0169	67.11	67.11	67.11	67.18	67.18	67.18	67.22	67.22	67.22	67.24	67.24	67.24	67.35	67.35	67.35	67.36	67.36	67.36
PI.0169SU	67.11	67.11	67.11	67.18	67.18	67.18	67.22	67.22	67.22	67.24	67.24	67.24	67.35	67.35	67.35	67.36	67.36	67.36
PI.0169BU	67.11	67.11	67.11	67.18	67.18	67.18	67.22	67.22	67.22	67.24	67.24	67.24	67.35	67.35	67.35	67.36	67.36	67.36
PI.0169SD	67.1	67.1	67.1	67.18	67.18	67.18	67.21	67.21	67.21	67.24	67.24	67.24	67.35	67.35	67.35	67.36	67.36	67.36
PI.0169BD	67.1	67.1	67.1	67.18	67.18	67.18	67.21	67.21	67.21	67.24	67.24	67.24	67.35	67.35	67.35	67.36	67.36	67.36
PI.0165	67.1	67.1	67.1	67.18	67.18	67.18	67.21	67.21	67.21	67.24	67.24	67.24	67.35	67.35	67.35	67.36	67.36	67.36
PI.0020	66.81	66.81	66.81	66.87	66.88	66.88	66.89	66.89	66.89	66.92	66.92	66.92	67.09	67.09	67.09	67.11	67.11	67.11
PI.0000	66.8	66.8	66.8	66.86	66.86	66.86	66.88	66.88	66.88	66.91	66.91	66.91	67.08	67.08	67.08	67.1	67.1	67.1
LA.1.6715_IN	72.6	72.6	72.6	72.81	72.81	72.81	72.93	72.93	72.93	72.99	72.99	72.99	73.13	73.13	73.13	73.12	73.12	73.12
LA.1.6715_BF	72.6	72.6	72.6	72.81	72.81	72.81	72.93	72.93	72.93	72.99	72.99	72.99	73.13	73.13	73.13	73.12	73.12	73.12
LA.2_IN	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99
LA.3_IN	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99

Node Reference	Peak Stage (mAOD)																	
	Annual Chance Events																	
	20%			5%			2%			1%			1%+CC70%			0.1%		
	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works
BA.sweet_i	69.99	69.99	69.99	70.11	70.12	70.12	70.17	70.18	70.18	70.22	70.22	70.22	70.57	70.57	70.57	70.61	70.61	70.61
PI.2_IN	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99
BU.1.3507_IN	78.74	78.74	78.74	78.9	78.9	78.9	79	79	79	79.08	79.08	79.08	79.47	79.47	79.47	79.55	79.55	79.55
BU.1.3507_BF	78.74	78.74	78.74	78.9	78.9	78.9	79	79	79	79.08	79.08	79.08	79.47	79.47	79.47	79.55	79.55	79.55
BU.2_IN	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99
LA.4_IN	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99	-9999.99
PI.1871_L	75.38	75.38	75.38	75.41	75.41	75.41	75.43	75.43	75.43	75.44	75.44	75.44	75.52	75.52	75.52	75.58	75.58	75.58
PI.1842_L	75.28	75.28	75.28	75.34	75.34	75.34	75.36	75.36	75.36	75.39	75.39	75.39	75.51	75.51	75.51	75.57	75.57	75.57
PI.1708_L	74.84	74.84	74.84	75.1	75.1	75.1	75.18	75.18	75.18	75.28	75.28	75.28	75.5	75.5	75.5	75.56	75.56	75.56
PI.1687_L	74.01	74.01	74.01	74.07	74.07	74.07	74.08	74.08	74.08	74.09	74.09	74.09	74.21	74.21	74.21	74.29	74.29	74.29
PI.1675_L	73.8	73.8	73.8	73.86	73.86	73.86	73.87	73.87	73.87	73.88	73.88	73.88	74.04	74.04	74.04	74.17	74.17	74.17
PI.1640_L	73.59	73.59	73.59	73.65	73.65	73.65	73.67	73.67	73.67	73.68	73.68	73.68	73.96	73.96	73.96	74.11	74.11	74.11
PI.1570_L	73.32	73.32	73.32	73.4	73.4	73.4	73.43	73.43	73.43	73.45	73.45	73.45	73.87	73.87	73.87	74.03	74.03	74.03
PI.1455_L	72.98	72.98	72.98	73.1	73.1	73.1	73.17	73.17	73.17	73.23	73.23	73.23	73.82	73.82	73.82	74	74	74
PI.1397_L	72.76	72.76	72.76	72.87	72.87	72.87	72.93	72.93	72.93	72.97	72.97	72.97	73.29	73.29	73.29	73.36	73.36	73.36
PI.1384_L	72.65	72.65	72.65	72.76	72.77	72.77	72.82	72.82	72.82	72.86	72.86	72.86	73.08	73.08	73.08	73.12	73.12	73.12
PI.1147_L	71.51	71.51	71.51	71.58	71.58	71.58	71.61	71.61	71.61	71.63	71.63	71.63	71.69	71.69	71.69	71.71	71.71	71.71
PI.0896_L	69.44	69.44	69.44	69.52	69.52	69.52	69.56	69.56	69.56	69.58	69.58	69.58	69.68	69.68	69.68	69.7	69.69	69.69
PI.0595_L	68.21	68.21	68.21	68.33	68.33	68.33	68.4	68.4	68.4	68.44	68.44	68.44	68.63	68.63	68.63	68.65	68.65	68.65
PI.0493_L	68.09	68.09	68.09	68.21	68.21	68.21	68.27	68.27	68.27	68.31	68.31	68.31	68.48	68.48	68.48	68.5	68.5	68.5
PI.0399_L	67.81	67.81	67.81	67.91	67.91	67.91	67.97	67.97	67.97	68.01	68.01	68.01	68.17	68.17	68.16	68.18	68.18	68.18
PI.0292_L	67.42	67.43	67.43	67.51	67.51	67.51	67.55	67.55	67.55	67.58	67.58	67.58	67.71	67.71	67.71	67.72	67.72	67.72
PI.0185_L	67.14	67.14	67.14	67.23	67.23	67.23	67.26	67.26	67.26	67.29	67.29	67.29	67.41	67.41	67.41	67.42	67.42	67.42
PI.0165_L	67.1	67.1	67.1	67.18	67.18	67.18	67.21	67.21	67.21	67.24	67.24	67.24	67.35	67.35	67.35	67.36	67.36	67.36
PI.0020_L	66.81	66.81	66.81	66.87	66.88	66.88	66.89	66.89	66.89	66.92	66.92	66.92	67.09	67.09	67.09	67.11	67.11	67.11
LA.1589d_L	65.51	65.51	65.51	65.64	65.65	65.65	65.7	65.7	65.7	65.75	65.75	65.75	66	66	66	65.98	65.98	65.98
LA.1350D_L	65.12	65.12	65.12	65.27	65.27	65.27	65.33	65.34	65.34	65.38	65.38	65.38	65.57	65.57	65.57	65.55	65.55	65.55
LA.0210_L	63.7	63.71	63.71	63.91	63.91	63.91	63.98	63.98	63.98	64.04	64.04	64.04	64.2	64.2	64.19	64.19	64.19	64.19
LA.0017_L	63.63	63.64	63.64	63.87	63.88	63.88	63.95	63.95	63.95	64.01	64.01	64.01	64.17	64.17	64.17	64.16	64.16	64.16
LA.1840_L	65.64	65.64	65.64	65.83	65.83	65.83	65.92	65.93	65.93	65.97	65.97	65.97	66.22	66.22	66.22	66.21	66.2	66.2
LA.2060_L	65.8	65.81	65.81	66.08	66.08	66.08	66.21	66.22	66.22	66.3	66.29	66.29	66.72	66.72	66.72	66.69	66.68	66.68
LA.2625_R_L	66.26	66.26	66.26	66.34	66.34	66.34	66.38	66.38	66.38	66.42	66.41	66.41	66.74	66.74	66.74	66.71	66.71	66.71
LA.3919_L	68.33	68.27	68.27	68.82	68.8	68.8	69.04	69.02	69.02	69.19	69.18	69.18	69.3	69.3	69.3	69.29	69.29	69.29
LA.4493D_L	68.9	68.89	68.89	69.18	69.18	69.18	69.34	69.32	69.32	69.51	69.5	69.5	69.77	69.77	69.77	69.75	69.75	69.75
LA.5098_L	69.81	69.81	69.81	70.11	70.11	70.11	70.31	70.32	70.32	70.38	70.39	70.39	70.5	70.5	70.5	70.49	70.49	70.49
LA.5966_L	71.22	71.22	71.22	71.28	71.28	71.28	71.31	71.31	71.31	71.34	71.34	71.34	71.45	71.45	71.45	71.44	71.44	71.43
BU.3507_L	78.74	78.74	78.74	78.9	78.9	78.9	79	79	79	79.08	79.08	79.08	79.47	79.47	79.47	79.55	79.55	79.55
BU.3471_L	78.44	78.44	78.44	78.55	78.55	78.55	78.62	78.62	78.62	78.66	78.66	78.66	78.8	78.8	78.8	78.82	78.82	78.82
BU.3452_L	78.32	78.32	78.32	78.43	78.43	78.43	78.49	78.49	78.49	78.55	78.55	78.55	78.72	78.72	78.72	78.75	78.75	78.75
BU.3352_L	77.81	77.81	77.81	77.93	77.93	77.93	78	78	78	78.06	78.06	78.06	78.29	78.29	78.29	78.32	78.32	78.32
BU.3264_L	77.54	77.54	77.54	77.67	77.67	77.67	77.75	77.75	77.75	77.82	77.82	77.82	78.07	78.07	78.07	78.12	78.12	78.12
BU.3220_L	77.37	77.37	77.37	77.48	77.48	77.48	77.55	77.55	77.55	77.6	77.6	77.6	77.82	77.82	77.82	77.86	77.86	77.86
BU.3203_L	77.28	77.28	77.28	77.41	77.41	77.41	77.48	77.48	77.48	77.53	77.53	77.53	77.76	77.76	77.76	77.8	77.8	77.8
BU.3134_L	77.03	77.03	77.03	77.2	77.2	77.2	77.26	77.26	77.26	77.31	77.31	77.3	77.48	77.48	77.48	77.51	77.51	77.51
BU.3049_L	76.58	76.58	76.58	76.69	76.69	76.69	76.73	76.73	76.73	76.77	76.77	76.77	77.12	77.12	77.12	77.37	77.37	77.37
BU.3042_L	76.55	76.55	76.55	76.67	76.67	76.67	76.72	76.72	76.72	76.76	76.76	76.76	77.12	77.12	77.12	77.37	77.37	77.37
BU.2914_L	76.18	76.18	76.18	76.36	76.36	76.36	76.42	76.42	76.42	76.45	76.45	76.45	77.09	77.09	77.09	77.36	77.36	77.36
BU.2893_L	76.15	76.15	76.15	76.32	76.32	76.32	76.38	76.38	76.38	76.41	76.41	76.41	77.09	77.09	77.09	77.36	77.36	77.36
BU.2801_L	75.57	75.57	75.57	75.74	75.74	75.74	75.9	75.91	75.91	76.09	76.09	76.09	77.08	77.08	77.08	77.36	77.36	77.36
BU.2710_L	75.16	75.16	75.16	75.4	75.4	75.41	75.69	75.7	75.7	75.99	75.99	75.99	77.08	77.08	77.08	77.36	77.36	77.36
BU.2621_L	75.06	75.06	75.06	75.38	75.39	75.39	75.69	75.69	75.69	75.99	75.99	75.99	77.08	77.08	77.08	77.36	77.36	77.36
BU.2609_L	75.05	75.05	75.05	75.37	75.38	75.38	75.68	75.69	75.69	75.99	75.99	75.99	77.08	77.08	77.08	77.36	77.36	77.36
BU.2588_L	75.05	75.05	75.05	75.37	75.38	75.38	75.68	75.69	75.69	75.99	75.99	75.99	77.08	77.08	77.08	77.36	77.36	77.36
BU.2560_L	75.04	75.04	75.04	75.37	75.38	75.38	75.68	75.69	75.69	75.99	75.99	75.99	77.08	77.08	77.08	77.36	77.36	77.36
BU.2533_L	75.04	75.04	75.04	75.37	75.37	75.37	75.68	75.69	75.69	75.99	75.99	75.99	77.08	77.08	77.08	77.36	77.36	77.36
BU.2461_L	74.57	74.57	74.57	74.79	74.79	74.79	74.9	74.9	74.9	74.98	74.98	74.98	75.22	75.22	75.22	75.27	75.27	75.27

Node Reference	Peak Stage (mAOD)																	
	Annual Chance Events																	
	20%			5%			2%			1%			1%+CC70%			0.1%		
	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works	Baseline	Temporary and Permanent Works	Permanent Works
BU.2397_L	74.36	74.36	74.36	74.6	74.6	74.6	74.71	74.71	74.71	74.8	74.8	74.8	75.04	75.04	75.04	75.09	75.09	75.09
BU.2250_L	73.59	73.59	73.59	73.76	73.76	73.76	73.84	73.84	73.84	73.91	73.91	73.91	74.14	74.14	74.14	74.19	74.19	74.19
BU.2216_L	73.37	73.37	73.37	73.54	73.54	73.54	73.62	73.62	73.62	73.68	73.68	73.68	73.89	73.89	73.89	73.94	73.94	73.94
BU.2209_L	73.34	73.34	73.34	73.51	73.51	73.51	73.59	73.59	73.59	73.65	73.65	73.65	73.87	73.87	73.87	73.91	73.91	73.91
BU.2134_L	72.35	72.35	72.35	72.5	72.5	72.5	72.57	72.57	72.57	72.63	72.63	72.63	72.77	72.77	72.77	72.8	72.8	72.8
BU.2092_L	72.2	72.2	72.2	72.37	72.37	72.37	72.46	72.46	72.46	72.53	72.53	72.53	72.68	72.68	72.68	72.71	72.71	72.71
BU.2089_L	72.18	72.18	72.18	72.35	72.35	72.35	72.43	72.43	72.43	72.5	72.5	72.5	72.64	72.64	72.64	72.67	72.67	72.67
BU.1983_L	71.97	71.97	71.97	72.09	72.09	72.09	72.16	72.16	72.16	72.23	72.23	72.23	72.39	72.39	72.39	72.42	72.42	72.42
BU.1960_L	71.61	71.62	71.61	71.79	71.79	71.79	71.85	71.85	71.85	71.9	71.9	71.9	72.01	72.01	72.01	72.03	72.03	72.03
BU.1889_L	71.37	71.37	71.37	71.56	71.56	71.56	71.63	71.63	71.63	71.7	71.7	71.7	71.85	71.85	71.85	71.87	71.87	71.87
BU.1764_L	71.04	71.05	71.05	71.26	71.26	71.26	71.33	71.34	71.34	71.4	71.4	71.4	71.56	71.56	71.56	71.59	71.59	71.59
BU.1738.r_L	70.69	70.69	70.69	70.86	70.86	70.86	70.94	70.95	70.95	71.01	71.01	71.01	71.2	71.2	71.2	71.24	71.24	71.24
BU.1737_L	70.62	70.62	70.62	70.79	70.79	70.79	70.87	70.87	70.87	70.92	70.92	70.92	71.07	71.07	71.07	71.11	71.11	71.11
BU.1708_L	70.61	70.61	70.61	70.8	70.8	70.8	70.88	70.88	70.88	70.93	70.93	70.93	71.07	71.07	71.07	71.09	71.09	71.09
BU.1614_L	70.49	70.49	70.49	70.72	70.72	70.72	70.81	70.81	70.81	70.87	70.87	70.87	71.01	71.01	71.01	71.04	71.04	71.04
BU.1548_L	70.4	70.4	70.4	70.63	70.64	70.64	70.73	70.73	70.73	70.78	70.78	70.78	70.92	70.92	70.92	70.95	70.95	70.95
BU.1452_L	70.3	70.3	70.3	70.55	70.55	70.55	70.65	70.65	70.65	70.7	70.7	70.7	70.81	70.81	70.81	70.83	70.83	70.83
BU.1442_L	70.3	70.3	70.3	70.54	70.55	70.55	70.65	70.65	70.65	70.7	70.7	70.7	70.81	70.81	70.81	70.83	70.83	70.83
BU.1347_L	70.25	70.25	70.25	70.52	70.52	70.52	70.62	70.62	70.62	70.67	70.67	70.67	70.77	70.77	70.77	70.79	70.79	70.79
BU.1301_L	70.22	70.22	70.22	70.48	70.48	70.48	70.58	70.58	70.58	70.62	70.62	70.62	70.68	70.68	70.68	70.69	70.69	70.69
BU.1170_L	69.96	69.96	69.96	70.17	70.17	70.17	70.24	70.24	70.24	70.26	70.26	70.26	70.28	70.28	70.28	70.29	70.29	70.29
BU.1149_L	69.94	69.94	69.94	70.16	70.16	70.16	70.22	70.22	70.22	70.24	70.24	70.24	70.27	70.27	70.27	70.28	70.28	70.28
BU.1100_L	69.77	69.77	69.77	69.94	69.94	69.94	70.01	70.01	70.01	70.01	70.01	70.01	70.02	70.02	70.02	70.02	70.02	70.02
BU.1088_L	69.7	69.7	69.7	69.89	69.9	69.9	69.97	69.97	69.97	69.98	69.98	69.98	70	70	70	70	70	70
BU.1072_L	69.7	69.7	69.7	69.86	69.86	69.86	69.92	69.92	69.92	69.93	69.93	69.93	69.96	69.96	69.96	69.96	69.96	69.96
BU.1059_L	69.67	69.67	69.67	69.82	69.82	69.82	69.89	69.89	69.89	69.89	69.89	69.89	69.92	69.92	69.92	69.92	69.92	69.92
BU.1025_L	69.58	69.58	69.58	69.72	69.72	69.72	69.78	69.79	69.79	69.79	69.79	69.79	69.83	69.83	69.83	69.83	69.83	69.83
BU.1021_L	69.59	69.59	69.59	69.73	69.73	69.73	69.79	69.79	69.79	69.8	69.8	69.8	69.84	69.84	69.84	69.84	69.84	69.84
BU.990_L	69.55	69.55	69.55	69.7	69.7	69.7	69.76	69.76	69.76	69.77	69.77	69.77	69.81	69.81	69.81	69.81	69.81	69.81
BU.962_L	69.32	69.33	69.32	69.53	69.53	69.53	69.61	69.61	69.61	69.62	69.62	69.62	69.66	69.66	69.66	69.67	69.67	69.67
BU.908.r_L	67.92	67.92	67.92	68.04	68.04	68.04	68.1	68.1	68.1	68.11	68.11	68.11	68.13	68.13	68.13	68.13	68.13	68.13
BU.890_L	67.6	67.6	67.6	67.68	67.68	67.68	67.71	67.71	67.71	67.73	67.73	67.73	67.76	67.76	67.76	67.76	67.76	67.76
BU.874_L	67.48	67.48	67.48	67.57	67.58	67.58	67.61	67.61	67.61	67.63	67.63	67.63	67.67	67.67	67.67	67.67	67.67	67.67
BU.853_L	67.39	67.39	67.39	67.51	67.51	67.51	67.55	67.55	67.55	67.57	67.57	67.57	67.62	67.62	67.62	67.63	67.63	67.63
BU.847_L	67.35	67.35	67.35	67.47	67.47	67.47	67.51	67.51	67.51	67.53	67.53	67.53	67.59	67.59	67.59	67.59	67.59	67.59
BU.747_L	67.02	67.02	67.02	67.09	67.09	67.09	67.11	67.11	67.11	67.12	67.12	67.12	67.2	67.2	67.2	67.21	67.21	67.21
BU.649_L	66.87	66.87	66.87	66.93	66.93	66.93	66.94	66.94	66.94	66.96	66.95	66.96	67.08	67.08	67.08	67.1	67.1	67.1
BU.622_L	66.86	66.86	66.86	66.91	66.91	66.91	66.93	66.93	66.93	66.95	66.95	66.95	67.08	67.08	67.08	67.1	67.1	67.1
BU.615_L	66.8	66.8	66.8	66.86	66.86	66.86	66.88	66.88	66.88	66.91	66.91	66.91	67.08	67.08	67.08	67.1	67.1	67.1
BU.576_L	66.78	66.78	66.78	66.83	66.83	66.83	66.85	66.85	66.85	66.89	66.89	66.89	67.07	67.07	67.07	67.09	67.09	67.09
BU.567_L	66.76	66.76	66.76	66.82	66.82	66.82	66.83	66.84	66.84	66.88	66.88	66.88	67.06	67.06	67.06	67.09	67.09	67.09
BU.520_L	66.69	66.7	66.7	66.75	66.75	66.75	66.8	66.8	66.8	66.85	66.85	66.85	67.06	67.06	67.06	67.09	67.09	67.09
BU.472_L	66.65	66.65	66.65	66.72	66.72	66.72	66.78	66.78	66.78	66.83	66.83	66.83	67.05	67.05	67.05	67.08	67.08	67.08
BU.426_L	66.59	66.59	66.59	66.65	66.66	66.66	66.71	66.71	66.71	66.77	66.77	66.77	66.99	66.99	66.99	67.02	67.02	67.02
BU.370_L	66.12	66.12	66.12	66.19	66.19	66.19	66.24	66.24	66.24	66.29	66.29	66.29	66.44	66.44	66.44	66.46	66.46	66.46
BU.350_L	65.98	65.98	65.98	66.06	66.06	66.06	66.12	66.12	66.12	66.17	66.17	66.17	66.33	66.32	66.32	66.34	66.34	66.34
BU.301_L	65.81	65.81	65.81	65.89	65.89	65.89	65.95	65.96	65.96	66.01	66.01	66.01	66.3	66.29	66.29	66.28	66.27	66.27
BU.252_L	65.7	65.7	65.7	65.79	65.79	65.79	65.83	65.83	65.83	65.89	65.89	65.89	66.29	66.28	66.28	66.26	66.26	66.26
BU.229_L	65.66	65.66	65.66	65.76	65.76	65.76	65.8	65.8	65.8	65.87	65.87	65.87	66.29	66.28	66.28	66.27	66.26	66.26
BU.206_L	65.62	65.62	65.62	65.73	65.73	65.73	65.78	65.78	65.78	65.84	65.84	65.84	66.23	66.23	66.23	66.21	66.2	66.2
BU.150_L	65.6	65.6	65.6	65.71	65.71	65.71	65.74	65.74	65.74	65.79	65.79	65.79	66.04	66.04	66.04	66.03	66.02	66.02
BU.139.r_L	65.59	65.59	65.59	65.7	65.7	65.7	65.73	65.73	65.73	65.78	65.78	65.78	66.02	66.02	66.02	66	66	66
BU.64_L	65.54	65.54	65.54	65.67	65.67	65.67	65.73	65.73	65.73	65.78	65.78	65.78	66.03	66.02	66.02	66.01	66	66
BU.15_L	65.51	65.52	65.52	65.65	65.65	65.65	65.7	65.7	65.7	65.75	65.75	65.75	66	66	66	65.98	65.98	65.98
LA.4517	69	69	69	69.22	69.22	69.22	69.37	69.35	69.35	69.53	69.52	69.52	69.77	69.77	69.77	69.76	69.76	69.76

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