



This document records technical and factual information used to support the NZTA's Assessment of Environmental Effects for the Pūhoi to Warkworth Project. It has been supplied to the Environmental Protection Authority by the NZTA in response to a section 149(2) Resource Management Act 1991 request. This document did not form part of the NZTA's application for the Project, which was lodged on 30 August 2013.



Pūhoi to Warkworth
Water Assessment Factual Report 9
Hydrological Assessment
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Pūhoi to Warkworth

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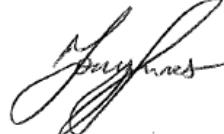
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Glossary of abbreviations

Abbreviation	Definition
AEE	Assessment of Environmental Effects
ANZECC	Australian and New Zealand Environment Conservation Council
ARC	Auckland Regional Council (legacy Council of Auckland Council)
ARI	Average Recurrence Interval
BPO	Best Practicable Option
Ch	Chainage
CN	Soil Conservation Service Curve Number
EPA	Environmental Protection Authority
ha	Hectares
HIRDS	High Intensity Rainfall Design System
LiDAR	Light Detection and Ranging
m	Metres
MfE	Ministry for the Environment
MHG	Mahurangi Hydrograph
NGTR	Northern Gateway Toll Road
NIWA	National Institute of Water and Atmosphere
NZTA	NZ Transport Agency
OWAR	Operational Water Assessment Report
PHG	Pūhoi Hydrograph
RFH	rapid flood hazard
RL	Reduced Level
RMA	Resource Management Act 1991
RoNS	Roads of National Significance
SHx	State Highway (number)
XP-SWMM	XP Solution Storm Water Management Model (software)
TP108	ARC Technical Publication 108: Guidelines for Stormwater Runoff Modelling in the Auckland Region
TSS	Total Suspended Solids

Glossary of defined terms

Term	Definition
Alignment	The route or position of a proposed motorway or state highway.
Average Recurrence Interval	The average time period between rainfall or flow events which equal or exceed a given magnitude. Similar to return period.
Culvert	A pipe with an inlet from a watercourse and outlet to a watercourse, designed to convey water under a specific structure (such as a road).
Heading up	Heading up is the term used to denote the condition when the water surface immediately upstream of the culvert rises to an elevation greater than the soffit of the culvert inlet.
Headwater	The water depth from the culvert invert at the inlet, to the water surface of the pool that forms as a result of heading up, is called the headwater.
Intermittent Stream	Any stream or part of a stream that is not a Permanent stream.
Motorway	Motorway means a motorway declared as such by the Governor-General in Council under section 138 of the PWA or under section 71 of the Government Roading Powers Act 1989.
Overland Flow Path	The flow path of stormwater over the ground.
Permanent Stream	Downstream of the uppermost reach of a river or stream which meets either of the following criteria: (a) has continual flow; or (b) has natural pools having a depth at their deepest point of not less than 150mm and a total pool surface area that is 10m ² or more per 100m of river or stream bed length. The boundary between Permanent and Intermittent river or stream reaches is the uppermost qualifying pool in the uppermost qualifying reach.
The Project	Ara Tūhono Pūhoi to Wellsford Road of National Significance Project: Pūhoi to Warkworth section
Project Area	From Johnstone's Hill portals in south to Kaipara Flats Road in the north.
Reduced Level	Equating levels / elevations to a common datum
Secondary flow path	The flow path of stormwater or floodwater that activates for larger storm events.
Wetland	Vegetated stormwater treatment device designed to remove a range of contaminants.

Contents

1.	Introduction	1
2.	Methodology for hydrological assessment.....	2
2.1	XP-SWMM software.....	2
2.2	Rainfall.....	2
2.3	Hydrology	3
2.4	Sub-catchment delineation.....	4
2.5	Catchment changes - pre/post-development	7
2.6	Modelling rivers and streams.....	10
2.7	SH1 culverts.....	11
2.8	Nomenclature.....	14
2.9	Sensitivity to model architecture	14
3.	Results.....	21
3.1	Changes in catchment peak flow.....	21
3.2	Changes in runoff volume	21
3.3	Changes in stream peak flow.....	22
3.4	Mahurangi catchment flow data.....	31
3.5	Pūhoi Catchment Flow Data	33
3.6	Existing SH1 Culverts	34
4.	References.....	36

Appendix A –Mahurangi pre-development catchment properties

Appendix B –Mahurangi post-development catchment properties

Appendix C –Pūhoi pre-development catchment properties

Appendix D –Pūhoi post-development catchment properties

Appendix E – Mahurangi pre-development conduit properties

Appendix F – Mahurangi post-development conduit properties

Appendix G – Pūhoi pre-development conduit properties

Appendix H – Pūhoi post-development conduit properties

Appendix I – Mahurangi flow change table

Appendix J – Pūhoi flow change table

Appendix K – Existing SH1 culverts information

Figures

Figure 1: Pūhoi sub-catchments pre-development.....	5
Figure 2: Mahurangi sub-catchments pre-development.	6
Figure 3: 3.2ha of Mahurangi catchment now draining to the Pūhoi catchment due to the vertical alignment of the proposed motorway.	8
Figure 4: Culvert conveying flows under the motorway alignment representation in XP-SWMM.	9
Figure 5: Example of stream diversion representation in XP-SWMM.	10
Figure 6: Cross-section of Pūhoi River.	10
Figure 7: SH1 Culvert locations and names.	12
Figure 8: Pre Development storage area upstream of SH1 Culvert P8.	13
Figure 9: Change in storage area upstream of SH1 P8 due to Indicative Alignment.....	14
Figure 10: Hypothetical catchment, sub-catchments and longest flow paths (not to scale).	16
Figure 11: Hypothetical catchment modelled as a single catchment in XP-SWMM.	17
Figure 12: Pre-development model output hydrograph.....	18
Figure 13: Hypothetical catchment modelled in XP-SWMM as three individual sub-catchments linked hydraulically.....	18
Figure 14: Runoff results from modelling as three discreet sub-catchments.	20
Figure 15: Changes in flow in streams due to motorway for 100 year ARI event – Mahurangi Catchment (1 of 2).	22
Figure 16: Changes in flow in streams due to motorway for 100 year ARI event – Mahurangi Catchment (2 of 2).	23
Figure 17: Mahurangi Hydrograph 01 – Flow change due to the Project.	24
Figure 18: Mahurangi Hydrograph 02 – Flow change due to the Project.	24
Figure 19: Mahurangi Hydrograph 03 – Flow change due to the Project.	24
Figure 20: Mahurangi Hydrograph 04 – Flow change due to the Project.	25
Figure 21: Mahurangi Hydrograph 05 – Flow change due to the Project.	25
Figure 22: Mahurangi Hydrograph 06 – Flow change due to the Project.	25
Figure 23: Mahurangi Hydrograph 07 – Flow change due to the Project.	26
Figure 24: Mahurangi Hydrograph 08 – Flow change due to the Project.	26
Figure 25: Mahurangi Hydrograph 09 – Flow change due to the Project.	26
Figure 26: Changes in flow in streams due to motorway for 100 year ARI event – Pūhoi Catchment (1 of 2).....	27
Figure 27: Changes in flow in streams due to motorway for 100 year ARI event – Pūhoi Catchment (2 of 2)....	28
Figure 28: Pūhoi Hydrograph 01 – Flow change due to the Project.	29
Figure 29: Pūhoi Hydrograph 02 – Flow change due to the Project.	29
Figure 30: Pūhoi Hydrograph 03 – Flow change due to the Project.	29
Figure 31: Pūhoi Hydrograph 04 – Flow change due to the Project.	30
Figure 32: Pūhoi Hydrograph 05 – Flow change due to the Project.	30
Figure 33: Pūhoi Hydrograph 06 – Flow change due to the Project.	30

Tables

Table 1: Design 24 hour rainfall depths for 2120.	3
Table 2: Curve numbers assigned for the Project.....	4
Table 3: Changes in catchment land-use due to the Project.	7
Table 4: Pre-development model properties.....	17
Table 5: Post-development model properties.	19
Table 6: Changes in Catchment Peak Flows due to the Project.	21
Table 7: Changes in runoff volume due to the Project for 100 year ARI event.....	21
Table 8: Changes in runoff volume due to the Project for 10 year ARI event.	21
Table 9: Changes in runoff volume due to the Project for 2 year ARI event.	21

Table 10: Mahurangi catchment pre/post-development flow comparisons.....	31
Table 11: Pūhoi catchment pre/post-development flow comparisons.....	33
Table 12: SH1 culverts assessment for the 100 year ARI storm event	34

1. Introduction

This report provides a factual basis for the Operational Water Assessment Report (OWAR) prepared for the New Zealand Transport Agency (NZTA). The OWAR provides an assessment of the environmental effects associated with water, arising from the operational aspects of the Pūhoi to Warkworth section of the Ara Tūhono Pūhoi to Wellsford Road of National Significance Project (Project). The OWAR supports the Assessment of Environmental Effects (AEE) resource consent applications and Notices of Requirement for the Project.

Potential water quantity effects of the Project are caused by an increase in impervious area, reduction in infiltration to ground and diversion of stormwater into alternative drainage systems. These hydrological changes may increase the flow and volume of water discharging to streams and harbours. Hydrological changes can also cause flooding, which may have direct effects on public safety and property. Hydrological changes can also cause stream erosion; erosion and sedimentation can affect aquatic habitats.

In addition, water quantity may be altered by stream works in the form of bridges, culverts and stream diversions as well as alterations to the floodplains.

Our design philosophy described in Section 6.1 of the OWAR includes the following hydrological principals:

- The design will best practicably mimic the existing hydrologic regime and setting, to deliver the outcomes that avoid, remedy or mitigate adverse environmental effects; and
- The design will avoid or mitigate changes that might make the current flood issues in the catchment worse.

We have carried out a hydrological assessment to compare catchment runoff flows for 2, 10 and 100 year ARI storm events. By simulating these storm events for pre and post development scenarios, we gain an understanding of the potential changes to the hydrologic regime in the Pūhoi and Mahurangi catchment arising from the Project. We can then modify our design to mitigate these changes. Where mitigation is not possible, the effects of any residual changes in the hydrologic regime are assessed in Section 8 of the OWAR.

2. Methodology for hydrological assessment

Our approach to the hydrological analysis was to create a hydrological model using the XP-SWMM modelling software. The hydrological model was based on the Auckland Council TP108 method. This approach forms the basis for consent level design and our assessment of effects.

Hydraulic links are included in the model to simulate the conveyance of runoff along streams, so the cumulative hydrological effects can be assessed. The hydraulic links are based on limited survey, so this aspect of the model is not accurate for water levels. Where there are flooding concerns, other analysis techniques have been used; refer to Section 6.2 in the OWAR.

This hydrological approach produces flows that are conservative; refer to Section 6.2 in the OWAR. For assessment of effects, the models are used to compare pre-development flows and velocities to post-development flows and velocities, where the relative difference indicates the effect. Therefore, we consider the hydrological approach suitable for the purpose of consent level design and our assessment of effects.

More detailed hydrological and hydraulic modelling will be necessary for detailed design to confirm that consent conditions are met.

2.1 XP-SWMM software

XP-SWMM is a software package from XP Solutions used for the dynamic modelling of stormwater, sanitary sewer systems and river systems.

We selected XP-SWMM as the software package to model pre and post-development in a range of storm events. Reasons for selecting XP-SWMM include:

- XP-SWMM is fully compatible with TP108 (hydrological method, refer Section 2.2);
- XP-SWMM offers dynamic modelling of hydraulic flows through a network including modelling of backwater effects, flow reversal, surcharge, open channel flow, storage in conduits, looped networks, multiple outfalls and tidal outfalls;
- Integration with GIS and CAD permits straightforward importation of data and shape files into the XP-SWMM model. We can also export the XP-SWMM model to GIS and CAD applications to assist with the wider design development; and
- Easy to use graphical user interface and spatial querying allows us to quickly build the model and automatically calculate model parameters such as catchment areas, slopes and lengths.

2.2 Rainfall

The basis for the Project design rainfall is detailed in Water Assessment Factual Report 7 – Hydrological Data.

Rainfall data used to calculate the catchment runoff was derived from TP108 based on the maximum predicted 24 hour rainfall depths for each catchment. We compared the 24 hr rainfall depths to the summary statistics for the Auckland Council Warkworth, Mahurangi and Orewa rain gauges, and the High Intensity Rainfall Design System (HIRDS) databases. We used the TP108

based rainfall depths for our assessment as they were higher than rainfall depths obtained from the rain gauge summary statistics and HIRDS databases.

Our hydrological assessment included an increase in rainfall intensity to allow for predicted climate change effects. Increased rainfall intensity is an important consideration because these changes are predicted to occur over the life of the Project's water infrastructure. Increase to rainfall as a consequence of climate change was estimated for 2120, which corresponds to 100 years after the Project completion.

We multiplied the TP108 rainfall data by the factor recommended in the Climate Change Effects and Impacts Assessment (Ministry for the Environment (MfE), 2008). Extreme rainfall events relative to 1990 were increased based on a mean predicted temperature rise for the Auckland region of 2.1 °C to 2090. We then applied linear extrapolation of the 2040 and 2090 values in order to estimate the projected 2120 rainfall data.

The projected increase in maximum 24 hour rainfall depth for the 100 year ARI event in 2120 compared to TP108 values was 22.6%. The design 24 hour rainfall depths for the Pūhoi and Mahurangi catchments that were used to estimate design flows and for the hydrological assessments are provided in Table 1. Full details about the rainfall data and climate change allowance can be read in Water Assessment Factual Report 7: Hydrological Data.

Table 1: Design 24 hour rainfall depths for 2120.

ARI	Pūhoi (mm/24hr)	Mahurangi (mm/24hr)
2 year	129	146
10 year	224	247
100 year	343	380

Areal reduction factors are used to apply point estimates of rainfall to large catchments, typically larger than 10 km². For the purposes of this hydrological assessment we have not applied any areal reduction factors to the Pūhoi and Mahurangi catchment rainfalls. Conservatively we are assuming that rainfall for a 2, 10 and 100 year ARI storm event will be uniform and simultaneous across all sub-catchments across the Pūhoi and Mahurangi catchments. This approach is consistent with the methodology adopted by Auckland Council for the Rapid Flood Hazard modelling of the Mahurangi Catchment, discussed in Section 6.3 of the OWAR.

2.3 Hydrology

The hydrology is based on the TP108 method which uses a US Department of Agriculture, Soil Conservation Service (SCS, 1986) guidelines approach. The TP108 method is considered appropriate and is industry practice for the Auckland Region.

The SCS method uses a curve number (CN) to describe the runoff characteristics of the land with a higher CN resulting in greater runoff. The SCS guidelines suggest that the major factors determining the curve number are the hydrological soil group, surface cover type, soil treatment, hydrological condition, and antecedent ground condition (i.e. the soil moisture content prior to a

rainfall event). We assessed that the Project area consisted of group C soils (mudstone/sandstone), which is consistent with the geology of the catchments (refer Section 4.2 of the OWAR). The curve numbers assigned for the land-uses in the Project catchments are shown below in Table 2. Project areas modified by earthworks such as fill embankments, cut slopes and spoil sites are likely to generate higher runoff and to reflect this higher runoff anticipated we assigned higher CN numbers to these areas.

The proposed motorway and rock cuts are assumed to be impervious for the purposes of the hydrological assessment.

Table 2: Curve numbers assigned for the Project.

Land	CN
Forestry Area	70
Native Bush	70
Farmland/Pasture	74
Project fill embankments, vegetated cut slopes and spoil locations (>1.2:1 Slope)	79
Project motorway surface and rock cuts	98

2.4 Sub-catchment delineation

We identified existing sub-catchments and land-uses within the Pūhoi and Mahurangi catchments using a combination of land-use maps, aerial images and 2 m LiDAR contour information. We then identified post-development catchments and land-uses by considering the geometric design of the Project and nominated spoil disposal sites within the designation. We visited the site a number of times to confirm our delineation of each catchment and enable land-use to be identified more accurately.

Figure 1 and Figure 2 show the sub-catchments we identified within the Pūhoi and Mahurangi catchment (respectively), pre-development. The figures show how the sub-catchments are represented in XP-SWMM.

We replicated the pre-development sub-catchments for the overall Pūhoi and Mahurangi catchments within XP-SWMM. We refined the catchment architecture within the model for the post-development sub-catchments to simulate changes to catchments and runoff characteristics. We ensured that sub-catchments identified in the pre-development scenario had common points of reference to the post-development sub-catchments. These points are for comparison of flow between scenarios.

Full details of the pre and post-development sub-catchment properties including area, SCS curve number, impervious area, time of concentration, etc. can be found in Appendix A to H.

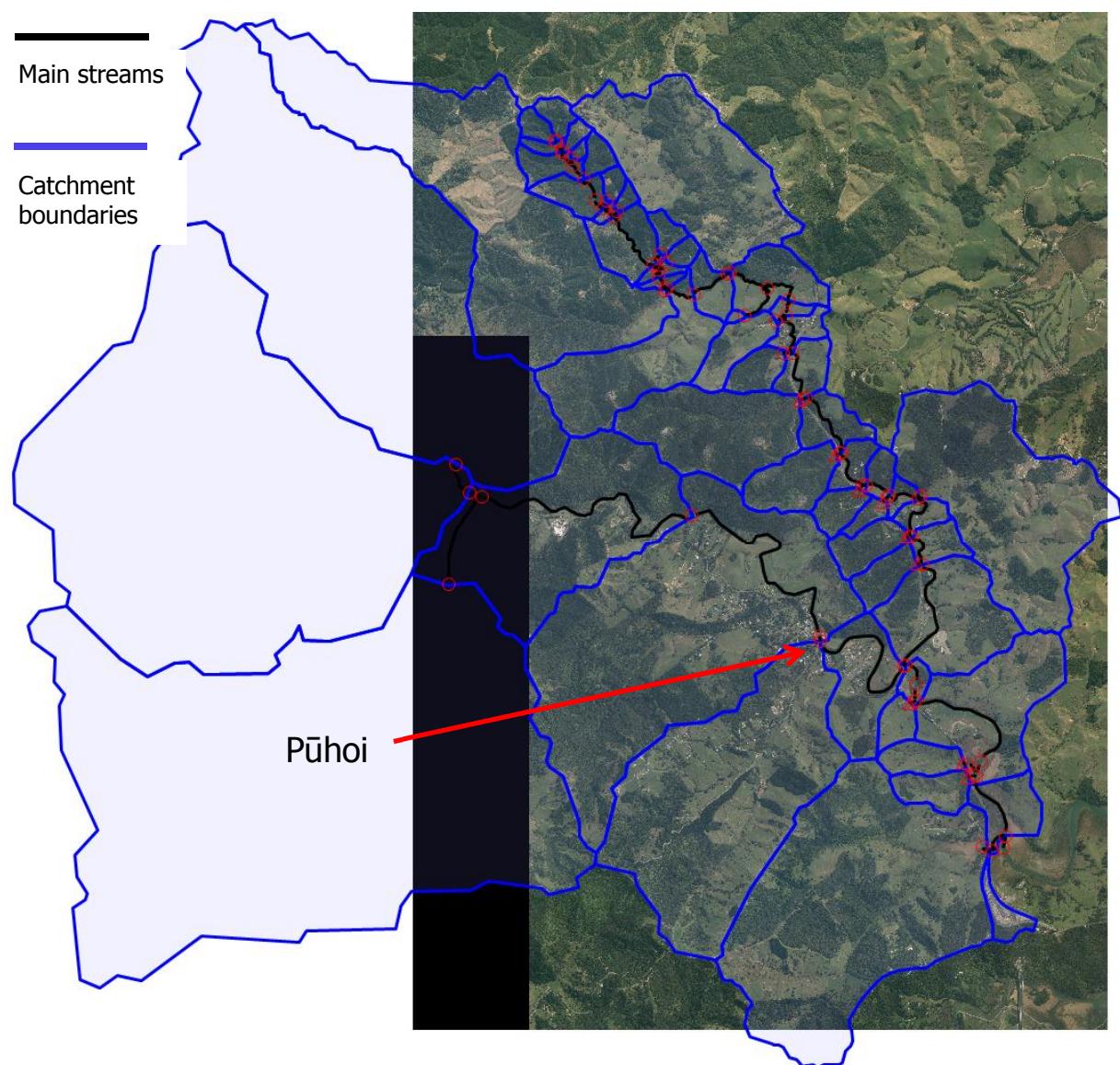


Figure 1: Pūhoi sub-catchments pre-development.

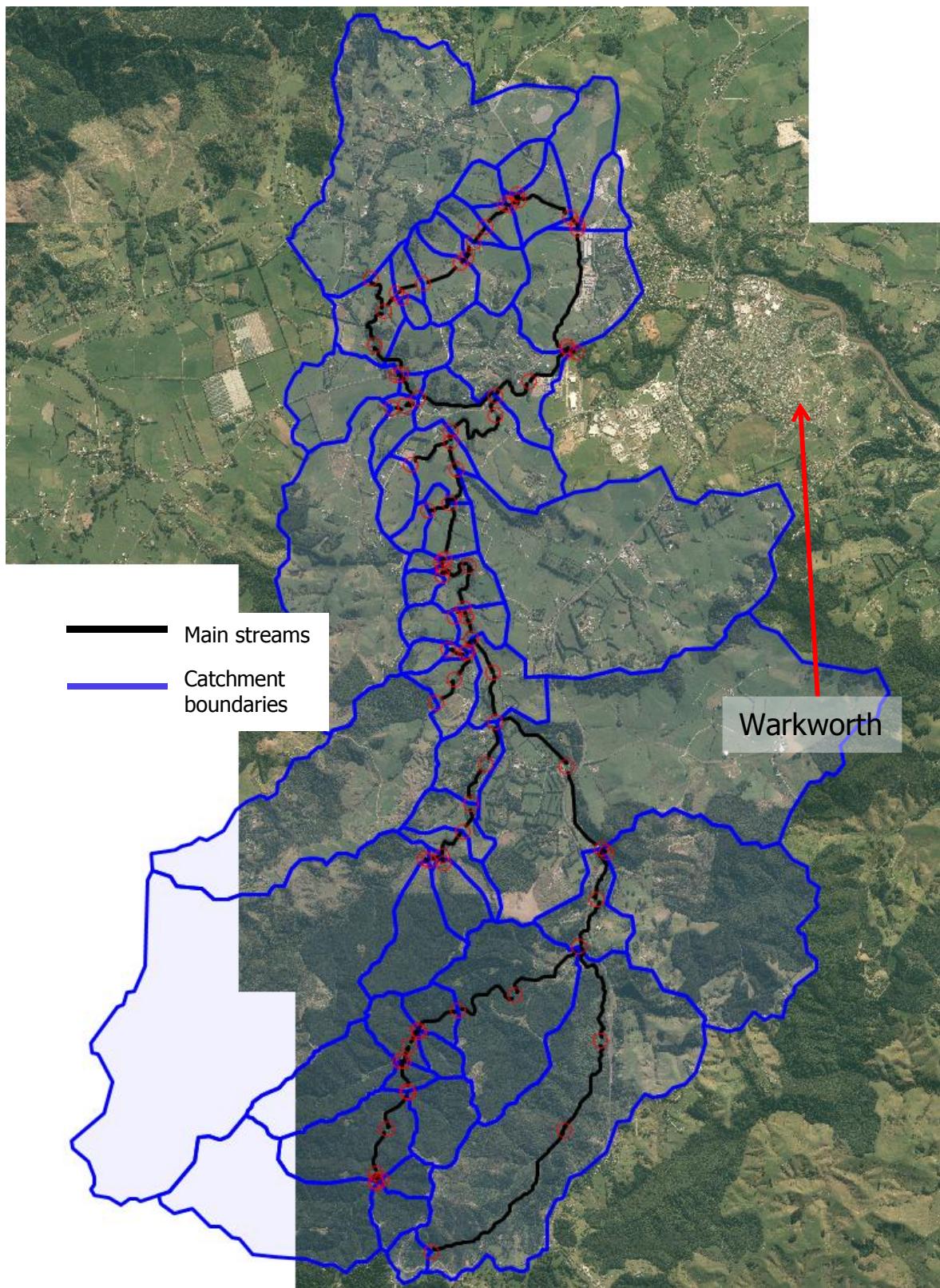


Figure 2: Mahurangi sub-catchments pre-development.

2.5 Catchment changes - pre/post-development

The indicative Project alignment would result in a number of changes to the Mahurangi and Pūhoi catchments and their sub-catchments. These changes are due to increased impervious areas from the road surface of the proposed motorway and rock cuts, changes to land cover and the diversion of streams and flow paths between sub-catchments.

2.5.1 Land-use changes

The impervious area of the Project associated with the motorway surface and rock cuts are relatively small compared to the total area of the Pūhoi and Mahurangi catchments. The Project results in a change to impervious land cover of 0.6% for the Pūhoi catchment, and 0.9% for the Mahurangi, refer to Table 3.

The runoff characteristics of cuts and fills associated with the Project will change due to the earthworks due to compaction and changes to the soil structure. These altered pervious areas have been assessed with pre-development curve numbers (CN) of 74 for pasture and 70 for forestry/bush. We changed these curve numbers to a CN of 79 for the post-development cuts and fills. These changes affect a relatively small area by a small amount (CN changes of 5 to 9), refer to Table 5.

Table 3: Changes in catchment land-use due to the Project.

Catchment	Total Catchment Area – Post-development (ha)	New Impervious Area		Altered Pervious Area (increased CN number)	
		Area (ha)	% of Total Catchment	Area (ha)	% of Total Catchment
Pūhoi	5141	34	0.6	58	1.1
Mahurangi	3829	38	0.9	85	2.2

*1 Catchment areas based on the SWMM model extend to the downstream extent of the Project.

These changes in land-use (new impervious area and altered pervious areas) due to the Project will cause an increase in post-development peak flows. However, in the OWAR Assessment (Section 8) this increase is found to be partially offset by the longer flow paths for the motorway drainage as it is conveyed along the alignment prior to discharge. Runoff is conveyed along the motorway to wetlands, which discharge to the streams at these locations.

2.5.2 Gross Catchment changes

Another change in the hydrological cycle is the transfer of 3.2ha from the Mahurangi catchment to the Pūhoi catchment. This change is shown in Figure 3. Land which previously discharged to the Mahurangi catchment now discharges to the Pūhoi catchment due to the vertical alignment of the proposed motorway.

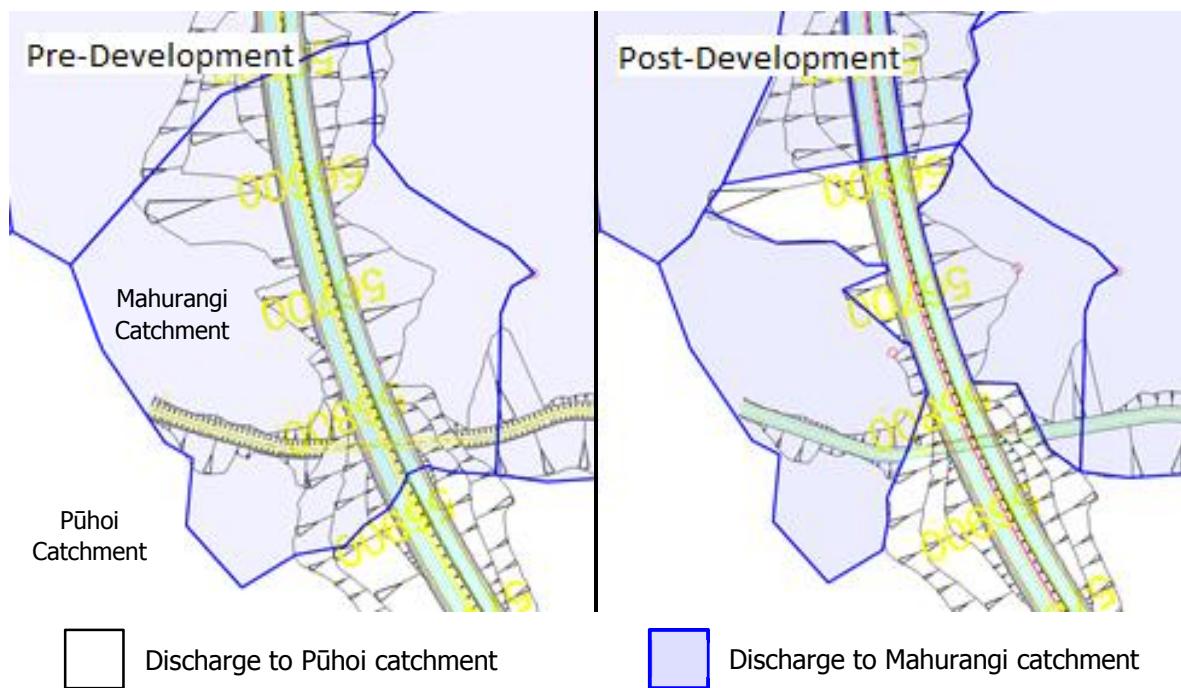


Figure 3: 3.2ha of Mahurangi catchment now draining to the Pūhoi catchment due to the vertical alignment of the proposed motorway.

2.5.3 Hydraulic routing changes

Where the Project crosses existing streams (permanent or intermittent), we propose bridges and culverts to provide conveyance of normal flows and flood waters from one side of the motorway to the other, whilst minimising the effect on the existing flow and ecological condition of the waterways.

Figure 4 provides an example of how we represent the cross drainage in XP-SWMM. An existing stream is conveyed from one side of the motorway to the other via a culvert. The culvert has slightly shortened the overall length of existing stream channel, the effects of which are assessed in the OWAR. Figure 4 also demonstrates how catchment areas are affected for the post-development scenario with a motorway surface and "cut" catchments in this case directed to adjacent catchments to the north.

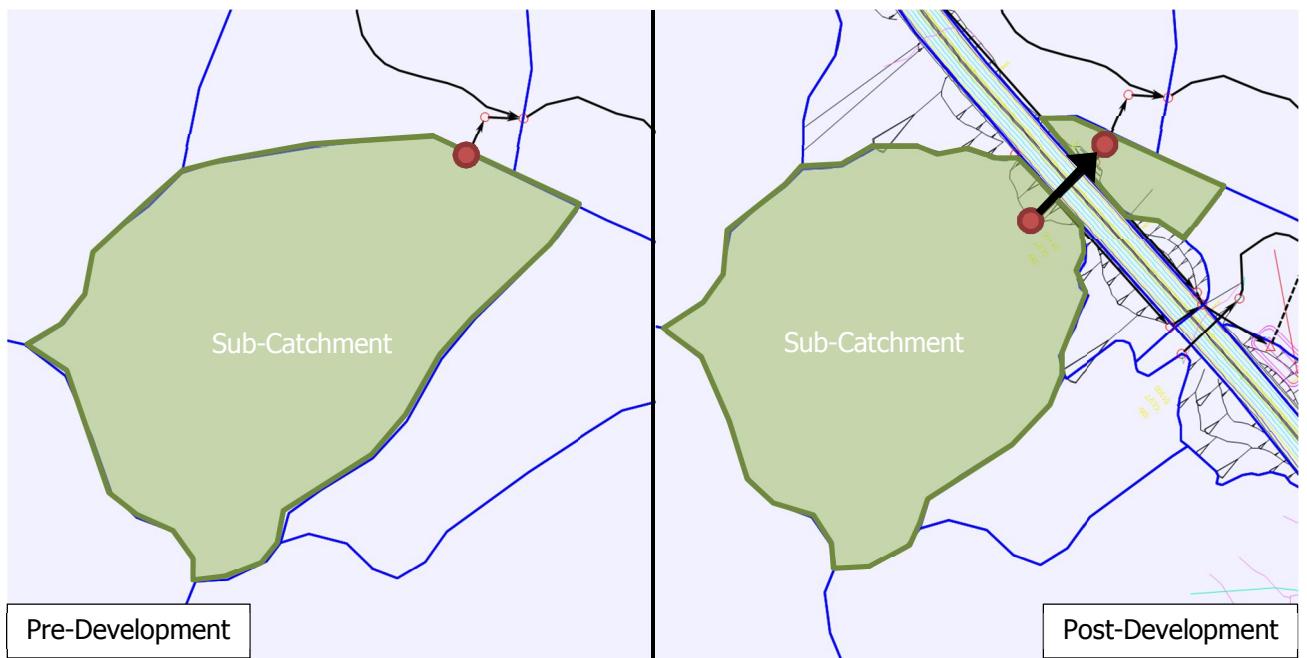


Figure 4: Culvert conveying flows under the motorway alignment representation in XP-SWMM.

Where existing streams and flow paths are crossed by the proposed motorway and a culvert or bridge has not been proposed, we will divert flows using stream diversions. Figure 5 shows an example of how we represent stream diversions in XP-SWMM.

For details on Cross Drainage and Stream Diversion Design stream diversions refer to Water Assessment Factual Report 8.

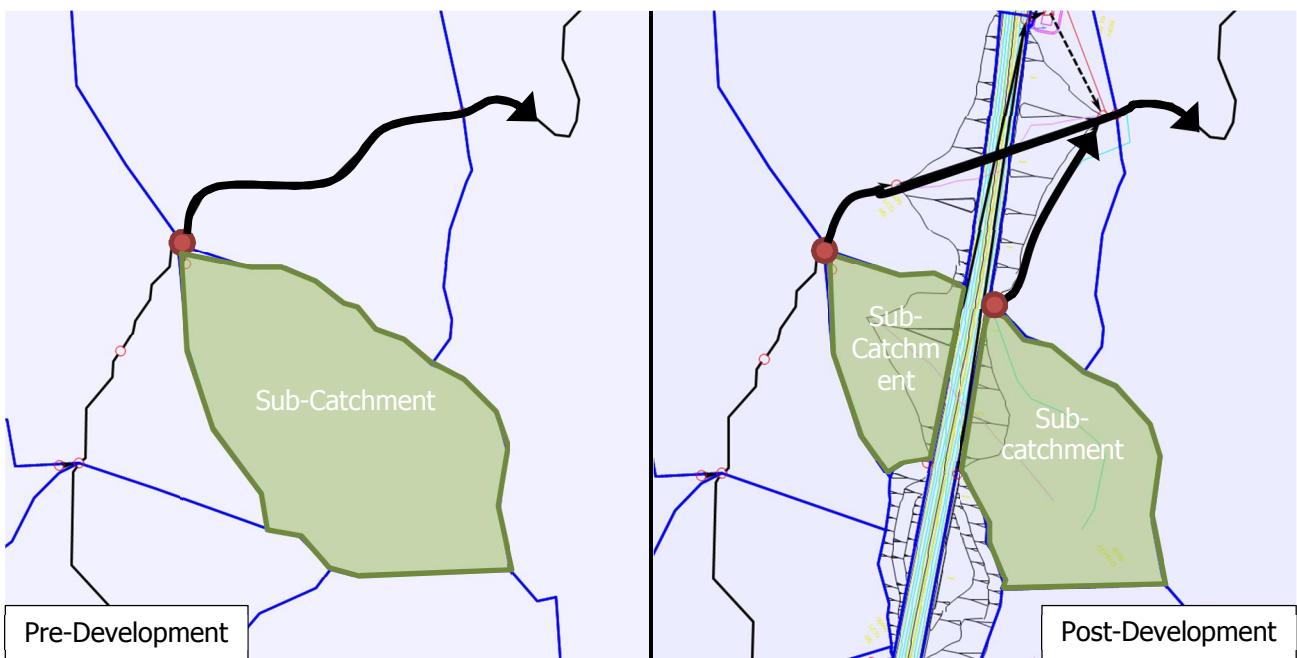


Figure 5: Example of stream diversion representation in XP-SWMM.

2.6 Modelling rivers and streams

Streams / rivers are included in the hydrological model to simulate collection and conveyance of runoff, so the cumulative hydrological effect can be assessed. Streams / rivers are modelled based on slopes and assessments of roughness and on survey of limited 'typical' cross sections. The modelling of these hydraulic links are not accurate for water levels. Where there are flooding concerns, other analysis techniques have been used; refer Section 6.2 in the OWAR.

2.6.1 Stream Cross-Sections

For modelling purposes we developed typical cross-sections based on aerial images and 2m photogrammetry and LIDAR contour information, supplemented with observations during site visits and limited stream cross section surveys. With this information and observations we estimated river/stream channel widths, ground cover, slope, bank profile and approximate depth.

We developed nine cross-sections for the Pūhoi catchment and eight cross-sections for the Mahurangi catchment. Figure 6 shows a cross section we developed to model the Pūhoi River.

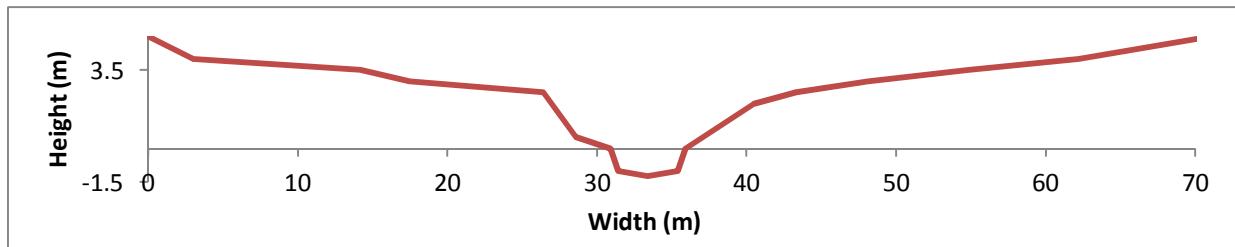


Figure 6: Cross-section of Pūhoi River.

2.6.2 Stream gradients

The gradient of streams within the XP-SWMM model have been calculated using ground levels from topographic information; design levels from the geometric design; and assumptions where no information is available (typically areas around proposed fill and spoil sites for the project).

2.6.3 Manning's 'n' – Roughness coefficient

Roughness coefficients represent the hydraulic losses due to roughness in streams, channels and flood plains.

To realistically model the roughness of streams and flow channels we selected Manning's 'n' values of 0.08 and 0.125 for stream channels and flood plains respectively. Our selection is based on Open Channel Hydraulics, Chow, V.T. (1959) and Road Drainage and the Water Environment, Highways Agency et al (2009).

2.6.4 Depression storage

Depressions in the topography or obstructions to a flow path can cause areas of ponding, which reduce the peak flow generated from a catchment. In steep terrain depression storage is minor; in flat terrain, depression storage can be very significant.

We have not accounted for depression storage within the XP-SWMM model as the proposed alignment is unlikely to result in changes to depression storage between pre and post-development scenarios.

2.7 SH1 culverts

In the Pūhoi catchment there are existing SH1 culverts in the Pūhoi and Hungry Creek Sectors downstream of the indicative Project alignment. These are included in the hydrological model because they are potentially impacted by the hydrological changes caused by the Project. We surveyed the nine culverts so we had greater confidence in our assessment of the effects of the Project on the downstream environment.

These culverts are shown in the OWAR drawing set. Figure 7 shows the location, diameter and ecological reference of these SH1 culverts, relative to the indicative Project alignment. Details of these culverts including photos and survey data can be found in Appendix K – Existing SH1 culverts information.

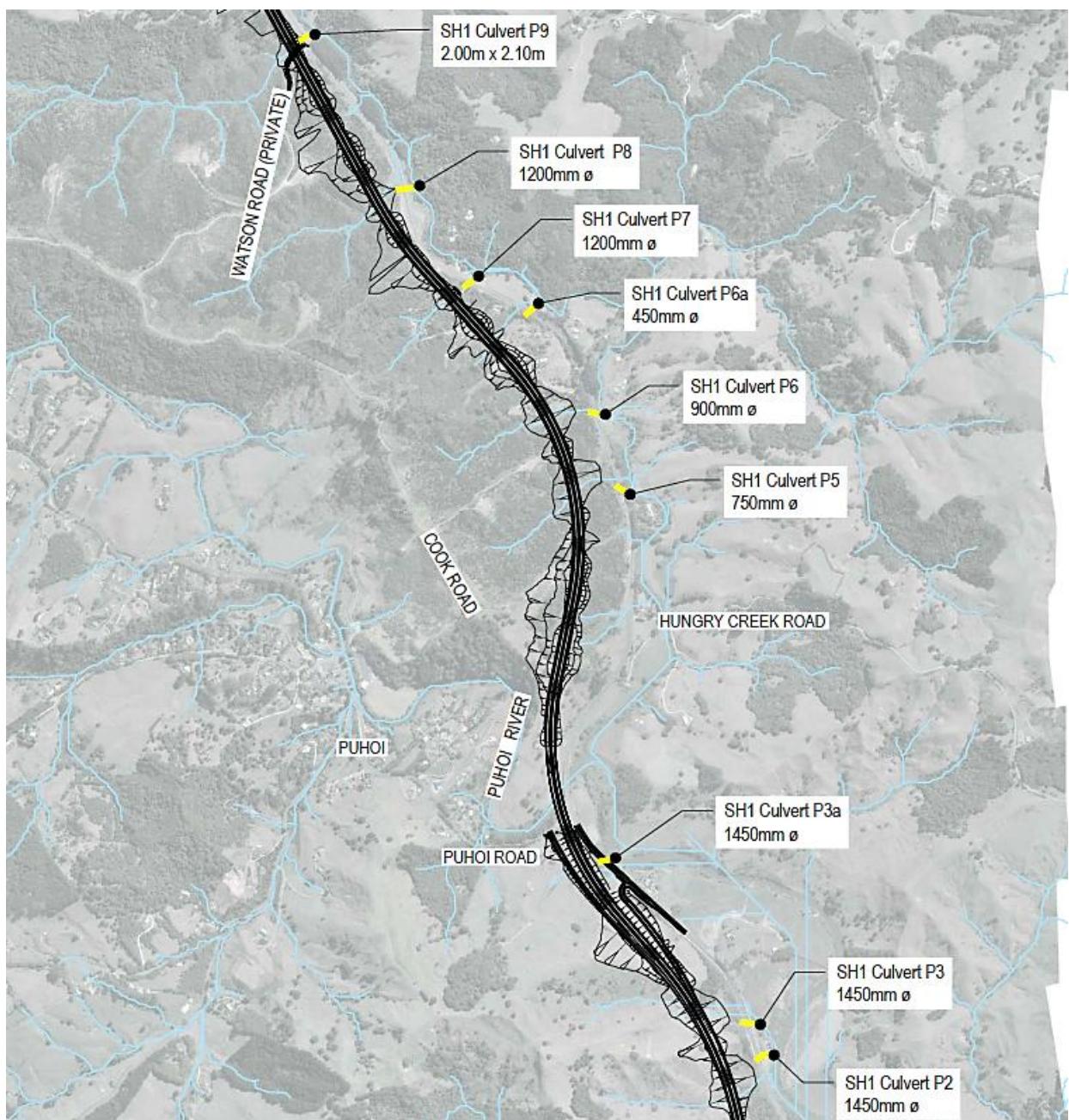


Figure 7: SH1 Culvert locations and names.

2.7.1 Existing SH1 culverts storage volumes

The majority of the existing SH1 culverts have hydraulic storage on the upstream side of SH1 if flows exceed the hydraulic capacity of the culvert. Typically these storage areas are formed by SH1 crossing the stream on an embankment resulting in an impoundment area upstream of the embankment.

Figure 8 shows an example of the flood storage area upstream of SH1 Culvert P8, pre-development.

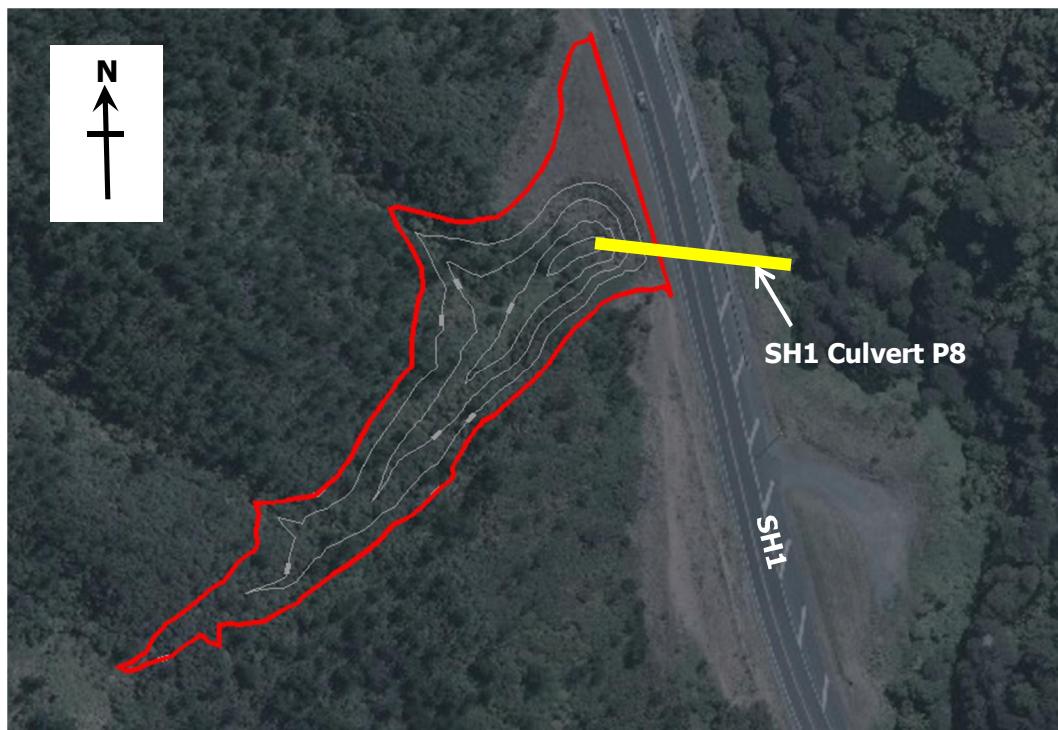


Figure 8: Pre Development storage area upstream of SH1 Culvert P8.

These storage areas upstream of the SH1 culverts are included in the hydrological model so we can assess the impact of the Project on flooding of these culverts in the post-development scenario, particularly when the storage is reduced by the Project.

Figure 9 shows the proposed motorway partially filling the existing storage area on the upstream side of the existing SH1 culvert P8. The post-development storage area is shown, which is smaller than the pre-development storage area.

The impact of this reduction in storage and other effects of the Project on SH1 culverts are simulated by the hydrological model and assessed in Section 8 of the OWAR.

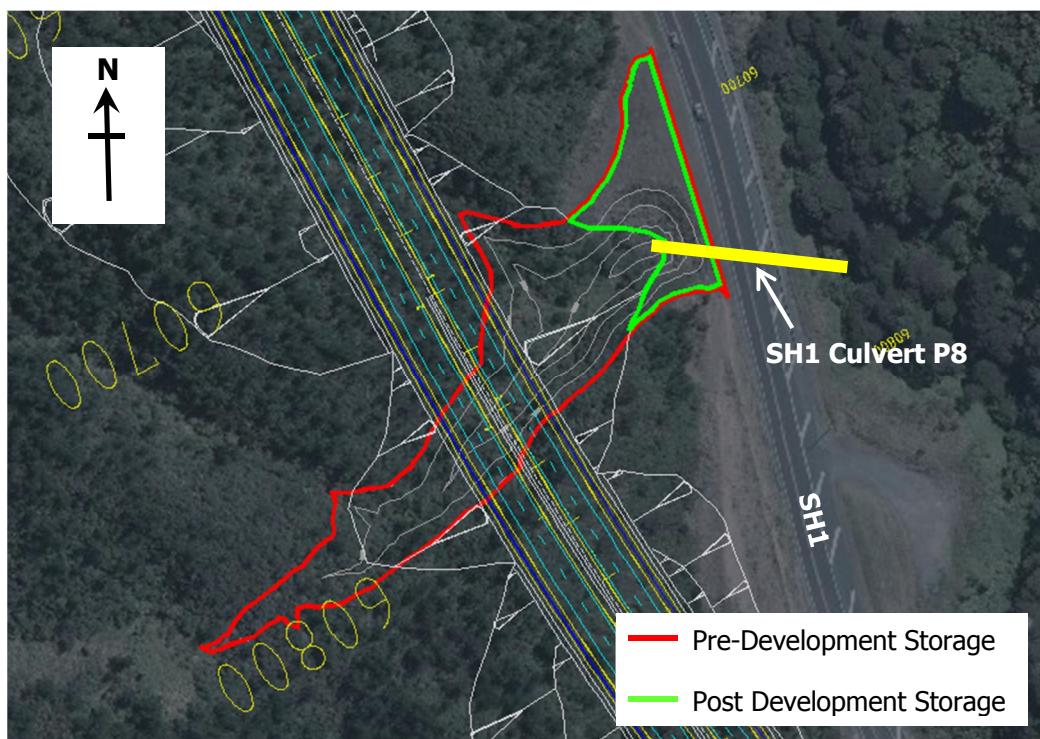


Figure 9: Change in storage area upstream of SH1 P8 due to Indicative Alignment.

2.8 Nomenclature

We have used the following nomenclature within the XP-SWMM model:

- Nodes: SNXX-X with SN00 being the outfall node;
- Links: XX-X/XX-X (downstream node number / upstream node number);
- Wetlands: PXXXXX numbered in accordance with their chainage on the project alignment.
Inlet and outlet links are named PXXXXXIN and PXXXXXOUT respectively;
- Roads: RoadXX numbered sequentially from North to South;
- Cuts: Cut-EXX or Cut-WXX numbered sequentially from North to South, E and W nominating their location either East or West of the alignment;
- Culverts: CXXXXX numbered in accordance with their chainage on the Project indicative alignment;
- Existing SH1 Culverts: SH1PX numbered in accordance with the ecological stream reference they are on.

Conduit Properties are summarised in Appendix E to H.

2.9 Sensitivity to model architecture

The sensitivity of the hydrological model to changes in the model architecture was tested to assess whether modelled changes were real or artefacts of the model architecture. There are three main components to creating a hydrological model within XP-SWMM. These include:

- Runoff node (RN): Runoff nodes contain all sub-catchment and rainfall data in order to generate runoff hydrographs. An example of a runoff node is a sub-catchment and all associated data, draining to a motorway culvert.
- Hydraulic node (HN): Hydraulic nodes provide the hydraulic junctions in the model, where flow enters and exits hydraulic links. These nodes also contain elevation information and storage properties (if any). An example of a hydraulic node is a manhole. Any known or assumed reduced levels and storage properties associated can be added to the hydraulic node data; and
- Hydraulic Link (HL): Hydraulic links connect hydraulic nodes and contain the variables that determine how flow is conveyed. An example of a hydraulic link is a river/stream section. A cross-sectional profile with known or assumed reduced levels can be added to the hydraulic link data.

In the construction of the hydrological model, sub-catchments for the pre-development scenario would often be sub-divided into smaller sub-catchment areas for the post-development scenario because the motorway bisects the catchment. This means that a sub-catchment initially modelled with a single runoff node in the pre-development scenario is modelled with multiple Runoff Nodes connected by Hydraulic Nodes and Hydraulic Links in the post-development scenario. The process of adding smaller sub-catchments linked by hydraulic elements may have the potential to alter flow outputs without any real changes to the catchment (i.e. artefact of the model structure). We carried out an exercise to establish if changing the model structure would change the model results. For the purposes of the exercise, the model of the overall catchment as a single runoff node is labelled pre-development. The model where the overall catchment has been divided into three parts is labelled post-development.

Figure 10 shows a hypothetical catchment enclosed by the green outline (pre-development) and the sub-catchment areas outlined in blue (post-development). Modelling of the pre and post development scenarios is carried out with no change to the overall catchment area or land-use. We then compare flow output from both models. Our aim is for the post-development model comprising of three catchments with hydraulic nodes and links to produce the same results as the single runoff node modelled for the pre-development scenario.

The models have assumed:

- There is a channel running the length of the centreline of the catchment;
- The ground falls to the channel at 2% gradient;
- The channel running the length of the centreline to the outlet has a gradient of 2%; and
- Impervious ground cover with a CN of 98.

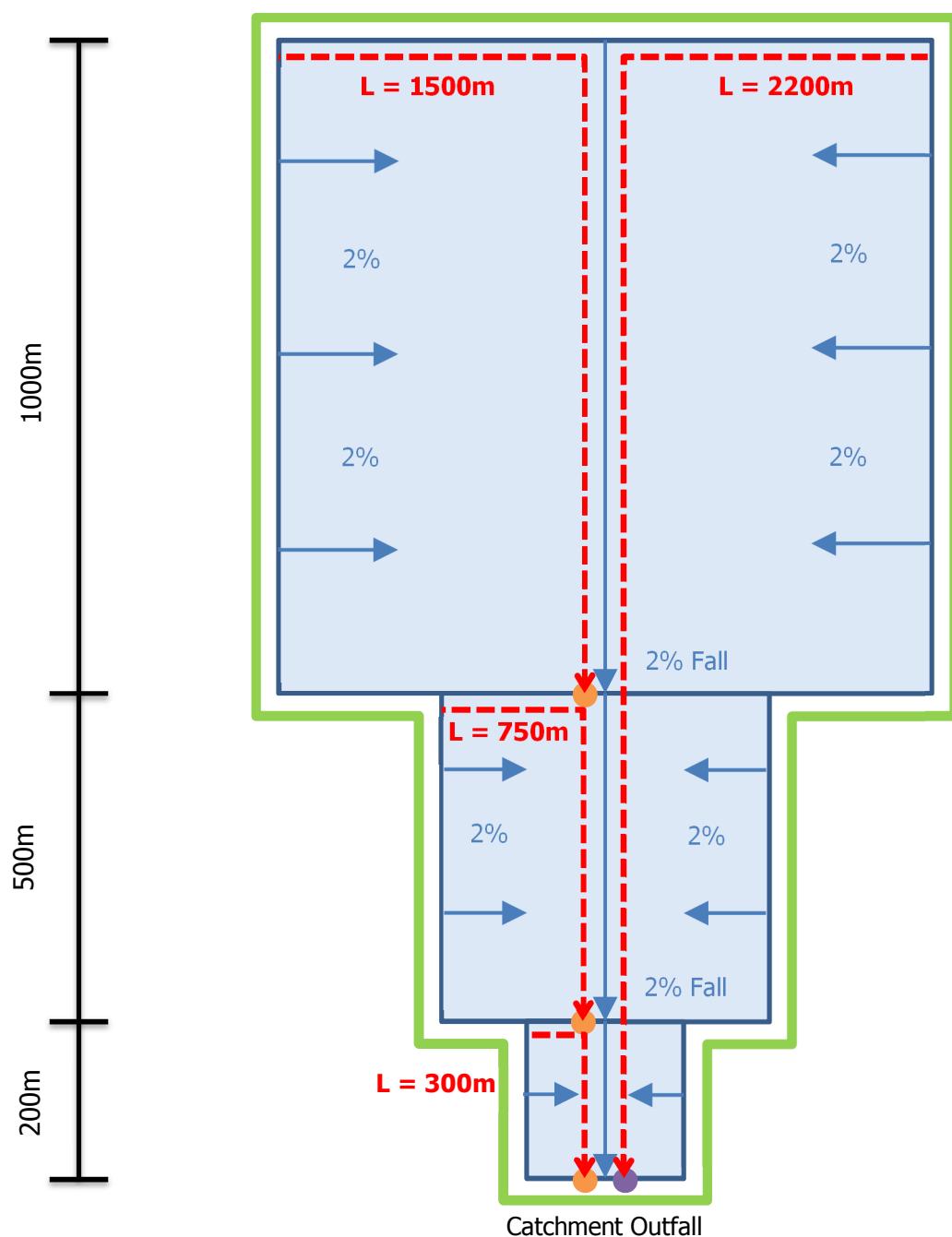


Figure 10: Hypothetical catchment, sub-catchments and longest flow paths (not to scale).

Pre-development model

Figure 11 shows the pre-development scenario modelled as a single catchment. Table 4 provides a summary of this model and its relevant properties.

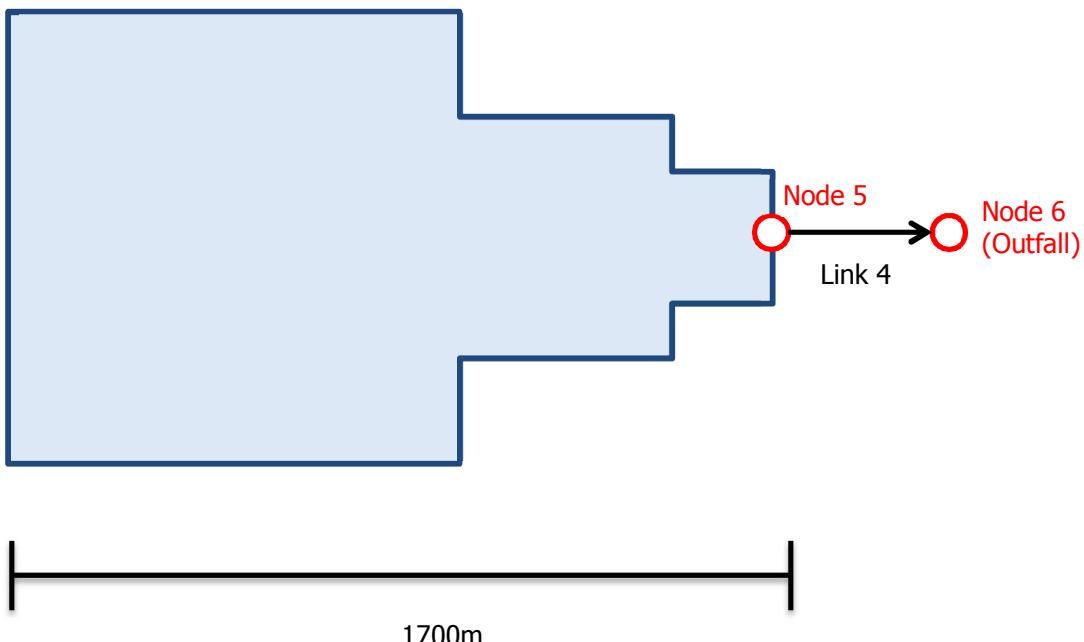


Figure 11: Hypothetical catchment modelled as a single catchment in XP-SWMM.

Table 4: Pre-development model properties

Model Element	Element Type	Length (m)	Longest Flow Path (m)	Slope (m/m)	Channelisation Factor	Catchment Area (ha)	Weighted CN	Tc (min)
Node 5	RN	1700	2200	0.02	0.8	129.00	98.0	37.38
Node 6	HN	-	-	-	-	-	-	-
Link 4	HL	10	-	0.02	-	-	-	-

A channelisation factor is used to reduce catchment response time to allow for higher velocities of flow in engineered channels. We have applied a channelisation factor of 0.8 for runoff node 5 as 1700m of the longest flow path (approx. 80% of total length of 2200m) is modelled down the centreline channel. We therefore assume a faster conveyance of flows here.

Figure 12 shows the output hydrograph from XP-SWMM of the pre-development model with a peak flow of 17.50m³/s.

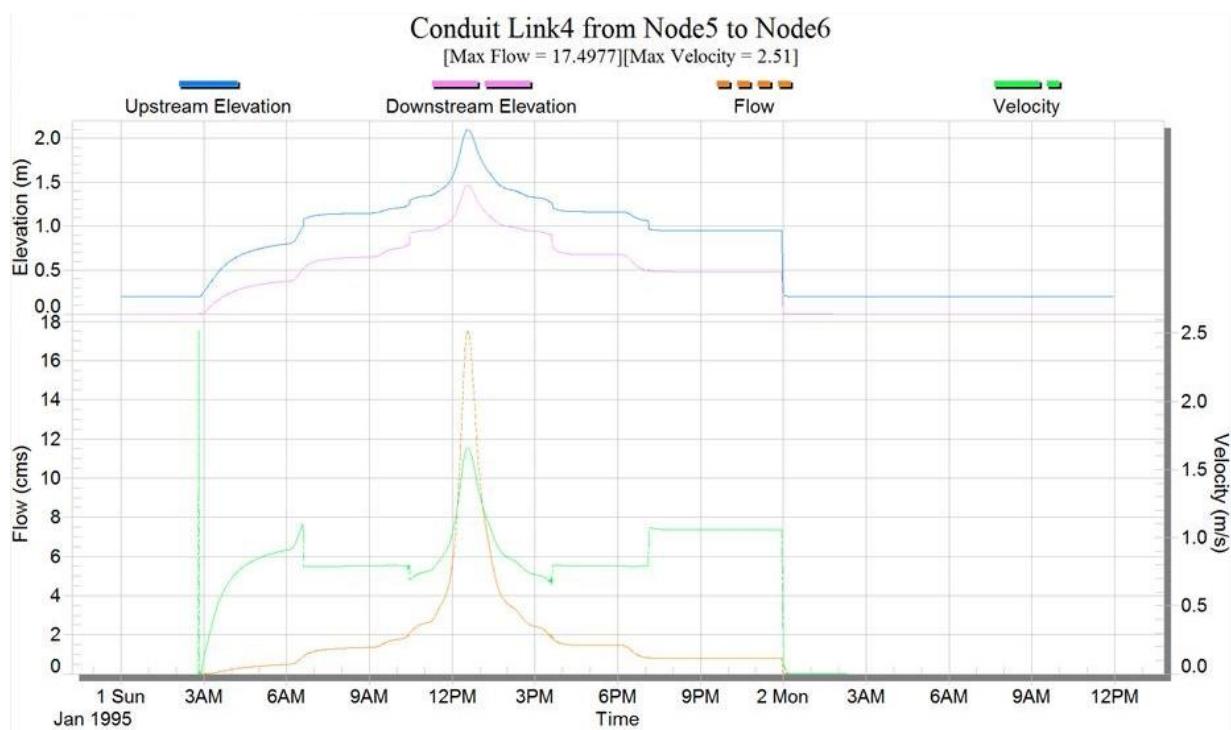


Figure 12: Pre-development model output hydrograph.

Post-development

Figure 13 shows the post-development scenario modelled as individual sub-catchment areas connected hydraulically via hydraulic links.

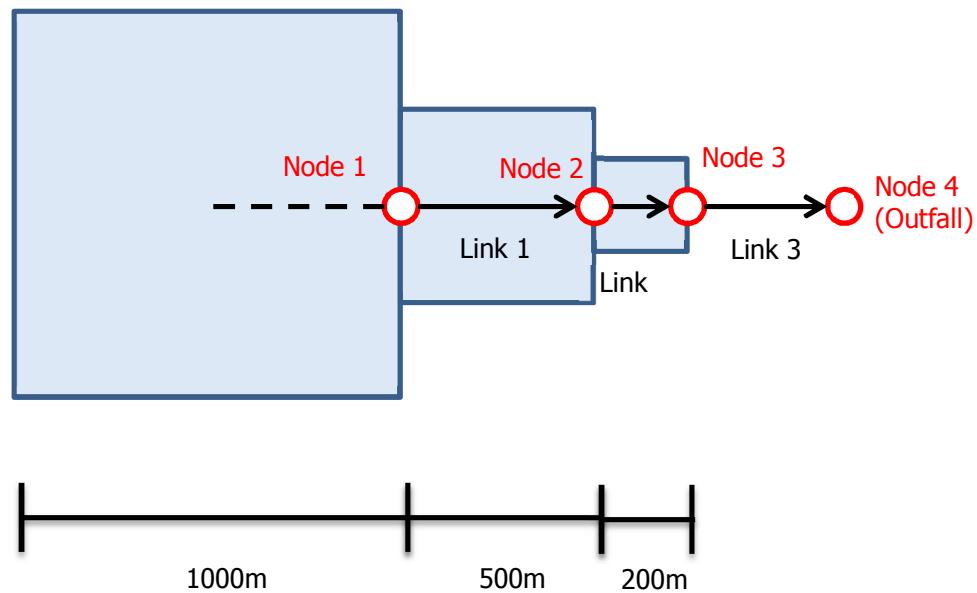


Figure 13: Hypothetical catchment modelled in XP-SWMM as three individual sub-catchments linked hydraulically.

Table 5 provides a summary of this model and its relevant properties.

Table 5: Post-development model properties.

Model Element	Element Type	Length (m)	Longest Flow Path (m)	Slope (m/m)	Channelisation Factor	Catchment Area (ha)	Weighted CN	Tc (min)
Node 1	RN	1000.0	1500	0.02	0.9	100.00	98.0	32.66
Node 2	RN	500.0	750	0.02	0.9	25.00	98.0	20.67
Node 3	RN	200.0	300	0.02	0.9	4.00	98.0	11.29
Node 4	HN	-	-	-	-	-	-	-
Link 1	HL	500	-	0.02	-	-	-	-
Link 2	HL	200	-	0.02	-	-	-	-
Link 3	HL	10	-	0.02	-	-	-	-

A channelisation factor of 0.9 for runoff nodes 1, 2 & 3 as only 50% of the longest flow paths are along the centreline channel i.e. slower conveyance of flows than in the pre-development scenario. It is important to remember that in this scenario, the flows of each sub-catchment area are being conveyed downstream by the hydraulic links.

Figure 14 shows the output hydrograph from XP-SWMM of the post-development model with a peak flow of 17.76m³/s.

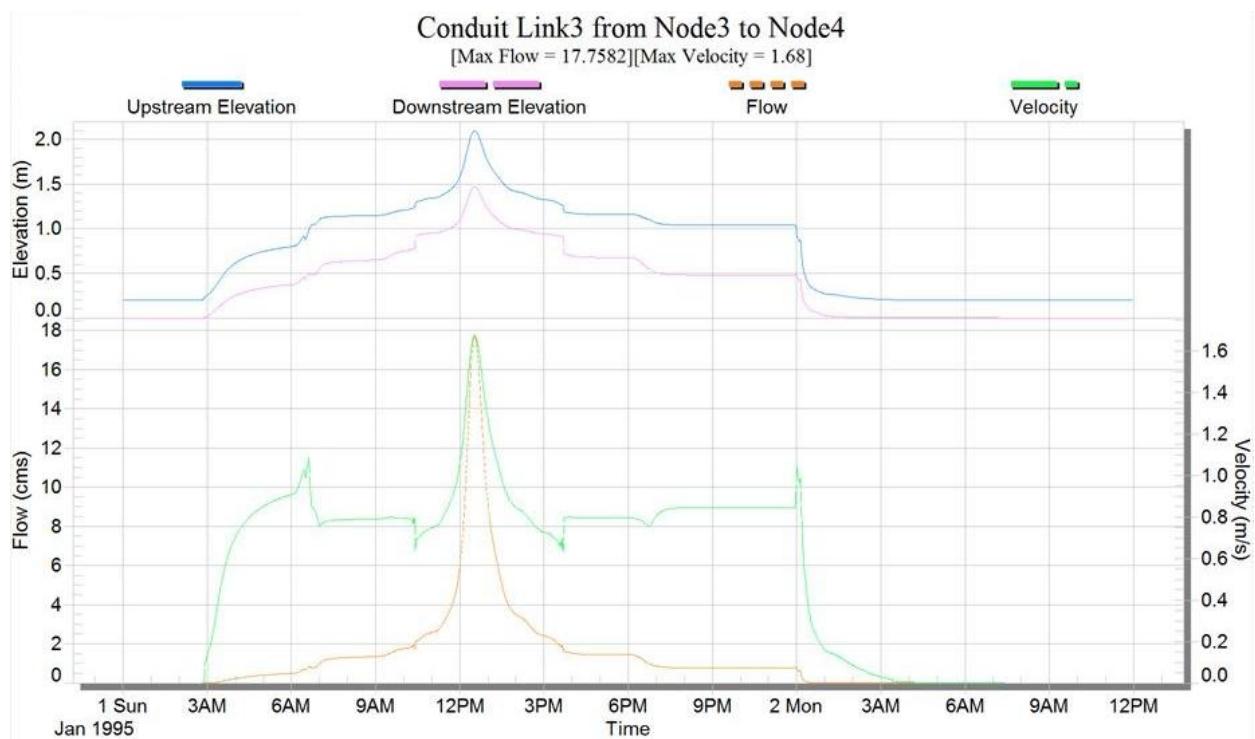


Figure 14: Runoff results from modelling as three discreet sub-catchments.

Conclusion

In conclusion, the pre-development scenario peak flow is $17.50\text{m}^3/\text{s}$ compared to the post-development scenario peak flow of $17.76\text{m}^3/\text{s}$. There is no appreciable change to the timing or difference in structure of the flow hydrographs.

We are able to simulate the actual effects associated with the changes resulting from the proposed motorway without introducing artificial changes to flow regimes due to modelling methodology. However proper selection of hydraulic routing variables and adjusting post-development runoff node properties is required to reflect the smaller sub-catchment areas and role of hydraulic links.

3. Results

This section summarises the results of the hydrological modelling from XP-SWMM. These are used to assist with the assessment of effects in Section 8 of the OWAR.

3.1 Changes in catchment peak flow

Table 6: Changes in Catchment Peak Flows due to the Project.

Catchment	Percentage increase in Flow (%)		
	100 year ARI Event	10 year ARI Event	2 year ARI Event
Pūhoi	0.16	0.26	1.35
Mahurangi	-0.18	0.12	0.57

3.2 Changes in runoff volume

Table 7: Changes in runoff volume due to the Project for 100 year ARI event.

Catchment	Pre-development volume (m ³)	Post-development volume (m ³)	Change in volume (%)
Pūhoi	13,373,000	13,518,000	1.08
Mahurangi	11,505,000	11,568,000	0.55

Table 8: Changes in runoff volume due to the Project for 10 year ARI event.

Catchment	Pre-development volume (m ³)	Post-development volume (m ³)	Change in volume (%)
Pūhoi	7,718,000	7,864,000	1.90
Mahurangi	6,678,000	6,743,000	0.98

Table 9: Changes in runoff volume due to the Project for 2 year ARI event.

Catchment	Pre-development runoff volume (m ³)	Post-development runoff volume (m ³)	Change in volume (%)
Pūhoi	3,542,000	3,700,000	4.46
Mahurangi	3,235,000	3,304,000	2.12

3.3 Changes in stream peak flow

3.3.1 In the Mahurangi Catchment

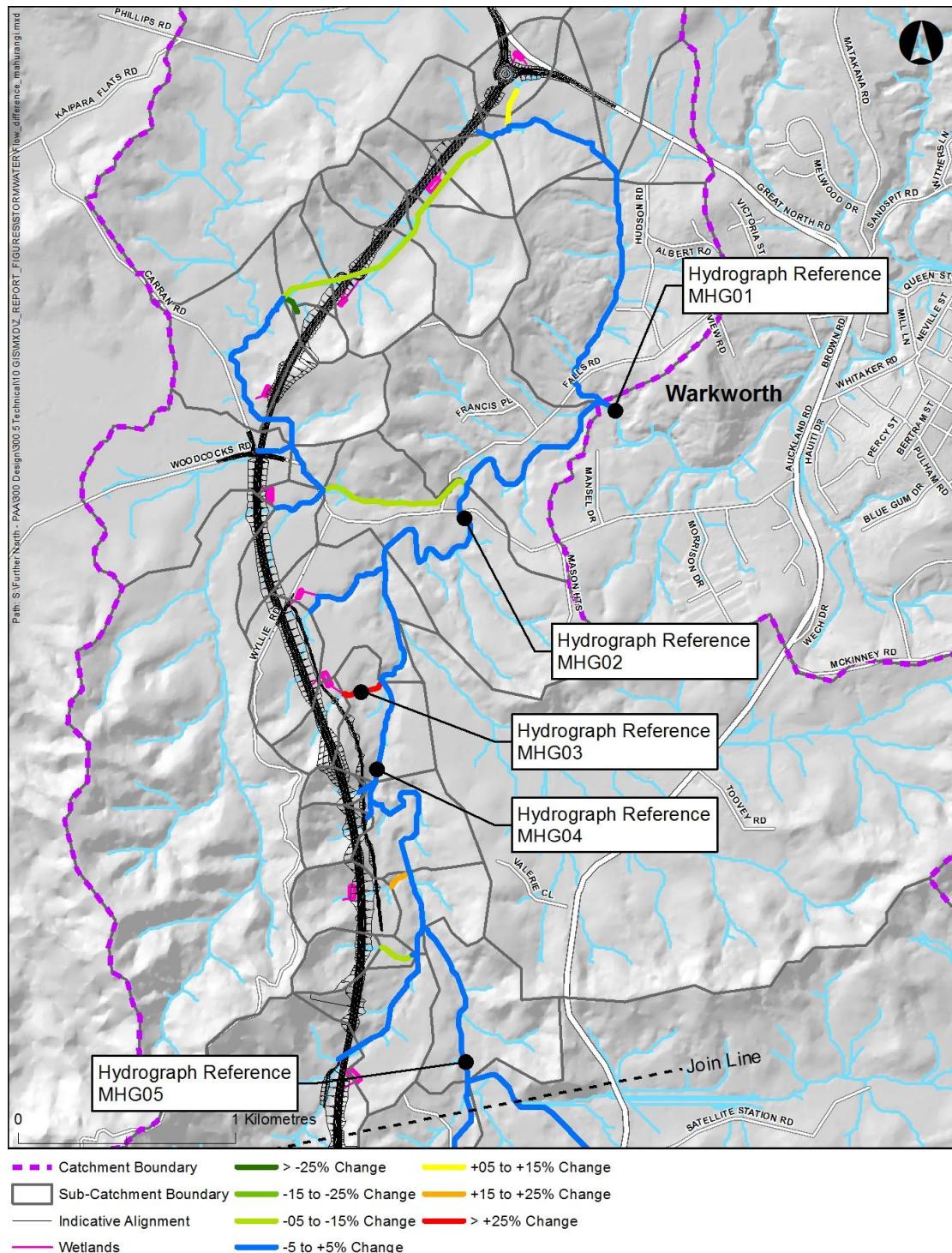


Figure 15: Changes in flow in streams due to motorway for 100 year ARI event – Mahurangi Catchment (1 of 2).

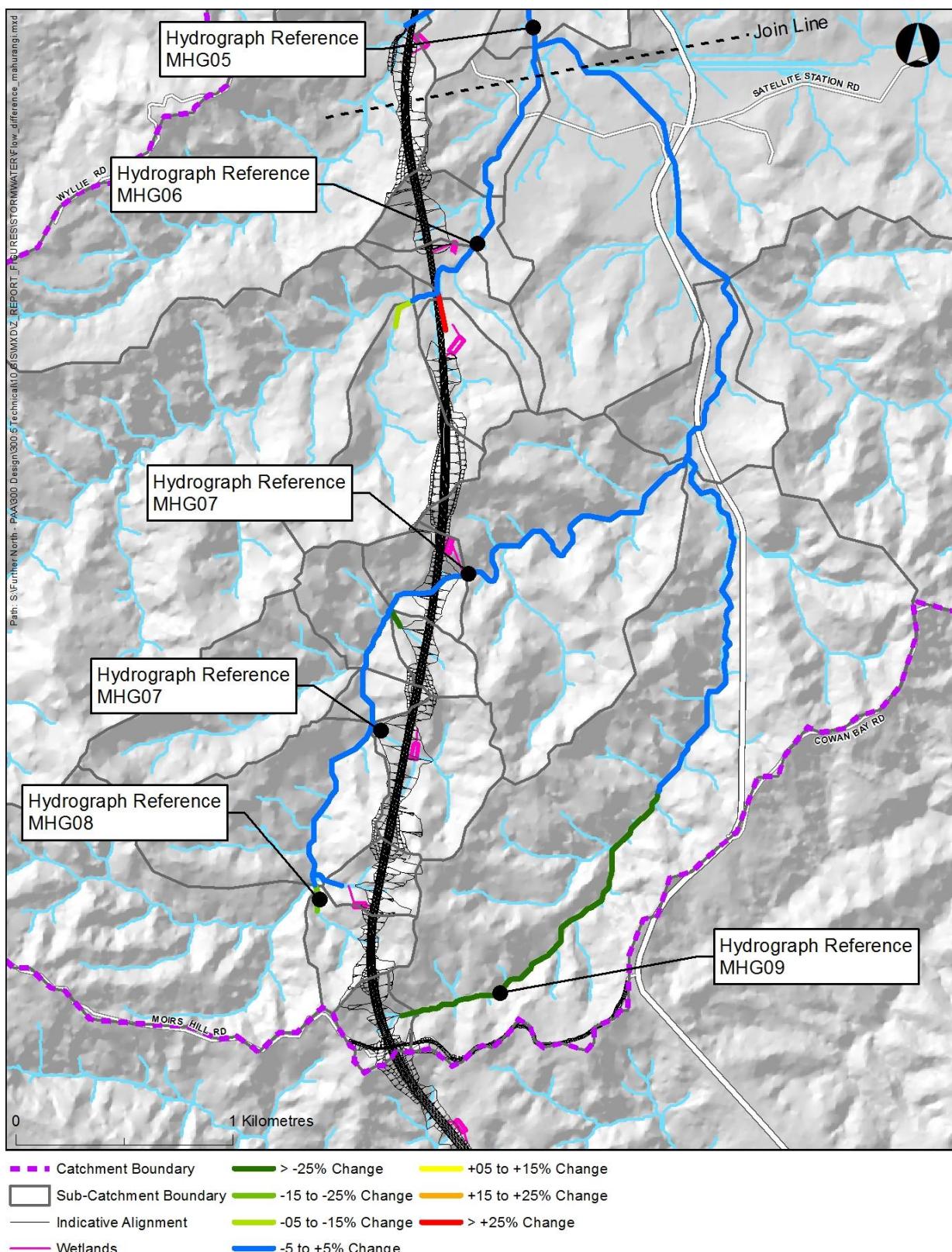


Figure 16: Changes in flow in streams due to motorway for 100 year ARI event – Mahurangi Catchment (2 of 2).

Hydrographs

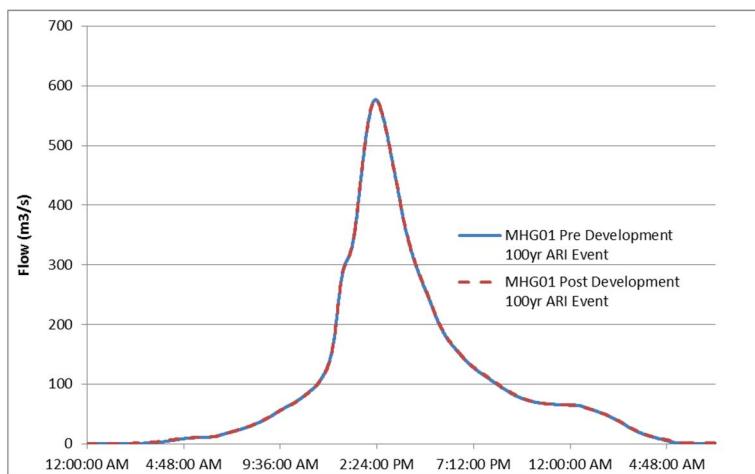


Figure 17: Mahurangi Hydrograph 01 – Flow change due to the Project.

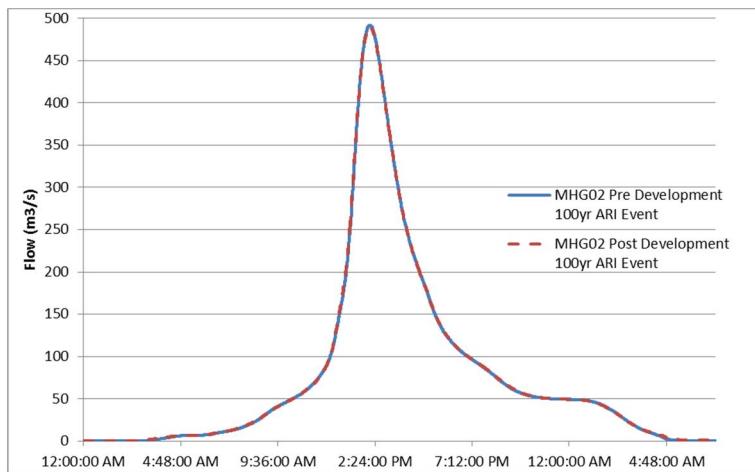


Figure 18: Mahurangi Hydrograph 02 – Flow change due to the Project.

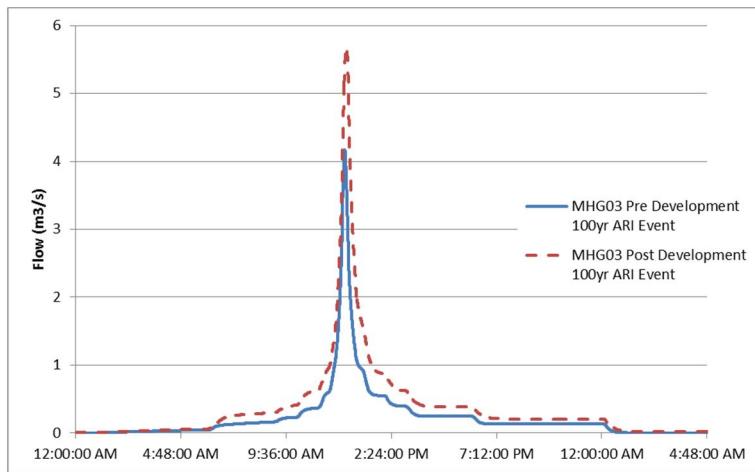


Figure 19: Mahurangi Hydrograph 03 – Flow change due to the Project.

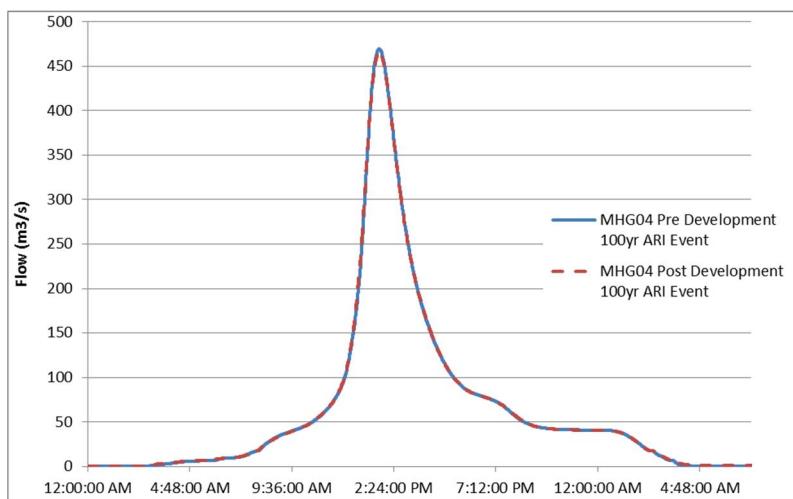


Figure 20: Mahurangi Hydrograph 04 – Flow change due to the Project.

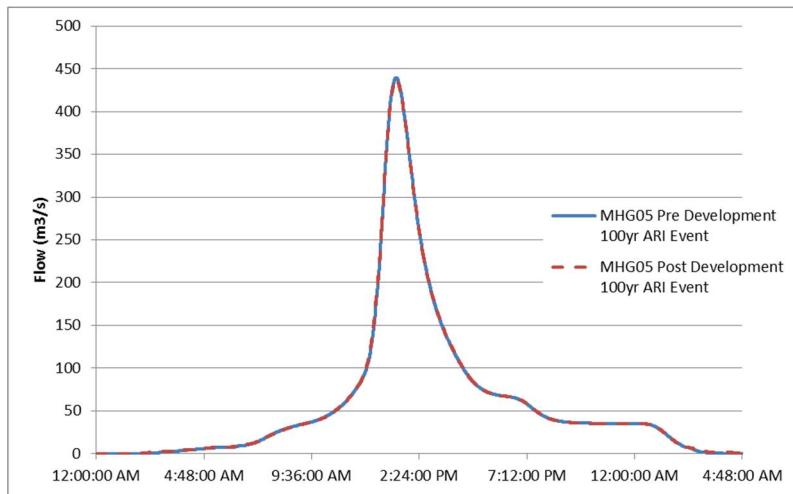


Figure 21: Mahurangi Hydrograph 05 – Flow change due to the Project.

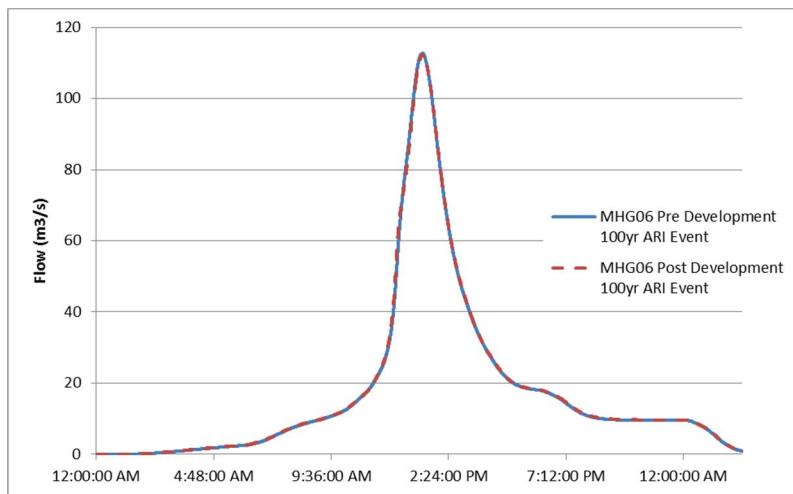


Figure 22: Mahurangi Hydrograph 06 – Flow change due to the Project.

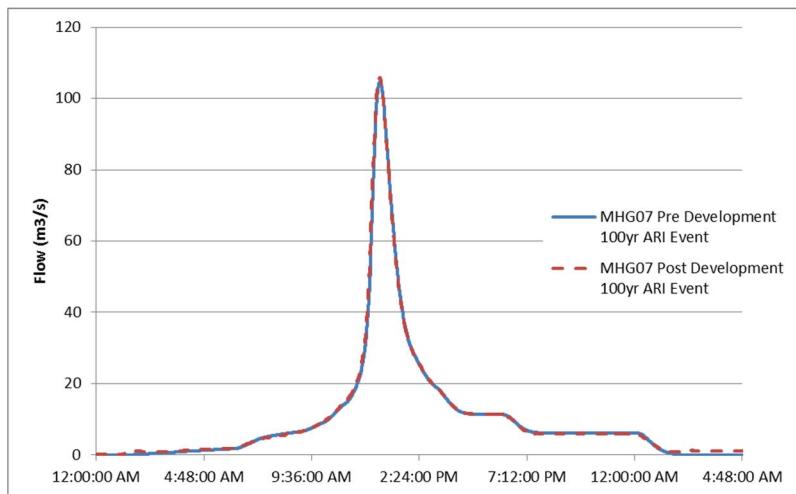


Figure 23: Mahurangi Hydrograph 07 – Flow change due to the Project.

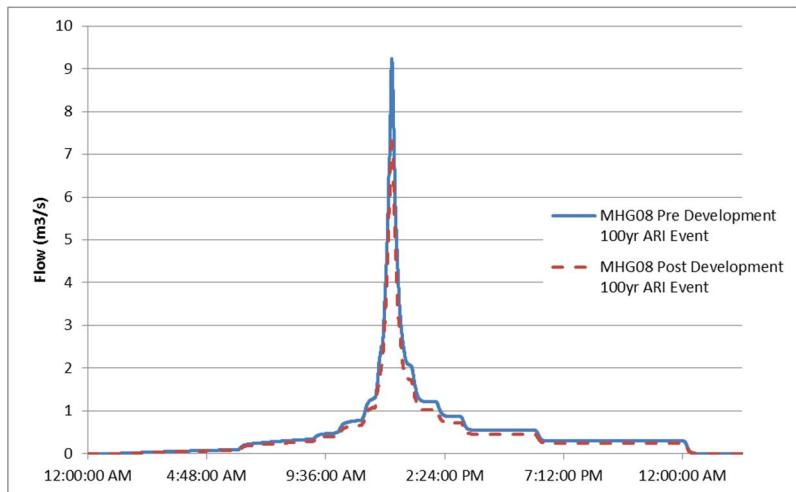


Figure 24: Mahurangi Hydrograph 08 – Flow change due to the Project.

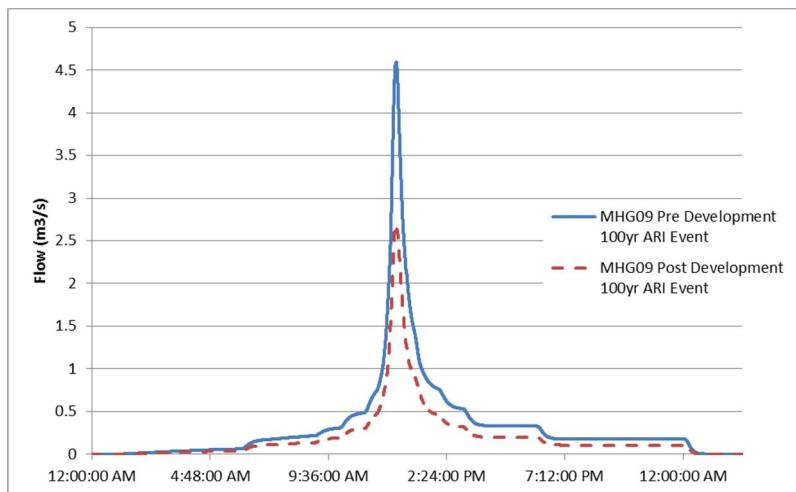


Figure 25: Mahurangi Hydrograph 09 – Flow change due to the Project.

3.3.2 In the Pūhoi catchment

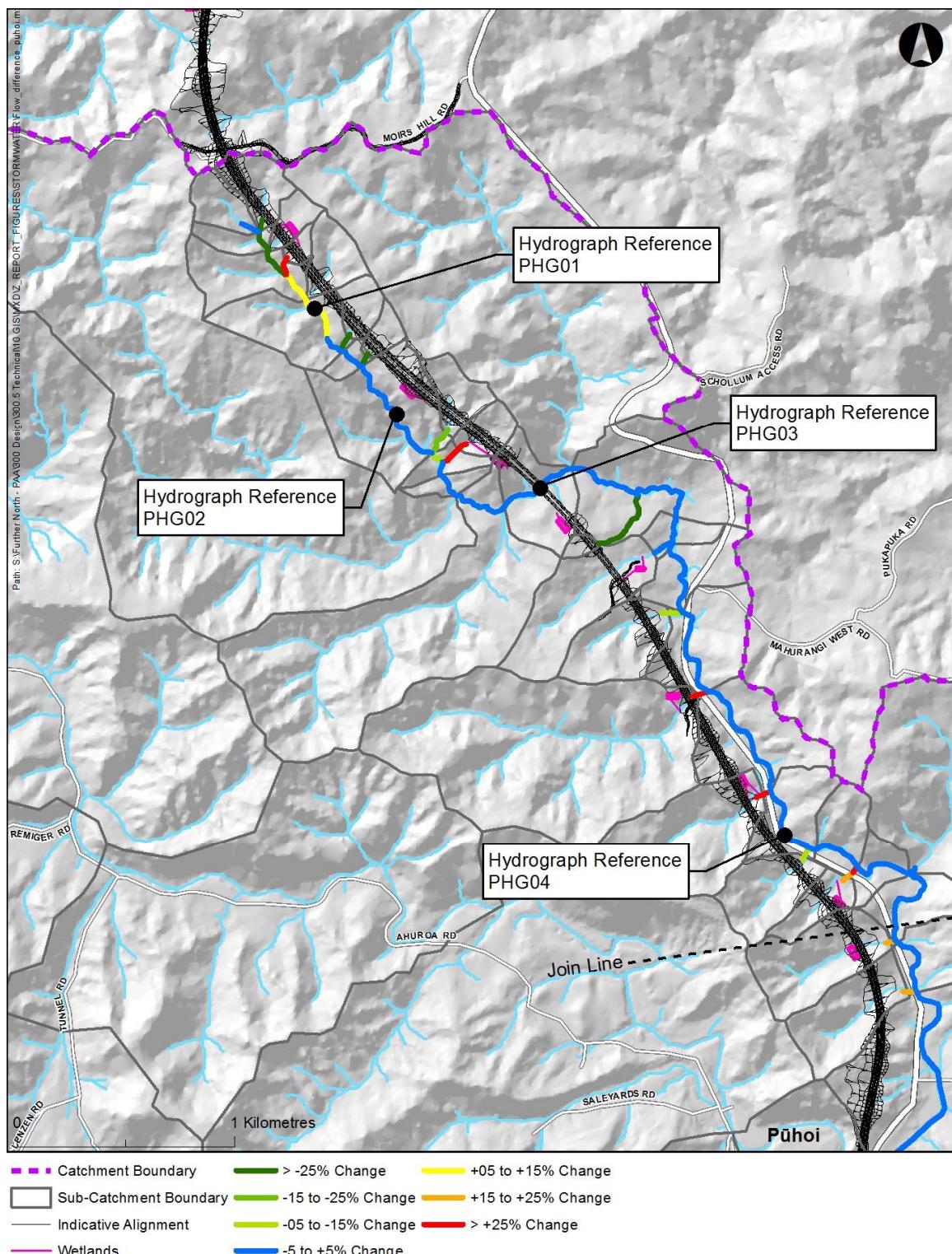


Figure 26: Changes in flow in streams due to motorway for 100 year ARI event – Pūhoi Catchment (1 of 2).

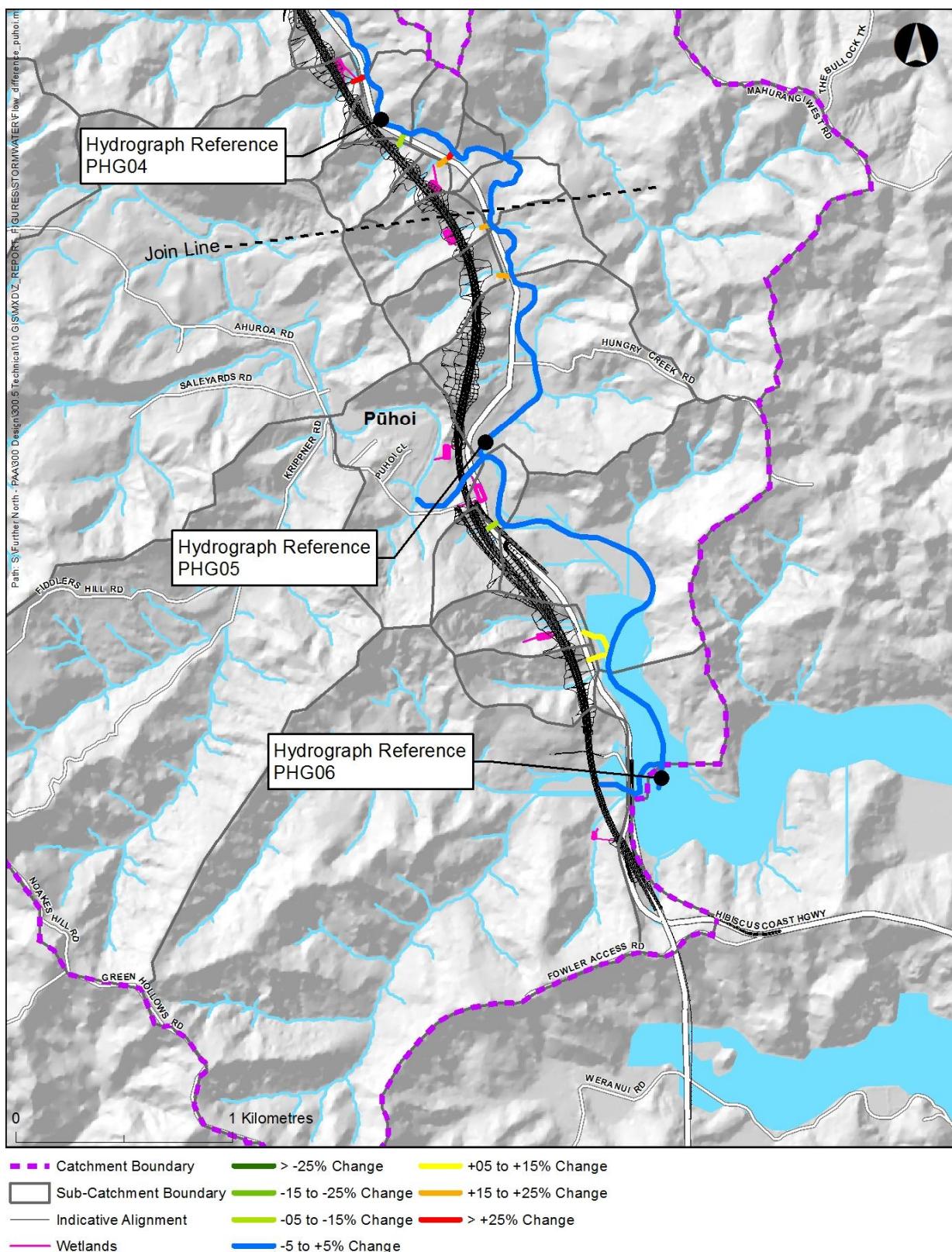


Figure 27: Changes in flow in streams due to motorway for 100 year ARI event – Pūhoi Catchment (2 of 2).

Hydrographs

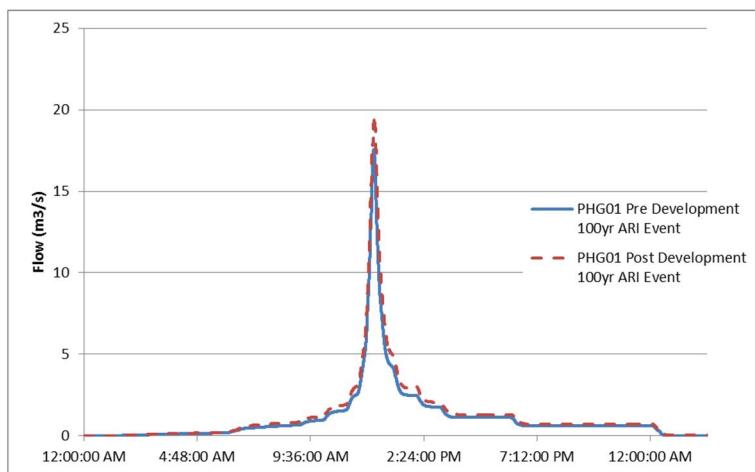


Figure 28: Pūhoi Hydrograph 01 – Flow change due to the Project.

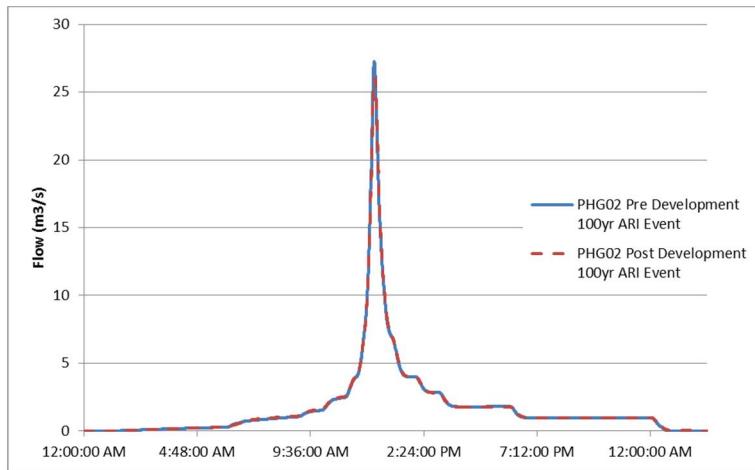


Figure 29: Pūhoi Hydrograph 02 – Flow change due to the Project.

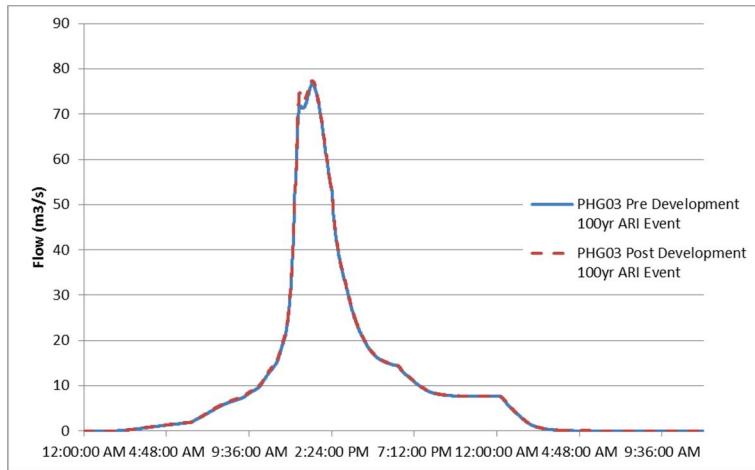


Figure 30: Pūhoi Hydrograph 03 – Flow change due to the Project.

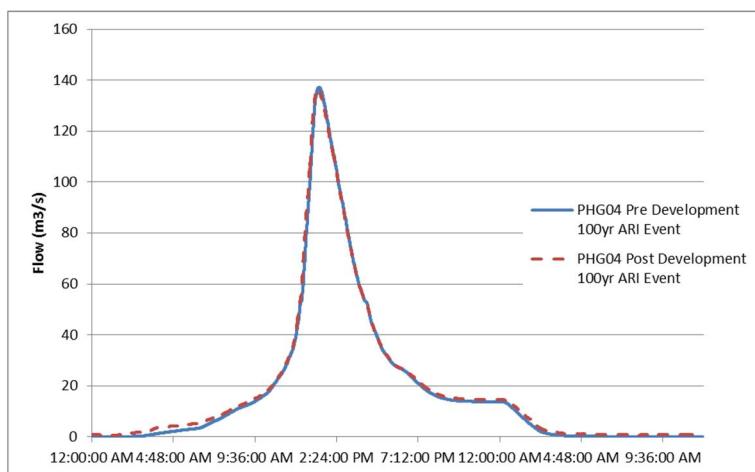


Figure 31: Pūhoi Hydrograph 04 – Flow change due to the Project.

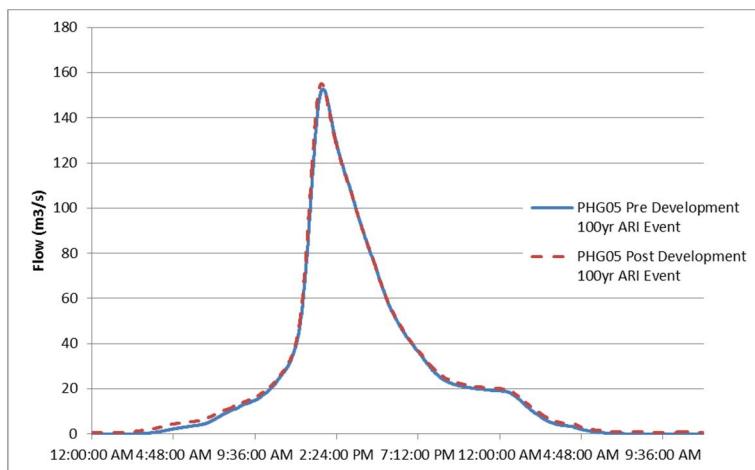


Figure 32: Pūhoi Hydrograph 05 – Flow change due to the Project.

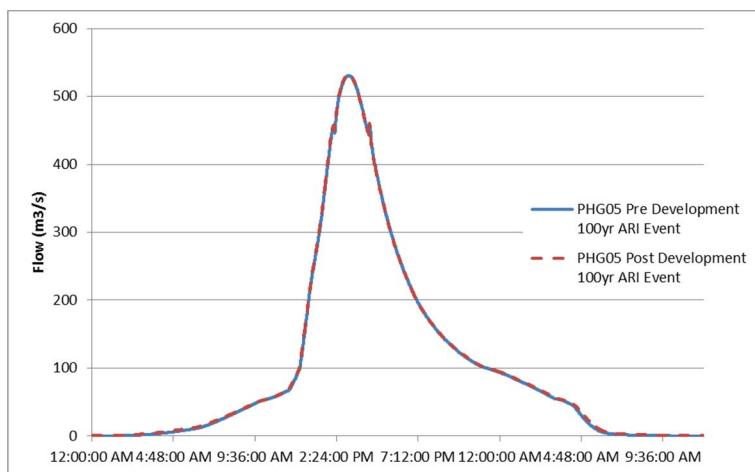


Figure 33: Pūhoi Hydrograph 06 – Flow change due to the Project.

3.4 Mahurangi catchment flow data

Table 10: Mahurangi catchment pre/post-development flow comparisons

Storm event	SWMM model link ref	Hydrograph reference	Time to Peak (hrs)		Peak flow (m³/s)		Peak flow %age difference	Max velocity (m/s)		Total flow from U/S node (m³)		Total flow %age difference
			Pre-dev (T _p)	Post-dev (T _p)	Pre-dev (Q)	Post-dev (Q)		Pre-dev (v)	Post-dev (v)	Pre-dev (Vol)	Post-dev (Vol)	
2-Year	00/01-1	MHG01	14.844	14.844	153.864	154.742	0.57%	2.540	2.53	3235303.57	3304959.49	2.15%
10-Year	00/01-1	MHG01	14.669	14.669	315.913	316.305	0.12%	2.900	2.9	6700000.00	6750000.00	0.75%
100-Year	00/01-1	MHG01	14.347	14.35	576.776	575.763	-0.18%	3.030	3.02	11500000.00	11550000.00	0.43%
2-Year	02-1/02-2	MHG02	14.667	14.672	128.733	128.487	-0.19%	1.250	1.24	2434003.82	2482548.82	1.99%
10-Year	02-1/02-2	MHG02	14.436	14.436	268.173	267.16	-0.38%	1.250	1.25	5050000.00	5100000.00	0.99%
100-Year	02-1/02-2	MHG02	14.164	14.169	491.880	489.196	-0.55%	1.390	1.39	8700000.00	8750000.00	0.57%
2-Year	05/06-1	MHG04	14.064	14.064	126.486	126.29	-0.15%	0.800	0.8	2014334.44	2055028.63	2.02%
10-Year	05/06-1	MHG04	13.872	13.881	269.175	267.878	-0.48%	0.920	0.92	4180622.37	4223460.00	1.02%
100-Year	05/06-1	MHG04	13.731	13.742	469.285	465.986	-0.70%	1.020	1.01	7250000.00	7250000.00	0.00%
2-Year	05/29	MHG03	12.300	12.325	1.185	1.726	45.65%	0.340	0.43	6865.09	12499.46	82.07%
10-Year	05/29	MHG03	12.292	12.325	2.456	3.481	41.73%	0.890	0.5	14044.70	23960.68	70.60%
100-Year	05/29	MHG03	12.289	12.356	4.171	5.678	36.13%	0.740	0.54	24047.75	39595.31	64.65%
2-Year	08-2/09-1	MHG05	13.567	13.567	119.977	120.218	0.20%	0.830	0.83	1727058.01	1762553.00	2.06%
10-Year	08-2/09-1	MHG05	13.456	13.458	253.489	252.997	-0.19%	0.960	0.96	3595851.92	3632221.63	1.01%
100-Year	08-2/09-1	MHG05	13.383	13.386	439.185	437.165	-0.46%	1.080	1.08	6250000.00	6250000.00	0.00%
2-Year	09-3/19	MHG06	13.436	13.45	30.936	31.01	0.24%	0.980	0.98	464030.35	470145.36	1.32%
10-Year	09-3/19	MHG06	13.378	13.392	65.180	65.046	-0.21%	1.140	1.14	967066.13	975206.30	0.84%
100-Year	09-3/19	MHG06	13.339	13.356	112.705	112.195	-0.45%	1.270	1.27	1676446.59	1686449.96	0.60%
2-Year	11-3/18	MHG09	12.383	12.378	1.195	0.769	-35.65%	1.120	0.95	9133.60	5678.19	-37.83%

Storm event	SWMM model link ref	Hydrograph reference	Time to Peak (hrs)		Peak flow (m³/s)		Peak flow %age difference	Max velocity (m/s)		Total flow from U/S node (m³)		Total flow %age difference
			Pre-dev (T _p)	Post-dev (T _p)	Pre-dev (Q)	Post-dev (Q)		Pre-dev (v)	Post-dev (v)	Pre-dev (Vol)	Post-dev (Vol)	
10-Year	11-3/18	MHG09	12.367	12.383	2.578	1.573	-38.98%	1.130	1.05	18711.90	11514.73	-38.46%
100-Year	11-3/18	MHG09	12.361	12.353	4.591	2.699	-41.21%	1.250	1.14	32004.78	19563.71	-38.87%
2-Year	11-4/12	MHG07	12.764	12.728	27.354	28.288	3.41%	1.390	1.4	291631.34	323882.43	11.06%
10-Year	11-4/12	MHG07	12.703	12.683	59.359	60.617	2.12%	1.680	1.69	611500.36	647320.75	5.86%
100-Year	11-4/12	MHG07	12.661	12.65	104.803	105.96	1.10%	1.950	1.96	1064129.66	1099309.70	3.31%
2-Year	17-1/17-2	MHG08	12.275	12.275	2.535	2.018	-20.39%	1.720	2.69	14021.70	11753.51	-16.18%
10-Year	17-1/17-2	MHG08	12.272	12.275	5.349	4.245	-20.64%	1.910	2.69	29408.08	24609.95	-16.32%
100-Year	17-1/17-2	MHG08	12.272	12.275	9.239	7.311	-20.87%	2.100	2.69	51199.13	42799.97	-16.40%

3.5 Pūhoi Catchment Flow Data

Table 11: Pūhoi catchment pre/post-development flow comparisons

ARI storm event	SWMM model link ref	Hydrograph reference	Time to peak (hrs)		Max flow (m³/s)		Peak flow %age difference	Max velocity (m/s)		Total flow from U/S Node (m³)		Total flow %age difference
			Pre-dev (T _p)	Post-dev (T _p)	Pre-dev (Q)	Post-dev (Q)		Pre-dev (v)	Post-dev (v)	Pre-dev (Vol)	Post-dev (Vol)	
2-Year	00/00-1	PHG06	16.142	16.131	114.548	116.093	1.35%	0.86	0.86	3542173.7	3704030.7	4.57%
10-Year	00/00-1	PHG06	15.5	15.486	288.478	289.219	0.26%	1.33	1.33	7700000.0	7850000.0	1.95%
100-Year	00/00-1	PHG06	15.133	15.114	530.562	531.394	0.16%	1.63	1.63	13350000.0	13500000.0	1.12%
2-Year	01-1/02-1	PHG05	13.972	13.975	39.847	40.893	2.63%	0.40	0.41	824869.2	980999.4	18.93%
10-Year	01-1/02-1	PHG05	13.808	13.781	81.465	82.763	1.59%	0.41	0.41	1815133.1	1960623.4	8.02%
100-Year	01-1/02-1	PHG05	13.608	13.525	152.756	155.121	1.55%	0.49	0.50	3164651.9	3309277.7	4.57%
2-Year	06-1/07-1	PHG04	13.392	13.378	34.412	35.311	2.61%	1.47	1.47	615575.0	766107.9	24.45%
10-Year	06-1/07-1	PHG04	13.633	13.597	72.56	73.032	0.65%	1.48	1.49	1360079.9	1493075.8	9.78%
100-Year	06-1/07-1	PHG04	13.378	13.308	137.261	136.504	-0.55%	1.46	1.47	2373385.9	2500368.8	5.35%
2-Year	12-2/13	PHG03	13.325	13.308	19.794	20.207	2.09%	1.40	1.41	339766.3	348705.9	2.63%
10-Year	12-2/13	PHG03	13.289	13.286	44.274	44.807	1.20%	1.63	1.64	752663.1	767361.2	1.95%
100-Year	12-2/13	PHG03	13.289	13.286	76.672	77.397	0.95%	1.64	1.64	1315259.3	1335077.0	1.51%
2-Year	16-1/17-1	PHG02	12.353	12.364	6.554	6.73	2.69%	1.75	1.77	43084.8	44874.5	4.15%
10-Year	16-1/17-1	PHG02	12.331	12.336	15.283	15.302	0.12%	1.86	1.87	95480.7	97424.0	2.04%
100-Year	16-1/17-1	PHG02	12.308	12.325	27.244	26.03	-4.46%	2.06	2.04	166638.2	167672.0	0.62%
2-Year	18-3/19-1	PHG01	12.328	12.333	4.398	5.331	21.21%	1.24	1.32	26948.3	33500.5	24.31%
10-Year	18-3/19-1	PHG01	12.294	12.3	10.09	11.791	16.86%	1.63	1.70	59650.5	72185.3	21.01%
100-Year	18-3/19-1	PHG01	12.289	12.314	17.563	19.664	11.96%	1.96	1.99	104087.5	123693.4	18.84%

3.6 Existing SH1 Culverts

Table 12: SH1 culverts assessment for the 100 year ARI storm event

SH1 culvert name	Existing SH1 culvert diameter (m)	Road elevation (mRL)	Pre-development		Post-development (Mitigation)			Comments	
			Pre-dev Q _p (m ³ /s)	Pre-dev Freeboard (m)	Post-dev mitigation Q _p (m ³ /s)	Post-dev mitigation freeboard (m)	New culvert diameter required	Project change	Potential downstream effect
SH1-P2	1.450	5.00	4.11	2.103	4.52	1.710	-	Small increase in peak flow due to minimum Tc of 10min for smaller sub-catchment as per TP108	Increase of peak flow likely to be an exaggeration. Minor effect due to discharge to estuary
SH1-P3	1.450	5.00	3.74	2.105	4.19	1.58	-	Small increase in peak flow	Minor effect due to discharge to estuary
SH1-P3a	1.450	7.00	4.80	2.670	4.32	2.67	-	Reduction in peak flow.	No effect.
SH1-P5	0.750	6.00	1.49	0.826	1.75	0.53	-	Small increase in peak flow due to minimum Tc of 10min for smaller sub-catchment as per TP108.	Increase of peak flow likely to be an exaggeration. Minor effect due to small increase in peak flow.
SH1-P6	0.900	7.50	6.60	-0.267	7.69	0.53	1.125	Increase in peak flow due to additional catchment from motorway. Additional 1200 mm diameter culvert proposed.	Minor effect due to discharge to main Hikauae Stream, and reduced velocities from increased cross-sectional area from additional culvert
SH1-P6a	0.450	15.50	0.56	3.756	0.66	2.83	-	Small increase in peak flow due to additional catchment from motorway	Minor effect due to discharge to intermittent farm drain.
SH1-P7	1.200	13.50	4.06	2.459	3.80	2.62	-	Reduction in peak flow.	No effect.

SH1 culvert name	Existing SH1 culvert diameter (m)	Road elevation (mRL)	Pre-development		Post-development (Mitigation)			Comments	
			Pre-dev Q _p (m ³ /s)	Pre-dev Freeboard (m)	Post-dev mitigation Q _p (m ³ /s)	Post-dev mitigation freeboard (m)	New culvert diameter required	Project change	Potential downstream effect
SH1-P8	1.200	21.00	6.87	2.652	12.71	0.61	0.825	Increase in peak flow due to additional catchment from motorway. Additional 900 mm diameter culvert proposed.	Short channel to main Hikauae Stream with potential for erosion. Energy dissipation/erosion protection to be provided for minor effect.
SH1-P9	2.1x2.0	20.00	18.97	0.132	25.03	0.64	1.575	Increase in peak flow due to additional catchment from motorway. Additional 1600 mm diameter culvert proposed.	Short channel to main Hikauae Stream with potential for erosion. Minor effect due to reduced velocities from increased cross-sectional area from additional culvert.

¹ Overflow paths across SH1 are assumed to be constrained to 10m width for modelling purposes.

² Negative freeboard indicates depth of flooding across SH1.

4. References

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Appendix A –Mahurangi pre-development catchment properties

MAHURANGI PRE-DEVELOPMENT CATCHMENT PROPERTIES

Catchment	Runoff Node	Catchment Length (km)	Sc (equal area method)	Channelisation Factor (C)	Impervious Area (ha)	Impervious Area %	Total Area (ha)	Pervious Area CN	Weighted CN	Tc (hrs)	Tc (min)	Node Invert (mRL)	Node Ground Level
SN00	0						0					10.634	20.634
SN01-1	0						0					11	21.5
SN01-2	1	1.526	0.022	0.85			85.0	74.0		0.665	39.91	12	19.6
SN01-3	1	1.136	0.020	0.85			64.0	79.0		0.529	31.72	13.5	24
SN02-1	0						0					16	26.5
SN02-2	1	1.197	0.022	0.85			70.3	74.0		0.561	33.64	16.6	27.1
SN03-1	0						0					18.75	26.25
SN03-2	1	0.753	0.029	0.85			28.3	74.0		0.382	22.94	19.1	26.6
SN04	1	3.156	0.012	0.90			335.0	74.0		1.370	82.20	20	27.5
SN05	1	0.632	0.034	0.85			20.5	74.0		0.326	19.56	21	28.5
SN06-1	0						0					23	30.5
SN06-2	0						0					25.5	33
SN06-3	1	0.950	0.023	0.85			21.0	74.0		0.476	28.58	26.52	34.02
SN07-1	0						0					27.53	35.03
SN07-2	1	0.444	0.040	0.90			13.7	74.0		0.259	15.53	28.52	36.02
SN08-1	0						0					29.5	37
SN08-2	1	1.090	0.015	0.90			33.2	74.0		0.635	38.10	31.25	38.75
SN09-1	0						0					33	39.95
SN09-2	1	3.588	0.009	0.95			460.9	72.0		1.736	104.19	38.45	48.95
SN09-3	1	0.823	0.048	0.90			27.3	73.0		0.374	22.46	35.5	46
SN10-1	0						0					42.9	53.4
SN10-2	1	2.170	0.019	1.00			230.0	70.0		1.075	64.48	43	54.5
SN10-3	1	1.027	0.011	0.90			37.5	73.0		0.680	40.83	44.95	55.45
SN11-1	0						0					47	57.5
SN11-2	1	3.536	0.027	0.95			283.5	72.0		1.244	74.66	75.75	85.75
SN11-3	0						0					104.5	114.5
SN11-4	1	2.358	0.039	0.95			126.8	70.0		0.869	52.15	62.5	72.5
SN12	1	0.626	0.073	0.90			16.7	70.0		0.285	17.11	77	87
SN13-1	0						0					81.33	91.33
SN13-2	1	0.552	0.143	0.90			10.3	70.0		0.214	12.86	88	98
SN13-3	1	0.671	0.122	0.95			19.5	70.0		0.270	16.20	85.16	95.16
SN14-1	1	0.343	0.235	0.90			7.4	70.0		0.167	10.02	89	99
SN14-2	1	1.397	0.094	1.00			59.4	70.0		0.499	29.96	91	101
SN15-1	0						0					91	101
SN15-2	1	0.821	0.088	0.95			33.5	70.0		0.341	20.44	92	102
SN15-3	1	1.508	0.061	0.95			61.8	70.0		0.566	33.96	97.41	107.41
SN16-1	0						0.0					103	113
SN16-2	1	0.533	0.207	1.00			11.2	70.0		0.208	12.50	127.5	137.5
SN17-1	1	2.087	0.074	1.00			127.4	70.0		0.699	41.97	105	115
SN17-2	1	0.605	0.180	1.00			17.4	70.0		0.236	14.17	115	125
SN18	1	0.419	0.146	1.00			10.5	74.0		0.188	11.29	161	171
SN19	1	0.621	0.080	0.95			20.7	74.0		0.278	16.67	38	48.5
SN20-1	1	0.947	0.085	0.95			17.2	73.0		0.364	21.85	40	50.5
SN21-1	1	0.154	0.105	0.90			1.2	70.0		0.167	10.02	42.5	53
SN21-2	1	0.839	0.116	1.00			20.2	70.0		0.335	20.09	44	50
SN22-1	1	1.420	0.052	1.00			49.9	70.0		0.603	36.20	43.5	54

Catchment	Runoff Node	Catchment Length (km)	Sc (equal area method)	Channelisation Factor (C)	Impervious Area (ha)	Impervious Area %	Total Area (ha)	Pervious Area CN	Weighted CN	Tc (hrs)	Tc (min)	Node Invert (mRL)	Node Ground Level
SN22-2	1	4.578	0.035	1.00			459.5	71.0		1.450	86.99	43.75	54.25
SN23-1	0						0					31.8	42.3
SN23-2	1	0.762	0.046	0.85			2.2	74.0		0.336	20.15	34.624	40.62
SN23-3	1	0.791	0.026	0.80			23.7	79.0		0.361	21.66	34.4	44.9
SN24	1	3.138	0.042	0.95			198.9	74.0		0.982	58.95	36.5	47.5
SN25	1	0.375	0.178	1.00			8.4	70.0		0.173	10.37	41	47
SN26	1	0.371	0.108	1.00			13.8	74.0		0.190	11.43	32	38
SN27	1	0.336	0.101	1.00			7.9	74.0		0.182	10.90	32.75	38.75
SN28	1	0.263	0.156	0.90			4.1	74.0		0.167	10.02	29	35
SN29	1	0.471	0.091	0.95			7.88	74.0		0.223	13.35	31.25	37.25
SN30	1	0.683	0.038	1.00			17.994	74.0		0.389	23.34	29.9	35.9
SN31-1	1	0.371	0.132	0.90			3.872	74.0		0.167	10.02	28	38
SN31-2	1	0.791	0.011	0.90			13.84	74.0		0.558	33.49	28.88	38.88
SN32	1	3.125	0.016	0.90			192.447	74.0		1.245	74.67	30	40
SN33-1	1	0.671	0.062	0.95			19.538	70.0		0.331	19.85	29	39
SN33-2	1	1.238	0.037	1.00			48.459	74.0		0.582	34.91	29.764	39.76
SN33-3	1	1.443	0.071	0.85			33.634	70.0		0.471	28.27	30.25	40.25
SN33-4	0						0					31.5	41.5
SN34	1	0.487	0.054	1.00			8.702	74.0		0.280	16.81	32.4	39
SN35	1	0.468	0.096	1.00			27.771	74.0		0.230	13.77	32.7	39.25
SN36	1	0.319	0.200	1.00			4.756	74.0		0.167	10.02	34	40
SN37	1	3.505	0.004	1.00			255.963	74.0		2.331	139.89	34.745	44.75
SN38-1	1	0.796	0.030	1.00			16.82	79.0		0.437	26.21	23	30.6
SN38-2	1	1.395	0.100	1.00			41.355	74.0		0.466	27.94	23.303	30.9
SN39	1	0.815	0.079	0.90			22.702	74.0		0.316	18.94	23.4	31
SN40-1	0						0					29	36.6
SN40-2	1	0.563	0.093	1.00			12.372	74.0		0.262	15.72	32	38
SN41-1	1	0.499	0.068	0.90			9.115	74.0		0.239	14.35	30.5	36
SN41-2	1	0.450	0.135	1.00			11.906	74.0		0.202	12.11	32	38
SN42-1	1	0.818	0.021	1.00			22.977	74.0		0.522	31.31	32.9	38.9
SN42-2	1	0.415	0.131	1.00			10.018	74.0		0.193	11.60	32.3	38.4
SN43	1	0.472	0.162	1.00			9.523	74.0		0.197	11.84	32.9	38.9
SN44	0						0					33.4	37.8

Appendix B –Mahurangi post-development catchment properties

MAHURANGI POST-DEVELOPMENT CATCHMENT PROPERTIES																
Catchment	Runoff Node	Catchment Length (km)	Sc (equal area method)	Channelisation Factor (C)	Impervious Area (ha)	Impervious Area %	Total Area (ha)	Pervious Area CN	Cut/Fill CN	Cut/Fill Area	Weighted Perv Area CN	Weighted CN	Tc (hrs)	Tc (min)	Node Level (mRL)	Node Ground Level
Cut-E01	1	0.079	0.0264	0.80			0.069	79.00			79.00	79.00	0.167	10.002	40.5	41
Cut-E02	1	0.311	0.0116	0.80			1.593	79.00			79.00	79.00	0.249	14.961	44.3	44.8
Cut-E03	1	0.273	0.0080	0.80			0.666	79.00			79.00	79.00	0.256	15.351	46.7	47.2
Cut-E04	1	0.044	0.0080	0.80			0.023	79.00			79.00	79.00	0.167	10.002	49.5	50
Cut-E05	1	0.101	0.0080	0.80			0.082	79.00			79.00	79.00	0.167	10.002	51.1	51.6
Cut-E06	1	0.114	0.0080	0.80			0.086	79.00			79.00	79.00	0.167	10.002	55.5	56
Cut-E07	1	0.061	0.0080	0.80			0.076	79.00			79.00	79.00	0.167	10.002	57.5	58
Cut-E08	1	0.440	0.0225	0.80	0.2577	10.55	2.443	79.00			79.00	81.00	0.251	15.075	65.4	65.9
Cut-E09	1	0.709	0.0258	0.80	1.5539	45.80	3.393	79.00			79.00	87.70	0.306	18.373	110.2	110.7
Cut-E10	1	0.256	0.0300	0.80	0.3130	20.88	1.499	79.00			79.00	82.97	0.167	10.002	133	133.5
Cut-E11	1	0.350	0.0491	0.80	0.3755	10.06	3.732	79.00			79.00	80.91	0.171	10.276	158.4	158.9
Cut-E12A	1	0.218	0.1787	0.80	0.0196	3.01	0.651	79.00			79.00	79.57	0.167	10.002	176.5	177
Cut-E12B	1	0.128	0.0297	0.80			0.620	79.00			79.00	79.00	0.167	10.002	180	180.5
Cut-E13	1	0.219	0.0263	0.80	0.0066	0.59	1.116	79.00			79.00	79.11	0.167	10.002	186.4	186.9
Cut-W01	1	0.098	0.0229	0.80			0.166	79.00			79.00	79.00	0.167	10.002	40.5	41
Cut-W02A	1	0.293	0.0068	0.80			0.769	79.00			79.00	79.00	0.281	16.864	36.1	36.6
Cut-W02B	1	0.309	0.0094	0.80			0.482	79.00			79.00	79.00	0.265	15.900	36.1	36.6
Cut-W03	1	0.313	0.0116	0.80			0.417	79.00			79.00	79.00	0.251	15.034	44.3	44.8
Cut-W04	1	0.250	0.0080	0.80	0.1079	10.36	1.042	79.00			79.00	80.97	0.236	14.162	46.7	47.2
Cut-W05	1	0.080	0.0080	0.80			0.193	79.00			79.00	79.00	0.167	10.002	49.5	50
Cut-W06	1	0.140	0.0080	0.80			0.439	79.00			79.00	79.00	0.167	10.002	51.1	51.6
Cut-W07	1	0.030	0.0080	0.80			0.033	79.00			79.00	79.00	0.167	10.002	53.5	54
Cut-W08	1	0.307	0.0080	0.80			1.704	79.00			79.00	79.00	0.276	16.588	55.5	56
Cut-W09	1	0.349	0.0225	0.80	0.1591	8.51	1.869	79.00			79.00	80.62	0.217	12.995	69.9	70.4
Cut-W10	1	0.694	0.0258	0.80	1.0452	37.44	2.792	79.00			79.00	86.11	0.307	18.441	110.2	110.7
Cut-W11	1	0.234	0.0300	0.80	0.0771	11.14	0.692	79.00			79.00	81.12	0.167	10.002	133	133.5
Cut-W12	1	0.264	0.0500	0.80	0.3679	24.91	1.477	79.00			79.00	83.73	0.167	10.002	158.4	158.9
Cut-W13	1	0.187	0.0155	0.80			0.270	79.00			79.00	79.00	0.167	10.002	180	180.5
Cut-W14	1	0.328	0.0641	0.80	0.1844	12.91	1.428	79.00			79.00	81.45	0.167	10.002	185.3	185.8
P47700	0						0.000								33.6	36.6
P48400	0						0.000								40.3	43.8
P48900	0						0.000								41.3	44.8
P49400	0						0.000								36.1	40.1
P49900	0						0.000								32	34.5
P50300	0						0.000								36	45.6
P51300	0						0.000								49.2	53.2
P52200	0						0.000								48.5	61.4
P53100	0						0.000								50.5	82.8
P53600	0						0.000								78.5	104.3
P54500	0						0.000								124	127.5
P55500	0						0.000								140.5	144.5
P56200	0						0.000								177	180.5
P800SH1S	0						0.000								41.5	45
Road01	1	0.667	0.0036	0.60		100.00	2.380	98.00			98.00	98.00	0.356	21.347	35.55	36.6
Road01(2)	1	0.536	0.0147	0.60		100.00	1.762	98.00			98.00	98.00	0.202	12.098		
Road02A		0.317	0.0091	0.60		100.00	1.011	98.00			98.00	98.00	0.167	10.002	42.55	43.3
Road02B	1	0.335	0.0107	0.60		100.00	1.112	98.00			98.00	98.00	0.167	10.002	44.05	44.8
Road03	1	0.613	0.0051	0.60		100.00	2.889	98.00			98.00	98.00	0.304	18.222	39.35	40.1
Road04	1	0.308	0.0072	0.60		100.00	1.140	98.00			98.00	98.00	0.174	10.413	42.7	43.2

Appendix C –Pūhoi pre-development catchment properties

PUHOI PRE-DEVELOPMENT CATCHMENT PROPERTIES															
Catchment	Runoff Node	Catchment Length (km)	Sc (equal area method)	Channelisation Factor (C)	Impervious Area (ha)	Impervious Area %	Total Area (ha)	Pervious Area CN	Cut/Fill CN	Cut/Fill Area	Weighted CN	Tc (hrs)	Tc (min)	Node Invert Level (mRL)	Node Ground Level
SN00	0						0.0						-4.155	5	
SN00-1	1	0.970	0.029	0.85			25.2	74			0.45	27.14	-4.099	5	
SN00-2	0						0.0						-3.801	5	
SN00-3	1	1.542	0.031	0.85			91.1	74			0.60	35.96	-3.731	5	
SN00-4	1	0.327	0.009	0.85			6.9	74			0.32	19.02	-3.18	5	
SN00-5	0						0.0						-3.11	5	
SN01-1	1	1.246	0.014	0.90			80.4	74.0			0.71	42.47	-3	10.7	
SN01-2	1	1.090	0.039	0.95			54.0	74.0			0.50	29.97	-2.972	10.73	
SN02-1	1	0.604	0.073	0.95			12.7	74.0			0.28	16.82	-1.5	7	
SN02-2	1	0.631	0.073	1.00			15.9	70.0			0.32	19.14	2.07	7	
SN03-1	1	0.543	0.069	1.00			9.4	74.0			0.28	16.80	-0.25	6.9	
SN03-2	0						0.0						3.37	8.5	
SN03-3	1	0.713	0.077	0.90			18.8	70.0			0.31	18.36	3.75	8.5	
SN04-1	1	0.330	0.121	0.90			5.2	70.0			0.17	10.00	1.75	9	
SN04-2	1	2.392	0.036	1.00			203.5	70.0			0.95	56.86	2.05	9.3	
SN05-1	1	0.528	0.132	0.95			8.4	70.0			0.23	13.51	3.65	10.9	
SN05-2	0						0.0						7.44	15.5	
SN05-3	1	0.474	0.134	1.00			6.0	70.0			0.22	13.18	9	15.5	
SN06-1	1	0.607	0.104	0.85			11.7	70.0			0.24	14.23	4.75	12	
SN06-2	0						0.0						7.46	13.5	
SN06-3	1	0.564	0.152	1.00			12.3	70.0			0.24	14.24	8.04	13.5	
SN07-1	1	0.572	0.023	0.85			20.3	70.0			0.36	21.60	10	17.25	
SN07-2	0						0.0						11.68	22	
SN07-3	1	0.970	0.069	1.00			30.4	70.0			0.43	25.80	12.53	22	
SN08-1	1	0.676	0.016	0.85			16.8	74.0			0.42	25.32	12.25	19.5	
SN08-2	0						0.0						13.54	21	
SN08-3	1	1.754	0.032	1.00			90.7	70.0			0.80	48.22	14.29	21	
SN09-1	1	0.432	0.046	0.90			10.4	74.0			0.24	14.64	15.25	21.5	
SN09-2	1	0.655	0.088	1.00			13.7	70.0			0.31	18.53	17.93	21.5	
SN10-1	1	0.445	0.062	0.90			4.3	74.0			0.23	13.67	16.75	25	
SN10-2	1	0.928	0.064	0.80			21.7	74.0			0.33	19.58	20.9	27.9	
SN11-1	1	0.708	0.080	0.90			32.1	72.0			0.29	17.65	17.65	24.9	
SN11-2	0						0.0						18.25	26.5	
SN11-3	1	0.1312	0.198170732	1.00			1.2	74.0			0.17	10.00	45	52.2	
SN12-1	1	2.633	0.049	1.00			150.3	70.0			0.92	55.34	21.75	29	
SN12-2	1	0.531	0.074	0.90			13.9	74.0			0.24	14.59	22.75	30	
SN13	1	1.741	0.027	1.00			82.8	70.0			0.84	50.43	27.25	34.5	
SN14-1	1	0.304	0.137	0.95			2.8	70.0			0.17	10.00	29.75	38.5	
SN14-2	1	5.526	0.032	1.00			321.0	70.0			1.70	102.08	30.15	37.4	
SN15-1	1	0.261	0.214	0.90			3.7	70.0			0.17	10.00	31.5	40	
SN15-2	1	0.321	0.307	1.00			4.9	70.0			0.17	10.00	44	50.9	
SN15-3	0						0.0						32.5	41	
SN16-1	1	0.726	0.103	0.90			26.1	70.0			0.28	17.03	33.25	41.75	
SN16-2	1	0.371	0.289	1.00			6.6	70.0			0.17	10.00	55	61.9	
SN17-1	1	0.165	0.189	0.95			2.1	70.0			0.17	10.00	85	93.5	
SN17-2	1	0.292	0.295	1.00			2.8	70.0			0.17	10.00	103.3	110.2	
SN18-1	0						0.0						90.9	99.4	
SN18-2	1	0.789	0.095	1.00			4.5	70.0			0.34	20.46	116	122.9	
SN18-3	1	0.327	0.215	0.95			15.0	70.0			0.17	10.00	97.5	106	
SN19-1	1	0.445	0.127	1.00			7.1	70.0			0.21	12.85	114.8	121.7	
SN19-2	1	0.658	0.079	1.00			11.6	70.0			0.32	19.15	122.4	129.3	

Catchment	Runoff Node	Catchment Length (km)	Sc (equal area method)	Channelisation Factor (C)	Impervious Area (ha)	Impervious Area %	Total Area (ha)	Pervious Area CN	Cut/Fill CN	Cut/Fill Area	Weighted CN	Tc (hrs)	Tc (min)	Node Invert Level (mRL)	Node Ground Level
SN19-3	1	0.224	0.209	1.00			1.6	70.0			0.17	10.00	132	154.5	
SN20-1	1	0.394	0.135	0.95			3.5	70.0			0.18	11.08	127.9	134.8	
SN20-2	1	0.326	0.164	1.00			3.6	72.0			0.17	10.00	130	136.9	
SN21-1	1	0.424	0.155	1.00			7.3	70.0			0.20	11.72	137.5	165.7	
SN21-2	1	0.388	0.168	1.00			5.8	70.0			0.18	10.79	140.5	147.4	
SN30-1	1	3.055	0.015	1.00			285.4	74			1.39	83.53	-1.534	12.16	
SN30-2	1	3.602	0.018	1.00			405.9	74.0			1.47	88.17	-1.464	12.21	
SN31	1	2.879	0.011	1.00			203.3	70.0			1.54	92.46	3.159	15.159	
SN32	0						0.0						10.808	22.299	
SN33	1	4.528	0.016	1.00			797.6	70.0			1.85	110.95	11.505	22.005	
SN34	1	4.821	0.032	1.00			578.9	70.0			1.57	94.04	14.199	24.699	
SN35	1	5.025	0.011	1.00			986.8	74.0			2.08	124.98	16.799	24.299	
SN36	1	0.712	0.077	1.00			17.2	74.0			0.32	19.40	1.01	5	
SN36OUT	0						0.0						0.6	5	
SN37	1	0.689	0.099	1.00			16.5	74.0			0.29	17.63	1.14	5	
SN37OUT	0						0.0						1.05	5	
SN38	1	0.574	0.150	1.00			11.0	74.0			0.23	13.78	1.4	7	
SN38OUT	0						0.0						-0.08	7	
SN39-1	1	0.8	0.081	0.60	3.9416	37.7	10.5	70.0	79	1.9096	82.2	0.18	11.09	-2	6
SN39-2	1	2.815	0.023	0.90			343.1	70.0			1.09	65.66	-2	6	

Appendix D –Pūhoi post-development catchment properties

PUHOI POST-DEVELOPMENT CATCHMENT PROPERTIES																
Catchment	Runoff Node	Catchment Length (km)	Sc (equal area method)	Channelisation Factor (C)	Impervious Area (ha)	Impervious Area %	Total Area (ha)	Pervious Area CN	Cut/Fill CN	Cut/Fill Area	Weighted Perv Area CN	Weighted CN	Tc (hrs)	Tc (min)	Node Invert Level (mRL)	Node Ground Level
Cut-E01	1	0.101	0.0875	0.80			0.149	79			79.00	79.00	0.17	10.002	187.6	188.1
Cut-E02	1	0.149	0.0631	0.80	0.1270	15.95	0.796	79			79.00	82.03	0.17	10.002	178.6	179.1
Cut-E03	1	0.070	0.1046	0.80			0.085	79			79.00	79.00	0.17	10.002	154.1	154.6
Cut-E04	1	0.174	0.0500	0.80			0.221	79			79.00	79.00	0.17	10.002	141.2	141.7
Cut-E05	1	0.022	0.0500	0.80			0.026	79			79.00	79.00	0.17	10.002	139	139.5
Cut-E06	1	0.495	0.0500	0.80	0.1845	7.48	2.466	79			79.00	80.42	0.22	12.908	110.9	111.4
Cut-E07	1	0.150	0.0650	0.80			0.230	79			79.00	79.00	0.17	10.002	84.5	85
Cut-E08	1	0.042	0.0590	0.80			0.025	79			79.00	79.00	0.17	10.002	51.7	52.2
Cut-E09	1	0.091	0.0205	0.80			0.218	79			79.00	79.00	0.17	10.002	39.6	40.1
Cut-E10	1	0.035	0.0159	0.80			0.017	79			79.00	79.00	0.17	10.002	36.8	37.3
Cut-E11	1	0.042	0.0159	0.80			0.057	79			79.00	79.00	0.17	10.002	35.8	36.3
Cut-E12	1	0.159	0.0038	0.80			0.214	79			79.00	79.00	0.22	13.434	33.7	34.2
Cut-E13	1	0.171	0.0038	0.80			0.352	79			79.00	79.00	0.23	14.094	33	33.5
Cut-E14	1	0.066	0.0038	0.80			0.169	79			79.00	79.00	0.17	10.002	32	32.5
Cut-E15	1	0.116	0.0038	0.80	0.0090	3.83	0.235	79			79.00	79.73	0.18	10.819	30.6	31.1
Cut-E16	1	0.177	0.0038	0.80	0.0250	4.99	0.501	79			79.00	79.95	0.24	14.263	29.8	30.3
Cut-E17	1	0.072	0.0015	0.80			0.095	79			79.00	79.00	0.18	10.525	29.4	29.9
Cut-E18	1	0.069	0.0020	0.80			0.090	79			79.00	79.00	0.17	10.002	29.7	30.2
Cut-E19	1	0.081	0.0020	0.80			0.146	79			79.00	79.00	0.17	10.435	30.1	30.6
Cut-E20	1	0.348	0.0262	0.80			0.925	79			79.00	79.00	0.21	12.616	26.1	26.6
Cut-E21	1	0.060	0.0065	0.80			0.084	79			79.00	79.00	0.17	10.002	22.6	23.1
Cut-E22	1	0.115	0.0065	0.80			0.307	79			79.00	79.00	0.17	10.002	24.6	25.1
Cut-W01	1	0.295	0.0887	0.80			0.979	79			79.00	79.00	0.17	10.002	183.7	184.2
Cut-W02	1	0.344	0.0408	0.80	0.3078	18.76	1.641	79			79.00	82.56	0.18	10.531	170.8	171.3
Cut-W03	1	0.071	0.0560	0.80			0.038	79			79.00	79.00	0.17	10.002	146.9	147.4
Cut-W04	1	0.213	0.0560	0.80	0.0056	2.86	0.196	79			79.00	79.54	0.17	10.002	109.2	109.7
Cut-W05	1	0.075	0.0560	0.80	0.1590	88.83	0.179	79			79.00	95.88	0.17	10.002	106.4	106.9
Cut-W06	1	0.132	0.0500	0.80			0.355	79			79.00	79.00	0.17	10.002	79.5	80
Cut-W07	1	0.167	0.0500	0.80			0.486	79			79.00	79.00	0.17	10.002	49.5	50
Cut-W08	1	0.132	0.0205	0.80			0.549	79			79.00	79.00	0.17	10.002	39.6	40.1
Cut-W09	1	0.088	0.0159	0.80			0.449	79			79.00	79.00	0.17	10.002	36.5	37
Cut-W10	1	0.107	0.0065	0.80			0.800	79			79.00	79.00	0.17	10.002	35.5	36
Cut-W11	1	0.092	0.0035	0.80			0.444	79			79.00	79.00	0.17	10.002	35.1	35.6
Cut-W12	1	0.454	0.0035	0.80	0.1142	3.44	3.321	79			79.00	79.65	0.46	27.314	32.6	33.1
Cut-W13	1	0.264	0.0035	0.80			2.020	79			79.00	79.00	0.32	19.242	31.4	31.9
Cut-W14	1	0.129	0.0035	0.80	0.0054	0.82	0.659	79			79.00	79.16	0.20	11.973	30.6	31.1
Cut-W15	1	0.200	0.0030	0.80	0.0643	7.99	0.805	79			79.00	80.52	0.27	16.489	29.8	30.3
Cut-W16	1	0.078	0.0015	0.80			0.229	79			79.00	79.00	0.18	11.096	29.4	29.9
Cut-W17	1	0.154	0.0039	0.80			0.619	79			79.00	79.00	0.22	13.014	29.8	30.3
Cut-W18	1	0.437	0.0262	0.80			3.195	79			79.00	79.00	0.24	14.662	23.4	23.9
Cut-W19	1	0.301	0.0065	0.80			1.621	79			79.00	79.00	0.29	17.426	19.7	20.2
Cut-W20	1	0.079	0.0065	0.80			0.397	79			79.00	79.00	0.17	10.002	22.6	23.1
Cut-W21	1	0.088	0.0065	0.80			0.280	79			79.00	79.00	0.17	10.002	24.9	25.4
P57300	0						0.000								159.6	162.1
P58200	0						0.000								106.7	109.7
P58800	0						0.000								77	80
P59200	0						0.000								50.5	60
P59600	0						0.000								33.5	42.4
P60200	0						0.000								31.9	35.4
P60800	0						0.000								29.6	33.1
P61400	0						0.000								27.1	30.6
P61600	0						0.000								27	30
P62600	0						0.000									

Catchment	Runoff Node	Catchment Length (km)	Sc (equal area method)	Channelisation Factor (C)	Impervious Area (ha)	Impervious Area %	Total Area (ha)	Pervious Area CN	Cut/Fill CN	Cut/Fill Area	Weighted Perv Area CN	Weighted CN	Tc (hrs)	Tc (min)	Node Invert Level (mRL)	Node Ground Level
P62900	0						0.000								5.5	8
P63600	0						0.000								19.3	22.8
P64500	0						0.000								14.5	28.8
Road01	1	0.650	0.0277	0.60		100.00	2.486	98			98.00	98.00	0.19	11.371	166.35	167.1
Road02	1	0.986	0.0560	0.60		100.00	4.735	98			98.00	98.00	0.20	12.120	108.65	109.7
Road03	1	0.585	0.0496	0.60		100.00	2.357	98			98.00	98.00	0.17	10.002	79.25	80
Road04	1	0.392	0.0500	0.60		100.00	3.695	98			98.00	98.00	0.17	10.002	59.25	60
Road05	1	0.349	0.0422	0.60		100.00	1.153	98			98.00	98.00	0.17	10.002	42.5	43
Road06	1	0.562	0.0132	0.60		100.00	1.945	98			98.00	98.00	0.22	12.911	34.35	35.4
Road07	1	0.604	0.0038	0.60		100.00	2.027	98			98.00	98.00	0.33	19.655	32.05	33.1
Road08	1	0.530	0.0038	0.60		100.00	1.803	98			98.00	98.00	0.30	18.033	30.1	31
Road09	1	0.309	0.0024	0.60		100.00	1.036	98			98.00	98.00	0.24	14.499	29.25	30
Road09(2)	1	0.508	0.0029	0.60		100.00	1.829	98			98.00	98.00	0.32	19.017		
Road10	1	0.512	0.0161	0.60		100.00	1.820	98			98.00	98.00	0.19	11.423	21.85	22.6
Road11	1	0.331	0.0118	0.60		100.00	0.821	98			98.00	98.00	0.17	10.002	18.05	18.8
Road11(2)	1	0.654	0.0058	0.60	3.8786	69.91	5.548	79			79.00	92.28	0.32	19.409		
Road12	1	1.000	0.0068	0.60		100.00	3.126	98			98.00	98.00	0.38	23.026	22.05	22.8
Road13	1	0.571	0.0616	0.60	0.4455	68.75	0.648	79			79.00	92.06	0.17	10.002	28.8	29.3
SN00	0						0.000								-4.155	5.0000
SN00-1	1	0.970	0.0290	0.85			25.236	74			74.00	74.00	0.45	27.138	-4.099	5
SN00-2	0						0.000								-3.801	5
SN00-3	1	1.542	0.0314	0.85			87.718	74			74.00	74.00	0.60	35.962	-3.731	5
SN00-4	1	0.327	0.0086	0.85			6.785	74			74.00	74.00	0.32	19.023	-3.18	5
SN00-5	0						0.000								-3.11	5
SN01-1	1	1.246	0.0137	0.90			72.439	74.0	79	0.2301	74.02	74.02	0.71	42.462	-3	10.7
SN01-2	1	0.126	0.0884	1.00			1.330	74.0	79	0.065	74.24	74.24	0.17	10.002	-2.972	10.73
SN01-2(2)	1	1.090	0.0390	0.95			52.067	74.0	79	0.0698	74.01	74.01	0.50	29.966		
SN02-1	1	0.604	0.0729	0.95			12.732	74.0			74.00	74.00	0.28	16.820	-1.5	7
SN02-2	1	0.196	0.1048	1.00			2.557	70.0	79	0.7913	72.79	72.79	0.17	10.002	2.07	7
SN02-2A	0						0.000								25	30.2
SN02-2B	1	0.423	0.0990	1.00			12.430	70.0	79	4.0328	72.92	72.92	0.22	12.929	25.5	30.2
SN03-1	1	0.543	0.0688	1.00			9.408	74.0			74.00	74.00	0.28	16.801	-0.25	6.9
SN03-2	0						0.000								3.37	8.5
SN03-3	1	0.257	0.1064	1.00			2.519	70.0	79	0.7582	72.71	72.71	0.17	10.002	3.75	8.5
SN03-3A	0						0.000								23.5	30
SN03-3B	1	0.571	0.0779	1.00			14.478	70.0	79	3.6073	72.24	72.24	0.28	17.085	25	30
SN04-1	1	0.330	0.1208	0.90			5.210	70.0			70.00	70.00	0.17	10.002	1.75	9
SN04-2	1	2.392	0.0361	1.00			203.506	70.0			70.00	70.00	0.95	56.863	2.05	9.3
SN05-1	1	0.528	0.1317	0.95			8.378	70.0			70.00	70.00	0.23	13.512	3.65	10.9
SN05-2	0						0.000								7.44	15.5
SN05-3	1	0.149	0.1595	1.00			1.852	70.0	79	0.06	70.29	70.29	0.17	10.002	9	15.5
SN05-3A	0						0.000								20	31
SN05-3B	1	0.311	0.1920	1.00			2.475	70.0			70.00	70.00	0.17	10.002	26.5	31
SN06-1	1	0.607	0.1040	0.85			9.679	70.0	79	0.0594	70.06	70.06	0.24	14.223	4.75	12
SN06-2	0						0.000								7.46	13.5
SN06-3	1	0.157	0.1127	1.00			0.830	70.0	79	0.0883	70.96	70.96	0.17	10.002	8.04	13.5
SN06-3A	0						0.000								12	31.6
SN06-3B	1	0.389	0.2111	1.00			10.077	70.0	79	0.1889	70.17	70.17	0.17	10.079	20	31.6
SN07-1	1	0.572	0.0228	0.85			16.438	70.0			70.00	70.00	0.36	21.603	10	17.25
SN07-2	0						0.000								11.68	22
SN07-3	1	0.133	0.1993	1.00			1.283	70.0	79	0.2891	72.03	72.03	0.17	10.002	12.53	22
SN07-3A	1	0.769	0.0980	1.00			26.933	70.0	79	0.1616	70.05	70.05	0.33	19.912	18.03	33.1
SN08-1	1	0.676	0.0165	0.85			14.859	74.0	79	0.1118	74.04	74.04	0.42	25.308	12.25	19.5
SN08-2	0						0.000								13.54	21

Catchment	Runoff Node	Catchment Length (km)	Sc (equal area method)	Channelisation Factor (C)	Impervious Area (ha)	Impervious Area %	Total Area (ha)	Pervious Area CN	Cut/Fill CN	Weighted Perv Area CN	Weighted CN	Tc (hrs)	Tc (min)	Node Invert Level (mRL)	Node Ground Level
SN08-3	1	0.057	0.1316	1.00			0.183	70.0	79	0.095	74.67	74.67	0.17	10.002	14.29
SN08-3A	1	1.636	0.0320	1.00			90.212	70.0	79	0.325	70.03	70.03	0.76	45.877	18.29
SN09-1	1	0.432	0.0462	0.90			10.297	74.0		74.00	74.00	0.24	14.637	15.25	21.5
SN09-2	1	0.150	0.0863	1.00			1.480	70.0	79	0.4505	72.74	72.74	0.17	10.002	17.93
SN09-2A	0						0.000							20.5	37.8
SN09-2B	1	0.456	0.1323	1.00			9.314	70.0	79	0.1261	70.12	70.12	0.21	12.881	27.5
SN09-2C	0						0.000							27	36.6
SN09-2D	1	0.156	0.2087	1.00			0.804	70.0		70.00	70.00	0.17	10.002	32	36.6
SN10-1	1	0.445	0.0620	0.90			4.258	74.0		74.00	74.00	0.23	13.672	16.75	25
SN10-2	1	0.312	0.0505	1.00			4.045	74.0	79	0.1413	74.17	74.17	0.21	12.749	20.9
SN10-2(2)	1	0.928	0.0637	0.80			16.336	74.0	79	0.1595	74.05	74.05	0.33	19.567	
SN11-1	1	0.708	0.0796	0.90			31.849	72.0	79	0.224	72.05	72.05	0.29	17.636	17.65
SN11-2	0						0.000							18.25	26.5
SN11-3	0						0.000							45	52.2
SN11-3A	1	0.1312	0.1982	1.00			0.635	74.0	79	0.0056	74.04	74.04	0.17	10.002	48
SN12-1	1	2.633	0.0488	1.00			150.135	70.0		70.00	70.00	0.92	55.338	21.75	29
SN12-2	1	0.292	0.0554	0.95			4.285	74.0		74.00	74.00	0.19	11.294	22.75	30
SN12-2(2)	1	0.721	0.0335	0.90			7.563	74.0	79	0.0585	74.04	74.04	0.38	22.605	
SN13	1	1.741	0.0268	1.00			82.728	70.0		70.00	70.00	0.84	50.433	27.25	34.5
SN14-1	1	0.304	0.1367	0.95			2.842	70.0		70.00	70.00	0.17	10.002	29.75	38.5
SN14-2	1	5.526	0.0324	1.00			320.985	70.0		70.00	70.00	1.70	102.077	30.15	37.4
SN15-1	1	0.331	0.1469	1.00			3.655	70.0		70.00	70.00	0.17	10.122	31.5	40
SN15-2	1	0.159	0.2833	1.00			1.172	70.0	79	0.1373	71.05	71.05	0.17	10.002	44
SN15-2A	0						0.000							63.5	82.5
SN15-2B	1	0.200	0.3070	1.00			2.508	70.0	79	0.3898	71.40	71.40	0.17	10.002	90.5
SN15-3	0						0.000							32.5	41
SN16-1	1	0.726	0.1027	0.90			22.315	70.0	79	0.0514	70.02	70.02	0.28	17.026	33.25
SN16-2	1	0.104	0.3245	1.00			0.630	70.0	79	0.2049	72.93	72.93	0.17	10.002	55
SN16-2A	0						0.000							67	111.4
SN16-2B	1	0.245	0.1568	1.00			4.871	70.0	79	0.999	71.85	71.85	0.17	10.002	103
SN16-3	0						0.000							98	109.7
SN17-1	1	0.243	0.1744	0.90			2.094	70.0	79	0.0557	70.24	70.24	0.17	10.002	85
SN17-2	1	0.070	0.2541	1.00			0.244	70.0	79	0.146	75.39	75.39	0.17	10.002	103.3
SN18-1	0						0.000							90.9	99.4
SN18-2	1	0.091	0.1813	1.00			0.314	70.0	79	0.0449	71.29	71.29	0.17	10.002	116
SN18-3	1	0.327	0.2147	0.95			14.450	70.0	79	0.1151	70.07	70.07	0.17	10.002	97.5
SN19-1	1	0.126	0.2083	1.00			0.421	70.0	79	0.1829	73.91	73.91	0.17	10.002	114.8
SN19-1A	0						0.000							118.5	143.3
SN19-1B	1	0.339	0.1221	1.00			5.927	70.0	79	0.3008	70.46	70.46	0.18	10.807	135
SN19-1B(2)	1	0.414	0.0478	0.90			3.131	70.0	79	0.001	70.00	70.00	0.25	14.781	
SN19-1B(3)	1	0.499	0.0225	0.90			1.702	70.0		70.00	70.00	0.35	20.971		
SN19-2	1	0.658	0.0794	1.00			11.434	70.0	79	0.2544	77.71	77.71	0.17	10.002	122.4
SN19-3	1	0.074	0.2429	1.00			0.297	70.0	79	0.2544	77.71	77.71	0.17	10.002	132
SN19-3A	1	0.124	0.1817	1.00			0.828	70.0	79	0.6243	76.79	76.79	0.17	10.002	155.5
SN19-3A(2)	1	0.385	0.0255	0.90			4.355	70.0	79	1.704	73.52	73.52	0.27	16.325	
SN20-1	1	0.394	0.1346	0.95			3.461	70.0	79	1.7392	74.52	74.52	0.17	10.497	127.9
SN20-2	1	0.107	0.1449	1.00			0.381	72.0	79	0.248	76.56	76.56	0.17	10.002	130
SN21-1	1	0.115	0.2924	1.00			0.449	70.0	79	0.4359	78.74	78.74	0.17	10.002	137.5
SN21-1A	1	0.108	0.2505	1.00			2.384	70.0	79	0.5465	72.06	72.06	0.17	10.002	162
SN21-2	1	0.388	0.1684	1.00			5.391	70.0	79	2.1912	73.66	73.66	0.17	10.331	140.5
SN30-1	1	3.055	0.0146	1.00			285.438	74		74.00	74.00	1.39	83.534	-1.534	12.16
SN30-2	1	3.602	0.0176	1.00			405.916	74.0		74.00	74.00	1.47	88.168	-1.464	12.21
SN31	1	2.879	0.0107	1.00			203.293	70.0		70.00	70.00	1.54	92.464	3.159	15.159
SN32	0						0.000							10.808	22.299

Catchment	Runoff Node	Catchment Length (km)	Sc (equal area method)	Channelisation Factor (C)	Impervious Area (ha)	Impervious Area %	Total Area (ha)	Pervious Area CN	Cut/Fill CN	Cut/Fill Area	Weighted Perv Area CN	Weighted CN	Tc (hrs)	Tc (min)	Node Invert Level (mRL)	Node Ground Level
SN33	1	4.528	0.0158	1.00			797.583	70.0			70.00	70.00	1.85	110.946	11.505	22.005
SN34	1	4.821	0.0315	1.00			578.857	70.0			70.00	70.00	1.57	94.041	14.199	24.699
SN35	1	5.025	0.0114	1.00			986.773	74.0			74.00	74.00	2.08	124.977	16.799	24.299
SN36	1	0.205	0.1060	0.90			1.796	74	79	0.8982	76.50	76.50	0.17	10.002	1.01	5
SN36A	0						0.000								1.01	24.4
SN36B	1	0.541	0.1274	1.00			13.807	74	79	0.5539	74.20	74.20	0.23	13.892	5.01	24.4
SN36OUT	0						0.000								0.6	5
SN37	1	0.228	0.0603	1.00			2.141	74	79	0.7221	75.69	75.69	0.17	10.002	1.14	5
SN37A	0						0.000								2.5	22.8
SN37B	1	0.375	0.1905	1.00			12.503	74	79	1.9695	74.79	74.79	0.17	10.002	12	22.8
SN37OUT	0						0.000								1.05	5
SN38	1	0.140	0.1003	1.00			0.840	74	79	0.2385	75.42	75.42	0.17	10.002	1.4	7
SN38A	0						0.000								4.5	18.8
SN38B	1	0.472	0.2244	1.00			7.975	74	79	0.158	74.10	74.10	0.18	10.722	9	18.8
SN38OUT	0						0.000								-0.08	7
SN39-1	1	0.780	0.0809	0.60	2.8945	29.42	9.840	70	79	2.9235	73.79	80.91	0.19	11.248	-2	6
SN39-2	1	0.409	0.0427	1.00			7.138	70			70.00	70.00	0.28	16.845	-2	6
SN39-2(2)	1	2.815	0.0225	0.90			333.931	70	79	0.1198	70.00	70.00	1.09	65.657		

Appendix E – Mahurangi pre-development conduit properties

MAHURANGI PRE-DEVELOPMENT CONDUIT PROPERTIES												
Link Name	D/S Node	D/S Invert Elevation	D/S Node Invert Elevation	D/S Node Ground Elevation	U/S Node	U/S Invert Elevation	U/S Node Invert Elevation	U/S Node Ground Elevation	Length	Slope	Shape	Natural Cross-Section
00/01-1	SN00	10.634	10.634	20.634	SN01-1	11	11	21.5	60.95	0.6	Natural	Mahu Main
01-1/01-2	SN01-1	11	11	21.5	SN01-2	12	12	19.6	38.64	2.59	Natural	Northern C
01-1/01-3	SN01-1	11	11	21.5	SN01-3	13.5	13.5	24	492.69	0.51	Natural	Mahu Main
01-2/38-1	SN01-2	12	12	19.6	SN38-1	23	23	30.6	1150.27	0.96	Natural	Northern C
01-3/02-1	SN01-3	13.5	13.5	24	SN02-1	16	16	26.5	492.69	0.51	Natural	Mahu Main
02-1/02-2	SN02-1	16	16	26.5	SN02-2	16.6	16.6	27.1	193.6	0.31	Natural	Mahu Main
02-1/31-1	SN02-1	16	16	26.5	SN31-1	28	28	38	733.65	1.64	Natural	Northern B
02-2/03-1	SN02-2	16.6	16.6	27.1	SN03-1	18.75	18.75	26.25	730.44	0.29	Natural	Northern D
03-1/03-2	SN03-1	18.75	18.75	26.25	SN03-2	19.1	19.1	26.6	89.89	0.39	Natural	Northern D
03-2/04	SN03-2	19.1	19.1	26.6	SN04	20	20	27.5	247.74	0.36	Natural	Northern D
03-2/30	SN03-2	19.1	19.1	26.6	SN30	29.9	29.9	35.9	465.95	2.32	Natural	Northern F
04/05	SN04	20	20	27.5	SN05	21	21	28.5	364.63	0.27	Natural	Northern D
05/06-1	SN05	21	21	28.5	SN06-1	23	23	30.5	489.47	0.41	Natural	Northern D
05/29	SN05	21	21	28.5	SN29	31.25	31.25	37.25	206.68	4.96	Natural	Northern F
06-1/06-2	SN06-1	23	23	30.5	SN06-2	25.5	25.5	33	92.83	2.69	Natural	Northern D
06-1/28	SN06-1	23	23	30.5	SN28	29	29	35	49.38	12.15	Natural	Northern F
06-2/06-3	SN06-2	25.5	25.5	33	SN06-3	26.52	26.52	34.02	343.82	0.3	Natural	Northern D
06-2/27	SN06-2	25.5	25.5	33	SN27	32.75	32.75	38.75	62.55	11.59	Natural	Northern F
06-3/07-1	SN06-3	26.52	26.52	34.02	SN07-1	27.53	27.53	35.03	407.22	0.25	Natural	Northern D
07-1/07-2	SN07-1	27.53	27.53	35.03	SN07-2	28.52	28.52	36.02	70.7	1.4	Natural	Northern D
07-1/26	SN07-1	27.53	27.53	35.03	SN26	32	32	38	110.94	4.03	Natural	Northern F
07-2/08-1	SN07-2	28.52	28.52	36.02	SN08-1	29.5	29.5	37	194.93	0.5	Natural	Northern D
08-1/08-2	SN08-1	29.5	29.5	37	SN08-2	31.25	31.25	38.75	359.4	0.49	Natural	Northern D
08-1/23-1	SN08-1	29.5	29.5	37	SN23-1	31.8	31.8	42.3	129.35	1.78	Natural	Northern E
08-2/09-1	SN08-2	31.25	31.25	38.75	SN09-1	33	33	39.95	427.59	0.41	Natural	Northern D
09-1/09-2	SN09-1	33	33	39.95	SN09-2	38.45	38.45	48.95	793.62	0.69	Natural	Northern E
09-1/09-3	SN09-1	33	33	39.95	SN09-3	35.5	35.5	46	402.82	0.62	Natural	Northern E
09-2/10-1	SN09-2	38.45	38.45	48.95	SN10-1	42.9	42.9	53.4	797.97	0.56	Natural	Northern E
09-3/19	SN09-3	35.5	35.5	46	SN19	38	38	48.5	402.82	0.62	Natural	Northern E
10-1/10-2	SN10-1	42.9	42.9	53.4	SN10-2	43	43	54.5	51.52	0.19	Natural	Northern E
10-1/10-3	SN10-1	42.9	42.9	53.4	SN10-3	44.95	44.95	55.45	483.08	0.42	Natural	Northern E
10-3/11-1	SN10-3	44.95	44.95	55.45	SN11-1	47	47	57.5	483.08	0.42	Natural	Northern E
11-1/11-2	SN11-1	47	47	57.5	SN11-2	75.75	75.75	85.75	979.38	2.94	Natural	Northern G
11-1/11-4	SN11-1	47	47	57.5	SN11-4	62.5	62.5	72.5	800.41	1.94	Natural	Northern G
11-2/11-3	SN11-2	75.75	75.75	85.75	SN11-3	104.5	104.5	114.5	909.53	3.16	Natural	Northern G
11-3/18	SN11-3	104.5	104.5	114.5	SN18	161	161	171	1694.3	3.33	Natural	Northern G
11-4/12	SN11-4	62.5	62.5	72.5	SN12	77	77	87	769.02	1.89	Natural	Northern G
12/13-1	SN12	77	77	87	SN13-1	81.33	81.33	91.33	415.42	1.04	Natural	Northern G
13-1/13-2	SN13-1	81.33	81.33	91.33	SN13-2	88	88	98	26.91	24.79	Natural	Northern G
13-1/13-3	SN13-1	81.33	81.33	91.33	SN13-3	85.16	85.16	95.16	154.66	2.48	Natural	Northern G
13-3/14-1	SN13-3	85.16	85.16	95.16	SN14-1	89	89	99	154.66	2.48	Natural	Northern G
14-1/14-2	SN14-1	89	89	99	SN14-2	91	91	101	24.46	8.18	Natural	Northern G
14-1/15-1	SN14-1	89	89	99	SN15-1	91	91	101	275.27	0.73	Natural	Northern G
15-1/15-2	SN15-1	91	91	101	SN15-2	92	92	102	14.08	7.1	Natural	Northern G
15-1/15-3	SN15-1	91	91	101	SN15-3	97.41	97.41	107.41	419.74	1.53	Natural	Northern G
15-3/16-1	SN15-3	97.41	97.41	107.41	SN16-1	103	103	113	419.59	1.33	Natural	Northern G

Link Name	D/S Node	D/S Invert Elevation	D/S Node Invert Elevation	D/S Node Ground Elevation	U/S Node	U/S Invert Elevation	U/S Node Invert Elevation	U/S Node Ground Elevation	Length	Slope	Shape	Natural Cross-Section
16-1/16-2	SN16-1	103	103	113	SN16-2	127.5	127.5	137.5	76.27	32.12	Natural	Northern G
16-1/17-1	SN16-1	103	103	113	SN17-1	105	105	115	81.39	2.46	Natural	Northern G
17-1/17-2	SN17-1	105	105	115	SN17-2	115	115	125	27.09	36.91	Natural	Northern G
19/20-1	SN19	38	38	48.5	SN20-1	40	40	50.5	266.36	0.75	Natural	Northern E
20-1/21-1	SN20-1	40	40	50.5	SN21-1	42.5	42.5	53	327.77	0.76	Natural	Northern E
21-1/21-2	SN21-1	42.5	42.5	53	SN21-2	44	44	50	55.11	2.72	Natural	Northern F
21-1/22-1	SN21-1	42.5	42.5	53	SN22-1	43.5	43.5	54	125.76	0.8	Natural	Northern E
22-1/22-2	SN22-1	43.5	43.5	54	SN22-2	43.75	43.75	54.25	47.15	0.53	Natural	Northern E
23-1/23-2	SN23-1	31.8	31.8	42.3	SN23-2	34.624	34.624	40.62	24.81	11.38	Natural	Northern F
23-1/23-3	SN23-1	31.8	31.8	42.3	SN23-3	34.4	34.4	44.9	273.46	0.95	Natural	Northern E
23-2/25	SN23-2	34.624	34.624	40.62	SN25	41	41	47	159.83	3.99	Natural	Northern F
23-3/24	SN23-3	34.4	34.4	44.9	SN24	36.5	36.5	47.5	273.46	0.77	Natural	Northern E
31-1/31-2	SN31-1	28	28	38	SN31-2	28.88	28.88	38.88	132.53	0.66	Natural	Northern B
31-1/33-1	SN31-1	28	28	38	SN33-1	29	29	39	265.43	0.38	Natural	Northern B
31-2/32	SN31-2	28.88	28.88	38.88	SN32	30	30	40	127.34	0.88	Natural	Northern B
33-1/33-2	SN33-1	29	29	39	SN33-2	29.764	29.764	39.76	36.08	2.12	Natural	Northern B
33-1/33-3	SN33-1	29	29	39	SN33-3	30.25	30.25	40.25	402.89	0.31	Natural	Northern B
33-3/33-4	SN33-3	30.25	30.25	40.25	SN33-4	31.5	31.5	41.5	402.89	0.31	Natural	Northern B
33-4/34	SN33-4	31.5	31.5	41.5	SN34	32.4	32.4	39	191.33	0.47	Natural	Northern A
33-4/37	SN33-4	31.5	31.5	41.5	SN37	34.745	34.745	44.75	372.63	0.87	Natural	Northern B
34/35	SN34	32.4	32.4	39	SN35	32.7	32.7	43.3	241.88	0.12	Natural	Northern A
34/36	SN34	32.4	32.4	39	SN36	34	34	40	83.07	1.93	Natural	Northern A
35/44	SN35	32.7	32.7	43.3	SN44	33.4	33.4	37.8	385.18	0.18	Natural	Northern A
38-1/38-2	SN38-1	23	23	30.6	SN38-2	23.303	23.303	30.9	38.11	0.8	Natural	Northern C
38-2/39	SN38-2	23.303	23.303	30.9	SN39	23.4	23.4	31	77.72	0.12	Natural	Northern C
39/40-1	SN39	23.4	23.4	31	SN40-1	29	29	36.6	530.35	1.06	Natural	Northern C
40-1/40-2	SN40-1	29	29	36.6	SN40-2	32	32	38	51.31	5.85	Natural	Northern A
40-1/41-1	SN40-1	29	29	36.6	SN41-1	30.5	30.5	36	101.27	1.48	Natural	Northern A
41-1/41-2	SN41-1	30.5	30.5	36	SN41-2	32	32	38	39.73	3.78	Natural	Northern A
41-1/42-1	SN41-1	30.5	30.5	36	SN42-2	32.3	32.3	38.4	277.95	0.65	Natural	Northern A
42-1/42-2	SN42-2	32.4	32.3	38.4	SN42-1	32.9	32.9	38.9	165.67	0.3	Natural	Northern A
42-1/43	SN42-1	32.9	32.9	38.9	SN43	32.9	32.9	38.9	150.43	0	Natural	Northern A
43/44	SN43	32.9	32.9	38.9	SN44	33.4	33.4	37.8	62.12	0.8	Natural	Northern A

Appendix F – Mahurangi post-development conduit properties

MAHURANGI POST-DEVELOPMENT CONDUIT PROPERTIES												
Link Name	D/S Node	D/S Invert Elevation	D/S Node Invert Elevation	D/S Node Ground Elevation	U/S Node	U/S Invert Elevation	U/S Node Invert Elevation	U/S Node Ground Elevation	Length	Slope	Shape	Natural Cross-Section
00/01-1	SN00	10.644	10.644	21.14	SN01-1	11	11	21.50	60.95	0.58	Natural	Mahu Main
01-1/01-2	SN01-1	11	11	21.50	SN01-2	12	12	19.60	38.64	2.59	Natural	Northern C
01-1/01-3	SN01-1	11	11	21.50	SN01-3	13.5	13.5	24.00	492.69	0.51	Natural	Mahu Main
01-2/38-1	SN01-2	12	12	19.60	SN38-1	23	23	30.60	1150.27	0.96	Natural	Northern C
01-3/02-1	SN01-3	13.5	13.5	24.00	SN02-1	16	16	26.50	492.69	0.51	Natural	Mahu Main
02-1/02-2	SN02-1	16	16	26.50	SN02-2	16.6	16.6	27.10	193.6	0.31	Natural	Mahu Main
02-1/31-1	SN02-1	16	16	26.50	SN31-1	28	28	38.00	733.65	1.64	Natural	Northern B
02-2/03-1	SN02-2	16.6	16.6	27.10	SN03-1	18.75	18.75	26.25	730.44	0.29	Natural	Northern D
03-1/03-2	SN03-1	18.75	18.75	26.25	SN03-2	19.1	19.1	26.60	89.89	0.39	Natural	Northern D
03-2/04	SN03-2	19.1	19.1	26.60	SN04	20	20	27.50	247.68	0.36	Natural	Northern D
03-2/30	SN03-2	19.1	19.1	26.60	SN30	29.9	29.9	35.90	465.95	2.32	Natural	Northern F
04/05	SN04	20	20	27.50	SN05	21	21	28.50	365.64	0.27	Natural	Northern D
05/06-1	SN05	21	21	28.50	SN06-1	23	23	30.50	488.86	0.41	Natural	Northern D
05/29	SN05	21	21	28.50	SN29	31.25	31.25	37.25	206.83	4.96	Natural	Northern F
06-1/06-2	SN06-1	23	23	30.50	SN06-2	25.5	25.5	33.00	92.83	2.69	Natural	Northern D
06-1/28	SN06-1	23	23	30.50	SN28	29	29	35.00	49.3	12.17	Natural	Northern F
06-2/06-3	SN06-2	25.5	25.5	33.00	SN06-3	26.52	26.52	34.02	343.82	0.3	Natural	Northern D
06-2/27	SN06-2	25.5	25.5	33.00	SN27	32.75	32.75	38.75	62.62	11.58	Natural	Northern F
06-3/07-1	SN06-3	26.52	26.52	34.02	SN07-1	27.53	27.53	35.03	405.11	0.25	Natural	Northern D
07-1/07-2	SN07-1	27.53	27.53	35.03	SN07-2	28.52	28.52	36.02	71.25	1.39	Natural	Northern D
07-1/26	SN07-1	27.53	27.53	35.03	SN26	32	32	38.00	111.32	4.02	Natural	Northern F
07-2/08-1	SN07-2	28.52	28.52	36.02	SN08-1	29.5	29.5	37.00	195.17	0.5	Natural	Northern D
08-1/08-2	SN08-1	29.5	29.5	37.00	SN08-2	31.25	31.25	38.75	358.76	0.49	Natural	Northern D
08-1/23-1	SN08-1	29.5	29.5	37.00	SN23-1	31.8	31.8	42.30	129.37	1.78	Natural	Northern E
08-2/09-1	SN08-2	31.25	31.25	38.75	SN09-1	33	33	39.95	427.59	0.41	Natural	Northern D
09-1/09-2	SN09-1	33	33	39.95	SN09-2	38.45	38.45	48.95	793.62	0.69	Natural	Northern E
09-1/09-3	SN09-1	33	33	39.95	SN09-3	35.5	35.5	46.00	402.82	0.62	Natural	Northern E
09-2/10-1	SN09-2	38.45	38.45	48.95	SN10-1	42.9	42.9	53.40	797.97	0.56	Natural	Northern E
09-3/19	SN09-3	35.5	35.5	46.00	SN19	38	38	48.50	402.82	0.62	Natural	Northern E
10-1/10-2	SN10-1	42.9	42.9	53.40	SN10-2	43	43	54.50	51.52	0.19	Natural	Northern E
10-1/10-3	SN10-1	42.9	42.9	53.40	SN10-3	44.95	44.95	55.45	483.08	0.42	Natural	Northern E
10-3/11-1	SN10-3	44.95	44.95	55.45	SN11-1	47	47	57.50	483.08	0.42	Natural	Northern E
11-1/11-2	SN11-1	47	47	57.50	SN11-2	75.75	75.75	85.75	978.65	2.94	Natural	Northern G
11-1/11-4	SN11-1	47	47	57.50	SN11-4	62.5	62.5	72.50	800.41	1.94	Natural	Northern G
11-2/11-3	SN11-2	75.75	75.75	85.75	SN11-3	104.5	104.5	114.50	909.53	3.16	Natural	Northern G
11-3/18	SN11-3	104.5	104.5	114.50	SN18	161	161	171.00	1694.3	3.33	Natural	Northern G
11-4/12	SN11-4	62.5	62.5	72.50	SN12	77	77	87.00	769.02	1.89	Natural	Northern G
12/12A	SN12	77	77	87.00	SN12A	77.5	73.233	128.70	15.48	3.23	Natural	Northern G
12A/13-2B	SN12A	77.5	73.233	128.70	SN13-2B	129	129	139.00	263.86	19.52	Natural	Northern G
12B/13-1	SN12B	80	75.733	130.70	SN13-1	81.33	81.33	91.33	126.88	1.05	Natural	Northern G
13-1/13-2	SN13-1	81.33	81.33	91.33	SN13-2	88	88	98.00	26.91	24.79	Natural	Northern G
13-1/13-3	SN13-1	81.33	81.33	91.33	SN13-3	85.16	85.16	95.16	154.66	2.48	Natural	Northern G
13-3/14-1	SN13-3	85.16	85.16	95.16	SN14-1	89	89	99.00	154.66	2.48	Natural	Northern G
14-1/14-2	SN14-1	89	89	99.00	SN14-2	91	91	101.00	24.46	8.18	Natural	Northern G
14-1/15-1	SN14-1	89	89	99.00	SN15-1	91	91	101.00	275.27	0.73	Natural	Northern G
15-1/15-2	SN15-1	91	91	101.00	SN15-2	92	92	102.00	14.06	7.11	Natural	Northern G

Link Name	D/S Node	D/S Invert Elevation	D/S Node Invert Elevation	D/S Node Ground Elevation	U/S Node	U/S Invert Elevation	U/S Node Invert Elevation	U/S Node Ground Elevation	Length	Slope	Shape	Natural Cross-Section
15-1/15-3	SN15-1	91	91	101.00	SN15-3	97.41	97.41	107.41	419.74	1.53	Natural	Northern G
15-2/15-2A	SN15-2	92	92	102.00	SN15-2A	130	130	138.80	138.14	27.51	Natural	Northern G
15-3/16-1	SN15-3	97.41	97.41	107.41	SN16-1	103	103	113.00	419.59	1.33	Natural	Northern G
16-1/16-2	SN16-1	103	103	113.00	SN16-2	127.5	127.5	137.50	76.27	32.12	Natural	Northern G
16-1/17-1	SN16-1	103	103	113.00	SN17-1	105	105	115.00	81.39	2.46	Natural	Northern G
16-2/16-2A	SN16-2	127.5	127.5	137.50	SN16-2A	162	162	177.00	191.91	17.98	Natural	Northern G
17-1/17-2	SN17-1	105	105	115.00	SN17-2	115	115	125.00	27.09	36.91	Natural	Northern G
17-2/17-2A	SN17-2	115	115	125.00	SN17-2A	169.5	169.5	184.30	352.88	15.44	Natural	Northern G
18/18A	SN18	161	161	171.00	SN18A	163.5	163.5	187.70	99.01	2.52	Natural	Northern G
19/19A	SN19	38	38	48.50	SN19A	51	51	79.40	247.21	5.26	Natural	Northern F
19/20-1	SN19	38	38	48.50	SN20-1	40	40	50.50	266.23	0.75	Natural	Northern E
20-1/20-2	SN20-1	40	40	50.50	SN20-2	41.5	41.5	52.00	132.7	1.13	Natural	Northern E
20-2/21-1	SN20-2	41.5	41.5	52.00	SN21-1	42.5	42.5	53.00	194.76	0.51	Natural	Northern E
21-1/21-2	SN21-1	42.5	42.5	53.00	SN21-2	44	44	50.00	54.13	2.77	Natural	Northern F
21-1/22-1	SN21-1	42.5	42.5	53.00	SN22-1	43.5	43.5	54.00	125.33	0.8	Natural	Northern E
21-2/21-2A	SN21-2	44	44	50.00	SN21-2A	105.5	105.5	110.60	404.4	15.21	Natural	Northern F
22-1/22-2	SN22-1	43.5	43.5	54.00	SN22-2	43.75	43.75	54.25	47.15	0.53	Natural	Northern E
23-1/23-2	SN23-1	31.8	31.8	42.30	SN23-2	34.624	34.624	40.62	24.81	11.38	Natural	Northern F
23-1/23-3	SN23-1	31.8	31.8	42.30	SN23-3	34.4	34.4	44.90	273.46	0.95	Natural	Northern E
23-2/25	SN23-2	34.624	34.624	40.62	SN25	41	41	47.00	159.39	4	Natural	Northern F
23-3/23-3A	SN23-3	34.4	34.4	44.90	SN23-3A	46	46	57.70	136.31	8.51	Natural	Northern F
23-3/24	SN23-3	34.4	34.4	44.90	SN24	36.5	36.5	47.50	273.46	0.77	Natural	Northern E
25/25A	SN25	41	41	47.00	SN25A	43	43	55.60	42.16	4.74	Natural	Northern F
26/26A	SN26	32	32	38.00	SN26A	33.5	33.5	53.20	51.74	2.9	Natural	Northern F
27/27A	SN27	32.75	32.75	38.75	SN27A	34.5	34.5	50.70	30.54	5.73	Natural	Northern F
28/28A	SN28	29	29	35.00	SN28A	36	36	49.60	45.9	15.25	Natural	Northern F
29/29A	SN29	31.25	31.25	37.25	SN29A	34	34	40.00	32.61	8.43	Natural	Northern F
29B/29C	SN29B	35.5	35.5	41.50	SN29C	39	39	46.70	51.6	6.78	Natural	Northern F
30/30A	SN30	29.9	29.9	35.90	SN30A	32	32	38.00	140.83	1.49	Natural	Northern F
30/30E	SN30	29.9	29.9	35.90	SN30E	31	31	37.00	64.03	1.72	Natural	Northern F
30B/30C	SN30B	33	33	39.00	SN30C	35	35	44.40	57.92	3.45	Natural	Northern F
30F/30G	SN30F	31.5	31.5	34.00	SN30G	34.5	34.5	37.00	84.26	3.56	Circular	
31-1/31-2	SN31-1	28	28	38.00	SN31-2	28.88	28.88	38.88	132.53	0.66	Natural	Northern B
31-1/33-1	SN31-1	28	28	38.00	SN33-1	29	29	39.00	265.43	0.38	Natural	Northern B
31-2/32	SN31-2	28.88	28.88	38.88	SN32	30	30	40.00	127.34	0.88	Natural	Northern B
32/32A	SN32	30	30	40.00	SN32A	31	27.342	40.70	47	2.13	Natural	Northern B
33-1/33-2	SN33-1	29	29	39.00	SN33-2	29.764	29.764	39.76	36.08	2.12	Natural	Northern B
33-1/33-3	SN33-1	29	29	39.00	SN33-3	30.25	30.25	40.25	402.89	0.31	Natural	Northern B
33-2/33-2A	SN33-2	29.764	29.764	39.76	SN33-2A	30	30	40.00	153.9	0.15	Natural	Northern B
33-3/33-4	SN33-3	30.25	30.25	40.25	SN33-4	31.5	31.5	41.50	402.89	0.31	Natural	Northern B
33-4/34	SN33-4	31.5	31.5	41.50	SN34	32.4	32.4	39.00	191.33	0.47	Natural	Northern A
33-4/37	SN33-4	31.5	31.5	41.50	SN37	34.745	34.745	44.75	372.63	0.87	Natural	Northern B
34/35	SN34	32.4	32.4	39.00	SN35	32.7	32.7	43.30	242.21	0.12	Natural	Northern A
34/36	SN34	32.4	32.4	39.00	SN36	34	34	40.00	83.07	1.93	Natural	Northern A
35/35A	SN35	32.7	32.7	43.30	SN35A	32.9	32.9	43.80	73.83	0.27	Natural	Northern A
35A/35B	SN35B	33.1	33.1	43.80	SN35C	42	42	48.00	207.15	4.3	Natural	Northern A
35B/44	SN35B	33.1	33.1	43.80	SN44	33.4	33.4	37.80	258.59	0.12	Natural	Northern A

Link Name	D/S Node	D/S Invert Elevation	D/S Node Invert Elevation	D/S Node Ground Elevation	U/S Node	U/S Invert Elevation	U/S Node Invert Elevation	U/S Node Ground Elevation	Length	Slope	Shape	Natural Cross-Section
38-1/38-2	SN38-1	23	23	30.60	SN38-2	23.303	23.303	30.90	38.11	0.8	Natural	Northern C
38-2/39	SN38-2	23.303	23.303	30.90	SN39	23.4	23.4	31.00	77.72	0.12	Natural	Northern C
39/40-1	SN39	23.4	23.4	31.00	SN40-1	29	29	36.60	530.35	1.06	Natural	Northern C
40-1/40-2	SN40-1	29	29	36.60	SN40-2	32	32	38.00	52.35	5.73	Natural	Northern A
40-1/41-1	SN40-1	29	29	36.60	SN41-1	30.5	30.5	36.00	100.34	1.49	Natural	Northern A
40-2/40-3	SN40-2	32	32	38.00	SN40-3	34.5	34.5	40.50	119.78	2.09	Natural	Northern A
40-3/40-3A	SN40-3	34.5	34.5	40.50	SN40-3A	37	37	44.90	31.85	7.85	Natural	Northern A
40-3/40-3C	SN40-3	34.5	34.5	40.50	SN40-3C	36.5	36	45.00	84.79	2.36	Natural	Northern A
41-1/41-2	SN41-1	30.5	30.5	36.00	SN41-2	32	32	38.00	39.73	3.78	Natural	Northern A
41-1/42-1	SN41-1	30.5	30.5	36.00	SN42-2	32.3	32.3	38.40	278.66	0.65	Natural	Northern A
41-2/41-2A	SN41-2	32	32	38.00	SN41-2A	33.5	33.5	39.75	40.16	3.74	Natural	Northern A
42-1/42-2	SN42-2	32.4	32.3	38.40	SN42-1	32.9	32.9	38.90	165.21	0.3	Natural	Northern A
42-1/43	SN42-1	32.9	32.9	38.90	SN43	32.9	32.9	38.90	150.76	0	Natural	Northern A
42-2/42-2A	SN42-2	32.3	32.3	38.40	SN42-2A	31.5	31.5	37.00	45	-1.78	Natural	Northern A
43/43A	SN43	32.9	32.9	38.90	SN43A	32	32	37.80	88.55	-1.02	Natural	Northern A
43/44	SN43	32.9	32.9	38.90	SN44	33.4	33.4	37.80	61.97	0.81	Natural	Northern A
B48300	SN35A	32.9	32.9	43.80	SN35B	33.1	33.1	43.80	87.37	0.23	Natural	B48300
C100A	SN30E	31	31	37.00	SN30F	31.5	31.5	34.00	22.6	2.21	Circular	
C200A	SN30A	32	32	38.00	SN30B	33	33	39.00	26.08	3.83	Circular	
C47200	SN40-3A	37	37	44.90	SN40-3B	41	41	44.90	60.23	6.64	Circular	
C47400	SN41-2A	33.5	33.5	39.75	SN41-2B	35	35	39.00	60.35	2.49	Circular	
C47700	SN42-2A	31.5	31.5	37.00	SN42-2B	32	32	37.00	71.28	0.7	Circular	
C48000	SN43A	32	32	37.80	SN43B	32.5	32.5	37.80	51.21	0.98	Circular	
C49500	SN32A	27.342	27.342	40.70	SN32B	28.342	28.342	40.70	104.15	0.96	Circular	
C500A	SN29A	34	34	40.00	SN29B	35.5	35.5	41.50	33.4	4.49	Circular	
C50200	SN30C	35	35	44.40	SN30D	37.5	37.5	44.80	109.27	2.29	Circular	
C50500	SN29C	39	39	46.70	SN29D	42.5	42.5	47.10	91.74	3.82	Circular	
C50800	SN28A	36	36	49.60	SN28B	43	43	49.60	94.24	7.43	Circular	
C51000	SN27B	36	36	50.70	SN27C	42	42	50.70	100.3	5.98	Circular	
C51000A	SN27A	34.5	34.5	50.70	SN27B	36	36	50.70	24.57	6.11	Circular	
C51300	SN26B	34.8	34.8	53.20	SN26C	40.5	40.5	53.20	139.53	4.09	Circular	
C51300A	SN26A	33.5	33.5	53.20	SN26B	34.8	34.8	53.20	32.33	4.02	Circular	
C51600	SN25A	43	43	55.60	SN25B	47	47	55.60	84.05	4.76	Circular	
C51900	SN23-3A	46	46	57.70	SN23-3B	52.5	52.5	57.70	77.04	8.44	Circular	
C53000	SN19A	51	51	79.40	SN19B	65	65	81.70	175.63	7.97	Circular	
C53800	SN21-2A	105.5	105.5	110.60	SN21-2B	106	106	110.60	66.95	0.75	Circular	
C54700	SN12A	73.233	73.233	128.70	SN12B	75.733	75.733	130.70	257.6	0.97	Circular	
C55300	SN15-2A	130	130	138.80	SN15-2B	135	135	140.50	80.56	6.21	Circular	
C56100	SN16-2A	162	162	177.00	SN16-2B	172.5	172.5	177.00	84.77	12.39	Circular	
C56400	SN17-2A	169.5	169.5	184.30	SN17-2B	179	179	185.10	96.97	9.8	Circular	
C56700	SN18A	163.5	163.5	187.70	SN18B	180.5	180.5	185.80	123.93	13.72	Circular	
C700SH1S	SN40-3C	36	36	45.00	SN40-3D	41	41	45.00	68.13	7.34	Circular	
E03/E04	Cut-E03	46.7	46.7	47.20	Cut-E04	49.5	49.5	50.00	352.9	0.79	Trapezoidal	
E04/E05	Cut-E04	49.5	49.5	50.00	Cut-E05	51.1	51.1	51.60	215.06	0.74	Trapezoidal	
E06/E07	Cut-E06	55.5	55.5	56.00	Cut-E07	57.5	57.5	58.00	228.64	0.87	Trapezoidal	
E11/E12A	Cut-E11	158.4	158.4	158.90	Cut-E12A	176.5	176.5	177.00	364.13	4.97	Trapezoidal	
E12B/E13	Cut-E12B	180	180	180.50	Cut-E13	186.4	186.4	186.90	233.64	2.74	Trapezoidal	

Link Name	D/S Node	D/S Invert Elevation	D/S Node Invert Elevation	D/S Node Ground Elevation	U/S Node	U/S Invert Elevation	U/S Node Invert Elevation	U/S Node Ground Elevation	Length	Slope	Shape	Natural Cross-Section
P47700IN	P47700	35.1	33.6	36.60	Road01	35.55	35.55	36.60	65.13	0.69	Circular	
P47700IN	P47700	35.1	33.6	36.60	Road01	35.55	35.55	36.60	65.13	0.69	Circular	
P47700OUT	SN42-2		32.3	38.40	P47700		33.6	36.60				
P47700OUT	SN42-2	0	32.3	38.40	P47700	0.05	33.6	36.60	10	0	Circular	
P47700OUT	SN42-2		32.3	38.40	P47700		33.6	36.60				
P48400IN	P48400	41.8	40.3	43.80	Road02A	42.55	42.55	43.30	90.61	0.83	Circular	
P48400OUT	SN35B		33.1	43.80	P48400		40.3	43.80				
P48400OUT	SN35B	0	33.1	43.80	P48400	0.05	40.3	43.80	10	0	Circular	
P48400OUT	SN35B		33.1	43.80	P48400		40.3	43.80				
P48900IN	P48900	42.8	41.3	44.80	Road02B	44.05	44.05	44.80	50.03	2.5	Circular	
P48900OUT	SN33-3		30.25	40.25	P48900		41.3	44.80				
P48900OUT	SN33-3	0	30.25	40.25	P48900	0.05	41.3	44.80	10	0	Circular	
P48900OUT	SN33-3		30.25	40.25	P48900		41.3	44.80				
P49400IN	P49400	37.6	36.1	40.10	Road03	39.35	39.35	40.10	83.92	2.09	Circular	
P49400OUT	SN32	0	30	40.00	P49400	0.05	36.1	40.10	10	0	Circular	
P49400OUT	SN32		30	40.00	P49400		36.1	40.10				
P49900IN	P49900	33.5	32	34.50	Road04	42.7	42.7	43.20	134.76	6.83	Circular	
P49900OUT	SN30		29.9	35.90	P49900		32	34.50				
P49900OUT	SN30	0	29.9	35.90	P49900	0.05	32	34.50	10	0	Circular	
P49900OUT	SN30		29.9	35.90	P49900		32	34.50				
P50300IN	P50300	37.5	36	45.60	Road05	44.85	44.85	45.60	94.48	7.78	Circular	
P50300OUT	SN29		31.25	37.25	P50300		36	45.60				
P50300OUT	SN29	0	31.25	37.25	P50300	0.05	36	45.60	10	0	Circular	
P50300OUT	SN29		31.25	37.25	P50300		36	45.60				
P51300IN	P51300	50.7	49.2	53.20	Road06	52.37	52.37	53.20	45.65	3.66	Circular	
P51300OUT	SN26C		40.5	53.20	P51300		49.2	53.20				
P51300OUT	SN26C	0	40.5	53.20	P51300	0.05	49.2	53.20	10	0	Circular	
P51300OUT	SN26C		40.5	53.20	P51300		49.2	53.20				
P52200IN	P52200	50	48.5	61.40	Road07	60.65	60.65	61.40	67.54	15.77	Circular	
P52200OUT	SN24		36.5	47.50	P52200		48.5	61.40				
P52200OUT	SN24	0	36.5	47.50	P52200	0.05	48.5	61.40	10	0	Circular	
P52200OUT	SN24		36.5	47.50	P52200		48.5	61.40				
P53100IN	P53100	52	50.5	82.80	Road08	82.3	82.3	82.80	108.28	27.98	Circular	
P53100OUT	SN20-1		40	50.50	P53100		50.5	82.80				
P53100OUT	SN20-1	0	40	50.50	P53100	0.05	50.5	82.80	10	0	Circular	
P53100OUT	SN20-1		40	50.50	P53100		50.5	82.80				
P53600IN	P53600	80	78.5	104.30	Road09	103.55	103.55	104.30	76.58	30.75	Circular	
P53600OUT	SN21-2		44	50.00	P53600		78.5	104.30				
P53600OUT	SN21-2	0	44	50.00	P53600	0.05	78.5	104.30	10	0	Circular	
P53600OUT	SN21-2		44	50.00	P53600		78.5	104.30				
P54500IN	P54500	125.5	124	127.50	Road10	126.67	126.67	127.50	29.64	3.95	Circular	
P54500OUT	SN12A		73.233	128.70	P54500		124	127.50				
P54500OUT	SN12A	0	73.233	128.70	P54500	0.05	124	127.50	10	0	Circular	
P54500OUT	SN12A		73.233	128.70	P54500		124	127.50				
P55500IN	P55500	142	140.5	144.50	Road11	143.45	143.45	144.50	55.22	2.63	Circular	
P55500IN	P55500	142	140.5	144.50	Road11	143.45	143.45	144.50	55.22	2.63	Circular	

Link Name	D/S Node	D/S Invert Elevation	D/S Node Invert Elevation	D/S Node Ground Elevation	U/S Node	U/S Invert Elevation	U/S Node Invert Elevation	U/S Node Ground Elevation	Length	Slope	Shape	Natural Cross-Section
P55500OUT	SN15-2B		135	140.50	P55500		140.5	144.50				
P55500OUT	SN15-2B	0	135	140.50	P55500	0.05	140.5	144.50	10	0	Circular	
P55500OUT	SN15-2B		135	140.50	P55500		140.5	144.50				
P56200IN	P56200	178.5	177	180.50	Road12	179.45	179.45	180.50	44.84	2.12	Circular	
P56200OUT	SN16-2A		162	177.00	P56200		177	180.50				
P56200OUT	SN16-2A	0	162	177.00	P56200	0.05	177	180.50	10	0	Circular	
P56200OUT	SN16-2A		162	177.00	P56200		177	180.50				
P800SH1OU	SN40-3D	41	41	45.00	P800SH1S	41.5	41.5	45.00	64.16	0.78	Circular	
P800SH1SIN	P800SH1S	41.5	41.5	45.00	RoadSH1	46.5	46.5	48.50	59.54	8.4	Circular	
RD01/E01	Road01	35.55	35.55	36.60	Cut-E01	40.5	40.5	41.00	418.51	1.18	Trapezoidal	
RD01/W02A	Road01	35.55	35.55	36.60	Cut-W02A	36.1	36.1	36.60	46.35	1.19	Trapezoidal	
RD01/W02B	Road01	35.55	35.55	36.60	Cut-W02B	36.1	36.1	36.60	35.76	1.54	Trapezoidal	
RD02B/E02	Road02B	44.05	44.05	44.80	Cut-E02	44.3	44.3	44.80	22.83	1.1	Trapezoidal	
RD02B/W03	Road02B	44.05	44.05	44.80	Cut-W03	44.3	44.3	44.80	22.94	1.09	Trapezoidal	
RD05/E03	Road05	44.85	44.85	45.60	Cut-E03	46.7	46.7	47.20	197.37	0.94	Trapezoidal	
RD05/W04	Road05	44.85	44.85	45.60	Cut-W04	46.7	46.7	47.20	223.52	0.83	Trapezoidal	
RD06/E06	Road06	52.37	52.37	53.20	Cut-E06	55.5	55.5	56.00	394.65	0.79	Trapezoidal	
RD06/W07	Road06	52.37	52.37	53.20	Cut-W07	53.5	53.5	54.00	142.67	0.79	Trapezoidal	
RD07/E08	Road07	60.65	60.65	61.40	Cut-E08	65.4	65.4	65.90	199.01	2.39	Trapezoidal	
RD07/W09	Road07	60.65	60.65	61.40	Cut-W09	69.9	69.9	70.40	351.75	2.63	Trapezoidal	
RD09/E09	Road09	103.55	103.55	104.30	Cut-E09	110.2	110.2	110.70	183.47	3.62	Trapezoidal	
RD09/W10	Road09	103.55	103.55	104.30	Cut-W10	110.2	110.2	110.70	180.35	3.69	Trapezoidal	
RD10/E10	Road10	126.67	126.67	127.50	Cut-E10	133	133	133.50	544.5	1.16	Trapezoidal	
RD10/W11	Road10	126.67	126.67	127.50	Cut-W11	133	133	133.50	538.29	1.18	Trapezoidal	
RD11/E11	Road11	143.45	143.45	144.50	Cut-E11	158.4	158.4	158.90	296.04	5.05	Trapezoidal	
RD11/W12	Road11	143.45	143.45	144.50	Cut-W12	158.4	158.4	158.90	269.28	5.55	Trapezoidal	
RD12/E12B	Road12	179.45	179.45	180.50	Cut-E12B	180	180	180.50	37.27	1.48	Trapezoidal	
RD12/W13	Road12	179.45	179.45	180.50	Cut-W13	180	180	180.50	14.31	3.84	Trapezoidal	
W02A/W01	Cut-W02A	36.1	36.1	36.60	Cut-W01	40.5	40.5	41.00	393.33	1.12	Trapezoidal	
W04/W05	Cut-W04	46.7	46.7	47.20	Cut-W05	49.5	49.5	50.00	302.11	0.93	Trapezoidal	
W05/W06	Cut-W05	49.5	49.5	50.00	Cut-W06	51.1	51.1	51.60	217.26	0.74	Trapezoidal	
W07/W08	Cut-W07	53.5	53.5	54.00	Cut-W08	55.5	55.5	56.00	238.73	0.84	Trapezoidal	
W13/W14	Cut-W13	180	180	180.50	Cut-W14	185.3	185.3	185.80	217.75	2.43	Trapezoidal	

Appendix G – Pūhoi pre-development conduit properties

PUHOI PRE-DEVELOPMENT CONDUIT PROPERTIES													
Link Name	D/S Node	D/S Invert Elevation	D/S Node Invert Elevation	D/S Node Ground Elevation	U/S Node	U/S Invert Elevation	U/S Node Invert Elevation	U/S Node Ground Elevation	Length	Slope	Shape	Natural Cross-Section	Diameter (m)
00-1/00-2	SN00-1	-4.099	-4.099	5.00	SN00-2	-3.801	-3.801	5.00	597.03	0.05	Natural	Puhoi 00	0
00-1/39-1	SN00-1	-2	-4.099	5.00	SN39-1	-2	-2	6.00	215.25	0	Natural	Puhoi LB1	0.05
00-2/00-3	SN00-2	-3.801	-3.801	5.00	SN00-3	-3.731	-3.731	5.00	138.54	0.05	Natural	Puhoi 00	0.05
00-2/36OUT	SN00-2	0.34	-3.801	5.00	SN36OUT	0.6	0.6	5.00	27.71	0.94	Trapezoidal		1
00-2/37OUT	SN00-2	0.729	-3.801	5.00	SN37OUT	1.05	1.05	5.00	139.62	0.23	Trapezoidal		1
00-3/00-4	SN00-3	-3.731	-3.731	5.00	SN00-4	-3.18	-3.18	5.00	1103.61	0.05	Natural	Puhoi 00	0.05
00-4/00-5	SN00-4	-3.18	-3.18	5.00	SN00-5	-3.11	-3.11	5.00	138.86	0.05	Natural	Puhoi 00	0.05
00-4/38OUT	SN00-4	-0.1	-3.18	5.00	SN38OUT	-0.08	-0.08	7.00	12.44	0.16	Trapezoidal		1
00-5/01-1	SN00-5	-3.11	-3.11	5.00	SN01-1	-3	-3	10.70	220.47	0.05	Natural	Puhoi 00	0.05
00/00-1	SN00	-4.155	-4.155	5.00	SN00-1	-4.099	-4.099	5.00	112.31	0.05	Natural	Puhoi 00	0.05
01-1/01-2	SN01-1	-3	-3	10.70	SN01-2	-2.972	-2.972	10.73	27.83	0.1	Natural	Puhoi 00	0
01-1/02-1	SN01-1	-2	-3	10.70	SN02-1	-1.5	-1.5	6.00	1093.62	0.05	Natural	Puhoi LB1	0
01-2/30-1	SN01-2	-2.972	-2.972	10.73	SN30-1	-1.534	-1.534	12.16	1438.06	0.1	Natural	Puhoi RB1	0
02-1/03-1	SN02-1	-0.75	-1.5	6.00	SN03-1	-0.25	-0.25	6.90	308.32	0.16	Natural	Puhoi LB2	0
03-1/03-2	SN03-1	3.076	-0.25	6.90	SN03-2	3.37	3.37	8.50	16.66	1.76	Trapezoidal		1
03-1/04-1	SN03-1	-0.25	-0.25	6.90	SN04-1	1.75	1.75	9.00	464.71	0.43	Natural	Puhoi LB2	0
04-1/04-2	SN04-1	1.75	1.75	9.00	SN04-2	2.05	2.05	9.30	53.76	0.56	Natural	Puhoi LB2	0
04-1/05-1	SN04-1	1.75	1.75	9.00	SN05-1	3.65	3.65	10.90	291.73	0.65	Natural	Puhoi LB2	0
05-1/05-2	SN05-1	5.514	3.65	10.90	SN05-2	7.44	7.44	15.50	29.42	6.55	Trapezoidal		1
05-1/06-1	SN05-1	3.65	3.65	10.90	SN06-1	4.75	4.75	12.00	233.77	0.47	Natural	Puhoi LB2	0
06-1/06-2	SN06-1	6	4.75	12.00	SN06-2	7.46	7.46	13.50	36.59	3.99	Trapezoidal		1
06-1/07-1	SN06-1	4.75	4.75	12.00	SN07-1	10	10	17.25	399.64	1.31	Natural	Puhoi LB2	0
07-1/07-2	SN07-1	10	10	17.25	SN07-2	11.68	11.68	21.00	10.78	15.58	Trapezoidal		1
07-1/08-1	SN07-1	10	10	17.25	SN08-1	12.25	12.25	19.50	609.65	0.37	Natural	Puhoi LB2	0
08-1/08-2	SN08-1	12.25	12.25	19.50	SN08-2	13.54	13.54	20.00	29.52	4.37	Trapezoidal		1
08-1/09-1	SN08-1	12.25	12.25	19.50	SN09-1	15.25	15.25	21.50	462.8	0.65	Natural	Puhoi LB2	0
09-1/10-1	SN09-1	15.25	15.25	21.50	SN10-1	16.75	16.75	25.00	398.53	0.38	Natural	Puhoi LB2	0
10-1/10-2	SN10-1	18	16.75	25.00	SN10-2	20.9	20.9	27.90	101.77	2.85	Natural	Puhoi LB5	0
10-1/11-1	SN10-1	16.75	16.75	25.00	SN11-1	17.65	17.65	24.90	137.43	0.65	Natural	Puhoi LB2	0
11-1/11-2	SN11-1	17.65	17.65	24.90	SN11-2	18.25	18.25	26.50	374.1	0.16	Natural	Puhoi LB2	0
11-2/11-3	SN11-2	19.5	18.25	26.50	SN11-3	45	45	52.20	345.53	7.38	Natural	Puhoi LB5	0
11-2/12-1	SN11-2	18.25	18.25	26.50	SN12-1	21.75	21.75	29.00	354.66	0.99	Natural	Puhoi LB2	0
12-1/12-2	SN12-1	21.75	21.75	29.00	SN12-2	22.75	22.75	30.00	27.71	3.61	Natural	Puhoi LB2	0
12-2/13	SN12-2	22.75	22.75	30.00	SN13	27.25	27.25	34.50	349.48	1.29	Natural	Puhoi LB2	0
13/14-1	SN13	27.25	27.25	34.50	SN14-1	29.75	29.75	38.50	272.77	0.92	Natural	Puhoi LB2	0
14-1/14-2	SN14-1	29.75	29.75	38.50	SN14-2	30.15	30.15	37.40	26.87	1.49	Natural	Puhoi LB2	0
14-1/15-1	SN14-1	30	29.75	38.50	SN15-1	31.5	31.5	40.00	128.59	1.17	Natural	Puhoi LB3	0
15-1/15-3	SN15-1	31.5	31.5	40.00	SN15-3	32.5	32.5	41.00	65.01	1.54	Natural	Puhoi LB3	0
15-3/15-2	SN15-3	33	32.5	41.00	SN15-2	44	44	50.90	94.12	11.69	Natural	Puhoi LB4	0
15-3/16-1	SN15-3	32.5	32.5	41.00	SN16-1	33.25	33.25	41.75	71.55	1.05	Natural	Puhoi LB3	0
16-1/16-2	SN16-1	33.75	33.25	41.75	SN16-2	55	55	61.90	117.47	18.09	Natural	Puhoi LB4	0
16-1/17-1	SN16-1	33.25	33.25	41.75	SN17-1	85	85	93.50	595.37	8.69	Natural	Puhoi LB3	0
17-1/17-2	SN17-1	85.5	85	93.50	SN17-2	103.3	103.3	110.20	46.26	38.48	Natural	Puhoi LB4	0
17-1/18-1	SN17-1	85	85	93.50	SN18-1	90.9	90.9	99.40	113.79	5.18	Natural	Puhoi LB3	0
18-1/18-2	SN18-1	91.4	90.9	99.40	SN18-2	116	116	122.90	67.74	36.32	Natural	Puhoi LB4	0
18-1/18-3	SN18-1	90.9	90.9	99.40	SN18-3	97.5	97.5	106.00	108.21	6.1	Natural	Puhoi LB3	0
18-3/19-1	SN18-3	98	97.5	106.00	SN19-1	114.8	114.8	121.70	226.24	7.43	Natural	Puhoi LB4	0
19-1/19-2	SN19-1	114.8	114.8	121.70	SN19-2	122.4	122.4	129.30	150.81	5.04	Natural	Puhoi LB4	0
19-2/19-3	SN19-2	122.4	122.4	129.30	SN19-3	132	132	154.50	71.21	13.48	Natural	Puhoi LB4	0.05
19-2/20-1	SN19-2	122.4	122.4	129.30	SN20-1	127.9	127.9	134.80	145.59	3.78	Natural	Puhoi LB4	0
20-1/20-2	SN20-1	127.9	127.9	134.80	SN20-2	130	130	136.90	17.4	12.07	Natural	Puhoi LB4	0
20-1/21-1	SN20-1	127.9	127.9	134.80	SN21-1	137.5	137.5	165.70	111.52	8.61	Natural	Puhoi LB4	0

Link Name	D/S Node	D/S Invert Elevation	D/S Node Invert Elevation	D/S Node Ground Elevation	U/S Node	U/S Invert Elevation	U/S Node Invert Elevation	U/S Node Ground Elevation	Length	Slope	Shape	Natural Cross-Section	Diameter (m)
21-1/21-2	SN21-1	137.5	137.5	165.70	SN21-2	140.5	140.5	147.40	20.11	14.92	Natural	Puhoi LB4	0
30-1/30-2	SN30-1	-1.534	-1.534	12.16	SN30-2	-1.464	-1.464	12.21	46.89	0.15	Natural	Puhoi RB1	0
30-2/31	SN30-2	-1.464	-1.464	12.21	SN31	3.159	3.159	15.16	2201.19	0.21	Natural	Puhoi RB1	0
31/32	SN31	4.659	3.159	15.16	SN32	10.808	10.808	22.30	2365.12	0.26	Natural	Puhoi RB2	0
32/33	SN32	10.808	10.808	22.30	SN33	11.505	11.505	22.01	107.11	0.65	Natural	Puhoi RB2	0
32/35	SN32	11.808	10.808	22.30	SN35	16.799	16.799	24.30	818.19	0.61	Natural	Puhoi RB3	0
33/34	SN33	11.505	11.505	22.01	SN34	14.199	14.199	24.70	289.75	0.93	Natural	Puhoi RB2	0
39-1/39-2	SN39-1	-2	-2	6.00	SN39-2	-2	-2	6.00	89.77	0	Natural	Puhoi LB1	0.05
SH1-P2	SN36OUT	0.6	0.6	5.00	SN36	1.01	1.01	5.00	43.45	0.94	Circular		1.45
SH1-P3	SN37OUT	1.05	1.05	5.00	SN37	1.14	1.14	5.00	38.95	0.23	Circular		1.45
SH1-P3a	SN38OUT	-0.08	-0.08	7.00	SN38	1.4	1.4	7.00	46.96	3.15	Circular		1.45
SH1-P5	SN02-1	1.85	-1.5	6.00	SN02-2	2.07	2.07	6.00	47.35	0.46	Circular		0.75
SH1-P6	SN03-2	3.37	3.37	8.50	SN03-3	3.75	3.75	8.50	21.54	1.76	Circular		0.9
SH1-P6	SN03-2	7.5	3.37	8.50	SN03-3	7.5	3.75	8.50	21.54	0	Trapezoidal		1
SH1-P6a	SN05-2	7.44	7.44	15.50	SN05-3	9	9	15.50	51.89	3.01	Circular		0.45
SH1-P7	SN06-2	7.46	7.46	13.50	SN06-3	8.04	8.04	13.50	47.27	1.23	Circular		1.2
SH1-P8	SN07-2	11.68	11.68	21.00	SN07-3	12.53	12.53	21.00	43.43	1.96	Circular		1.2
SH1-P9	SN08-2	13.54	13.54	20.00	SN08-3	14.29	14.29	20.00	29.63	2.53	Rectangular		2
SH1-P9a	SN09-1	17.58	15.25	21.50	SN09-2	17.93	17.93	21.50	75.22	0.47	Circular		0.525
SH1-P9a	SN09-1	19.5	15.25	21.50	SN09-2	19.5	17.93	21.50	75.22	0	Trapezoidal		1

Appendix H – Pūhoi post-development conduit properties

PUHOI POST-DEVELOPMENT CONDUIT PROPERTIES												
Link Name	D/S Node	D/S Invert Elevation	D/S Node Invert Elevation	D/S Node Ground Elevation	U/S Node	U/S Invert Elevation	U/S Node Invert Elevation	U/S Node Ground Elevation	Length	Slope	Shape	Natural Cross-Section
00-1/00-2	SN00-1	-4.099	-4.099	5.00	SN00-2	-3.801	-3.801	5.00	596.82	0.05	Natural	Puhoi 00
00-1/39-1	SN00-1	-2	-4.099	5.00	SN39-1	-2	-2	6.00	215.49	0	Natural	Puhoi LB1
00-2/00-3	SN00-2	-3.801	-3.801	5.00	SN00-3	-3.731	-3.731	5.00	138.89	0.05	Natural	Puhoi 00
00-2/36OUT	SN00-2	0.339	-3.801	5.00	SN36OUT	0.6	0.6	5.00	27.72	0.94	Trapezoidal	
00-2/37OUT	SN00-2	-0.321	-3.801	5.00	SN37OUT	1.05	1.05	5.00	139.43	0.98	Trapezoidal	
00-3/00-4	SN00-3	-3.731	-3.731	5.00	SN00-4	-3.18	-3.18	5.00	1103.17	0.05	Natural	Puhoi 00
00-4/00-5	SN00-4	-3.18	-3.18	5.00	SN00-5	-3.11	-3.11	5.00	138.8	0.05	Natural	Puhoi 00
00-4/38OUT	SN00-4	-0.784	-3.18	5.00	SN38OUT	-0.08	-0.08	7.00	20	3.52	Trapezoidal	
00-5/01-1	SN00-5	-3.11	-3.11	5.00	SN01-1	-3	-3	10.70	220.54	0.05	Natural	Puhoi 00
00-00-1	SN00	-4.155	-4.155	5.00	SN00-1	-4.099	-4.099	5.00	112.28	0.05	Natural	Puhoi 00
01-1/01-2	SN01-1	-3	-3	10.70	SN01-2	-2.972	-2.972	10.73	27.83	0.1	Natural	Puhoi 00
01-1/02-1	SN01-1	-2	-3	10.70	SN02-1	-1.5	-1.5	6.80	1093.62	0.05	Natural	Puhoi LB1
01-2/30-1	SN01-2	-2.972	-2.972	10.73	SN30-1	-1.534	-1.534	12.16	1438.06	0.1	Natural	Puhoi RB1
02-1/02-2	SN02-1	1.85	-1.5	6.80	SN02-2	2.07	2.07	6.00	47.35	0.46	Circular	
02-1/03-1	SN02-1	-0.75	-1.5	6.80	SN03-1	-0.25	-0.25	6.90	308.32	0.16	Natural	Puhoi LB2
02-2/02-2A	SN02-2	2.07	2.07	6.00	SN02-2A	25	25	30.20	128.09	17.9	Natural	Puhoi LB3
03-1/03-2	SN03-1	3.076	-0.25	6.90	SN03-2	3.37	3.37	7.50	16.66	1.76	Trapezoidal	
03-1/04-1	SN03-1	-0.25	-0.25	6.90	SN04-1	1.75	1.75	9.00	464.71	0.43	Natural	Puhoi LB2
03-2/03-3	SN03-2	3.37	3.37	7.50	SN03-3	3.75	3.75	7.50	21.54	1.76	Circular	
03-3/03-3A	SN03-3	3.75	3.75	7.50	SN03-3A	24	24	29.60	144.78	13.99	Natural	Puhoi LB3
04-1/04-2	SN04-1	1.75	1.75	9.00	SN04-2	2.05	2.05	9.30	53.76	0.56	Natural	Puhoi LB2
04-1/05-1	SN04-1	1.75	1.75	9.00	SN05-1	3.65	3.65	10.90	291.73	0.65	Natural	Puhoi LB2
05-1/05-2	SN05-1	5.514	3.65	10.90	SN05-2	7.44	7.44	15.50	29.42	6.55	Trapezoidal	
05-1/06-1	SN05-1	3.65	3.65	10.90	SN06-1	4.75	4.75	12.00	233.77	0.47	Natural	Puhoi LB2
05-2/05-3	SN05-2	7.44	7.44	15.50	SN05-3	9	9	15.50	51.89	3.01	Circular	
05-3/05-3A	SN05-3	9	9	15.50	SN05-3A	25	25	31.10	130.05	12.3	Natural	Puhoi LB3
06-1/06-2	SN06-1	6	4.75	12.00	SN06-2	7.46	7.46	13.50	36.97	3.95	Trapezoidal	
06-1/07-1	SN06-1	4.75	4.75	12.00	SN07-1	10	10	17.25	399.64	1.31	Natural	Puhoi LB2
06-2/06-3	SN06-2	7.46	7.46	13.50	SN06-3	8.04	8.04	13.50	47.67	1.22	Circular	
06-3/06-3A	SN06-3	8.04	8.04	13.50	SN06-3A	10	10	31.70	22.45	8.73	Natural	Puhoi LB3
07-1/07-2	SN07-1	10	10	17.25	SN07-2	11.68	11.68	21.00	10.98	15.3	Trapezoidal	
07-1/08-1	SN07-1	10	10	17.25	SN08-1	12.25	12.25	19.50	609.65	0.37	Natural	Puhoi LB2
07-2/07-3	SN07-2	11.68	11.68	21.00	SN07-3	12.53	12.53	21.00	43.52	1.95	Circular	
08-1/08-2	SN08-1	12.25	12.25	19.50	SN08-2	13.54	13.54	20.00	29.52	4.37	Trapezoidal	
08-1/09-1	SN08-1	12.25	12.25	19.50	SN09-1	15.25	15.25	22.50	462.8	0.65	Natural	Puhoi LB2
08-2/08-3	SN08-2	13.54	13.54	20.00	SN08-3	14.29	14.29	20.00	29.63	2.53	Rectangular	
09-1/09-2	SN09-1	17.58	15.25	22.50	SN09-2	17.93	17.93	26.00	75.22	0.47	Circular	
09-1/09-2	SN09-1		15.25	22.50	SN09-2		17.93	26.00				
09-1/10-1	SN09-1	15.25	15.25	22.50	SN10-1	16.75	16.75	25.00	398.53	0.38	Natural	Puhoi LB2
09-2/09-2A	SN09-2	17.93	17.93	26.00	SN09-2A	21	21	28.00	37.69	8.15	Natural	Puhoi LB2
10-1/10-2	SN10-1	18	16.75	25.00	SN10-2	20.9	20.9	27.90	101.77	2.85	Natural	Puhoi LB5
10-1/11-1	SN10-1	16.75	16.75	25.00	SN11-1	17.65	17.65	24.90	137.43	0.65	Natural	Puhoi LB2
11-1/11-2	SN11-1	17.65	17.65	24.90	SN11-2	18.25	18.25	26.50	374.1	0.16	Natural	Puhoi LB2
11-2/11-3	SN11-2	19.5	18.25	26.50	SN11-3	45.25	45.25	52.25	345.53	7.45	Natural	Puhoi LB5
11-2/12-1	SN11-2	18.25	18.25	26.50	SN12-1	21.75	21.75	29.00	354.66	0.99	Natural	Puhoi LB2
12-1/12-2	SN12-1	21.75	21.75	29.00	SN12-2	22.75	22.75	30.00	27.71	3.61	Natural	Puhoi LB2

Link Name	D/S Node	D/S Invert Elevation	D/S Node Invert Elevation	D/S Node Ground Elevation	U/S Node	U/S Invert Elevation	U/S Node Invert Elevation	U/S Node Ground Elevation	Length	Slope	Shape	Natural Cross-Section
12-2/13	SN12-2	22.75	22.75	30.00	SN13	27.25	27.25	34.50	349.48	1.29	Natural	Puhoi LB2
13/14-1	SN13	27.25	27.25	34.50	SN14-1	29.75	29.75	38.50	272.77	0.92	Natural	Puhoi LB2
14-1/14-2	SN14-1	29.75	29.75	38.50	SN14-2	30.15	30.15	37.40	26.87	1.49	Natural	Puhoi LB2
14-1/15-1	SN14-1	30	29.75	38.50	SN15-1	31.5	31.5	40.00	128.59	1.17	Natural	Puhoi LB3
15-1/15-3	SN15-1	31.5	31.5	40.00	SN15-3	32.5	32.5	41.00	65.01	1.54	Natural	Puhoi LB3
15-2/15-2A	SN15-2	44	44	50.90	SN15-2A	67	67	94.70	66.46	34.61	Natural	Puhoi LB4
15-3/15-2	SN15-3	33	32.5	41.00	SN15-2	44	44	50.90	94.12	11.69	Natural	Puhoi LB4
15-3/16-1	SN15-3	32.5	32.5	41.00	SN16-1	33.25	33.25	41.75	71.55	1.05	Natural	Puhoi LB3
16-1/16-2	SN16-1	33.75	33.25	41.75	SN16-2	55	55	61.90	117.47	18.09	Natural	Puhoi LB4
16-1/16-3	SN16-1	34	33.25	41.75	SN16-3	98	98	121.70	265.51	24.1	Natural	Puhoi LB5
16-1/17-1	SN16-1	33.25	33.25	41.75	SN17-1	85	85	93.50	595.37	8.69	Natural	Puhoi LB3
16-2/16-2A	SN16-2	55	55	61.90	SN16-2A	70	70	108.50	37.95	39.53	Natural	Puhoi LB4
17-1/17-2	SN17-1	85.5	85	93.50	SN17-2	103.3	103.3	110.20	46.26	38.48	Natural	Puhoi LB4
17-1/18-1	SN17-1	85	85	93.50	SN18-1	90.9	90.9	99.40	113.79	5.18	Natural	Puhoi LB3
18-1/18-2	SN18-1	91.4	90.9	99.40	SN18-2	116	116	122.90	67.74	36.32	Natural	Puhoi LB4
18-1/18-3	SN18-1	90.9	90.9	99.40	SN18-3	97.5	97.5	106.00	108.21	6.1	Natural	Puhoi LB3
18-3/19-1	SN18-3	98	97.5	106.00	SN19-1	114.8	114.8	121.70	226.24	7.43	Natural	Puhoi LB4
19-1/19-1A	SN19-1	114.8	114.8	121.70	SN19-1A	118	118	151.70	30.19	10.6	Natural	Puhoi LB4
19-1/19-2	SN19-1	114.8	114.8	121.70	SN19-2	122.4	122.4	129.30	150.81	5.04	Natural	Puhoi LB4
19-2/19-3	SN19-2	122.4	122.4	129.30	SN19-3	133	133	161.70	71.11	14.91	Natural	Puhoi LB4
19-2/20-1	SN19-2	122.4	122.4	129.30	SN20-1	127.9	127.9	134.80	145.59	3.78	Natural	Puhoi LB4
20-1/20-2	SN20-1	127.9	127.9	134.80	SN20-2	130	130	136.90	17.4	12.07	Natural	Puhoi LB4
20-1/21-1	SN20-1	127.9	127.9	134.80	SN21-1	137.75	137.75	144.65	119.47	8.24	Natural	Puhoi LB4
21-1/21-2	SN21-1	137.75	137.75	144.65	SN21-2	140.5	140.5	147.40	18.69	14.71	Natural	Puhoi LB4
30-1/30-2	SN30-1	-1.534	-1.534	12.16	SN30-2	-1.464	-1.464	12.21	46.89	0.15	Natural	Puhoi RB1
30-2/31	SN30-2	-1.464	-1.464	12.21	SN31	3.159	3.159	15.16	2201.19	0.21	Natural	Puhoi RB1
31/32	SN31	4.659	3.159	15.16	SN32	10.808	10.808	22.30	2365.12	0.26	Natural	Puhoi RB2
32/33	SN32	10.808	10.808	22.30	SN33	11.505	11.505	22.01	107.11	0.65	Natural	Puhoi RB2
32/35	SN32	11.808	10.808	22.30	SN35	16.799	16.799	24.30	818.19	0.61	Natural	Puhoi RB3
33/34	SN33	11.505	11.505	22.01	SN34	14.199	14.199	24.70	289.75	0.93	Natural	Puhoi RB2
36/36A	SN36	1.01	1.01	5.00	SN36A	2	2	5.00	94.15	1.05	Natural	Puhoi LB5
36OUT/36	SN36OUT	0.6	0.6	5.00	SN36	1.01	1.01	5.00	43.73	0.94	Circular	
37/37A	SN37	1.14	1.14	5.00	SN37A	2	2	5.00	102.37	0.84	Natural	Puhoi LB5
37OUT/37	SN37OUT	1.05	1.05	5.00	SN37	1.14	1.14	5.00	39.03	0.23	Circular	
38/38A	SN38	1.4	1.4	7.00	SN38A	4	4	7.00	27.15	9.58	Natural	Puhoi LB5
38OUT/38	SN38OUT	-0.08	-0.08	7.00	SN38	1.4	1.4	7.00	42.02	3.52	Circular	
39-1/39-2	SN39-1	-2	-2	6.00	SN39-2	-2	-2	6.00	89.68	0	Natural	Puhoi LB1
C57200	SN21-1	137.75	137.75	144.65	SN21-1A	160.75	160.75	180.70	227.32	10.12	Circular	
C57400	SN19-3	133	133	161.70	SN19-3A	156	156	161.70	98.73	23.3	Circular	
C57600	SN19-1A	118	118	151.70	SN19-1B	135	135	151.70	135.61	12.54	Circular	
C58400	SN16-2A	70	70	108.50	SN16-2B	102	102	113.80	145.27	22.03	Circular	
C58700	SN15-2A	67	67	94.70	SN15-2B	90	90	94.70	98.15	23.43	Circular	
C59400	SN11-3	45.25	45.25	52.25	SN11-3A	47.75	47.75	54.20	55.54	4.5	Circular	
C59800	SN09-2A	21	21	28.00	SN09-2B	28	28	39.80	120.87	5.79	Circular	
C60200	SN08-3	14.29	14.29	20.00	SN08-3A	15.29	15.29	26.00	105.42	0.95	Circular	
C60800	SN07-3	12.53	12.53	21.00	SN07-3A	17.53	17.53	33.10	128.33	3.9	Circular	
C61100	SN06-3A	10	10	31.70	SN06-3B	18	18	31.70	80.57	9.93	Circular	

Link Name	D/S Node	D/S Invert Elevation	D/S Node Invert Elevation	D/S Node Ground Elevation	U/S Node	U/S Invert Elevation	U/S Node Invert Elevation	U/S Node Ground Elevation	Length	Slope	Shape	Natural Cross-Section
C61300	SN05-3A	25	25	31.10	SN05-3B	26.5	26.5	31.10	55.06	2.72	Circular	
C61600	SN03-3A	24	24	29.60	SN03-3B	24.5	24.5	29.60	39.1	1.28	Circular	
C61900	SN02-2A	25	25	30.20	SN02-2B	25.5	25.5	30.20	66.3	0.75	Circular	
C63000	SN38A	4	4	7.00	SN38B	9	9	18.80	91.78	5.45	Circular	
C63500	SN37A	2	2	5.00	SN37B	11	11	22.10	216.9	4.15	Circular	
C63800	SN36A	2	2	5.00	SN36B	7	7	17.00	139.55	3.58	Circular	
E02/E01	Cut-E02	180.7	180.7	182.70	Cut-E01	188.1	188.1	190.10	398.06	1.86	Trapezoidal	
E04/E03	Cut-E04	141.7	141.7	143.70	Cut-E03	156.7	156.7	158.70	295.04	5.08	Trapezoidal	
E05/E04	Cut-E05	139.5	139.5	141.50	Cut-E04	141.7	141.7	143.70	37.98	5.79	Trapezoidal	
E06/E05	Cut-E06	113.8	113.8	115.80	Cut-E05	139.5	139.5	141.50	521.24	4.93	Trapezoidal	
E10/E09	Cut-E10	37.4	37.4	39.40	Cut-E09	39.8	39.8	41.80	152.13	1.58	Trapezoidal	
E11/E10	Cut-E11	36.5	36.5	38.50	Cut-E10	37.4	37.4	39.40	82.77	1.09	Trapezoidal	
E13/E12	Cut-E13	33.5	33.5	35.50	Cut-E12	34.4	34.4	36.40	237.57	0.38	Trapezoidal	
E15/E14	Cut-E15	31.1	31.1	33.10	Cut-E14	32.5	32.5	34.50	364.75	0.38	Trapezoidal	
E17/E16	Cut-E17	29.9	29.9	31.90	Cut-E16	30.4	30.4	32.40	249.65	0.2	Trapezoidal	
E18/E19	Cut-E18	30.2	30.2	32.20	Cut-E19	30.6	30.6	32.60	138.96	0.29	Trapezoidal	
P50100IN	P59100	40	40	59.60	Road04	59.6	59.6	61.60	185.37	10.57	Circular	
P50100OUT	P59000	32	32	59.60	P59100	40	40	59.60	89.13	8.98	Circular	
P57400IN	P57400	156	156	161.70	Road01	161.7	161.7	163.70	38.05	14.98	Circular	
P57400OUT	SN19-3A	156	156	161.70	P57400	156	156	161.70	19.97	0	Circular	
P58200IN	P58200	115	115	121.70	Road02	121.7	121.7	123.70	23.89	28.05	Circular	
P58200OUT	SN16-3	98	98	121.70	P58200	115	115	121.70	81.07	20.97	Circular	
P58500IN	P58500	96	96	108.50	Road03	108.5	108.5	110.50	46.94	26.63	Circular	
P58500OUT	SN15-2B	90	90	94.70	P58500	96	96	108.50	145.05	4.14	Circular	
P59000OUT	SN13	27.25	27.25	34.50	P59000	32	32	59.60	68.46	6.94	Circular	
P59600IN	P59600	28	28	42.40	Road05	42.4	42.4	44.40	103.1	13.97	Circular	
P59600OUT	SN10-2	20.9	20.9	27.90	P59600	28	28	42.40	91.76	7.74	Circular	
P60200IN	P60200	22	22	35.60	Road06	35.5	35.5	37.50	50.99	26.48	Circular	
P60200OUT	SN08-3A	15.29	15.29	26.00	P60200	22	22	35.60	68.69	9.77	Circular	
P60800IN	P60800	20	20	33.20	Road07	33.2	33.2	35.20	76.52	17.25	Circular	
P60800OUT	SN07-3	12.53	12.53	21.00	P60800	20	20	33.20	44.04	16.96	Circular	
P61300IN	P61300	20	20	31.10	Road08	30.8	30.8	31.80	82.87	13.03	Circular	
P61300OUT	SN05-3	9	9	15.50	P61300	20	20	31.10	75.99	14.48	Circular	
P61800IN	P61800	4	4	29.90	Road09	29.6	29.6	30.60	125.05	20.47	Circular	
P61800OUT	SN02-2	2.07	2.07	6.00	P61800	4	4	29.90	35.47	5.44	Circular	
P62600OUT	SN01-2	-2.972	-2.972	10.73	P62600	6	6	22.50	141.36	6.35	Circular	
P62800IN	P62600	6	6	22.50	Road10	22.5	22.5	24.50	54.86	30.08	Circular	
P62900IN	P62900	2	2	8.00	Road11	18.8	18.8	20.80	98.14	17.12	Circular	
P62900OUT	SN00-5	0.8	-3.11	5.00	P62900	2	2	8.00	93.91	1.28	Circular	
P63800AIN	P63800	2.5	2.5	17.50	Road12A	20.5	20.5	22.50	109.73	16.4	Circular	
P63800BIN	P63800	2.5	2.5	17.50	Road12B	17	17	19.00	91.96	15.77	Circular	
P63800OUT	SN36	1.01	1.01	5.00	P63800	2.5	2.5	17.50	85.2	1.75	Circular	
P64500IN	P64500	4	4	8.00	Road13	26.7	26.7	28.70	126.67	17.92	Circular	
P64500OUT	SN39-2	0	-2	6.00	P64500	4	4	8.00	236.66	1.69	Circular	
RD01/E02	Road01	161.7	161.7	163.70	Cut-E02	180.7	180.7	182.70	354.02	5.37	Trapezoidal	
RD01/W02	Road01	161.7	161.7	163.70	Cut-W02	176.6	176.6	178.60	271.71	5.48	Trapezoidal	
RD02/W04	Road02	121.7	121.7	123.70	Cut-W04	122	122	124.00	12.57	2.39	Trapezoidal	

Link Name	D/S Node	D/S Invert Elevation	D/S Node Invert Elevation	D/S Node Ground Elevation	U/S Node	U/S Invert Elevation	U/S Node Invert Elevation	U/S Node Ground Elevation	Length	Slope	Shape	Natural Cross-Section
RD03/E06	Road03	108.5	108.5	110.50	Cut-E06	113.8	113.8	115.80	108.8	4.87	Trapezoidal	
RD04/E07	Road04	59.6	59.6	61.60	Cut-E07	85	85	87.00	395.89	6.42	Trapezoidal	
RD04/W06	Road04	59.6	59.6	61.60	Cut-W06	85	85	87.00	411.36	6.17	Trapezoidal	
RD05/E08	Road05	42.4	42.4	44.40	Cut-E08	54.2	54.2	56.20	243.53	4.85	Trapezoidal	
RD05/W07	Road05	42.4	42.4	44.40	Cut-W07	50	50	52.00	179.42	4.24	Trapezoidal	
RD06/E11	Road06	35.5	35.5	37.50	Cut-E11	36.5	36.5	38.50	198.37	0.5	Trapezoidal	
RD06/W11	Road06	35.5	35.5	37.50	Cut-W11	35.6	35.6	37.60	14.98	0.67	Trapezoidal	
RD07/E13	Road07	33.2	33.2	35.20	Cut-E13	33.5	33.5	35.50	74.36	0.4	Trapezoidal	
RD07/W12	Road07	33.2	33.2	35.20	Cut-W12	33.3	33.3	35.50	36.77	0.27	Trapezoidal	
RD08/E15	Road08	30.8	30.8	31.80	Cut-E15	31.1	31.1	33.10	10.17	2.95	Trapezoidal	
RD08/W14	Road08	30.8	30.8	31.80	Cut-W14	31.1	31.1	33.10	35.75	0.84	Trapezoidal	
RD09/E17	Road09	29.6	29.6	30.60	Cut-E17	29.9	29.9	31.90	14.13	2.12	Trapezoidal	
RD09/E18	Road09	29.6	29.6	30.60	Cut-E18	30.2	30.2	32.20	149.19	0.4	Trapezoidal	
RD09/W16	Road09	29.6	29.6	30.60	Cut-W16	29.9	29.9	31.90	33.78	0.89	Trapezoidal	
RD09/W17	Road09	29.6	29.6	30.60	Cut-W17	30.2	30.2	32.20	206.15	0.29	Trapezoidal	
RD10/E20	Road10	22.5	22.5	24.50	Cut-E20	27.6	27.6	29.60	164.63	3.1	Trapezoidal	
RD10/W18	Road10	22.5	22.5	24.50	Cut-W18	24.9	24.9	26.90	77.17	3.11	Trapezoidal	
RD11/W19	Road11	18.8	18.8	20.80	Cut-W19	20.3	20.3	22.30	234.15	0.64	Trapezoidal	
RD12A/E21	Road12A	20.5	20.5	22.50	Cut-E21	20.7	20.7	22.70	20.08	1	Trapezoidal	
RD12A/W20	Road12A	20.5	20.5	22.50	Cut-W20	20.7	20.7	22.70	46.06	0.43	Trapezoidal	
RD12B/E22	Road12B	17	17	19.00	Cut-E22	17.5	17.5	19.50	20.01	2.5	Trapezoidal	
RD12B/W21	Road12B	17	17	19.00	Cut-W21	17.5	17.5	19.50	38.77	1.29	Trapezoidal	
W02/W01	Cut-W02	176.6	176.6	178.60	Cut-W01	187.6	187.6	189.60	397.13	2.77	Trapezoidal	
W04/W03	Cut-W04	122	122	124.00	Cut-W03	156	156	158.00	668.15	5.09	Trapezoidal	
W06/W05	Cut-W06	85	85	87.00	Cut-W05	114	114	116.00	493.68	5.87	Trapezoidal	
W09/W08	Cut-W09	37	37	39.00	Cut-W08	39.8	39.8	41.80	175.14	1.6	Trapezoidal	
W10/W09	Cut-W10	35.9	35.9	37.90	Cut-W09	37	37	39.00	119.05	0.92	Trapezoidal	
W11/W10	Cut-W11	35.6	35.6	37.60	Cut-W10	35.9	35.9	37.90	119.25	0.25	Trapezoidal	
W14/W13	Cut-W14	31.1	31.1	33.10	Cut-W13	32	32	34.00	217.23	0.41	Trapezoidal	
W16/W15	Cut-W16	29.9	29.9	31.90	Cut-W15	30.4	30.4	32.40	243.01	0.21	Trapezoidal	

Appendix I – Mahurangi flow change table

Mahurangi Pre/Post Development Flow Comparisons

Storm Event	Link2	Link	D/S Node	U/S Node	Time to Peak (hrs)		Peak Flow (m³/s)		Peak Flow %age Difference	Max Velocity (m/s)		Total Flow from U/S Node (m³)		Total Flow %age difference
					Pre-Dev (T _p)	Post-Dev (T _p)	Pre-Dev (Q)	Post-Dev (Q)		Pre-Dev (v)	Post-Dev (v)	Pre-Dev (Vol)	Post-Dev (Vol)	
EDV	00/01-1	00/01-1 (EDV)	SN00	SN01-1	15.808	15.817	10.546	11.11	▲ 5.35%	0.940	0.96	269322.49	351321.95	▲ 30.45%
2-Year	00/01-1	00/01-1 (2-Year)	SN00	SN01-1	14.844	14.844	153.864	154.742	▲ 0.57%	2.540	2.53	3235303.57	3304959.49	▲ 2.15%
10-Year	00/01-1	00/01-1 (10-Year)	SN00	SN01-1	14.669	14.669	315.913	316.305	▲ 0.12%	2.900	2.9	6700000.00	6750000.00	▲ 0.75%
100-Year	00/01-1	00/01-1 (100-Year)	SN00	SN01-1	14.347	14.35	576.776	575.763	▲ -0.18%	3.030	3.02	11500000.00	11550000.00	▲ 0.43%
EDV	01-1/01-2	01-1/01-2 (EDV)	SN01-1	SN01-2	12.772	12.794	1.264	1.226	▲ -3.01%	0.760	0.73	18070.31	19612.03	▲ 8.53%
2-Year	01-1/01-2	01-1/01-2 (2-Year)	SN01-1	SN01-2	12.678	12.681	19.844	19.618	▲ -1.14%	0.780	0.72	214378.48	221417.39	▲ 3.28%
10-Year	01-1/01-2	01-1/01-2 (10-Year)	SN01-1	SN01-2	12.672	12.672	39.603	39.188	▲ -1.05%	0.770	0.71	453923.70	462786.91	▲ 1.95%
100-Year	01-1/01-2	01-1/01-2 (100-Year)	SN01-1	SN01-2	12.656	12.656	66.824	66.287	▲ -0.80%	0.760	0.78	849759.58	854057.68	▲ 0.51%
EDV	01-1/01-3	01-1/01-3 (EDV)	SN01-1	SN01-3	15.794	15.811	10.200	10.748	▲ 5.37%	0.770	0.79	251172.63	331482.85	▲ 31.97%
2-Year	01-1/01-3	01-1/01-3 (2-Year)	SN01-1	SN01-3	14.806	14.811	148.819	149.156	▲ 0.23%	1.580	1.58	3020621.88	3083041.23	▲ 2.07%
10-Year	01-1/01-3	01-1/01-3 (10-Year)	SN01-1	SN01-3	14.617	14.619	305.323	305.478	▲ 0.05%	1.670	1.67	6200000.00	6300000.00	▲ 1.61%
100-Year	01-1/01-3	01-1/01-3 (100-Year)	SN01-1	SN01-3	14.275	14.281	554.904	554.475	▲ -0.08%	1.740	1.74	10650000.00	10700000.00	▲ 0.47%
EDV	01-2/38-1	01-2/38-1 (EDV)	SN01-2	SN38-1	13.117	13.189	0.706	0.682	▲ -3.40%	0.470	0.47	11823.09	13350.10	▲ 12.92%
2-Year	01-2/38-1	01-2/38-1 (2-Year)	SN01-2	SN38-1	12.689	12.686	12.162	11.929	▲ -1.92%	0.570	0.57	139636.93	146593.87	▲ 4.98%
10-Year	01-2/38-1	01-2/38-1 (10-Year)	SN01-2	SN38-1	12.647	12.647	25.910	25.395	▲ -1.99%	0.670	0.66	300710.76	309488.82	▲ 2.92%
100-Year	01-2/38-1	01-2/38-1 (100-Year)	SN01-2	SN38-1	12.628	12.636	45.887	45.231	▲ -1.43%	0.740	0.74	587975.59	592278.36	▲ 0.73%
EDV	01-3/02-1	01-3/02-1 (EDV)	SN01-3	SN02-1	15.694	15.719	10.136	10.675	▲ 5.32%	0.780	0.8	245302.24	325340.70	▲ 32.63%
2-Year	01-3/02-1	01-3/02-1 (2-Year)	SN01-3	SN02-1	14.725	14.728	147.960	148.308	▲ 0.24%	1.490	1.49	2958850.17	3020896.23	▲ 2.10%
10-Year	01-3/02-1	01-3/02-1 (10-Year)	SN01-3	SN02-1	14.531	14.533	303.926	304.091	▲ 0.05%	1.540	1.54	6100000.00	6150000.00	▲ 0.82%
100-Year	01-3/02-1	01-3/02-1 (100-Year)	SN01-3	SN02-1	14.208	14.214	551.755	551.322	▲ -0.08%	1.620	1.62	10450000.00	10500000.00	▲ 0.48%
EDV	02-1/02-2	02-1/02-2 (EDV)	SN02-1	SN02-2	15.672	15.717	8.753	9.09	▲ 3.85%	0.640	0.65	200653.70	253587.63	▲ 26.38%
2-Year	02-1/02-2	02-1/02-2 (2-Year)	SN02-1	SN02-2	14.667	14.672	128.733	128.487	▲ -0.19%	1.250	1.24	2434003.82	2482548.82	▲ 1.99%
10-Year	02-1/02-2	02-1/02-2 (10-Year)	SN02-1	SN02-2	14.436	14.436	268.173	267.16	▲ -0.38%	1.250	1.25	5050000.00	5100000.00	▲ 0.99%
100-Year	02-1/02-2	02-1/02-2 (100-Year)	SN02-1	SN02-2	14.164	14.169	491.880	489.196	▲ -0.55%	1.390	1.39	8700000.00	8750000.00	▲ 0.57%
EDV	02-1/31-1	02-1/31-1 (EDV)	SN02-1	SN31-1	13.264	14.547	2.043	2.132	▲ 4.36%	0.890	0.86	44482.70	71412.65	▲ 60.54%
2-Year	02-1/31-1	02-1/31-1 (2-Year)	SN02-1	SN31-1	13.128	13.322	26.317	25.376	▲ -3.58%	1.770	1.72	524069.18	536952.62	▲ 2.46%
10-Year	02-1/31-1	02-1/31-1 (10-Year)	SN02-1	SN31-1	13.086	13.239	52.587	50.038	▲ -4.85%	1.890	1.88	1059377.29	1066607.53	▲ 0.68%
100-Year	02-1/31-1	02-1/31-1 (100-Year)	SN02-1	SN31-1	13.003	13.178	85.393	80.946	▲ -5.21%	1.760	1.76	1743204.92	1749965.89	▲ 0.39%
EDV	02-2/03-1	02-2/03-1 (EDV)	SN02-2	SN03-1	15.597	15.65	8.679	9.016	▲ 3.88%	0.570	0.57	195396.98	248084.30	▲ 26.96%
2-Year	02-2/03-1	02-2/03-1 (2-Year)	SN02-2	SN03-1	14.428	14.436	131.432	131.198	▲ -0.18%	0.650	0.65	2371916.74	2420038.52	▲ 2.03%
10-Year	02-2/03-1	02-2/03-1 (10-Year)	SN02-2	SN03-1	14.211	14.225	274.311	273.199	▲ -0.41%	0.680	0.67	4911849.22	4962951.41	▲ 1.04%
100-Year	02-2/03-1	02-2/03-1 (100-Year)	SN02-2	SN03-1	14.050	14.047	492.753	490.093	▲ -0.54%	0.720	0.72	8500000.00	8550000.00	▲ 0.59%
EDV	03-1/03-2	03-1/03-2 (EDV)	SN03-1	SN03-2	15.408	15.447	8.840	9.185	▲ 3.90%	0.660	0.66	195373.94	247805.39	▲ 26.84%
2-Year	03-1/03-2	03-1/03-2 (2-Year)	SN03-1	SN03-2	14.281	14.294	134.739	134.659	▲ -0.06%	0.760	0.76	2370814.60	2418590.64	▲ 2.02%
10-Year	03-1/03-2	03-1/03-2 (10-Year)	SN03-1	SN03-2	14.028	14.058	283.976	283.303	▲ -0.24%	0.820	0.82	4909914.22	4960916.95	▲ 1.04%
100-Year	03-1/03-2	03-1/03-2 (100-Year)	SN03-1	SN03-2	13.906	13.903	503.025	500.306	▲ -0.54%	0.850	0.85	8500000.00	8550000.00	▲ 0.59%
EDV	03-2/04	03-2/04 (EDV)	SN03-2	SN04	15.339	15.367	8.863	9.196	▲ 3.76%	0.670	0.67	191947.44	243916.10	▲ 27.07%
2-Year	03-2/04	03-2/04 (2-Year)	SN03-2	SN04	14.233	14.231	135.546	135.359	▲ -0.14%	0.780	0.78	2330325.09	2376789.70	▲ 1.99%
10-Year	03-2/04	03-2/04 (10-Year)	SN03-2	SN04	13.989	13.994	287.445	286.229	▲ -0.42%	0.880	0.88	4827208.64		

100-Year	05/29	05/29 (100-Year)	SN05	SN29	12.289	12.356	4.171	5.678	▲ 36.13%	0.740	0.54	24047.75	39595.31	▲ 64.65%
EDV	06-1/06-2	06-1/06-2 (EDV)	SN06-1	SN06-2	14.722	14.714	8.570	8.748	▲ 2.08%	1.260	1.26	164128.02	214587.25	▲ 30.74%
2-Year	06-1/06-2	06-1/06-2 (2-Year)	SN06-1	SN06-2	13.972	13.972	127.608	127.393	▲ -0.17%	1.480	1.48	2009739.64	2050317.42	▲ 2.02%
10-Year	06-1/06-2	06-1/06-2 (10-Year)	SN06-1	SN06-2	13.797	13.8	271.719	270.297	▲ -0.52%	1.630	1.63	4172500.37	4214819.04	▲ 1.01%
100-Year	06-1/06-2	06-1/06-2 (100-Year)	SN06-1	SN06-2	13.669	13.672	473.556	469.783	▲ -0.80%	1.740	1.74	7200000.00	7250000.00	▲ 0.69%
EDV	06-1/28	06-1/28 (EDV)	SN06-1	SN28	12.244	12.25	0.054	0.054	▲ 0.00%	0.160	0.11	302.84	298.59	▲ -1.40%
2-Year	06-1/28	06-1/28 (2-Year)	SN06-1	SN28	12.239	12.244	0.690	0.674	▲ -2.32%	0.270	0.26	3560.38	3487.67	▲ -2.04%
10-Year	06-1/28	06-1/28 (10-Year)	SN06-1	SN28	12.233	12.242	1.409	1.373	▲ -2.56%	0.460	0.29	7287.90	7122.58	▲ -2.27%
100-Year	06-1/28	06-1/28 (100-Year)	SN06-1	SN28	12.231	12.239	2.381	2.315	▲ -2.77%	1.730	0.33	12484.48	12183.70	▲ -2.41%
EDV	06-2/06-3	06-2/06-3 (EDV)	SN06-2	SN06-3	14.692	14.678	8.560	8.737	▲ 2.07%	0.590	0.59	163625.07	213951.56	▲ 30.76%
2-Year	06-2/06-3	06-2/06-3 (2-Year)	SN06-2	SN06-3	13.931	13.933	127.715	127.507	▲ -0.16%	0.860	0.86	2002826.89	2043239.11	▲ 2.02%
10-Year	06-2/06-3	06-2/06-3 (10-Year)	SN06-2	SN06-3	13.753	13.758	272.277	270.842	▲ -0.53%	1.020	1.02	4158505.84	4201236.89	▲ 1.03%
100-Year	06-2/06-3	06-2/06-3 (100-Year)	SN06-2	SN06-3	13.631	13.636	474.950	471.131	▲ -0.80%	1.170	1.17	7200000.00	7250000.00	▲ 0.69%
EDV	06-2/27	06-2/27 (EDV)	SN06-2	SN27	12.256	12.253	0.101	0.1	▲ -0.99%	1.680	0.25	579.47	556.57	▲ -3.95%
2-Year	06-2/27	06-2/27 (2-Year)	SN06-2	SN27	12.242	12.244	1.290	1.249	▲ -3.18%	1.680	0.53	6817.21	6443.95	▲ -5.48%
10-Year	06-2/27	06-2/27 (10-Year)	SN06-2	SN27	12.236	12.242	2.636	2.531	▲ -3.98%	0.660	0.64	13952.60	13123.94	▲ -5.94%
100-Year	06-2/27	06-2/27 (100-Year)	SN06-2	SN27	12.231	12.236	4.465	4.261	▲ -4.57%	0.760	0.74	23901.38	22413.04	▲ -6.23%
EDV	06-3/07-1	06-3/07-1 (EDV)	SN06-3	SN07-1	14.425	14.483	8.560	8.739	▲ 2.09%	0.550	0.56	162033.87	212184.65	▲ 30.95%
2-Year	06-3/07-1	06-3/07-1 (2-Year)	SN06-3	SN07-1	13.831	13.831	128.187	127.989	▲ -0.15%	0.720	0.72	1984303.66	2024923.43	▲ 2.05%
10-Year	06-3/07-1	06-3/07-1 (10-Year)	SN06-3	SN07-1	13.672	13.672	273.119	271.703	▲ -0.52%	0.860	0.86	4120550.62	4164793.30	▲ 1.07%
100-Year	06-3/07-1	06-3/07-1 (100-Year)	SN06-3	SN07-1	13.561	13.564	476.060	472.282	▲ -0.79%	0.990	0.99	7150000.00	7150000.00	▲ 0.00%
EDV	07-1/07-2	07-1/07-2 (EDV)	SN07-1	SN07-2	14.206	14.317	8.570	8.735	▲ 1.93%	0.920	0.91	160856.89	209848.83	▲ 30.46%
2-Year	07-1/07-2	07-1/07-2 (2-Year)	SN07-1	SN07-2	13.744	13.75	128.795	128.441	▲ -0.27%	0.990	0.99	1971742.50	2006983.86	▲ 1.79%
10-Year	07-1/07-2	07-1/07-2 (10-Year)	SN07-1	SN07-2	13.603	13.603	274.007	272.368	▲ -0.60%	1.110	1.11	4095147.30	4130148.61	▲ 0.85%
100-Year	07-1/07-2	07-1/07-2 (100-Year)	SN07-1	SN07-2	13.503	13.506	477.190	473.062	▲ -0.87%	1.220	1.21	7100000.00	7100000.00	▲ 0.00%
EDV	07-1/26	07-1/26 (EDV)	SN07-1	SN26	12.281	12.281	0.170	0.175	▲ 2.94%	0.670	0.2	1015.09	2067.56	▲ 103.68%
2-Year	07-1/26	07-1/26 (2-Year)	SN07-1	SN26	12.258	12.272	2.212	2.642	▲ 19.44%	0.610	0.5	11924.66	17100.61	▲ 43.41%
10-Year	07-1/26	07-1/26 (10-Year)	SN07-1	SN26	12.253	12.264	4.532	5.316	▲ 17.30%	0.610	0.61	24403.69	33541.11	▲ 37.44%
100-Year	07-1/26	07-1/26 (100-Year)	SN07-1	SN26	12.253	12.264	7.668	8.858	▲ 15.52%	0.630	0.69	41788.54	56151.28	▲ 34.37%
EDV	07-2/08-1	07-2/08-1 (EDV)	SN07-2	SN08-1	13.969	14.289	8.551	8.715	▲ 1.92%	0.790	0.79	159831.62	208775.81	▲ 30.62%
2-Year	07-2/08-1	07-2/08-1 (2-Year)	SN07-2	SN08-1	13.708	13.714	129.002	128.634	▲ -0.29%	0.940	0.94	1959875.75	1995002.58	▲ 1.79%
10-Year	07-2/08-1	07-2/08-1 (10-Year)	SN07-2	SN08-1	13.572	13.572	274.397	272.774	▲ -0.59%	1.080	1.08	4071108.02	4105872.46	▲ 0.85%
100-Year	07-2/08-1	07-2/08-1 (100-Year)	SN07-2	SN08-1	13.472	13.481	477.770	473.559	▲ -0.88%	1.210	1.2	7050000.00	7050000.00	▲ 0.00%
EDV	08-1/08-2	08-1/08-2 (EDV)	SN08-1	SN08-2	14.200	14.242	7.892	8.112	▲ 2.79%	0.750	0.75	142332.57	190932.93	▲ 34.15%
2-Year	08-1/08-2	08-1/08-2 (2-Year)	SN08-1	SN08-2	13.678	13.678	119.550	119.75	▲ 0.17%	0.880	0.88	1756113.31	1791642.87	▲ 2.02%
10-Year	08-1/08-2	08-1/08-2 (10-Year)	SN08-1	SN08-2	13.547	13.55	253.311	252.827	▲ -0.19%	1.010	1.01	3655257.89	3691446.05	▲ 0.99%
100-Year	08-1/08-2	08-1/08-2 (100-Year)	SN08-1	SN08-2	13.464	13.467	439.892	437.841	▲ -0.47%	1.130	1.13	6350000.00	6350000.00	▲ 0.00%
EDV	08-1/23-1	08-1/23-1 (EDV)	SN08-1	SN23-1	13.036	12.983	1.364	1.435	▲ 5.21%	0.570	0.58	17453.00	17682.72	▲ 1.32%
2-Year	08-1/23-1	08-1/23-1 (2-Year)	SN08-1	SN23-1	12.972	12.922	17.177	17.334	▲ 0.91%	1.010	1.03	203572.70	202905.48	▲ -0.33%
10-Year	08-1/23-1	08-1/23-1 (10-Year)	SN08-1	SN23-1	12.914	12.864	34.406	34.839	▲ 1.26%	1.100	1.13	415638.29	413952.91	▲ -0.41%
100-Year	08-1/23-1	08-1/23-1 (100-Year)	SN08-1	SN23-1	12.892	12.861	57.929	58.498	▲ 0.98%	1.150	1.18	710813.35	707879.67	▲ -0.41%
EDV	08-2/09-1	08-2/09-1 (EDV)	SN08-2	SN09-1	14.089	14.014	7.939	8.4	▲ 5.81%	0.710	0.71	139842.06	188311.34	▲ 34.66%
2-Year	08-2/09-1	08-2/09-1 (2-Year)	SN08-2	SN09-1	13.567	13.567								

100-Year	09-3/19	09-3/19 (100-Year)	SN09-3	SN19	13.339	13.356	112.705	112.195	-0.45%	1.270	1.27	1676446.59	1686449.96	0.60%
EDV	10-1/10-2	10-1/10-2 (EDV)	SN10-1	SN10-2	13.042	13.05	1.110	1.116	0.54%	0.260	0.23	14517.73	14519.20	0.01%
2-Year	10-1/10-2	10-1/10-2 (2-Year)	SN10-1	SN10-2	12.972	12.967	15.741	15.724	-0.11%	0.370	0.37	183519.19	183540.82	0.01%
10-Year	10-1/10-2	10-1/10-2 (10-Year)	SN10-1	SN10-2	12.958	12.942	33.595	33.607	0.04%	0.390	0.37	384912.51	384962.28	0.01%
100-Year	10-1/10-2	10-1/10-2 (100-Year)	SN10-1	SN10-2	12.956	12.939	58.515	58.527	0.02%	0.400	0.39	670154.44	670221.15	0.01%
EDV	10-1/10-3	10-1/10-3 (EDV)	SN10-1	SN10-3	13.367	13.389	3.845	4.002	4.08%	0.580	0.58	53907.27	100844.53	87.07%
2-Year	10-1/10-3	10-1/10-3 (2-Year)	SN10-1	SN10-3	13.094	13.094	54.564	54.802	0.44%	0.980	0.98	669878.25	699715.54	4.45%
10-Year	10-1/10-3	10-1/10-3 (10-Year)	SN10-1	SN10-3	13.031	13.019	114.831	114.773	-0.05%	1.140	1.14	1398121.51	1427272.98	2.09%
100-Year	10-1/10-3	10-1/10-3 (100-Year)	SN10-1	SN10-3	12.986	12.972	199.200	198.002	-0.60%	1.280	1.28	2425227.72	2447666.68	0.93%
EDV	10-3/11-1	10-3/11-1 (EDV)	SN10-3	SN11-1	13.258	13.261	3.805	3.944	3.65%	0.580	0.58	51473.57	98108.74	90.60%
2-Year	10-3/11-1	10-3/11-1 (2-Year)	SN10-3	SN11-1	13.000	12.989	54.242	54.317	0.14%	0.980	0.98	639833.96	667544.51	4.33%
10-Year	10-3/11-1	10-3/11-1 (10-Year)	SN10-3	SN11-1	12.942	12.931	113.009	112.705	-0.27%	1.150	1.15	1335128.66	1361253.76	1.96%
100-Year	10-3/11-1	10-3/11-1 (100-Year)	SN10-3	SN11-1	12.914	12.911	195.216	193.769	-0.74%	1.290	1.29	2315695.03	2333994.15	0.79%
EDV	11-1/11-2	11-1/11-2 (EDV)	SN11-1	SN11-2	13.300	13.297	1.438	1.425	-0.90%	0.980	0.97	20159.81	19911.17	-1.23%
2-Year	11-1/11-2	11-1/11-2 (2-Year)	SN11-1	SN11-2	13.181	13.181	19.605	19.377	-1.16%	1.440	1.44	245831.11	242526.81	-1.34%
10-Year	11-1/11-2	11-1/11-2 (10-Year)	SN11-1	SN11-2	13.156	13.156	40.839	40.505	-0.82%	1.670	1.66	509259.52	502256.62	-1.38%
100-Year	11-1/11-2	11-1/11-2 (100-Year)	SN11-1	SN11-2	13.114	13.125	70.199	69.632	-0.81%	1.880	1.87	878879.37	866751.01	-1.38%
EDV	11-1/11-4	11-1/11-4 (EDV)	SN11-1	SN11-4	13.069	13.075	2.446	2.599	6.26%	0.820	0.82	31241.96	78104.01	150.00%
2-Year	11-1/11-4	11-1/11-4 (2-Year)	SN11-1	SN11-4	12.853	12.831	37.582	38.196	1.63%	1.550	1.55	393494.89	424348.28	7.84%
10-Year	11-1/11-4	11-1/11-4 (10-Year)	SN11-1	SN11-4	12.753	12.717	79.919	81.128	1.51%	1.880	1.89	824892.65	857741.29	3.98%
100-Year	11-1/11-4	11-1/11-4 (100-Year)	SN11-1	SN11-4	12.747	12.736	139.234	139.578	0.25%	2.150	2.15	1435457.26	1465360.61	2.08%
EDV	11-2/11-3	11-2/11-3 (EDV)	SN11-2	SN11-3	12.472	12.464	0.098	0.065	-33.67%	0.430	0.35	788.80	508.26	-35.57%
2-Year	11-2/11-3	11-2/11-3 (2-Year)	SN11-2	SN11-3	12.592	12.558	0.947	0.622	-34.32%	0.580	0.47	9344.34	5839.97	-37.50%
10-Year	11-2/11-3	11-2/11-3 (10-Year)	SN11-2	SN11-3	12.519	12.522	2.188	1.273	-41.82%	0.680	0.51	19100.17	11823.16	-38.10%
100-Year	11-2/11-3	11-2/11-3 (100-Year)	SN11-2	SN11-3	12.469	12.514	4.001	2.207	-44.84%	0.780	0.56	32559.67	19994.00	-38.59%
EDV	11-3/18	11-3/18 (EDV)	SN11-3	SN18	12.372	12.356	0.108	0.071	-34.26%	0.520	0.44	773.45	495.87	-35.89%
2-Year	11-3/18	11-3/18 (2-Year)	SN11-3	SN18	12.383	12.378	1.195	0.769	-35.65%	1.120	0.95	9133.60	5678.19	-37.83%
10-Year	11-3/18	11-3/18 (10-Year)	SN11-3	SN18	12.367	12.383	2.578	1.573	-38.98%	1.130	1.05	18711.90	11514.73	-38.46%
100-Year	11-3/18	11-3/18 (100-Year)	SN11-3	SN18	12.361	12.353	4.591	2.699	-41.21%	1.250	1.14	32004.78	19563.71	-38.87%
EDV	11-4/12	11-4/12 (EDV)	SN11-4	SN12	13.011	13.011	1.797	1.97	9.63%	0.790	0.81	23151.67	69981.04	202.27%
2-Year	11-4/12	11-4/12 (2-Year)	SN11-4	SN12	12.764	12.728	27.354	28.288	3.41%	1.390	1.4	291631.34	323882.43	11.06%
10-Year	11-4/12	11-4/12 (10-Year)	SN11-4	SN12	12.703	12.683	59.359	60.617	2.12%	1.680	1.69	611500.36	647320.75	5.86%
100-Year	11-4/12	11-4/12 (100-Year)	SN11-4	SN12	12.661	12.65	104.803	105.96	1.10%	1.950	1.96	1064129.66	1099309.70	3.31%
EDV	12/12A	12/12A (EDV)	SN12	SN12A	#N/A	12.992	#N/A	2.158	#N/A	#N/A	1.04	#N/A	54849.46	#N/A
2-Year	12/12A	12/12A (2-Year)	SN12	SN12A	#N/A	12.667	#N/A	28.99	#N/A	#N/A	1.65	#N/A	311545.69	#N/A
10-Year	12/12A	12/12A (10-Year)	SN12	SN12A	#N/A	12.639	#N/A	60.625	#N/A	#N/A	1.91	#N/A	630489.13	#N/A
100-Year	12/12A	12/12A (100-Year)	SN12	SN12A	#N/A	12.536	#N/A	106.952	#N/A	#N/A	2.18	#N/A	1075782.37	#N/A
EDV	12A/13-2B	12A/13-2B (EDV)	SN12A	SN13-2B	#N/A	12.264	#N/A	0.073	#N/A	#N/A	0.4	#N/A	417.20	#N/A
2-Year	12A/13-2B	12A/13-2B (2-Year)	SN12A	SN13-2B	#N/A	12.258	#N/A	0.901	#N/A	#N/A	0.38	#N/A	4931.99	#N/A
10-Year	12A/13-2B	12A/13-2B (10-Year)	SN12A	SN13-2B	#N/A	12.256	#N/A	1.885	#N/A	#N/A	0.28	#N/A	10062.62	#N/A
100-Year	12A/13-2B	12A/13-2B (100-Year)	SN12A	SN13-2B	#N/A	12.244	#N/A	3.243	#N/A	#N/A	0.29	#N/A	17224.35	#N/A
EDV	12B/13-1	12B/13-1 (EDV)	SN12B	SN13-1	#N/A	12.844	#N/A	1.902	#N/A	#N/A	0.68	#N/A	23032.28	#N/A
2-Year	12B/13-1	12B/13-1 (2-Year)	SN12B	SN13-1	#N/A	12.672	#N/A	27.324	#N/A	#N/A	1.27	#N/A	278434.80	#N/A
10-Year	12B/13-1	12B/13-1 (10-Year)	SN12B	SN13-1	#N/A	12.633	#N/A	58.352	#N/A	#N/A	1.58	#N/A	578912.53	#N/A
100-Year	12B/13-1	12B/13-1 (100-Year)	SN12B	SN13-1	#N/A	12.606	#N/A	101.907	#N/A	#N/A	1.87	#N/A	1002622.98	#N/A
EDV	13-1/13-2	13-1/1												

100-Year	14-1/14-2	14-1/14-2 (100-Year)	SN14-1	SN14-2	12.475	12.475	22.263	22.281	0.08%	1.290	1.3	173279.78	173377.61	0.06%
EDV	14-1/15-1	14-1/15-1 (EDV)	SN14-1	SN15-1	12.800	12.811	1.369	1.496	9.28%	0.530	0.53	15918.84	17341.16	8.93%
2-Year	14-1/15-1	14-1/15-1 (2-Year)	SN14-1	SN15-1	12.681	12.678	20.003	20.661	3.29%	0.930	0.94	200905.44	207257.92	3.16%
10-Year	14-1/15-1	14-1/15-1 (10-Year)	SN14-1	SN15-1	12.650	12.647	42.760	43.745	2.30%	1.140	1.15	421291.44	430080.76	2.09%
100-Year	14-1/15-1	14-1/15-1 (100-Year)	SN14-1	SN15-1	12.625	12.633	74.778	75.992	1.62%	1.340	1.35	733402.50	744088.05	1.46%
EDV	15-1/15-2	15-1/15-2 (EDV)	SN15-1	SN15-2	12.356	12.406	0.292	0.344	17.81%	0.920	0.72	2117.11	3317.89	56.72%
2-Year	15-1/15-2	15-1/15-2 (2-Year)	SN15-1	SN15-2	12.353	12.372	4.015	4.59	14.32%	0.990	0.64	26762.51	33959.37	26.89%
10-Year	15-1/15-2	15-1/15-2 (10-Year)	SN15-1	SN15-2	12.350	12.358	8.494	9.224	8.59%	0.990	0.57	56137.43	67885.52	20.93%
100-Year	15-1/15-2	15-1/15-2 (100-Year)	SN15-1	SN15-2	12.350	12.356	14.720	15.387	4.53%	0.900	0.55	97731.24	114790.70	17.46%
EDV	15-1/15-3	15-1/15-3 (EDV)	SN15-1	SN15-3	12.753	12.761	1.245	1.276	2.49%	0.680	0.67	13789.60	14005.57	1.57%
2-Year	15-1/15-3	15-1/15-3 (2-Year)	SN15-1	SN15-3	12.664	12.672	17.962	17.89	-0.40%	1.140	1.14	174130.04	173256.87	-0.50%
10-Year	15-1/15-3	15-1/15-3 (10-Year)	SN15-1	SN15-3	12.647	12.65	38.227	37.953	-0.72%	1.360	1.35	365124.97	362129.52	-0.82%
100-Year	15-1/15-3	15-1/15-3 (100-Year)	SN15-1	SN15-3	12.631	12.639	66.617	65.997	-0.93%	1.560	1.55	635659.82	629218.43	-1.01%
EDV	15-2/15-2A	15-2/15-2A (EDV)	SN15-2	SN15-2A	#N/A	12.428	#N/A	0.321	#N/A	#N/A	1.44	#N/A	3064.69	#N/A
2-Year	15-2/15-2A	15-2/15-2A (2-Year)	SN15-2	SN15-2A	#N/A	12.383	#N/A	4.365	#N/A	#N/A	2.05	#N/A	31144.02	#N/A
10-Year	15-2/15-2A	15-2/15-2A (10-Year)	SN15-2	SN15-2A	#N/A	12.372	#N/A	8.771	#N/A	#N/A	2.1	#N/A	62238.42	#N/A
100-Year	15-2/15-2A	15-2/15-2A (100-Year)	SN15-2	SN15-2A	#N/A	12.372	#N/A	14.633	#N/A	#N/A	2.19	#N/A	105238.24	#N/A
EDV	15-3/16-1	15-3/16-1 (EDV)	SN15-3	SN16-1	12.722	12.719	0.887	0.923	4.06%	0.630	0.64	9873.85	10084.45	2.13%
2-Year	15-3/16-1	15-3/16-1 (2-Year)	SN15-3	SN16-1	12.664	12.661	12.508	12.481	-0.22%	1.020	1.02	124785.70	123917.35	-0.70%
10-Year	15-3/16-1	15-3/16-1 (10-Year)	SN15-3	SN16-1	12.644	12.642	26.528	26.346	-0.69%	1.210	1.21	261689.48	258662.93	-1.16%
100-Year	15-3/16-1	15-3/16-1 (100-Year)	SN15-3	SN16-1	12.628	12.633	46.063	45.668	-0.86%	1.370	1.37	455580.43	449139.13	-1.41%
EDV	16-1/16-2	16-1/16-2 (EDV)	SN16-1	SN16-2	12.275	12.269	0.119	0.146	22.69%	1.260	0.79	707.96	1084.87	53.24%
2-Year	16-1/16-2	16-1/16-2 (2-Year)	SN16-1	SN16-2	12.272	12.283	1.625	1.598	-1.66%	1.170	1.14	8949.06	10284.07	14.92%
10-Year	16-1/16-2	16-1/16-2 (10-Year)	SN16-1	SN16-2	12.272	12.269	3.421	3.532	3.24%	1.290	1.34	18769.92	20385.77	8.61%
100-Year	16-1/16-2	16-1/16-2 (100-Year)	SN16-1	SN16-2	12.269	12.258	5.899	6.035	2.31%	4.750	1.46	32675.84	34361.15	5.16%
EDV	16-1/17-1	16-1/17-1 (EDV)	SN16-1	SN17-1	12.672	12.669	0.863	0.852	-1.27%	0.820	0.82	9158.52	8989.61	-1.84%
2-Year	16-1/17-1	16-1/17-1 (2-Year)	SN16-1	SN17-1	12.628	12.625	12.043	11.923	-1.00%	1.260	1.26	115795.10	113595.62	-1.90%
10-Year	16-1/17-1	16-1/17-1 (10-Year)	SN16-1	SN17-1	12.614	12.614	25.483	25.24	-0.95%	1.460	1.46	242861.57	238206.58	-1.92%
100-Year	16-1/17-1	16-1/17-1 (100-Year)	SN16-1	SN17-1	12.608	12.611	44.166	43.764	-0.91%	1.640	1.63	422821.78	414666.01	-1.93%
EDV	16-2/16-2A	16-2/16-2A (EDV)	SN16-2	SN16-2A	#N/A	12.292	#N/A	0.096	#N/A	#N/A	0.83	#N/A	787.87	#N/A
2-Year	16-2/16-2A	16-2/16-2A (2-Year)	SN16-2	SN16-2A	#N/A	12.317	#N/A	1.012	#N/A	#N/A	1.99	#N/A	6586.21	#N/A
10-Year	16-2/16-2A	16-2/16-2A (10-Year)	SN16-2	SN16-2A	#N/A	12.289	#N/A	2.17	#N/A	#N/A	2.2	#N/A	12679.05	#N/A
100-Year	16-2/16-2A	16-2/16-2A (100-Year)	SN16-2	SN16-2A	#N/A	12.278	#N/A	3.639	#N/A	#N/A	2.34	#N/A	21000.14	#N/A
EDV	17-1/17-2	17-1/17-2 (EDV)	SN17-1	SN17-2	12.275	12.283	0.183	0.147	-19.67%	1.510	0.91	1109.91	934.92	-15.77%
2-Year	17-1/17-2	17-1/17-2 (2-Year)	SN17-1	SN17-2	12.275	12.275	2.535	2.018	-20.39%	1.720	2.69	14021.70	11753.51	-16.18%
10-Year	17-1/17-2	17-1/17-2 (10-Year)	SN17-1	SN17-2	12.272	12.275	5.349	4.245	-20.64%	1.910	2.69	29408.08	24609.95	-16.32%
100-Year	17-1/17-2	17-1/17-2 (100-Year)	SN17-1	SN17-2	12.272	12.275	9.239	7.311	-20.87%	2.100	2.69	51199.13	42799.97	-16.40%
EDV	17-2/17-2A	17-2/17-2A (EDV)	SN17-2	SN17-2A	#N/A	12.25	#N/A	0.042	#N/A	#N/A	0.54	#N/A	234.41	#N/A
2-Year	17-2/17-2A	17-2/17-2A (2-Year)	SN17-2	SN17-2A	#N/A	12.25	#N/A	0.562	#N/A	#N/A	1.46	#N/A	2949.14	#N/A
10-Year	17-2/17-2A	17-2/17-2A (10-Year)	SN17-2	SN17-2A	#N/A	12.25	#N/A	1.172	#N/A	#N/A	1.7	#N/A	6174.76	#N/A
100-Year	17-2/17-2A	17-2/17-2A (100-Year)	SN17-2	SN17-2A	#N/A	12.253	#N/A	1.99	#N/A	#N/A	1.82	#N/A	10737.08	#N/A
EDV	18/18A	18/18A (EDV)	SN18	SN18A	#N/A	12.253	#N/A	0.056	#N/A	#N/A	0.37	#N/A	308.76	#N/A
2-Year	18/18A	18/18A (2-Year)	SN18	SN18A	#N/A	12.25	#N/A	0.688	#N/A	#N/A	0.84	#N/A	3541.47	#N/A
10-Year	18/18A	18/18A (10-Year)	SN18	SN18A	#N/A	12.242	#N/A	1.401	#N/A	#N/A	0.92	#N/A	7190.40	#N/A
100-Year	18/18A	18/18A (100-Year)	SN18	SN18A	#N/A	12.242	#N/A	2.334	#N/A	#N/A	1	#N/A	12250.90	#N/A
EDV	19/19A	19/19A (EDV)	SN19	SN19A	#N/A	12.292	#N/A	0.054	#N/A	#N/A				

100-Year	20-2/21-1	20-2/21-1 (100-Year)	SN20-2	SN21-1	#N/A	13.242	#N/A	110.157	#N/A	#N/A	1.35	#N/A	1576336.76	#N/A
EDV	21-1/21-2	21-1/21-2 (EDV)	SN21-1	SN21-2	12.375	12.322	0.176	0.412	▲ 134.09%	0.390	0.49	1272.82	3112.62	▲ 144.55%
2-Year	21-1/21-2	21-1/21-2 (2-Year)	SN21-1	SN21-2	12.356	12.269	2.436	3.366	▲ 38.18%	0.590	0.66	16082.56	28424.01	▲ 76.74%
10-Year	21-1/21-2	21-1/21-2 (10-Year)	SN21-1	SN21-2	12.353	12.289	5.075	8.241	▲ 62.38%	0.560	0.69	33725.99	55318.34	▲ 64.02%
100-Year	21-1/21-2	21-1/21-2 (100-Year)	SN21-1	SN21-2	12.342	12.272	8.713	14.027	▲ 60.99%	0.510	0.67	58707.45	92030.30	▲ 56.76%
EDV	21-1/22-1	21-1/22-1 (EDV)	SN21-1	SN22-1	13.358	13.364	2.190	2.169	▬ -0.96%	0.640	0.61	33270.51	32880.36	▬ -1.17%
2-Year	21-1/22-1	21-1/22-1 (2-Year)	SN21-1	SN22-1	13.275	13.278	29.828	29.583	▬ -0.82%	1.090	1.04	414201.36	409303.28	▬ -1.18%
10-Year	21-1/22-1	21-1/22-1 (10-Year)	SN21-1	SN22-1	13.250	13.258	62.678	62.168	▬ -0.81%	1.280	1.22	864049.04	853765.43	▬ -1.19%
100-Year	21-1/22-1	21-1/22-1 (100-Year)	SN21-1	SN22-1	13.222	13.242	108.197	107.314	▬ -0.82%	1.430	1.37	1498824.17	1480906.05	▬ -1.20%
EDV	21-2/21-2A	21-2/21-2A (EDV)	SN21-2	SN21-2A	#N/A	12.292	#N/A	0.15	#N/A	#N/A	0.52	#N/A	902.32	#N/A
2-Year	21-2/21-2A	21-2/21-2A (2-Year)	SN21-2	SN21-2A	#N/A	12.278	#N/A	1.846	#N/A	#N/A	1.19	#N/A	10252.32	#N/A
10-Year	21-2/21-2A	21-2/21-2A (10-Year)	SN21-2	SN21-2A	#N/A	12.275	#N/A	3.712	#N/A	#N/A	1.26	#N/A	20764.38	#N/A
100-Year	21-2/21-2A	21-2/21-2A (100-Year)	SN21-2	SN21-2A	#N/A	12.267	#N/A	6.292	#N/A	#N/A	1.33	#N/A	35310.52	#N/A
EDV	22-1/22-2	22-1/22-2 (EDV)	SN22-1	SN22-2	13.378	13.378	2.034	2.034	▬ 0.00%	0.560	0.56	30114.86	30113.55	▬ 0.00%
2-Year	22-1/22-2	22-1/22-2 (2-Year)	SN22-1	SN22-2	13.275	13.275	27.843	27.843	▬ 0.00%	0.990	0.97	374317.30	374316.39	▬ 0.00%
10-Year	22-1/22-2	22-1/22-2 (10-Year)	SN22-1	SN22-2	13.258	13.261	58.566	58.566	▬ 0.00%	1.160	1.14	780410.45	780402.20	▬ 0.00%
100-Year	22-1/22-2	22-1/22-2 (100-Year)	SN22-1	SN22-2	13.256	13.256	101.159	101.158	▬ 0.00%	1.310	1.28	1353206.43	1353188.54	▬ 0.00%
EDV	23-1/23-2	23-1/23-2 (EDV)	SN23-1	SN23-2	12.269	12.264	0.112	0.107	▬ -4.46%	0.430	0.42	694.24	613.63	▼ -11.61%
2-Year	23-1/23-2	23-1/23-2 (2-Year)	SN23-1	SN23-2	12.264	12.258	1.527	1.453	▬ -4.85%	0.830	0.81	8639.09	7707.68	▼ -10.78%
10-Year	23-1/23-2	23-1/23-2 (10-Year)	SN23-1	SN23-2	12.256	12.256	3.214	3.06	▬ -4.79%	0.940	0.9	18026.74	16126.56	▼ -10.54%
100-Year	23-1/23-2	23-1/23-2 (100-Year)	SN23-1	SN23-2	12.253	12.25	5.535	5.281	▬ -4.59%	1.030	0.98	31282.27	28045.63	▼ -10.35%
EDV	23-1/23-3	23-1/23-3 (EDV)	SN23-1	SN23-3	13.014	12.961	1.331	1.407	▲ 5.71%	0.580	0.58	16744.62	17056.64	▬ 1.86%
2-Year	23-1/23-3	23-1/23-3 (2-Year)	SN23-1	SN23-3	12.942	12.897	17.043	17.26	▬ 1.27%	1.060	1.06	194814.51	195044.79	▬ 0.12%
10-Year	23-1/23-3	23-1/23-3 (10-Year)	SN23-1	SN23-3	12.908	12.85	34.670	35.11	▬ 1.27%	1.220	1.23	397395.99	397547.90	▬ 0.04%
100-Year	23-1/23-3	23-1/23-3 (100-Year)	SN23-1	SN23-3	12.894	12.844	58.755	59.345	▬ 1.00%	1.340	1.35	679251.30	679478.14	▬ 0.03%
EDV	23-2/25	23-2/25 (EDV)	SN23-2	SN25	12.258	12.264	0.093	0.084	▼ -9.68%	0.390	0.33	533.23	474.70	▼ -10.98%
2-Year	23-2/25	23-2/25 (2-Year)	SN23-2	SN25	12.256	12.258	1.272	1.13	▼ -11.16%	0.840	0.78	6743.01	5951.85	▼ -11.73%
10-Year	23-2/25	23-2/25 (10-Year)	SN23-2	SN25	12.247	12.253	2.693	2.379	▼ -11.66%	0.950	0.93	14144.70	12444.22	▼ -12.02%
100-Year	23-2/25	23-2/25 (100-Year)	SN23-2	SN25	12.244	12.247	4.654	4.103	▼ -11.84%	1.100	1.08	24628.67	21631.82	▼ -12.17%
EDV	23-3/23-3A	23-3/23-3A (EDV)	SN23-3	SN23-3A	#N/A	12.269	#N/A	0.015	#N/A	#N/A	0.1	#N/A	84.76	#N/A
2-Year	23-3/23-3A	23-3/23-3A (2-Year)	SN23-3	SN23-3A	#N/A	12.261	#N/A	0.186	#N/A	#N/A	0.17	#N/A	995.76	#N/A
10-Year	23-3/23-3A	23-3/23-3A (10-Year)	SN23-3	SN23-3A	#N/A	12.258	#N/A	0.378	#N/A	#N/A	0.18	#N/A	2037.55	#N/A
100-Year	23-3/23-3A	23-3/23-3A (100-Year)	SN23-3	SN23-3A	#N/A	12.256	#N/A	0.639	#N/A	#N/A	0.2	#N/A	3490.39	#N/A
EDV	23-3/24	23-3/24 (EDV)	SN23-3	SN24	12.978	12.922	1.222	1.322	▲ 8.18%	0.550	0.56	14615.43	15471.39	▲ 5.86%
2-Year	23-3/24	23-3/24 (2-Year)	SN23-3	SN24	12.900	12.856	15.881	16.211	▬ 2.08%	0.970	0.97	172136.93	176386.09	▬ 2.47%
10-Year	23-3/24	23-3/24 (10-Year)	SN23-3	SN24	12.886	12.842	32.670	33.146	▬ 1.46%	1.110	1.12	352388.00	359372.61	▬ 1.98%
100-Year	23-3/24	23-3/24 (100-Year)	SN23-3	SN24	12.878	12.828	55.582	56.243	▬ 1.19%	1.250	1.25	603684.86	614110.52	▬ 1.73%
EDV	25/25A	25/25A (EDV)	SN25	SN25A	#N/A	12.247	#N/A	0.075	#N/A	#N/A	0.34	#N/A	418.14	#N/A
2-Year	25/25A	25/25A (2-Year)	SN25	SN25A	#N/A	12.242	#N/A	1.019	#N/A	#N/A	0.82	#N/A	5281.97	#N/A
10-Year	25/25A	25/25A (10-Year)	SN25	SN25A	#N/A	12.239	#N/A	2.141	#N/A	#N/A	0.99	#N/A	11071.90	#N/A
100-Year	25/25A	25/25A (100-Year)	SN25	SN25A	#N/A	12.231	#N/A	3.693	#N/A	#N/A	1.14	#N/A	19275.16	#N/A
EDV	26/26A	26/26A (EDV)	SN26	SN26A	#N/A	12.25	#N/A	0.154	#N/A	#N/A	0.39	#N/A	1907.63	#N/A
2-Year	26/26A	26/26A (2-Year)	SN26	SN26A	#N/A	12.253	#N/A	2.322	#N/A	#N/A	0.86	#N/A	15223.72	#N/A
10-Year	26/26A	26/26A (10-Year)	SN26	SN26A	#N/A	12.25	#N/A	4.648	#N/A	#N/A	1.03	#N/A	29711.42	#N/A
100-Year	26/26A	26/26A (100-Year)	SN26	SN26A	#N/A	12.253	#N/A	7.734	#N/A	#N/A	1.17	#N/A	49615.51	#N/A
EDV	27/27A	27/27A (EDV)	SN27	SN27A	#N/A	12.247	#N/A	0.095	#N/A	#N/A	0.39			

100-Year	29B/29C	29B/29C (100-Year)	SN29B	SN29C	#N/A	12.239	#N/A	2.152	#N/A	#N/A	0.56	#N/A	11342.71	#N/A
EDV	30/30A	30/30A (EDV)	SN30	SN30A	#N/A	12.292	#N/A	0.115	#N/A	#N/A	0.28	#N/A	683.81	#N/A
2-Year	30/30A	30/30A (2-Year)	SN30	SN30A	#N/A	12.306	#N/A	1.398	#N/A	#N/A	0.57	#N/A	7816.10	#N/A
10-Year	30/30A	30/30A (10-Year)	SN30	SN30A	#N/A	12.353	#N/A	2.463	#N/A	#N/A	0.65	#N/A	15854.29	#N/A
100-Year	30/30A	30/30A (100-Year)	SN30	SN30A	#N/A	12.386	#N/A	3.407	#N/A	#N/A	0.7	#N/A	26989.97	#N/A
EDV	30/30E	30/30E (EDV)	SN30	SN30E	#N/A	12.258	#N/A	0.074	#N/A	#N/A	0.24	#N/A	415.02	#N/A
2-Year	30/30E	30/30E (2-Year)	SN30	SN30E	#N/A	12.247	#N/A	0.899	#N/A	#N/A	0.52	#N/A	4702.89	#N/A
10-Year	30/30E	30/30E (10-Year)	SN30	SN30E	#N/A	12.244	#N/A	1.81	#N/A	#N/A	0.62	#N/A	9510.62	#N/A
100-Year	30/30E	30/30E (100-Year)	SN30	SN30E	#N/A	12.239	#N/A	3.026	#N/A	#N/A	0.7	#N/A	16168.61	#N/A
EDV	30B/30C	30B/30C (EDV)	SN30B	SN30C	#N/A	12.269	#N/A	0.101	#N/A	#N/A	0.34	#N/A	584.66	#N/A
2-Year	30B/30C	30B/30C (2-Year)	SN30B	SN30C	#N/A	12.258	#N/A	1.258	#N/A	#N/A	0.55	#N/A	6755.54	#N/A
10-Year	30B/30C	30B/30C (10-Year)	SN30B	SN30C	#N/A	12.261	#N/A	2.541	#N/A	#N/A	0.6	#N/A	13746.77	#N/A
100-Year	30B/30C	30B/30C (100-Year)	SN30B	SN30C	#N/A	12.247	#N/A	3.635	#N/A	#N/A	0.59	#N/A	23447.87	#N/A
EDV	30F/30G	30F/30G (EDV)	SN30F	SN30G	#N/A	12.242	#N/A	0.066	#N/A	#N/A	1.84	#N/A	363.27	#N/A
2-Year	30F/30G	30F/30G (2-Year)	SN30F	SN30G	#N/A	12.231	#N/A	0.805	#N/A	#N/A	3.75	#N/A	4135.35	#N/A
10-Year	30F/30G	30F/30G (10-Year)	SN30F	SN30G	#N/A	12.228	#N/A	1.618	#N/A	#N/A	3.9	#N/A	8375.73	#N/A
100-Year	30F/30G	30F/30G (100-Year)	SN30F	SN30G	#N/A	12.225	#N/A	2.712	#N/A	#N/A	3.89	#N/A	14250.76	#N/A
EDV	31-1/31-2	31-1/31-2 (EDV)	SN31-1	SN31-2	13.208	13.422	1.104	1.164	▲ 5.43%	0.550	0.57	15216.03	41798.56	▲ 174.70%
2-Year	31-1/31-2	31-1/31-2 (2-Year)	SN31-1	SN31-2	13.100	13.144	14.248	13.924	▬ -2.27%	1.100	1.1	179105.60	194938.00	▲ 8.84%
10-Year	31-1/31-2	31-1/31-2 (10-Year)	SN31-1	SN31-2	13.092	13.161	29.247	28.449	▬ -2.73%	1.220	1.23	366647.16	378722.00	▬ 3.29%
100-Year	31-1/31-2	31-1/31-2 (100-Year)	SN31-1	SN31-2	13.086	13.144	49.743	48.351	▬ -2.80%	1.210	1.22	628130.35	635603.51	▬ 1.19%
EDV	31-1/33-1	31-1/33-1 (EDV)	SN31-1	SN33-1	14.544	14.481	1.237	1.287	▬ 4.04%	0.470	0.48	28891.51	29252.01	▬ 1.25%
2-Year	31-1/33-1	31-1/33-1 (2-Year)	SN31-1	SN33-1	14.389	14.397	14.026	14.275	▬ 1.78%	0.980	0.98	341068.23	338019.64	▬ -0.89%
10-Year	31-1/33-1	31-1/33-1 (10-Year)	SN31-1	SN33-1	12.611	12.569	27.673	26.966	▬ -2.55%	1.130	1.14	684034.01	679112.28	▬ -0.72%
100-Year	31-1/33-1	31-1/33-1 (100-Year)	SN31-1	SN33-1	12.581	12.561	45.082	43.834	▬ -2.77%	1.140	1.14	1099875.26	1099099.39	▬ -0.07%
EDV	31-2/32	31-2/32 (EDV)	SN31-2	SN32	13.181	13.411	1.050	1.152	▲ 9.71%	0.600	0.62	14192.40	40962.70	▲ 188.62%
2-Year	31-2/32	31-2/32 (2-Year)	SN31-2	SN32	13.092	13.136	13.575	13.671	▬ 0.71%	1.190	1.21	167089.34	186621.04	▲ 11.69%
10-Year	31-2/32	31-2/32 (10-Year)	SN31-2	SN32	13.083	13.153	27.922	27.796	▬ -0.45%	1.350	1.37	342056.01	361684.56	▲ 5.74%
100-Year	31-2/32	31-2/32 (100-Year)	SN31-2	SN32	13.078	13.128	47.494	47.227	▬ -0.56%	1.340	1.36	586002.74	606288.44	▬ 3.46%
EDV	32/32A	32/32A (EDV)	SN32	SN32A	#N/A	13.272	#N/A	1.239	#N/A	#N/A	0.85	#N/A	30214.05	#N/A
2-Year	32/32A	32/32A (2-Year)	SN32	SN32A	#N/A	13.131	#N/A	13.84	#N/A	#N/A	1.57	#N/A	177160.51	#N/A
10-Year	32/32A	32/32A (10-Year)	SN32	SN32A	#N/A	13.119	#N/A	27.562	#N/A	#N/A	1.77	#N/A	350323.69	#N/A
100-Year	32/32A	32/32A (100-Year)	SN32	SN32A	#N/A	13.114	#N/A	46.882	#N/A	#N/A	1.81	#N/A	591625.50	#N/A
EDV	33-1/33-2	33-1/33-2 (EDV)	SN33-1	SN33-2	12.561	12.572	0.390	0.397	▬ 1.79%	0.460	0.47	3571.30	3532.04	▬ -1.10%
2-Year	33-1/33-2	33-1/33-2 (2-Year)	SN33-1	SN33-2	12.544	12.5	5.043	5.003	▬ -0.79%	0.590	0.6	42038.17	41410.82	▬ -1.49%
10-Year	33-1/33-2	33-1/33-2 (10-Year)	SN33-1	SN33-2	12.525	12.483	10.356	10.271	▬ -0.82%	0.620	0.64	86058.75	84586.07	▬ -1.71%
100-Year	33-1/33-2	33-1/33-2 (100-Year)	SN33-1	SN33-2	12.525	12.483	17.578	17.276	▬ -1.72%	0.640	0.66	147427.59	144698.08	▬ -1.85%
EDV	33-1/33-3	33-1/33-3 (EDV)	SN33-1	SN33-3	14.497	14.406	1.115	1.163	▬ 4.30%	0.430	0.44	24059.81	24605.53	▬ 2.27%
2-Year	33-1/33-3	33-1/33-3 (2-Year)	SN33-1	SN33-3	14.478	14.431	12.686	13.023	▬ 2.66%	0.850	0.85	283314.48	282607.46	▬ -0.25%
10-Year	33-1/33-3	33-1/33-3 (10-Year)	SN33-1	SN33-3	14.706	14.664	22.117	22.52	▬ 1.82%	0.940	0.94	564949.81	565173.66	▬ 0.04%
100-Year	33-1/33-3	33-1/33-3 (100-Year)	SN33-1	SN33-3	14.539	14.522	31.562	32.544	▬ 3.11%	0.950	0.94	894800.55	903096.16	▬ 0.93%
EDV	33-2/33-2A	33-2/33-2A (EDV)	SN33-2	SN33-2A	#N/A	12.558	#N/A	0.383	#N/A	#N/A	0.27	#N/A	3306.64	#N/A
2-Year	33-2/33-2A	33-2/33-2A (2-Year)	SN33-2	SN33-2A	#N/A	12.497	#N/A	4.932	#N/A	#N/A	0.58	#N/A	38800.72	#N/A
10-Year	33-2/33-2A	33-2/33-2A (10-Year)	SN33-2	SN33-2A	#N/A	12.486	#N/A	10.096	#N/A	#N/A	0.65	#N/A	79305.89	#N/A
100-Year	33-2/33-2A	33-2/33-2A (100-Year)	SN33-2	SN33-2A	#N/A	12.472	#N/A	17.034	#N/A	#N/A	0.68	#N/A	135714.73	#N/A
EDV	33-3/33-4	33-3/33-4 (EDV)	SN33-3	SN33-4	14.367	14.283	1.066	1.102	▬ 3.38%	0.430	0.43	21911.81	22068.47	▬ 0.71%
2-Year	33-3/33-4	33-3/33-4 (2-Year)	SN33-3	SN33-4	14.469	14.403	12.099	12.382	▬ 2.34%	0.820	0.83	256743.65	253302.30	▬ -1.34%
10-Year	33-3/33-4	33-3/33-4 (10-Year)	SN											

100-Year	34/35	34/35 (100-Year)	SN34	SN35	14.089	14.022	-12.237	-11.504	⬇️ -5.99%	0.270	0.26	106136.62	35916.57	⬇️ -66.16%
EDV	34/36	34/36 (EDV)	SN34	SN36	12.258	12.261	0.062	0.015	⬇️ -75.81%	0.300	0.13	349.27	87.32	⬇️ -75.00%
2-Year	34/36	34/36 (2-Year)	SN34	SN36	12.242	12.25	0.793	0.189	⬇️ -76.17%	0.530	0.26	4109.56	992.67	⬇️ -75.84%
10-Year	34/36	34/36 (10-Year)	SN34	SN36	12.244	12.244	1.607	0.382	⬇️ -76.23%	0.530	0.26	8433.42	2015.16	⬇️ -76.11%
100-Year	34/36	34/36 (100-Year)	SN34	SN36	12.256	12.244	2.603	0.637	⬇️ -75.53%	0.430	0.2	14527.88	3454.98	⬇️ -76.22%
EDV	35/35A	35/35A (EDV)	SN35	SN35A	#N/A	12.606	#N/A	0.138	#N/A	#N/A	0.19	#N/A	1841.56	#N/A
2-Year	35/35A	35/35A (2-Year)	SN35	SN35A	#N/A	12.55	#N/A	1.539	#N/A	#N/A	0.26	#N/A	15308.25	#N/A
10-Year	35/35A	35/35A (10-Year)	SN35	SN35A	#N/A	12.519	#N/A	3.408	#N/A	#N/A	0.25	#N/A	17532.92	#N/A
100-Year	35/35A	35/35A (100-Year)	SN35	SN35A	#N/A	14.233	#N/A	-10.666	#N/A	#N/A	0.21	#N/A	36104.27	#N/A
EDV	35A/35B	35A/35B (EDV)	SN35B	SN35C	#N/A	12.294	#N/A	0.039	#N/A	#N/A	0.22	#N/A	243.02	#N/A
2-Year	35A/35B	35A/35B (2-Year)	SN35B	SN35C	#N/A	12.272	#N/A	0.495	#N/A	#N/A	0.53	#N/A	2746.14	#N/A
10-Year	35A/35B	35A/35B (10-Year)	SN35B	SN35C	#N/A	12.264	#N/A	1.007	#N/A	#N/A	0.62	#N/A	5552.82	#N/A
100-Year	35A/35B	35A/35B (100-Year)	SN35B	SN35C	#N/A	12.261	#N/A	1.69	#N/A	#N/A	0.64	#N/A	9470.29	#N/A
EDV	35B/44	35B/44 (EDV)	SN35B	SN44	#N/A	12.447	#N/A	-0.035	#N/A	#N/A	-0.04	#N/A	45.14	#N/A
2-Year	35B/44	35B/44 (2-Year)	SN35B	SN44	#N/A	12.35	#N/A	-0.567	#N/A	#N/A	-0.16	#N/A	4164.41	#N/A
10-Year	35B/44	35B/44 (10-Year)	SN35B	SN44	#N/A	14.569	#N/A	-2.053	#N/A	#N/A	-0.14	#N/A	21510.89	#N/A
100-Year	35B/44	35B/44 (100-Year)	SN35B	SN44	#N/A	14.453	#N/A	-11.052	#N/A	#N/A	-0.16	#N/A	102529.84	#N/A
EDV	38-1/38-2	38-1/38-2 (EDV)	SN38-1	SN38-2	12.597	12.608	0.890	0.813	⬇️ -8.65%	0.480	0.48	10336.67	11842.35	▲ 14.57%
2-Year	38-1/38-2	38-1/38-2 (2-Year)	SN38-1	SN38-2	12.486	12.481	12.375	12.151	⬇️ -1.81%	0.590	0.59	122623.17	129481.48	▲ 5.59%
10-Year	38-1/38-2	38-1/38-2 (10-Year)	SN38-1	SN38-2	12.472	12.467	25.699	25.194	⬇️ -1.97%	0.740	0.73	266725.73	275363.34	⬇️ 3.24%
100-Year	38-1/38-2	38-1/38-2 (100-Year)	SN38-1	SN38-2	12.472	12.481	45.023	44.164	⬇️ -1.91%	0.860	0.85	531365.69	535570.25	⬇️ 0.79%
EDV	38-2/39	38-2/39 (EDV)	SN38-2	SN39	12.656	12.656	0.570	0.493	⬇️ -13.51%	0.240	0.24	7293.00	8794.64	▲ 20.59%
2-Year	38-2/39	38-2/39 (2-Year)	SN38-2	SN39	12.492	12.483	7.749	7.516	⬇️ -3.01%	0.310	0.31	86789.00	93664.52	▲ 7.92%
10-Year	38-2/39	38-2/39 (10-Year)	SN38-2	SN39	12.481	12.478	16.229	15.697	⬇️ -3.28%	0.400	0.39	193414.57	202084.93	⬇️ 4.48%
100-Year	38-2/39	38-2/39 (100-Year)	SN38-2	SN39	12.483	12.497	29.025	28.228	⬇️ -2.75%	0.480	0.48	405809.76	410088.03	⬇️ 1.05%
EDV	39/40-1	39/40-1 (EDV)	SN39	SN40-1	12.644	12.525	0.438	0.381	⬇️ -13.01%	0.380	0.38	5615.75	7314.55	▲ 30.25%
2-Year	39/40-1	39/40-1 (2-Year)	SN39	SN40-1	12.528	12.486	5.561	5.542	⬇️ -0.34%	0.440	0.44	67074.37	76315.80	▲ 13.78%
10-Year	39/40-1	39/40-1 (10-Year)	SN39	SN40-1	12.500	12.481	11.765	11.731	⬇️ -0.29%	0.540	0.54	153170.05	166685.73	▲ 8.82%
100-Year	39/40-1	39/40-1 (100-Year)	SN39	SN40-1	12.486	12.528	21.661	22.155	⬇️ 2.28%	0.650	0.66	336871.66	349499.99	⬇️ 3.75%
EDV	40-1/40-2	40-1/40-2 (EDV)	SN40-1	SN40-2	12.319	12.306	0.141	0.163	▲ 15.60%	0.370	0.41	897.11	1340.40	▲ 49.41%
2-Year	40-1/40-2	40-1/40-2 (2-Year)	SN40-1	SN40-2	12.292	12.283	1.818	2.299	▲ 26.46%	0.820	0.92	10569.14	12751.46	▲ 20.65%
10-Year	40-1/40-2	40-1/40-2 (10-Year)	SN40-1	SN40-2	12.292	12.283	3.695	4.576	▲ 23.84%	0.880	0.97	21659.08	25548.38	▲ 17.96%
100-Year	40-1/40-2	40-1/40-2 (100-Year)	SN40-1	SN40-2	12.325	12.344	6.079	6.78	▲ 11.53%	0.850	0.88	37146.16	43391.73	▲ 16.81%
EDV	40-1/41-1	40-1/41-1 (EDV)	SN40-1	SN41-1	12.342	12.325	0.438	0.36	⬇️ -17.81%	0.490	0.46	4703.09	5958.69	▲ 26.70%
2-Year	40-1/41-1	40-1/41-1 (2-Year)	SN40-1	SN41-1	12.386	12.342	4.824	4.543	⬇️ -5.83%	0.820	0.82	56434.75	63496.48	▲ 12.51%
10-Year	40-1/41-1	40-1/41-1 (10-Year)	SN40-1	SN41-1	12.367	12.361	10.253	9.638	⬇️ -6.00%	0.810	0.82	131422.61	141030.91	▲ 7.31%
100-Year	40-1/41-1	40-1/41-1 (100-Year)	SN40-1	SN41-1	12.372	12.403	18.433	18.119	⬇️ -1.70%	0.810	0.81	299513.15	305946.85	⬇️ 2.15%
EDV	40-2/40-3	40-2/40-3 (EDV)	SN40-2	SN40-3	#N/A	12.297	#N/A	0.13	#N/A	#N/A	0.42	#N/A	1126.89	#N/A
2-Year	40-2/40-3	40-2/40-3 (2-Year)	SN40-2	SN40-3	#N/A	12.275	#N/A	1.877	#N/A	#N/A	0.9	#N/A	10300.10	#N/A
10-Year	40-2/40-3	40-2/40-3 (10-Year)	SN40-2	SN40-3	#N/A	12.269	#N/A	3.768	#N/A	#N/A	1.1	#N/A	20542.43	#N/A
100-Year	40-2/40-3	40-2/40-3 (100-Year)	SN40-2	SN40-3	#N/A	12.325	#N/A	5.551	#N/A	#N/A	1.13	#N/A	34796.39	#N/A
EDV	40-3/40-3A	40-3/40-3A (EDV)	SN40-3	SN40-3A	#N/A	12.292	#N/A	0.029	#N/A	#N/A	0.28	#N/A	175.18	#N/A
2-Year	40-3/40-3A	40-3/40-3A (2-Year)	SN40-3	SN40-3A	#N/A	12.278	#N/A	0.372	#N/A	#N/A	0.66	#N/A	2043.69	#N/A
10-Year	40-3/40-3A	40-3/40-3A (10-Year)	SN40-3	SN40-3A	#N/A	12.278	#N/A	0.758	#N/A	#N/A	0.83	#N/A	4172.08	#N/A
100-Year	40-3/40-3A	40-3/40-3A (100-Year)	SN40-3	SN40-3A	#N/A	12.278	#N/A	1.28	#N/A	#N/A	0.92	#N/A	7135.53	#N/A
EDV	40-3/40-3C	40-3/40-3C (EDV)	SN40-3	SN40-3C	#N/A	12.258	#N/A	0.104	#N/A	#N/A	0.41	#N/A	950.88	#N/A
2-Year	40-3/40-3C	40-3/40-3C (2-Year)	SN40-3	SN40-3C	#N/A	12.247	#N/A	1.535	#N/A	#				

100-Year	41-2/41-2A	41-2/41-2A (100-Year)	SN41-2	SN41-2A	#N/A	12.233	#N/A	6.619	#N/A	#N/A	1.51	#N/A	34576.14	#N/A
EDV	42-1/42-2	42-1/42-2 (EDV)	SN42-2	SN42-1	12.636	12.803	0.226	0.167	⬇️ -26.11%	0.260	0.23	2403.36	2386.52	⬇️ -0.70%
2-Year	42-1/42-2	42-1/42-2 (2-Year)	SN42-2	SN42-1	12.647	12.747	2.338	2.164	⬇️ -7.44%	0.450	0.45	29548.95	31570.87	⬆️ 6.84%
10-Year	42-1/42-2	42-1/42-2 (10-Year)	SN42-2	SN42-1	12.603	12.678	5.161	5.035	⬇️ -2.44%	0.460	0.45	76382.75	77425.30	⬇️ 1.36%
100-Year	42-1/42-2	42-1/42-2 (100-Year)	SN42-2	SN42-1	14.792	14.881	13.173	11.975	⬇️ -9.09%	0.460	0.45	204986.55	198389.34	⬇️ -3.22%
EDV	42-1/43	42-1/43 (EDV)	SN42-1	SN43	12.311	13.2	0.077	0.047	⬇️ -38.96%	0.090	0.07	703.56	703.93	⬇️ 0.05%
2-Year	42-1/43	42-1/43 (2-Year)	SN42-1	SN43	12.286	13.792	0.677	0.862	⬆️ 27.33%	0.180	0.2	9588.76	11805.80	⬆️ 23.12%
10-Year	42-1/43	42-1/43 (10-Year)	SN42-1	SN43	14.867	14.961	2.565	2.141	⬇️ -16.53%	0.210	0.21	35574.06	37006.45	⬇️ 4.03%
100-Year	42-1/43	42-1/43 (100-Year)	SN42-1	SN43	14.706	14.778	12.025	10.867	⬇️ -9.63%	0.210	0.21	135020.10	129046.08	⬇️ -4.42%
EDV	42-2/42-2A	42-2/42-2A (EDV)	SN42-2	SN42-2A	#N/A	12.25	#N/A	-0.056	#N/A	#N/A	-0.02	#N/A	480.80	#N/A
2-Year	42-2/42-2A	42-2/42-2A (2-Year)	SN42-2	SN42-2A	#N/A	12.247	#N/A	-0.55	#N/A	#N/A	-0.02	#N/A	5608.13	#N/A
10-Year	42-2/42-2A	42-2/42-2A (10-Year)	SN42-2	SN42-2A	#N/A	12.258	#N/A	-1.624	#N/A	#N/A	-0.03	#N/A	11467.02	#N/A
100-Year	42-2/42-2A	42-2/42-2A (100-Year)	SN42-2	SN42-2A	#N/A	12.244	#N/A	-3.011	#N/A	#N/A	-0.04	#N/A	19635.92	#N/A
EDV	43/43A	43/43A (EDV)	SN43	SN43A	#N/A	12.247	#N/A	-0.044	#N/A	#N/A	-0.01	#N/A	611.46	#N/A
2-Year	43/43A	43/43A (2-Year)	SN43	SN43A	#N/A	13.783	#N/A	-0.465	#N/A	#N/A	-0.01	#N/A	7143.15	#N/A
10-Year	43/43A	43/43A (10-Year)	SN43	SN43A	#N/A	12.278	#N/A	-1.532	#N/A	#N/A	-0.02	#N/A	14587.24	#N/A
100-Year	43/43A	43/43A (100-Year)	SN43	SN43A	#N/A	12.272	#N/A	-3.303	#N/A	#N/A	-0.04	#N/A	24981.79	#N/A
EDV	43/44	43/44 (EDV)	SN43	SN44	0.000	12.617	0.000	0.024	#DIV/0!	0.000	0.12	0.00	45.14	#DIV/0!
2-Year	43/44	43/44 (2-Year)	SN43	SN44	12.247	12.394	-0.386	0.425	⬇️ -210.10%	0.250	0.24	1315.46	4164.41	⬆️ 216.58%
10-Year	43/44	43/44 (10-Year)	SN43	SN44	14.731	14.725	2.313	1.982	⬇️ -14.31%	0.280	0.28	18720.09	21510.89	⬆️ 14.91%
100-Year	43/44	43/44 (100-Year)	SN43	SN44	14.619	14.589	11.649	10.742	⬇️ -7.79%	0.320	0.33	106193.20	102529.84	⬇️ -3.45%
EDV	B48300	B48300 (EDV)	SN35A	SN35B	#N/A	12.528	#N/A	0.143	#N/A	#N/A	0.26	#N/A	1881.14	#N/A
2-Year	B48300	B48300 (2-Year)	SN35A	SN35B	#N/A	12.406	#N/A	1.82	#N/A	#N/A	0.43	#N/A	19403.22	#N/A
10-Year	B48300	B48300 (10-Year)	SN35A	SN35B	#N/A	12.419	#N/A	3.753	#N/A	#N/A	0.41	#N/A	39068.26	#N/A
100-Year	B48300	B48300 (100-Year)	SN35A	SN35B	#N/A	14.353	#N/A	-10.345	#N/A	#N/A	0.39	#N/A	102586.31	#N/A
EDV	C100A	C100A (EDV)	SN30E	SN30F	#N/A	12.244	#N/A	0.075	#N/A	#N/A	1.43	#N/A	414.65	#N/A
2-Year	C100A	C100A (2-Year)	SN30E	SN30F	#N/A	12.242	#N/A	0.907	#N/A	#N/A	2.44	#N/A	4700.16	#N/A
10-Year	C100A	C100A (10-Year)	SN30E	SN30F	#N/A	12.233	#N/A	1.819	#N/A	#N/A	3.27	#N/A	9507.30	#N/A
100-Year	C100A	C100A (100-Year)	SN30E	SN30F	#N/A	12.225	#N/A	3.043	#N/A	#N/A	3.6	#N/A	16163.88	#N/A
EDV	C200A	C200A (EDV)	SN30A	SN30B	#N/A	12.267	#N/A	0.119	#N/A	#N/A	2.15	#N/A	682.79	#N/A
2-Year	C200A	C200A (2-Year)	SN30A	SN30B	#N/A	12.281	#N/A	1.422	#N/A	#N/A	2.83	#N/A	7812.02	#N/A
10-Year	C200A	C200A (10-Year)	SN30A	SN30B	#N/A	12.328	#N/A	2.483	#N/A	#N/A	3.95	#N/A	15851.41	#N/A
100-Year	C200A	C200A (100-Year)	SN30A	SN30B	#N/A	12.364	#N/A	3.414	#N/A	#N/A	5.32	#N/A	26989.06	#N/A
EDV	C47200	C47200 (EDV)	SN40-3A	SN40-3B	#N/A	12.286	#N/A	0.029	#N/A	#N/A	1.71	#N/A	175.16	#N/A
2-Year	C47200	C47200 (2-Year)	SN40-3A	SN40-3B	#N/A	12.275	#N/A	0.373	#N/A	#N/A	3.72	#N/A	2043.57	#N/A
10-Year	C47200	C47200 (10-Year)	SN40-3A	SN40-3B	#N/A	12.275	#N/A	0.759	#N/A	#N/A	4.45	#N/A	4172.07	#N/A
100-Year	C47200	C47200 (100-Year)	SN40-3A	SN40-3B	#N/A	12.275	#N/A	1.282	#N/A	#N/A	4.99	#N/A	7135.31	#N/A
EDV	C47400	C47400 (EDV)	SN41-2A	SN41-2B	#N/A	12.239	#N/A	0.153	#N/A	#N/A	1.98	#N/A	837.82	#N/A
2-Year	C47400	C47400 (2-Year)	SN41-2A	SN41-2B	#N/A	12.231	#N/A	1.93	#N/A	#N/A	3.54	#N/A	9859.59	#N/A
10-Year	C47400	C47400 (10-Year)	SN41-2A	SN41-2B	#N/A	12.225	#N/A	3.939	#N/A	#N/A	3.44	#N/A	20181.95	#N/A
100-Year	C47400	C47400 (100-Year)	SN41-2A	SN41-2B	#N/A	12.225	#N/A	6.659	#N/A	#N/A	3.45	#N/A	34571.16	#N/A
EDV	C47700	C47700 (EDV)	SN42-2A	SN42-2B	#N/A	12.25	#N/A	0.077	#N/A	#N/A	0.14	#N/A	476.50	#N/A
2-Year	C47700	C47700 (2-Year)	SN42-2A	SN42-2B	#N/A	12.244	#N/A	1.042	#N/A	#N/A	0.73	#N/A	5598.26	#N/A
10-Year	C47700	C47700 (10-Year)	SN42-2A	SN42-2B	#N/A	12.239	#N/A	2.137	#N/A	#N/A	1.49	#N/A	11459.17	#N/A
100-Year	C47700	C47700 (100-Year)	SN42-2A	SN42-2B	#N/A	12.239	#N/A	3.614	#N/A	#N/A	2.51	#N/A	19631.43	#N/A
EDV	C48000	C48000 (EDV)	SN43A	SN43B	#N/A	12.278	#N/A	0.098	#N/A	#N/A	0.14	#N/A	605.38	#N/A
2-Year	C48000	C48000 (2-Year)	SN43A	SN43B	#N/A	12.258	#N/A	1.299	#N/A	#N/A	0.88	#N/A	7122.23	#N/A
10-Year	C48000	C48000 (10-Year)	SN43A	SN43B	#N/A	12.256	#N/A	2.658	#N/A	#N/A	1.85	#N/A	14579.95	#N/A
100-Year	C48000	C48000 (100-Year)	SN43A	SN43B	#N/A	12.256	#N/A	4.495	#N/A	#N/A	3.12	#N/A	24977.34	#N/A
EDV	C49500	C49500 (EDV)	SN32A	SN32B	#N/A	13.283	#N/A	1.799	#N/A	#N/A	1.32	#N/A	17613.48	#N/A
2-Year	C49500	C49500 (2-Year)	SN32A	SN32B	#N/A	1								

100-Year	C50200	C50200 (100-Year)	SN30C	SN30D	#N/A	12.244	#N/A	4.31	#N/A	#N/A	3.68	#N/A	23444.85	#N/A
EDV	C50500	C50500 (EDV)	SN29C	SN29D	#N/A	12.244	#N/A	0.05	#N/A	#N/A	1.53	#N/A	278.48	#N/A
2-Year	C50500	C50500 (2-Year)	SN29C	SN29D	#N/A	12.231	#N/A	0.632	#N/A	#N/A	3.41	#N/A	3249.00	#N/A
10-Year	C50500	C50500 (10-Year)	SN29C	SN29D	#N/A	12.236	#N/A	1.28	#N/A	#N/A	3.73	#N/A	6631.15	#N/A
100-Year	C50500	C50500 (100-Year)	SN29C	SN29D	#N/A	12.228	#N/A	2.16	#N/A	#N/A	3.77	#N/A	11339.22	#N/A
EDV	C50800	C50800 (EDV)	SN28A	SN28B	#N/A	12.242	#N/A	0.03	#N/A	#N/A	1.74	#N/A	164.77	#N/A
2-Year	C50800	C50800 (2-Year)	SN28A	SN28B	#N/A	12.231	#N/A	0.376	#N/A	#N/A	3.99	#N/A	1935.94	#N/A
10-Year	C50800	C50800 (10-Year)	SN28A	SN28B	#N/A	12.228	#N/A	0.766	#N/A	#N/A	4.83	#N/A	3960.51	#N/A
100-Year	C50800	C50800 (100-Year)	SN28A	SN28B	#N/A	12.228	#N/A	1.294	#N/A	#N/A	5.48	#N/A	6782.27	#N/A
EDV	C51000	C51000 (EDV)	SN27B	SN27C	#N/A	12.242	#N/A	0.083	#N/A	#N/A	2.28	#N/A	455.55	#N/A
2-Year	C51000	C51000 (2-Year)	SN27B	SN27C	#N/A	12.231	#N/A	1.038	#N/A	#N/A	4.87	#N/A	5342.05	#N/A
10-Year	C51000	C51000 (10-Year)	SN27B	SN27C	#N/A	12.225	#N/A	2.113	#N/A	#N/A	5.88	#N/A	10922.12	#N/A
100-Year	C51000	C51000 (100-Year)	SN27B	SN27C	#N/A	12.225	#N/A	3.566	#N/A	#N/A	6.67	#N/A	18696.28	#N/A
EDV	C51000A	C51000A (EDV)	SN27A	SN27B	#N/A	12.244	#N/A	0.095	#N/A	#N/A	2.18	#N/A	521.11	#N/A
2-Year	C51000A	C51000A (2-Year)	SN27A	SN27B	#N/A	12.231	#N/A	1.181	#N/A	#N/A	4.06	#N/A	6077.34	#N/A
10-Year	C51000A	C51000A (10-Year)	SN27A	SN27B	#N/A	12.228	#N/A	2.4	#N/A	#N/A	4.41	#N/A	12404.68	#N/A
100-Year	C51000A	C51000A (100-Year)	SN27A	SN27B	#N/A	12.228	#N/A	4.044	#N/A	#N/A	4.47	#N/A	21211.39	#N/A
EDV	C51300	C51300 (EDV)	SN26B	SN26C	#N/A	12.244	#N/A	0.125	#N/A	#N/A	2.22	#N/A	1748.23	#N/A
2-Year	C51300	C51300 (2-Year)	SN26B	SN26C	#N/A	12.247	#N/A	1.986	#N/A	#N/A	5.03	#N/A	13457.16	#N/A
10-Year	C51300	C51300 (10-Year)	SN26B	SN26C	#N/A	12.244	#N/A	3.976	#N/A	#N/A	5.99	#N/A	26166.01	#N/A
100-Year	C51300	C51300 (100-Year)	SN26B	SN26C	#N/A	12.247	#N/A	6.63	#N/A	#N/A	6.05	#N/A	43606.18	#N/A
EDV	C51300A	C51300A (EDV)	SN26A	SN26B	#N/A	12.244	#N/A	0.154	#N/A	#N/A	2.25	#N/A	1907.37	#N/A
2-Year	C51300A	C51300A (2-Year)	SN26A	SN26B	#N/A	12.247	#N/A	2.326	#N/A	#N/A	4.01	#N/A	15223.22	#N/A
10-Year	C51300A	C51300A (10-Year)	SN26A	SN26B	#N/A	12.244	#N/A	4.655	#N/A	#N/A	4.26	#N/A	29709.92	#N/A
100-Year	C51300A	C51300A (100-Year)	SN26A	SN26B	#N/A	12.25	#N/A	7.745	#N/A	#N/A	4.91	#N/A	49606.09	#N/A
EDV	C51600	C51600 (EDV)	SN25A	SN25B	#N/A	12.242	#N/A	0.075	#N/A	#N/A	1.95	#N/A	418.12	#N/A
2-Year	C51600	C51600 (2-Year)	SN25A	SN25B	#N/A	12.231	#N/A	1.02	#N/A	#N/A	4.28	#N/A	5281.34	#N/A
10-Year	C51600	C51600 (10-Year)	SN25A	SN25B	#N/A	12.231	#N/A	2.142	#N/A	#N/A	4.42	#N/A	11072.82	#N/A
100-Year	C51600	C51600 (100-Year)	SN25A	SN25B	#N/A	12.225	#N/A	3.696	#N/A	#N/A	4.41	#N/A	19275.75	#N/A
EDV	C51900	C51900 (EDV)	SN23-3A	SN23-3B	#N/A	12.244	#N/A	0.015	#N/A	#N/A	1.67	#N/A	84.23	#N/A
2-Year	C51900	C51900 (2-Year)	SN23-3A	SN23-3B	#N/A	12.231	#N/A	0.193	#N/A	#N/A	3.3	#N/A	991.54	#N/A
10-Year	C51900	C51900 (10-Year)	SN23-3A	SN23-3B	#N/A	12.225	#N/A	0.394	#N/A	#N/A	4.17	#N/A	2029.70	#N/A
100-Year	C51900	C51900 (100-Year)	SN23-3A	SN23-3B	#N/A	12.228	#N/A	0.664	#N/A	#N/A	4.79	#N/A	3477.22	#N/A
EDV	C53000	C53000 (EDV)	SN19A	SN19B	#N/A	12.25	#N/A	0.058	#N/A	#N/A	2.23	#N/A	320.26	#N/A
2-Year	C53000	C53000 (2-Year)	SN19A	SN19B	#N/A	12.233	#N/A	0.725	#N/A	#N/A	4.81	#N/A	3730.78	#N/A
10-Year	C53000	C53000 (10-Year)	SN19A	SN19B	#N/A	12.228	#N/A	1.472	#N/A	#N/A	5.91	#N/A	7611.04	#N/A
100-Year	C53000	C53000 (100-Year)	SN19A	SN19B	#N/A	12.228	#N/A	2.483	#N/A	#N/A	6.81	#N/A	13010.12	#N/A
EDV	C53800	C53800 (EDV)	SN21-2A	SN21-2B	#N/A	12.258	#N/A	0.157	#N/A	#N/A	1.06	#N/A	901.08	#N/A
2-Year	C53800	C53800 (2-Year)	SN21-2A	SN21-2B	#N/A	12.247	#N/A	1.916	#N/A	#N/A	1.65	#N/A	10232.88	#N/A
10-Year	C53800	C53800 (10-Year)	SN21-2A	SN21-2B	#N/A	12.244	#N/A	3.858	#N/A	#N/A	2.09	#N/A	20710.56	#N/A
100-Year	C53800	C53800 (100-Year)	SN21-2A	SN21-2B	#N/A	12.244	#N/A	6.474	#N/A	#N/A	3.43	#N/A	35220.39	#N/A
EDV	C54700	C54700 (EDV)	SN12A	SN12B	#N/A	13.044	#N/A	3.082	#N/A	#N/A	1.33	#N/A	31158.53	#N/A
2-Year	C54700	C54700 (2-Year)	SN12A	SN12B	#N/A	12.722	#N/A	29.713	#N/A	#N/A	3.18	#N/A	289399.96	#N/A
10-Year	C54700	C54700 (10-Year)	SN12A	SN12B	#N/A	12.639	#N/A	59.209	#N/A	#N/A	3.41	#N/A	598353.87	#N/A
100-Year	C54700	C54700 (100-Year)	SN12A	SN12B	#N/A	12.606	#N/A	103.469	#N/A	#N/A	3.86	#N/A	1031815.98	#N/A
EDV	C55300	C55300 (EDV)	SN15-2A	SN15-2B	#N/A	12.419	#N/A	0.321	#N/A	#N/A	3.08	#N/A	3064.52	#N/A
2-Year	C55300	C55300 (2-Year)	SN15-2A	SN15-2B	#N/A	12.372	#N/A	4.377	#N/A	#N/A	6.2	#N/A	31120.26	#N/A
10-Year	C55300	C55300 (10-Year)	SN15-2A	SN15-2B	#N/A	12.367	#N/A	8.783	#N/A	#N/A	7.12	#N/A	62204.68	#N/A
100-Year	C55300	C55300 (100-Year)	SN15-2A	SN15-2B	#N/A	12.361	#N/A	14.65	#N/A	#N/A	7.26	#N/A	105198.59	#N/A
EDV	C56100	C56100 (EDV)	SN16-2A	SN16-2B	#N/A	12.244	#N/A	0.018	#N/A	#N/A	1.36	#N/A	99.85	#N/A
2-Year	C56100	C56100 (2-Year)	SN16-2A	SN16-2B	#N/A	12.239	#N/A	0.244	#N/A	#N/A	3.46	#N/A	1262.03	#N/A
10-Year	C56100	C56100 (10-Year)	SN16-2A	SN16-2B	#N/A	12.228	#N/A	0.512	#N/A	#N/A	3.53	#N/A	2646.57	#N/A
100-Year	C56100	C56100 (100-Year)	SN16-2A	SN16-2B	#N/A	12.225	#N/A	0.884	#N/A	#N/A	4.15	#N/A	4607.58	#N/A
EDV	C56400	C56400 (EDV)	SN17-2A	SN17-2										

100-Year	C56700	C56700 (100-Year)	SN18A	SN18B	#N/A	12.225	#N/A	2.331	#N/A	#N/A	5.76	#N/A	12245.07	#N/A
EDV	C700SH1S	C700SH1S (EDV)	SN40-3C	SN40-3D	#N/A	12.242	#N/A	0.106	#N/A	#N/A	0.97	#N/A	950.40	#N/A
2-Year	C700SH1S	C700SH1S (2-Year)	SN40-3C	SN40-3D	#N/A	12.242	#N/A	1.542	#N/A	#N/A	4.16	#N/A	8250.62	#N/A
10-Year	C700SH1S	C700SH1S (10-Year)	SN40-3C	SN40-3D	#N/A	12.239	#N/A	3.064	#N/A	#N/A	5.62	#N/A	16364.32	#N/A
100-Year	C700SH1S	C700SH1S (100-Year)	SN40-3C	SN40-3D	#N/A	12.236	#N/A	5.116	#N/A	#N/A	6.36	#N/A	27576.38	#N/A
EDV	E03/E04	E03/E04 (EDV)	Cut-E03	Cut-E04	#N/A	12.478	#N/A	0.001	#N/A	#N/A	0.12	#N/A	9.44	#N/A
2-Year	E03/E04	E03/E04 (2-Year)	Cut-E03	Cut-E04	#N/A	12.342	#N/A	0.016	#N/A	#N/A	0.32	#N/A	100.21	#N/A
10-Year	E03/E04	E03/E04 (10-Year)	Cut-E03	Cut-E04	#N/A	12.311	#N/A	0.033	#N/A	#N/A	0.43	#N/A	198.83	#N/A
100-Year	E03/E04	E03/E04 (100-Year)	Cut-E03	Cut-E04	#N/A	12.297	#N/A	0.056	#N/A	#N/A	0.52	#N/A	333.95	#N/A
EDV	E04/E05	E04/E05 (EDV)	Cut-E04	Cut-E05	#N/A	12.381	#N/A	0.001	#N/A	#N/A	0.11	#N/A	7.37	#N/A
2-Year	E04/E05	E04/E05 (2-Year)	Cut-E04	Cut-E05	#N/A	12.286	#N/A	0.015	#N/A	#N/A	0.37	#N/A	78.27	#N/A
10-Year	E04/E05	E04/E05 (10-Year)	Cut-E04	Cut-E05	#N/A	12.261	#N/A	0.029	#N/A	#N/A	0.49	#N/A	155.29	#N/A
100-Year	E04/E05	E04/E05 (100-Year)	Cut-E04	Cut-E05	#N/A	12.258	#N/A	0.048	#N/A	#N/A	0.59	#N/A	260.80	#N/A
EDV	E06/E07	E06/E07 (EDV)	Cut-E06	Cut-E07	#N/A	12.353	#N/A	0.001	#N/A	#N/A	0.13	#N/A	6.83	#N/A
2-Year	E06/E07	E06/E07 (2-Year)	Cut-E06	Cut-E07	#N/A	12.278	#N/A	0.013	#N/A	#N/A	0.36	#N/A	72.54	#N/A
10-Year	E06/E07	E06/E07 (10-Year)	Cut-E06	Cut-E07	#N/A	12.267	#N/A	0.026	#N/A	#N/A	0.47	#N/A	143.92	#N/A
100-Year	E06/E07	E06/E07 (100-Year)	Cut-E06	Cut-E07	#N/A	12.258	#N/A	0.044	#N/A	#N/A	0.57	#N/A	241.71	#N/A
EDV	E11/E12A	E11/E12A (EDV)	Cut-E11	Cut-E12A	#N/A	12.286	#N/A	0.01	#N/A	#N/A	0.46	#N/A	59.93	#N/A
2-Year	E11/E12A	E11/E12A (2-Year)	Cut-E11	Cut-E12A	#N/A	12.247	#N/A	0.121	#N/A	#N/A	1.23	#N/A	628.36	#N/A
10-Year	E11/E12A	E11/E12A (10-Year)	Cut-E11	Cut-E12A	#N/A	12.244	#N/A	0.237	#N/A	#N/A	1.58	#N/A	1242.07	#N/A
100-Year	E11/E12A	E11/E12A (100-Year)	Cut-E11	Cut-E12A	#N/A	12.242	#N/A	0.39	#N/A	#N/A	1.9	#N/A	2081.19	#N/A
EDV	E12B/E13	E12B/E13 (EDV)	Cut-E12B	Cut-E13	#N/A	12.272	#N/A	0.018	#N/A	#N/A	0.57	#N/A	100.78	#N/A
2-Year	E12B/E13	E12B/E13 (2-Year)	Cut-E12B	Cut-E13	#N/A	12.242	#N/A	0.207	#N/A	#N/A	1.46	#N/A	1067.56	#N/A
10-Year	E12B/E13	E12B/E13 (10-Year)	Cut-E12B	Cut-E13	#N/A	12.239	#N/A	0.406	#N/A	#N/A	1.85	#N/A	2116.56	#N/A
100-Year	E12B/E13	E12B/E13 (100-Year)	Cut-E12B	Cut-E13	#N/A	12.233	#N/A	0.669	#N/A	#N/A	2.17	#N/A	3552.92	#N/A
EDV	P47700INA	P47700INA (EDV)	P47700	Road01	#N/A	12.311	#N/A	0.098	#N/A	#N/A	1.23	#N/A	1175.47	#N/A
2-Year	P47700INA	P47700INA (2-Year)			#N/A	12.306	#N/A	0.53	#N/A	#N/A	2.03	#N/A	7064.52	#N/A
10-Year	P47700INA	P47700INA (10-Year)			#N/A	12.308	#N/A	0.932	#N/A	#N/A	2.36	#N/A	12651.12	#N/A
100-Year	P47700INA	P47700INA (100-Year)			#N/A	12.308	#N/A	1.46	#N/A	#N/A	2.63	#N/A	20084.98	#N/A
EDV	P47700INB	P47700INB (EDV)	P47700	Road01	#N/A	12.311	#N/A	0.098	#N/A	#N/A	1.23	#N/A	1175.47	#N/A
2-Year	P47700INB	P47700INB (2-Year)			#N/A	12.306	#N/A	0.53	#N/A	#N/A	2.03	#N/A	7064.52	#N/A
10-Year	P47700INB	P47700INB (10-Year)			#N/A	12.308	#N/A	0.932	#N/A	#N/A	2.36	#N/A	12651.12	#N/A
100-Year	P47700INB	P47700INB (100-Year)			#N/A	12.308	#N/A	1.46	#N/A	#N/A	2.63	#N/A	20084.98	#N/A
EDV	P47700orof	P47700orof (EDV)	SN42-2	P47700	#N/A	15.278	#N/A	0.019	#N/A	#N/A	1.52	#N/A	1302.73	#N/A
2-Year	P47700orof	P47700orof (2-Year)			#N/A	12.411	#N/A	0.028	#N/A	#N/A	2.29	#N/A	7071.87	#N/A
10-Year	P47700orof	P47700orof (10-Year)			#N/A	12.397	#N/A	0.031	#N/A	#N/A	2.46	#N/A	12654.97	#N/A
100-Year	P47700orof	P47700orof (100-Year)			#N/A	12.389	#N/A	0.033	#N/A	#N/A	2.64	#N/A	20087.89	#N/A
EDV	P47700OUT	P47700OUT (EDV)	SN42-2	P47700	#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	1302.73	#N/A
2-Year	P47700OUT	P47700OUT (2-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	7071.87	#N/A
10-Year	P47700OUT	P47700OUT (10-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	12654.97	#N/A
100-Year	P47700OUT	P47700OUT (100-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	20087.89	#N/A
EDV	P47700over	P47700over (EDV)	SN42-2	P47700	#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	1302.73	#N/A
2-Year	P47700over	P47700over (2-Year)			#N/A	12.397	#N/A	0.91	#N/A	#N/A	0	#N/A	7071.87	#N/A
10-Year	P47700over	P47700over (10-Year)			#N/A	12.383	#N/A	1.671	#N/A	#N/A	0	#N/A	12654.97	#N/A
100-Year	P47700over	P47700over (100-Year)			#N/A	12.375	#N/A	2.688	#N/A	#N/A	0	#N/A	20087.89	#N/A
EDV	P48400IN	P48400IN (EDV)	P48400	Road02A	#N/A	12.242	#N/A	0.054	#N/A	#N/A	1.15	#N/A	253.94	#N/A
2-Year	P48400IN	P48400IN (2-Year)	P48400	Road02A	#N/A	12.233	#N/A	0.25	#N/A	#N/A	1.8	#N/A	1376.00	#N/A
10-Year	P48400IN	P48400IN (10-Year)	P48400	Road02A	#N/A	12.231	#N/A	0.425	#N/A	#N/A	2.08	#N/A	2396.92	#N/A
100-Year	P48400IN	P48400IN (100-Year)	P48400	Road02A	#N/A	12.231	#N/A	0.655	#N/A	#N/A	2.3	#N/A	3742.16	#N/A
EDV	P48400orof	P48400orof (EDV)	SN35B	P48400	#N/A	15.178	#N/A	0.004	#N/A	#N/A	1.34	#N/A	294.11	#N/A
2-Year	P48400orof	P48400orof (2-Year)			#N/A	12.297	#N/A	0.006	#N/A	#N/A	1.96	#N/A	1377.34	#N/A
10-Year	P48400orof	P48400orof (10-Year)			#N/A	12.289	#N/A	0.006	#N/A	#N/A	2.03	#N/A	2397.49	#N/A
100-Year	P48400orof	P48400orof (100-Year)			#N/A	12.283	#N/A	0.007	#N/A	#N/A	2.11	#N/A	3742.41	#N/A
EDV	P48400OUT	P48400OUT (EDV)	SN35B	P48400	#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	294.11	#N/A
2-Year	P48400OUT	P48400OUT (2-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	1377.34	#N/A
10-Year	P48400OUT	P48400OUT (1												

100-Year	P48400over	P48400over (100-Year)		#N/A	12.269	#N/A	0.614	#N/A	#N/A	0	#N/A	3742.41	#N/A	
EDV	P48900IN	P48900IN (EDV)	P48900	Road02B	#N/A	12.253	#N/A	0.085	#N/A	#N/A	1.95	#N/A	460.16	#N/A
2-Year	P48900IN	P48900IN (2-Year)	P48900	Road02B	#N/A	12.278	#N/A	0.587	#N/A	#N/A	3.39	#N/A	3433.37	#N/A
10-Year	P48900IN	P48900IN (10-Year)	P48900	Road02B	#N/A	12.275	#N/A	1.078	#N/A	#N/A	3.95	#N/A	6446.64	#N/A
100-Year	P48900IN	P48900IN (100-Year)	P48900	Road02B	#N/A	12.281	#N/A	1.702	#N/A	#N/A	4.22	#N/A	10515.23	#N/A
EDV	P48900orof	P48900orof (EDV)	SN33-3	P48900	#N/A	12.286	#N/A	0.049	#N/A	#N/A	10.53	#N/A	460.28	#N/A
2-Year	P48900orof	P48900orof (2-Year)			#N/A	11.119	#N/A	0.048	#N/A	#N/A	10.34	#N/A	3433.15	#N/A
10-Year	P48900orof	P48900orof (10-Year)			#N/A	9.289	#N/A	0.048	#N/A	#N/A	10.36	#N/A	6446.67	#N/A
100-Year	P48900orof	P48900orof (100-Year)			#N/A	6.453	#N/A	0.048	#N/A	#N/A	10.36	#N/A	10515.40	#N/A
EDV	P48900OUT	P48900OUT (EDV)	SN33-3	P48900	#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	460.28	#N/A
2-Year	P48900OUT	P48900OUT (2-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	3433.15	#N/A
10-Year	P48900OUT	P48900OUT (10-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	6446.67	#N/A
100-Year	P48900OUT	P48900OUT (100-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	10515.40	#N/A
EDV	P48900over	P48900over (EDV)	SN33-3	P48900	#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	460.28	#N/A
2-Year	P48900over	P48900over (2-Year)			#N/A	12.336	#N/A	0.461	#N/A	#N/A	0	#N/A	3433.15	#N/A
10-Year	P48900over	P48900over (10-Year)			#N/A	12.308	#N/A	0.978	#N/A	#N/A	0	#N/A	6446.67	#N/A
100-Year	P48900over	P48900over (100-Year)			#N/A	12.317	#N/A	1.606	#N/A	#N/A	0	#N/A	10515.40	#N/A
EDV	P49400IN	P49400IN (EDV)	P49400	Road03	#N/A	12.325	#N/A	0.128	#N/A	#N/A	2.06	#N/A	727.98	#N/A
2-Year	P49400IN	P49400IN (2-Year)	P49400	Road03	#N/A	12.319	#N/A	0.597	#N/A	#N/A	3.08	#N/A	3943.13	#N/A
10-Year	P49400IN	P49400IN (10-Year)	P49400	Road03	#N/A	12.319	#N/A	1.013	#N/A	#N/A	3.58	#N/A	6871.14	#N/A
100-Year	P49400IN	P49400IN (100-Year)	P49400	Road03	#N/A	12.322	#N/A	1.56	#N/A	#N/A	3.85	#N/A	10726.14	#N/A
EDV	P49400orof	P49400orof (EDV)	SN32	P49400	#N/A	0	#N/A	0.014	#N/A	#N/A	1.55	#N/A	958.53	#N/A
2-Year	P49400orof	P49400orof (2-Year)			#N/A	12.436	#N/A	0.025	#N/A	#N/A	2.65	#N/A	3967.07	#N/A
10-Year	P49400orof	P49400orof (10-Year)			#N/A	12.4	#N/A	0.026	#N/A	#N/A	2.75	#N/A	6874.14	#N/A
100-Year	P49400orof	P49400orof (100-Year)			#N/A	12.392	#N/A	0.027	#N/A	#N/A	2.86	#N/A	10724.72	#N/A
EDV	P49400OUT	P49400OUT (EDV)	SN32	P49400	#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	958.53	#N/A
2-Year	P49400OUT	P49400OUT (2-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	3967.07	#N/A
10-Year	P49400OUT	P49400OUT (10-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	6874.14	#N/A
100-Year	P49400OUT	P49400OUT (100-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	10724.72	#N/A
EDV	P49400over	P49400over (EDV)	SN32	P49400	#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	958.53	#N/A
2-Year	P49400over	P49400over (2-Year)			#N/A	12.425	#N/A	0.474	#N/A	#N/A	0	#N/A	3967.07	#N/A
10-Year	P49400over	P49400over (10-Year)			#N/A	12.389	#N/A	0.906	#N/A	#N/A	0	#N/A	6874.14	#N/A
100-Year	P49400over	P49400over (100-Year)			#N/A	12.381	#N/A	1.436	#N/A	#N/A	0	#N/A	10724.72	#N/A
EDV	P49900IN	P49900IN (EDV)	P49900	Road04	#N/A	12.244	#N/A	0.06	#N/A	#N/A	2.63	#N/A	287.78	#N/A
2-Year	P49900IN	P49900IN (2-Year)	P49900	Road04	#N/A	12.236	#N/A	0.279	#N/A	#N/A	4.09	#N/A	1559.12	#N/A
10-Year	P49900IN	P49900IN (10-Year)	P49900	Road04	#N/A	12.233	#N/A	0.474	#N/A	#N/A	4.7	#N/A	2715.88	#N/A
100-Year	P49900IN	P49900IN (100-Year)	P49900	Road04	#N/A	12.233	#N/A	0.731	#N/A	#N/A	5.18	#N/A	4240.00	#N/A
EDV	P49900orof	P49900orof (EDV)	SN30	P49900	#N/A	15.094	#N/A	0.005	#N/A	#N/A	1.29	#N/A	323.53	#N/A
2-Year	P49900orof	P49900orof (2-Year)			#N/A	12.297	#N/A	0.008	#N/A	#N/A	1.98	#N/A	1560.92	#N/A
10-Year	P49900orof	P49900orof (10-Year)			#N/A	12.292	#N/A	0.009	#N/A	#N/A	2.06	#N/A	2716.62	#N/A
100-Year	P49900orof	P49900orof (100-Year)			#N/A	12.286	#N/A	0.009	#N/A	#N/A	2.14	#N/A	4240.25	#N/A
EDV	P49900OUT	P49900OUT (EDV)	SN30	P49900	#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	323.53	#N/A
2-Year	P49900OUT	P49900OUT (2-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	1560.92	#N/A
10-Year	P49900OUT	P49900OUT (10-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	2716.62	#N/A
100-Year	P49900OUT	P49900OUT (100-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	4240.25	#N/A
EDV	P49900over	P49900over (EDV)	SN30	P49900	#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	323.53	#N/A
2-Year	P49900over	P49900over (2-Year)			#N/A	12.283	#N/A	0.247	#N/A	#N/A	0	#N/A	1560.92	#N/A
10-Year	P49900over	P49900over (10-Year)			#N/A	12.278	#N/A	0.436	#N/A	#N/A	0	#N/A	2716.62	#N/A
100-Year	P49900over	P49900over (100-Year)			#N/A	12.272	#N/A	0.685	#N/A	#N/A	0	#N/A	4240.25	#N/A
EDV	P50300IN	P50300IN (EDV)	P50300	Road05	#N/A	12.364	#N/A	0.162	#N/A	#N/A	3.52	#N/A	1010.20	#N/A
2-Year	P50300IN	P50300IN (2-Year)	P50300	Road05	#N/A	12.331	#N/A	1.012	#N/A	#N/A	5.95	#N/A	6612.22	#N/A
10-Year	P50300IN	P50300IN (10-Year)	P50300	Road05	#N/A	12.325	#N/A	1.821	#N/A	#N/A	6.9	#N/A	12067.30	#N/A
100-Year	P50300IN	P50300IN (100-Year)	P50300	Road05	#N/A	12.333	#N/A	2.859	#N/A	#N/A	7.44	#N/A	19366.84	#N/A
EDV	P50300orof	P50300orof (EDV)	SN29	P50300	#N/A	15.386	#N/A	0.015	#N/A	#N/A	1.52	#N/A	1110.42	#N/A
2-Year	P50300orof	P50300orof (2-Year)			#N/A	12.428	#N/A	0.023	#N/A	#N/A	2.25	#N/A	6617.67	#N/A
10-Year	P50300orof	P50300orof (10-Year)			#N/A	12.408	#N/A	0.025	#N/A	#N/A	2.43	#N/A	12070.76	#N/A
100-Year	P50300orof	P50300orof (100-Year)			#N/A	12.406	#N/A	0.027	#N/A	#N/A	2.62	#N/A	1	

100-Year	P50300OUT	P50300OUT (100-Year)		#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	19369.29	#N/A	
EDV	P50300over	P50300over (EDV)	SN29	P50300	#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	1110.42	#N/A
2-Year	P50300over	P50300over (2-Year)			#N/A	12.414	#N/A	0.892	#N/A	#N/A	0	#N/A	6617.67	#N/A
10-Year	P50300over	P50300over (10-Year)			#N/A	12.394	#N/A	1.665	#N/A	#N/A	0	#N/A	12070.76	#N/A
100-Year	P50300over	P50300over (100-Year)			#N/A	12.392	#N/A	2.689	#N/A	#N/A	0	#N/A	19369.29	#N/A
EDV	P51300IN	P51300IN (EDV)	P51300	Road06	#N/A	12.372	#N/A	0.148	#N/A	#N/A	2.6	#N/A	913.70	#N/A
2-Year	P51300IN	P51300IN (2-Year)	P51300	Road06	#N/A	12.356	#N/A	0.88	#N/A	#N/A	4.33	#N/A	5843.58	#N/A
10-Year	P51300IN	P51300IN (10-Year)	P51300	Road06	#N/A	12.353	#N/A	1.573	#N/A	#N/A	5.02	#N/A	10621.15	#N/A
100-Year	P51300IN	P51300IN (100-Year)	P51300	Road06	#N/A	12.367	#N/A	2.459	#N/A	#N/A	5.43	#N/A	17008.40	#N/A
EDV	P51300orof	P51300orof (EDV)	SN26C	P51300	#N/A	15.383	#N/A	0.014	#N/A	#N/A	1.52	#N/A	1006.65	#N/A
2-Year	P51300orof	P51300orof (2-Year)			#N/A	12.444	#N/A	0.021	#N/A	#N/A	2.23	#N/A	5848.23	#N/A
10-Year	P51300orof	P51300orof (10-Year)			#N/A	12.431	#N/A	0.022	#N/A	#N/A	2.39	#N/A	10624.06	#N/A
100-Year	P51300orof	P51300orof (100-Year)			#N/A	12.431	#N/A	0.024	#N/A	#N/A	2.56	#N/A	17009.52	#N/A
EDV	P51300OUT	P51300OUT (EDV)	SN26C	P51300	#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	1006.65	#N/A
2-Year	P51300OUT	P51300OUT (2-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	5848.23	#N/A
10-Year	P51300OUT	P51300OUT (10-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	10624.06	#N/A
100-Year	P51300OUT	P51300OUT (100-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	17009.52	#N/A
EDV	P51300over	P51300over (EDV)	SN26C	P51300	#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	1006.65	#N/A
2-Year	P51300over	P51300over (2-Year)			#N/A	12.431	#N/A	0.784	#N/A	#N/A	0	#N/A	5848.23	#N/A
10-Year	P51300over	P51300over (10-Year)			#N/A	12.417	#N/A	1.453	#N/A	#N/A	0	#N/A	10624.06	#N/A
100-Year	P51300over	P51300over (100-Year)			#N/A	12.419	#N/A	2.331	#N/A	#N/A	0	#N/A	17009.52	#N/A
EDV	P52200IN	P52200IN (EDV)	P52200	Road07	#N/A	12.3	#N/A	0.217	#N/A	#N/A	4.92	#N/A	1215.87	#N/A
2-Year	P52200IN	P52200IN (2-Year)	P52200	Road07	#N/A	12.292	#N/A	1.448	#N/A	#N/A	8.48	#N/A	8571.59	#N/A
10-Year	P52200IN	P52200IN (10-Year)	P52200	Road07	#N/A	12.289	#N/A	2.636	#N/A	#N/A	9.86	#N/A	15858.27	#N/A
100-Year	P52200IN	P52200IN (100-Year)	P52200	Road07	#N/A	12.292	#N/A	4.191	#N/A	#N/A	10.59	#N/A	25640.00	#N/A
EDV	P52200orof	P52200orof (EDV)	SN24	P52200	#N/A	12.414	#N/A	0.122	#N/A	#N/A	10.92	#N/A	1216.51	#N/A
2-Year	P52200orof	P52200orof (2-Year)			#N/A	20.272	#N/A	0.122	#N/A	#N/A	10.94	#N/A	8572.09	#N/A
10-Year	P52200orof	P52200orof (10-Year)			#N/A	24.481	#N/A	0.121	#N/A	#N/A	10.91	#N/A	15856.56	#N/A
100-Year	P52200orof	P52200orof (100-Year)			#N/A	26.353	#N/A	0.127	#N/A	#N/A	11.16	#N/A	25636.70	#N/A
EDV	P52200OUT	P52200OUT (EDV)	SN24	P52200	#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	1216.51	#N/A
2-Year	P52200OUT	P52200OUT (2-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	8572.09	#N/A
10-Year	P52200OUT	P52200OUT (10-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	15856.56	#N/A
100-Year	P52200OUT	P52200OUT (100-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	25636.70	#N/A
EDV	P52200over	P52200over (EDV)	SN24	P52200	#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	1216.51	#N/A
2-Year	P52200over	P52200over (2-Year)			#N/A	12.406	#N/A	0.984	#N/A	#N/A	0	#N/A	8572.09	#N/A
10-Year	P52200over	P52200over (10-Year)			#N/A	12.35	#N/A	2.273	#N/A	#N/A	0	#N/A	15856.56	#N/A
100-Year	P52200over	P52200over (100-Year)			#N/A	12.342	#N/A	3.783	#N/A	#N/A	0	#N/A	25636.70	#N/A
EDV	P53100IN	P53100IN (EDV)	P53100	Road08	#N/A	12.231	#N/A	0.071	#N/A	#N/A	4.51	#N/A	332.29	#N/A
2-Year	P53100IN	P53100IN (2-Year)	P53100	Road08	#N/A	12.225	#N/A	0.328	#N/A	#N/A	7.12	#N/A	1800.53	#N/A
10-Year	P53100IN	P53100IN (10-Year)	P53100	Road08	#N/A	12.225	#N/A	0.557	#N/A	#N/A	8.25	#N/A	3136.49	#N/A
100-Year	P53100IN	P53100IN (100-Year)	P53100	Road08	#N/A	12.225	#N/A	0.858	#N/A	#N/A	9.26	#N/A	4896.71	#N/A
EDV	P53100orof	P53100orof (EDV)	SN20-1	P53100	#N/A	12.319	#N/A	0.038	#N/A	#N/A	10.26	#N/A	332.29	#N/A
2-Year	P53100orof	P53100orof (2-Year)			#N/A	11.411	#N/A	0.038	#N/A	#N/A	10.14	#N/A	1800.48	#N/A
10-Year	P53100orof	P53100orof (10-Year)			#N/A	21.389	#N/A	0.038	#N/A	#N/A	10.07	#N/A	3136.47	#N/A
100-Year	P53100orof	P53100orof (100-Year)			#N/A	6.8	#N/A	0.038	#N/A	#N/A	10.1	#N/A	4896.89	#N/A
EDV	P53100OUT	P53100OUT (EDV)	SN20-1	P53100	#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	332.29	#N/A
2-Year	P53100OUT	P53100OUT (2-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	1800.48	#N/A
10-Year	P53100OUT	P53100OUT (10-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	3136.47	#N/A
100-Year	P53100OUT	P53100OUT (100-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	4896.89	#N/A
EDV	P53100over	P53100over (EDV)	SN20-1	P53100	#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	332.29	#N/A
2-Year	P53100over	P53100over (2-Year)			#N/A	12.467	#N/A	0.09	#N/A	#N/A	0	#N/A	1800.48	#N/A
10-Year	P53100over	P53100over (10-Year)			#N/A	12.278	#N/A	0.466	#N/A	#N/A	0	#N/A	3136.47	#N/A
100-Year	P53100over	P53100over (100-Year)			#N/A	12.267	#N/A	0.77	#N/A	#N/A	0	#N/A	4896.89	#N/A
EDV	P53600IN	P53600IN (EDV)	P53600	Road09	#N/A	12.3	#N/A	0.266	#N/A	#N/A	6.57	#N/A	1581.48	#N/A
2-Year	P53600IN	P53600IN (2-Year)	P53600	Road09	#N/A	12.306	#N/A	1.768	#N/A	#N/A	11.42	#N/A	11120.85	#N/A
10-Year	P53600IN	P53600IN (10-Year)	P53600	Road09	#N/A	12.303	#N/A	3.159	#N/A	#N/A	13.28	#N/A	20339.73	#N/A
100-Year	P53600IN	P53600IN (100-Year)	P53600	Road09	#N/A	12.306	#N/A	4.973	#N/A	#N/A	14.5	#N/A	32618.29	#N/A

100-Year	P53600orof	P53600orof (100-Year)		#N/A	12.364	#N/A	0.272	#N/A	#N/A	16.68	#N/A	32614.97	#N/A	
EDV	P53600OUT	P53600OUT (EDV)	SN21-2	P53600	#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	1581.65	#N/A
2-Year	P53600OUT	P53600OUT (2-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	11120.76	#N/A
10-Year	P53600OUT	P53600OUT (10-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	20337.80	#N/A
100-Year	P53600OUT	P53600OUT (100-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	32614.97	#N/A
EDV	P53600over	P53600over (EDV)	SN21-2	P53600	#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	1581.65	#N/A
2-Year	P53600over	P53600over (2-Year)			#N/A	12.528	#N/A	0.761	#N/A	#N/A	0	#N/A	11120.76	#N/A
10-Year	P53600over	P53600over (10-Year)			#N/A	12.392	#N/A	2.472	#N/A	#N/A	0	#N/A	20337.80	#N/A
100-Year	P53600over	P53600over (100-Year)			#N/A	12.372	#N/A	4.264	#N/A	#N/A	0	#N/A	32614.97	#N/A
EDV	P54500IN	P54500IN (EDV)	P54500	Road10	#N/A	12.306	#N/A	0.17	#N/A	#N/A	2.77	#N/A	966.83	#N/A
2-Year	P54500IN	P54500IN (2-Year)	P54500	Road10	#N/A	12.289	#N/A	1.045	#N/A	#N/A	4.66	#N/A	6234.89	#N/A
10-Year	P54500IN	P54500IN (10-Year)	P54500	Road10	#N/A	12.289	#N/A	1.863	#N/A	#N/A	5.36	#N/A	11304.84	#N/A
100-Year	P54500IN	P54500IN (100-Year)	P54500	Road10	#N/A	12.308	#N/A	2.84	#N/A	#N/A	5.65	#N/A	18066.89	#N/A
EDV	P54500orof	P54500orof (EDV)	SN12A	P54500	#N/A	15.297	#N/A	0.015	#N/A	#N/A	1.48	#N/A	1071.33	#N/A
2-Year	P54500orof	P54500orof (2-Year)			#N/A	12.375	#N/A	0.023	#N/A	#N/A	2.27	#N/A	6240.36	#N/A
10-Year	P54500orof	P54500orof (10-Year)			#N/A	12.358	#N/A	0.025	#N/A	#N/A	2.45	#N/A	11307.74	#N/A
100-Year	P54500orof	P54500orof (100-Year)			#N/A	12.372	#N/A	0.027	#N/A	#N/A	2.62	#N/A	18068.38	#N/A
EDV	P54500OUT	P54500OUT (EDV)	SN12A	P54500	#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	1071.33	#N/A
2-Year	P54500OUT	P54500OUT (2-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	6240.36	#N/A
10-Year	P54500OUT	P54500OUT (10-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	11307.74	#N/A
100-Year	P54500OUT	P54500OUT (100-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	18068.38	#N/A
EDV	P54500over	P54500over (EDV)	SN12A	P54500	#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	1071.33	#N/A
2-Year	P54500over	P54500over (2-Year)			#N/A	12.361	#N/A	0.9	#N/A	#N/A	0	#N/A	6240.36	#N/A
10-Year	P54500over	P54500over (10-Year)			#N/A	12.347	#N/A	1.676	#N/A	#N/A	0	#N/A	11307.74	#N/A
100-Year	P54500over	P54500over (100-Year)			#N/A	12.361	#N/A	2.684	#N/A	#N/A	0	#N/A	18068.38	#N/A
EDV	P55500INA	P55500INA (EDV)	P55500	Road11	#N/A	12.256	#N/A	0.118	#N/A	#N/A	2.09	#N/A	1223.68	#N/A
2-Year	P55500INA	P55500INA (2-Year)			#N/A	12.242	#N/A	0.871	#N/A	#N/A	3.76	#N/A	9312.74	#N/A
10-Year	P55500INA	P55500INA (10-Year)			#N/A	12.236	#N/A	1.606	#N/A	#N/A	4.45	#N/A	17453.27	#N/A
100-Year	P55500INA	P55500INA (100-Year)			#N/A	12.231	#N/A	2.571	#N/A	#N/A	4.98	#N/A	28413.26	#N/A
EDV	P55500INB	P55500INB (EDV)	P55500	Road11	#N/A	12.256	#N/A	0.118	#N/A	#N/A	2.09	#N/A	1223.68	#N/A
2-Year	P55500INB	P55500INB (2-Year)			#N/A	12.242	#N/A	0.871	#N/A	#N/A	3.76	#N/A	9312.74	#N/A
10-Year	P55500INB	P55500INB (10-Year)			#N/A	12.236	#N/A	1.606	#N/A	#N/A	4.45	#N/A	17453.27	#N/A
100-Year	P55500INB	P55500INB (100-Year)			#N/A	12.231	#N/A	2.571	#N/A	#N/A	4.98	#N/A	28413.26	#N/A
EDV	P55500orof	P55500orof (EDV)	SN15-2B	P55500	#N/A	12.269	#N/A	0.09	#N/A	#N/A	7.82	#N/A	1225.65	#N/A
2-Year	P55500orof	P55500orof (2-Year)			#N/A	10.328	#N/A	0.089	#N/A	#N/A	7.88	#N/A	9311.84	#N/A
10-Year	P55500orof	P55500orof (10-Year)			#N/A	12.25	#N/A	0.09	#N/A	#N/A	7.88	#N/A	17449.45	#N/A
100-Year	P55500orof	P55500orof (100-Year)			#N/A	12.192	#N/A	0.09	#N/A	#N/A	7.87	#N/A	28407.56	#N/A
EDV	P55500OUT	P55500OUT (EDV)	SN15-2B	P55500	#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	1225.65	#N/A
2-Year	P55500OUT	P55500OUT (2-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	9311.84	#N/A
10-Year	P55500OUT	P55500OUT (10-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	17449.45	#N/A
100-Year	P55500OUT	P55500OUT (100-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	28407.56	#N/A
EDV	P55500over	P55500over (EDV)	SN15-2B	P55500	#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	1225.65	#N/A
2-Year	P55500over	P55500over (2-Year)			#N/A	12.314	#N/A	1.353	#N/A	#N/A	0	#N/A	9311.84	#N/A
10-Year	P55500over	P55500over (10-Year)			#N/A	12.292	#N/A	2.793	#N/A	#N/A	0	#N/A	17449.45	#N/A
100-Year	P55500over	P55500over (100-Year)			#N/A	12.283	#N/A	4.648	#N/A	#N/A	0	#N/A	28407.56	#N/A
EDV	P56200IN	P56200IN (EDV)	P56200	Road12	#N/A	12.247	#N/A	0.133	#N/A	#N/A	2.01	#N/A	687.57	#N/A
2-Year	P56200IN	P56200IN (2-Year)	P56200	Road12	#N/A	12.242	#N/A	1.008	#N/A	#N/A	3.63	#N/A	5319.42	#N/A
10-Year	P56200IN	P56200IN (10-Year)	P56200	Road12	#N/A	12.239	#N/A	1.875	#N/A	#N/A	4.28	#N/A	10029.99	#N/A
100-Year	P56200IN	P56200IN (100-Year)	P56200	Road12	#N/A	12.239	#N/A	3.009	#N/A	#N/A	4.75	#N/A	16391.40	#N/A
EDV	P56200orof	P56200orof (EDV)	SN16-2A	P56200	#N/A	12.331	#N/A	0.08	#N/A	#N/A	12.31	#N/A	687.82	#N/A
2-Year	P56200orof	P56200orof (2-Year)			#N/A	11.222	#N/A	0.08	#N/A	#N/A	12.28	#N/A	5319.62	#N/A
10-Year	P56200orof	P56200orof (10-Year)			#N/A	12.283	#N/A	0.081	#N/A	#N/A	12.22	#N/A	10030.36	#N/A
100-Year	P56200orof	P56200orof (100-Year)			#N/A	12.281	#N/A	0.082	#N/A	#N/A	12.27	#N/A	16391.67	#N/A
EDV	P56200OUT	P56200OUT (EDV)	SN16-2A	P56200	#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	687.82	#N/A
2-Year	P56200OUT	P56200OUT (2-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	5319.62	#N/A
10-Year	P56200OUT	P56200OUT (10-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	10030.36	#N/A
100-Year	P56200OUT	P56200OUT (100-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	16391.67	#N/A
EDV	P56200over	P56200over (EDV)												

100-Year	P5620over	P5620over (100-Year)		#N/A	12.278	#N/A	2.755	#N/A	#N/A	0	#N/A	16391.67	#N/A	
EDV	P800SH1OU	P800SH1OU (EDV)	P800SH1S	RoadSH1	#N/A	12.225	#N/A	0.064	#N/A	#N/A	1.61	#N/A	300.30	#N/A
2-Year	P800SH1OU	P800SH1OU (2-Year)	P800SH1S	RoadSH1	#N/A	12.222	#N/A	0.297	#N/A	#N/A	3.74	#N/A	1627.61	#N/A
10-Year	P800SH1OU	P800SH1OU (10-Year)	P800SH1S	RoadSH1	#N/A	12.225	#N/A	0.503	#N/A	#N/A	4.47	#N/A	2835.34	#N/A
100-Year	P800SH1OU	P800SH1OU (100-Year)	P800SH1S	RoadSH1	#N/A	12.225	#N/A	0.775	#N/A	#N/A	4.94	#N/A	4426.59	#N/A
EDV	P800SH1Sorof	P800SH1Sorof (EDV)	SN40-3D	P800SH1S	#N/A	15.103	#N/A	0.005	#N/A	#N/A	1.31	#N/A	0.00	#N/A
2-Year	P800SH1Sorof	P800SH1Sorof (2-Year)			#N/A	12.289	#N/A	0.008	#N/A	#N/A	2.03	#N/A	0.00	#N/A
10-Year	P800SH1Sorof	P800SH1Sorof (10-Year)			#N/A	12.283	#N/A	0.009	#N/A	#N/A	2.1	#N/A	0.00	#N/A
100-Year	P800SH1Sorof	P800SH1Sorof (100-Year)			#N/A	12.175	#N/A	0.009	#N/A	#N/A	2.14	#N/A	0.00	#N/A
EDV	P800SH1SOUT	P800SH1SOUT (EDV)	SN40-3D	P800SH1S	#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	0.00	#N/A
2-Year	P800SH1SOUT	P800SH1SOUT (2-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	0.00	#N/A
10-Year	P800SH1SOUT	P800SH1SOUT (10-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	0.00	#N/A
100-Year	P800SH1SOUT	P800SH1SOUT (100-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	0.00	#N/A
EDV	P800SH1Sover	P800SH1Sover (EDV)	SN40-3D	P800SH1S	#N/A	0	#N/A	0	#N/A	#N/A	0	#N/A	0.00	#N/A
2-Year	P800SH1Sover	P800SH1Sover (2-Year)			#N/A	12.275	#N/A	0.261	#N/A	#N/A	0	#N/A	0.00	#N/A
10-Year	P800SH1Sover	P800SH1Sover (10-Year)			#N/A	12.269	#N/A	0.459	#N/A	#N/A	0	#N/A	0.00	#N/A
100-Year	P800SH1Sover	P800SH1Sover (100-Year)			#N/A	12.264	#N/A	0.724	#N/A	#N/A	0	#N/A	0.00	#N/A
EDV	RD01/E01	RD01/E01 (EDV)	Road01	Cut-E01	#N/A	12.456	#N/A	0.001	#N/A	#N/A	0.03	#N/A	6.19	#N/A
2-Year	RD01/E01	RD01/E01 (2-Year)	Road01	Cut-E01	#N/A	12.308	#N/A	0.01	#N/A	#N/A	0.07	#N/A	65.80	#N/A
10-Year	RD01/E01	RD01/E01 (10-Year)	Road01	Cut-E01	#N/A	12.294	#N/A	0.021	#N/A	#N/A	0.09	#N/A	130.61	#N/A
100-Year	RD01/E01	RD01/E01 (100-Year)	Road01	Cut-E01	#N/A	12.286	#N/A	0.036	#N/A	#N/A	0.11	#N/A	219.43	#N/A
EDV	RD01/W02A	RD01/W02A (EDV)	Road01	Cut-W02A	#N/A	12.336	#N/A	0.012	#N/A	#N/A	0.24	#N/A	84.39	#N/A
2-Year	RD01/W02A	RD01/W02A (2-Year)	Road01	Cut-W02A	#N/A	12.308	#N/A	0.149	#N/A	#N/A	0.58	#N/A	896.17	#N/A
10-Year	RD01/W02A	RD01/W02A (10-Year)	Road01	Cut-W02A	#N/A	12.306	#N/A	0.293	#N/A	#N/A	0.75	#N/A	1778.23	#N/A
100-Year	RD01/W02A	RD01/W02A (100-Year)	Road01	Cut-W02A	#N/A	12.3	#N/A	0.485	#N/A	#N/A	0.87	#N/A	2986.57	#N/A
EDV	RD01/W02B	RD01/W02B (EDV)	Road01	Cut-W02B	#N/A	12.314	#N/A	0.007	#N/A	#N/A	0.11	#N/A	43.23	#N/A
2-Year	RD01/W02B	RD01/W02B (2-Year)	Road01	Cut-W02B	#N/A	12.3	#N/A	0.078	#N/A	#N/A	0.38	#N/A	459.19	#N/A
10-Year	RD01/W02B	RD01/W02B (10-Year)	Road01	Cut-W02B	#N/A	12.294	#N/A	0.154	#N/A	#N/A	0.49	#N/A	911.09	#N/A
100-Year	RD01/W02B	RD01/W02B (100-Year)	Road01	Cut-W02B	#N/A	12.292	#N/A	0.254	#N/A	#N/A	0.57	#N/A	1530.01	#N/A
EDV	RD02B/E02	RD02B/E02 (EDV)	Road02B	Cut-E02	#N/A	12.303	#N/A	0.023	#N/A	#N/A	0.32	#N/A	143.35	#N/A
2-Year	RD02B/E02	RD02B/E02 (2-Year)	Road02B	Cut-E02	#N/A	12.292	#N/A	0.261	#N/A	#N/A	0.84	#N/A	1522.67	#N/A
10-Year	RD02B/E02	RD02B/E02 (10-Year)	Road02B	Cut-E02	#N/A	12.289	#N/A	0.517	#N/A	#N/A	0.94	#N/A	3021.54	#N/A
100-Year	RD02B/E02	RD02B/E02 (100-Year)	Road02B	Cut-E02	#N/A	12.303	#N/A	0.853	#N/A	#N/A	0.97	#N/A	5074.76	#N/A
EDV	RD02B/W03	RD02B/W03 (EDV)	Road02B	Cut-W03	#N/A	12.306	#N/A	0.006	#N/A	#N/A	0.12	#N/A	37.44	#N/A
2-Year	RD02B/W03	RD02B/W03 (2-Year)	Road02B	Cut-W03	#N/A	12.272	#N/A	0.086	#N/A	#N/A	0.41	#N/A	397.60	#N/A
10-Year	RD02B/W03	RD02B/W03 (10-Year)	Road02B	Cut-W03	#N/A	12.311	#N/A	0.143	#N/A	#N/A	0.42	#N/A	788.90	#N/A
100-Year	RD02B/W03	RD02B/W03 (100-Year)	Road02B	Cut-W03	#N/A	12.317	#N/A	0.239	#N/A	#N/A	0.41	#N/A	1324.83	#N/A
EDV	RD05/E03	RD05/E03 (EDV)	Road05	Cut-E03	#N/A	12.361	#N/A	0.01	#N/A	#N/A	0.16	#N/A	68.56	#N/A
2-Year	RD05/E03	RD05/E03 (2-Year)	Road05	Cut-E03	#N/A	12.317	#N/A	0.123	#N/A	#N/A	0.54	#N/A	728.94	#N/A
10-Year	RD05/E03	RD05/E03 (10-Year)	Road05	Cut-E03	#N/A	12.308	#N/A	0.246	#N/A	#N/A	0.7	#N/A	1446.23	#N/A
100-Year	RD05/E03	RD05/E03 (100-Year)	Road05	Cut-E03	#N/A	12.303	#N/A	0.41	#N/A	#N/A	0.8	#N/A	2428.89	#N/A
EDV	RD05/W04	RD05/W04 (EDV)	Road05	Cut-W04	#N/A	12.353	#N/A	0.023	#N/A	#N/A	0.29	#N/A	159.52	#N/A
2-Year	RD05/W04	RD05/W04 (2-Year)	Road05	Cut-W04	#N/A	12.292	#N/A	0.298	#N/A	#N/A	0.92	#N/A	1645.72	#N/A
10-Year	RD05/W04	RD05/W04 (10-Year)	Road05	Cut-W04	#N/A	12.286	#N/A	0.586	#N/A	#N/A	1.17	#N/A	3239.09	#N/A
100-Year	RD05/W04	RD05/W04 (100-Year)	Road05	Cut-W04	#N/A	12.281	#N/A	0.965	#N/A	#N/A	1.34	#N/A	5413.66	#N/A
EDV	RD06/E06	RD06/E06 (EDV)	Road06	Cut-E06	#N/A	12.525	#N/A	0.001	#N/A	#N/A	0.09	#N/A	14.54	#N/A

2-Year	RD06/E06	RD06/E06 (2-Year)	Road06	Cut-E06	#N/A	12.319	#N/A	0.024	#N/A	#N/A	0.15	#N/A	154.58	#N/A
10-Year	RD06/E06	RD06/E06 (10-Year)	Road06	Cut-E06	#N/A	12.3	#N/A	0.05	#N/A	#N/A	0.2	#N/A	306.83	#N/A
100-Year	RD06/E06	RD06/E06 (100-Year)	Road06	Cut-E06	#N/A	12.289	#N/A	0.086	#N/A	#N/A	0.24	#N/A	515.79	#N/A
EDV	RD06/W07	RD06/W07 (EDV)	Road06	Cut-W07	#N/A	12.4	#N/A	0.023	#N/A	#N/A	0.27	#N/A	156.99	#N/A
2-Year	RD06/W07	RD06/W07 (2-Year)	Road06	Cut-W07	#N/A	12.333	#N/A	0.272	#N/A	#N/A	0.83	#N/A	1667.58	#N/A
10-Year	RD06/W07	RD06/W07 (10-Year)	Road06	Cut-W07	#N/A	12.325	#N/A	0.537	#N/A	#N/A	1.05	#N/A	3308.57	#N/A
100-Year	RD06/W07	RD06/W07 (100-Year)	Road06	Cut-W07	#N/A	12.319	#N/A	0.889	#N/A	#N/A	1.21	#N/A	5556.00	#N/A
EDV	RD07/E08	RD07/E08 (EDV)	Road07	Cut-E08	#N/A	12.322	#N/A	0.038	#N/A	#N/A	0.49	#N/A	238.73	#N/A
2-Year	RD07/E08	RD07/E08 (2-Year)	Road07	Cut-E08	#N/A	12.294	#N/A	0.419	#N/A	#N/A	1.39	#N/A	2419.09	#N/A
10-Year	RD07/E08	RD07/E08 (10-Year)	Road07	Cut-E08	#N/A	12.292	#N/A	0.809	#N/A	#N/A	1.73	#N/A	4738.02	#N/A
100-Year	RD07/E08	RD07/E08 (100-Year)	Road07	Cut-E08	#N/A	12.292	#N/A	1.323	#N/A	#N/A	1.91	#N/A	7893.93	#N/A
EDV	RD07/W09	RD07/W09 (EDV)	Road07	Cut-W09	#N/A	12.317	#N/A	0.028	#N/A	#N/A	0.41	#N/A	179.18	#N/A
2-Year	RD07/W09	RD07/W09 (2-Year)	Road07	Cut-W09	#N/A	12.278	#N/A	0.325	#N/A	#N/A	1.22	#N/A	1833.71	#N/A
10-Year	RD07/W09	RD07/W09 (10-Year)	Road07	Cut-W09	#N/A	12.275	#N/A	0.63	#N/A	#N/A	1.53	#N/A	3601.00	#N/A
100-Year	RD07/W09	RD07/W09 (100-Year)	Road07	Cut-W09	#N/A	12.272	#N/A	1.033	#N/A	#N/A	1.71	#N/A	6008.88	#N/A
EDV	RD09/E09	RD09/E09 (EDV)	Road09	Cut-E09	#N/A	12.356	#N/A	0.072	#N/A	#N/A	0.82	#N/A	455.02	#N/A
2-Year	RD09/E09	RD09/E09 (2-Year)	Road09	Cut-E09	#N/A	12.331	#N/A	0.616	#N/A	#N/A	1.96	#N/A	3829.89	#N/A
10-Year	RD09/E09	RD09/E09 (10-Year)	Road09	Cut-E09	#N/A	12.325	#N/A	1.125	#N/A	#N/A	2.4	#N/A	7176.22	#N/A
100-Year	RD09/E09	RD09/E09 (100-Year)	Road09	Cut-E09	#N/A	12.322	#N/A	1.784	#N/A	#N/A	2.72	#N/A	11649.06	#N/A
EDV	RD09/W10	RD09/W10 (EDV)	Road09	Cut-W10	#N/A	12.356	#N/A	0.054	#N/A	#N/A	0.69	#N/A	345.86	#N/A
2-Year	RD09/W10	RD09/W10 (2-Year)	Road09	Cut-W10	#N/A	12.333	#N/A	0.492	#N/A	#N/A	1.74	#N/A	3057.90	#N/A
10-Year	RD09/W10	RD09/W10 (10-Year)	Road09	Cut-W10	#N/A	12.325	#N/A	0.909	#N/A	#N/A	2.14	#N/A	5791.81	#N/A
100-Year	RD09/W10	RD09/W10 (100-Year)	Road09	Cut-W10	#N/A	12.325	#N/A	1.452	#N/A	#N/A	2.43	#N/A	9459.89	#N/A
EDV	RD10/E10	RD10/E10 (EDV)	Road10	Cut-E10	#N/A	12.311	#N/A	0.024	#N/A	#N/A	0.29	#N/A	160.08	#N/A
2-Year	RD10/E10	RD10/E10 (2-Year)	Road10	Cut-E10	#N/A	12.264	#N/A	0.286	#N/A	#N/A	0.89	#N/A	1544.99	#N/A
10-Year	RD10/E10	RD10/E10 (10-Year)	Road10	Cut-E10	#N/A	12.256	#N/A	0.549	#N/A	#N/A	1.11	#N/A	2987.78	#N/A
100-Year	RD10/E10	RD10/E10 (100-Year)	Road10	Cut-E10	#N/A	12.253	#N/A	0.894	#N/A	#N/A	1.25	#N/A	4940.81	#N/A
EDV	RD10/W11	RD10/W11 (EDV)	Road10	Cut-W11	#N/A	12.339	#N/A	0.009	#N/A	#N/A	0.14	#N/A	68.01	#N/A
2-Year	RD10/W11	RD10/W11 (2-Year)	Road10	Cut-W11	#N/A	12.275	#N/A	0.123	#N/A	#N/A	0.51	#N/A	688.30	#N/A
10-Year	RD10/W11	RD10/W11 (10-Year)	Road10	Cut-W11	#N/A	12.267	#N/A	0.242	#N/A	#N/A	0.65	#N/A	1347.18	#N/A
100-Year	RD10/W11	RD10/W11 (100-Year)	Road10	Cut-W11	#N/A	12.261	#N/A	0.4	#N/A	#N/A	0.72	#N/A	2244.16	#N/A
EDV	RD11/E11	RD11/E11 (EDV)	Road11	Cut-E11	#N/A	12.269	#N/A	0.075	#N/A	#N/A	0.85	#N/A	423.24	#N/A
2-Year	RD11/E11	RD11/E11 (2-Year)	Road11	Cut-E11	#N/A	12.25	#N/A	0.828	#N/A	#N/A	2.35	#N/A	4319.66	#N/A
10-Year	RD11/E11	RD11/E11 (10-Year)	Road11	Cut-E11	#N/A	12.242	#N/A	1.6	#N/A	#N/A	2.94	#N/A	8476.26	#N/A
100-Year	RD11/E11	RD11/E11 (100-Year)	Road11	Cut-E11	#N/A	12.239	#N/A	2.617	#N/A	#N/A	3.4	#N/A	14138.48	#N/A
EDV	RD11/W12	RD11/W12 (EDV)	Road11	Cut-W12	#N/A	12.261	#N/A	0.03	#N/A	#N/A	0.47	#N/A	163.37	#N/A
2-Year	RD11/W12	RD11/W12 (2-Year)	Road11	Cut-W12	#N/A	12.242	#N/A	0.3	#N/A	#N/A	1.27	#N/A	1544.20	#N/A
10-Year	RD11/W12	RD11/W12 (10-Year)	Road11	Cut-W12	#N/A	12.236	#N/A	0.565	#N/A	#N/A	1.58	#N/A	2971.21	#N/A
100-Year	RD11/W12	RD11/W12 (100-Year)	Road11	Cut-W12	#N/A	12.233	#N/A	0.912	#N/A	#N/A	1.8	#N/A	4898.18	#N/A
EDV	RD12/E12B	RD12/E12B (EDV)	Road12	Cut-E12B	#N/A	12.264	#N/A	0.028	#N/A	#N/A	0.34	#N/A	156.52	#N/A
2-Year	RD12/E12B	RD12/E12B (2-Year)	Road12	Cut-E12B	#N/A	12.242	#N/A	0.322	#N/A	#N/A	0.98	#N/A	1659.44	#N/A
10-Year	RD12/E12B	RD12/E12B (10-Year)	Road12	Cut-E12B	#N/A	12.239	#N/A	0.632	#N/A	#N/A	1.18	#N/A	3290.70	#N/A
100-Year	RD12/E12B	RD12/E12B (100-Year)	Road12	Cut-E12B	#N/A	12.233	#N/A	1.041	#N/A	#N/A	1.26	#N/A	5524.78	#N/A
EDV	RD12/W13	RD12/W13 (EDV)	Road12	Cut-W13	#N/A	12.261	#N/A	0.03	#N/A	#N/A	0.41	#N/A	166.88	#N/A
2-Year	RD12/W13	RD12/W13 (2-Year)	Road12	Cut-W13	#N/A	12.239	#N/A	0.328	#N/A	#N/A	1.17	#N/A	1687.05	#N/A
10-Year	RD12/W13	RD12/W13 (10-Year)	Road12	Cut-W13	#N/A	12.233	#N/A	0.636	#N/A	#N/A	1.45	#N/A	3302.82	#N/A
100-Year	RD12/W13	RD12/W13 (100-Year)	Road12	Cut-W13	#N/A	12.233	#N/A	1.032	#N/A	#N/A	1.46	#N/A	5501.64	#N/A
EDV	W02A/W01	W02A/W01 (EDV)	Cut-W02A	Cut-W01	#N/A	12.367	#N/A	0.002	#N/A	#N/A	0.15	#N/A	14.92	#N/A
2-Year	W02A/W01	W02A/W01 (2-Year)	Cut-W02A	Cut-W01	#N/A	12.283	#N/A	0.027	#N/A	#N/A	0.46	#N/A	158.43	#N/A
10-Year	W02A/W01	W02A/W01 (10-Year)	Cut-W02A	Cut-W01	#N/A	12.272	#N/A	0.056	#N/A	#N/A	0.61	#N/A	314.38	#N/A
100-Year	W02A/W01	W02A/W01 (100-Year)	Cut-W02A	Cut-W01	#N/A	12.264	#N/A	0.094	#N/A	#N/A	0.74	#N/A	528.05	#N/A
EDV	W04/W05	W04/W05 (EDV)	Cut-W04	Cut-W05	#N/A	12.383	#N/A	0.008	#N/A	#N/A	0.28	#N/A	56.81	#N/A
2-Year	W04/W05	W04/W05 (2-Year)	Cut-W04	Cut-W05	#N/A	12.278	#N/A	0.111	#N/A	#N/A	0.8	#N/A	603.48	#N/A
10-Year	W04/W05	W04/W05 (10-Year)	Cut-W04	Cut-W05	#N/A	12.267	#N/A	0.222	#N/A	#N/A	1			

2-Year	W07/W08	W07/W08 (2-Year)	Cut-W07	Cut-W08	#N/A	12.322	#N/A	0.269	#N/A	#N/A	1.17	#N/A	1635.91	#N/A
10-Year	W07/W08	W07/W08 (10-Year)	Cut-W07	Cut-W08	#N/A	12.314	#N/A	0.53	#N/A	#N/A	1.48	#N/A	3245.98	#N/A
100-Year	W07/W08	W07/W08 (100-Year)	Cut-W07	Cut-W08	#N/A	12.308	#N/A	0.876	#N/A	#N/A	1.76	#N/A	5451.28	#N/A
EDV	W13/W14	W13/W14 (EDV)	Cut-W13	Cut-W14	#N/A	12.264	#N/A	0.026	#N/A	#N/A	0.66	#N/A	142.58	#N/A
2-Year	W13/W14	W13/W14 (2-Year)	Cut-W13	Cut-W14	#N/A	12.242	#N/A	0.278	#N/A	#N/A	1.64	#N/A	1429.26	#N/A
10-Year	W13/W14	W13/W14 (10-Year)	Cut-W13	Cut-W14	#N/A	12.231	#N/A	0.537	#N/A	#N/A	2.1	#N/A	2791.41	#N/A
100-Year	W13/W14	W13/W14 (100-Year)	Cut-W13	Cut-W14	#N/A	12.233	#N/A	0.87	#N/A	#N/A	2.39	#N/A	4642.88	#N/A

Appendix J – Pūhoi flow change table

Puhoi Pre/Post Development Flow Comparisons

Storm Event	Link2	Link	D/S Node	U/S Node	Time to Peak (hrs)		Max Flow (m³/s)		Peak Flow %age Difference	Max Velocity (m/s)		Total Flow from U/S Node (m³)		Total Flow %age difference
					Pre-Dev (T _p)	Post-Dev (T _p)	Pre-Dev (Q)	Post-Dev (Q)		Pre-Dev (v)	Post-Dev (v)	Pre-Dev (Vol)	Post-Dev (Vol)	
EDV	00-1/00-2	00-1/00-2 (EDV)	SN00-1	SN00-2	15.719	15.589	10.856	12.965	19.43%	0.12	0.15	326601.7	462298.6	41.55%
2-Year	00-1/00-2	00-1/00-2 (2-Year)	SN00-1	SN00-2	16.122	16.117	110.775	112.342	1.41%	0.51	0.51	3284965.4	3449059.8	5.00%
10-Year	00-1/00-2	00-1/00-2 (10-Year)	SN00-1	SN00-2	15.481	15.469	278.015	278.85	0.30%	0.75	0.75	7150000.0	7300000.0	2.10%
100-Year	00-1/00-2	00-1/00-2 (100-Year)	SN00-1	SN00-2	15.122	15.1	510.699	511.567	0.17%	0.97	0.97	12400000.0	12550000.0	1.21%
EDV	00-1/39-1	00-1/39-1 (EDV)	SN00-1	SN39-1	13.061	13.061	1.763	1.722	-2.33%	0.14	0.14	23090.1	22588.4	-2.17%
2-Year	00-1/39-1	00-1/39-1 (2-Year)	SN00-1	SN39-1	13.069	13.067	19.704	19.383	-1.63%	0.74	0.74	237411.6	234674.8	-1.15%
10-Year	00-1/39-1	00-1/39-1 (10-Year)	SN00-1	SN39-1	13.014	13.017	44.351	43.591	-1.71%	0.78	0.77	523424.5	518749.5	-0.89%
100-Year	00-1/39-1	00-1/39-1 (100-Year)	SN00-1	SN39-1	12.994	13	76.833	75.498	-1.74%	0.81	0.80	912459.3	905320.9	-0.78%
EDV	00-2/00-3	00-2/00-3 (EDV)	SN00-2	SN00-3	15.703	15.564	10.801	12.901	19.44%	0.13	0.15	324106.5	458825.6	41.57%
2-Year	00-2/00-3	00-2/00-3 (2-Year)	SN00-2	SN00-3	16.006	15.972	110.676	112.239	1.41%	0.47	0.47	3259296.0	3420449.5	4.94%
10-Year	00-2/00-3	00-2/00-3 (10-Year)	SN00-2	SN00-3	15.392	15.386	277.829	278.585	0.27%	0.69	0.69	7100000.0	7250000.0	2.11%
100-Year	00-2/00-3	00-2/00-3 (100-Year)	SN00-2	SN00-3	15.042	15.031	509.994	510.556	0.11%	0.90	0.90	12300000.0	12450000.0	1.22%
EDV	00-2/36OUT	00-2/36OUT (EDV)	SN00-2	SN36OUT	12.503	12.4	0.143	0.155	8.39%	0.97	1.00	1263.3	1167.8	-7.56%
2-Year	00-2/36OUT	00-2/36OUT (2-Year)	SN00-2	SN36OUT	12.533	12.372	1.323	1.611	21.77%	2.18	2.33	12427.8	11411.4	-8.18%
10-Year	00-2/36OUT	00-2/36OUT (10-Year)	SN00-2	SN36OUT	12.575	12.386	2.505	3.273	30.66%	2.69	2.93	26810.9	24533.0	-8.50%
100-Year	00-2/36OUT	00-2/36OUT (100-Year)	SN00-2	SN36OUT	12.639	12.433	4.098	4.516	10.20%	3.06	3.24	46065.4	42074.7	-8.66%
EDV	00-2/37OUT	00-2/37OUT (EDV)	SN00-2	SN37OUT	13.267	12.706	0.052	0.074	42.31%	0.40	0.76	1220.9	2252.2	84.47%
2-Year	00-2/37OUT	00-2/37OUT (2-Year)	SN00-2	SN37OUT	12.581	12.467	1.114	1.564	40.39%	1.27	2.34	11866.4	15160.5	27.76%
10-Year	00-2/37OUT	00-2/37OUT (10-Year)	SN00-2	SN37OUT	12.567	14.747	2.372	3.032	27.82%	1.63	2.90	25576.3	31646.9	23.74%
100-Year	00-2/37OUT	00-2/37OUT (100-Year)	SN00-2	SN37OUT	12.589	13.658	3.741	4.176	11.63%	1.87	2.57	43926.3	53069.3	20.81%
EDV	00-3/00-4	00-3/00-4 (EDV)	SN00-3	SN00-4	15.694	15.542	10.682	12.776	19.60%	0.15	0.18	317381.0	452266.6	42.50%
2-Year	00-3/00-4	00-3/00-4 (2-Year)	SN00-3	SN00-4	15.675	15.647	112.084	113.591	1.34%	0.41	0.41	3192502.2	3355824.6	5.12%
10-Year	00-3/00-4	00-3/00-4 (10-Year)	SN00-3	SN00-4	15.231	15.231	277.63	278.35	0.26%	0.59	0.60	6950000.0	7100000.0	2.16%
100-Year	00-3/00-4	00-3/00-4 (100-Year)	SN00-3	SN00-4	14.906	14.903	508.477	509.074	0.12%	0.77	0.77	12050000.0	12200000.0	1.24%
EDV	00-4/00-5	00-4/00-5 (EDV)	SN00-4	SN00-5	15.594	15.436	10.665	12.775	19.78%	0.16	0.19	316043.5	451017.9	42.71%
2-Year	00-4/00-5	00-4/00-5 (2-Year)	SN00-4	SN00-5	15.372	15.331	114.52	115.891	1.20%	0.46	0.46	3178845.6	3343759.9	5.19%
10-Year	00-4/00-5	00-4/00-5 (10-Year)	SN00-4	SN00-5	15.05	15.047	279.774	280.533	0.27%	0.59	0.59	6900000.0	7050000.0	2.17%
100-Year	00-4/00-5	00-4/00-5 (100-Year)	SN00-4	SN00-5	14.764	14.769	511.084	511.457	0.07%	0.76	0.76	12000000.0	12150000.0	1.25%
EDV	00-4/38OUT	00-4/38OUT (EDV)	SN00-4	SN38OUT	12.292	12.272	0.133	0.116	-12.78%	0.61	0.58	809.5	652.7	-19.37%
2-Year	00-4/38OUT	00-4/38OUT (2-Year)	SN00-4	SN38OUT	12.292	12.222	1.403	1.179	-15.97%	1.44	1.40	7947.1	6364.1	-19.92%
10-Year	00-4/38OUT	00-4/38OUT (10-Year)	SN00-4	SN38OUT	12.3	12.272	2.957	2.538	-14.17%	1.14	0.96	17171.4	13725.8	-20.07%
100-Year	00-4/38OUT	00-4/38OUT (100-Year)	SN00-4	SN38OUT	12.319	12.267	4.783	4.3	-10.10%	0.71	0.65	29543.5	23620.1	-20.05%
EDV	00-5/01-1	00-5/01-1 (EDV)	SN00-5	SN01-1	15.561	15.392	10.67	12.765	19.63%	0.17	0.19	316041.2	449644.7	42.27%
2-Year	00-5/01-1	00-5/01-1 (2-Year)	SN00-5	SN01-1	15.278	15.256	115.724	116.946	1.06%	0.48	0.47	3182611.0	3338911.0	4.91%
10-Year	00-5/01-1	00-5/01-1 (10-Year)	SN00-5	SN01-1	14.994	14.992	281.164	281.702	0.19%	0.59	0.59	6900000.0	7050000.0	2.17%
100-Year	00-5/01-1	00-5/01-1 (100-Year)	SN00-5	SN01-1	14.686	14.681	512.97	512.829	-0.03%	0.75	0.75	12000000.0	12100000.0	0.83%
EDV	00/00-1	00/00-1 (EDV)	SN00	SN00-1	15.628	15.55	11.404	13.524	18.59%	0.11	0.13	351548.6	486760.6	38.46%
2-Year	00/00-1	00/00-1 (2-Year)	SN00	SN00-1	16.142	16.131	114.548	116.093	1.35%	0.86	0.86	3542173.7	3704030.7	4.57%
10-Year	00/00-1	00/00-1 (10-Year)	SN00	SN00-1	15.5	15.486	288.478	289.219	0.26%	1.33	1.33	7700000.0	7850000.0	1.95%
100-Year	00/00-1	00/00-1 (100-Year)	SN00	SN00-1	15.133	15.114	530.562	531.394	0.16%	1.63	1.63	13350000.0	13500000.0	1.12%
EDV	01-1/01-2	01-1/01-2 (EDV)	SN01-1	SN01-2	15.931	15.864	8.024	8.132	1.35%	0.13	0.13	231		

100-Year	02-1/03-1	02-1/03-1 (100-Year)	SN02-1	SN03-1	13.492	13.431	168.481	169.794	0.78%	1.03	1.04	3084166.9	3228660.6	4.69%
EDV	02-2/02-2A	02-2/02-2A (EDV)	SN02-2	SN02-2A	#N/A	12.281	#N/A	0.144	#N/A	#N/A	1.11	#N/A	872.0	#N/A
2-Year	02-2/02-2A	02-2/02-2A (2-Year)	SN02-2	SN02-2A	#N/A	12.281	#N/A	1.542	#N/A	#N/A	2.15	#N/A	8730.1	#N/A
10-Year	02-2/02-2A	02-2/02-2A (10-Year)	SN02-2	SN02-2A	#N/A	12.275	#N/A	3.364	#N/A	#N/A	2.36	#N/A	18979.4	#N/A
100-Year	02-2/02-2A	02-2/02-2A (100-Year)	SN02-2	SN02-2A	#N/A	12.269	#N/A	5.728	#N/A	#N/A	2.19	#N/A	32809.6	#N/A
EDV	03-1/03-2	03-1/03-2 (EDV)	SN03-1	SN03-2	12.358	12.333	0.172	0.181	▲ 5.23%	1.26	1.29	1189.3	2326.8	95.64%
2-Year	03-1/03-2	03-1/03-2 (2-Year)	SN03-1	SN03-2	12.714	12.347	1.659	2.504	▲ 50.93%	2.75	3.33	12479.0	17192.0	37.77%
10-Year	03-1/03-2	03-1/03-2 (10-Year)	SN03-1	SN03-2	12.503	12.369	3.024	5.15	▲ 70.30%	2.43	2.74	27644.9	36344.5	31.47%
100-Year	03-1/03-2	03-1/03-2 (100-Year)	SN03-1	SN03-2	12.425	12.394	6.508	7.64	▲ 17.39%	2.07	2.23	48316.0	61672.8	27.64%
EDV	03-1/04-1	03-1/04-1 (EDV)	SN03-1	SN04-1	13.558	13.583	3.898	5.831	▲ 49.59%	0.68	0.68	75017.1	204663.9	172.82%
2-Year	03-1/04-1	03-1/04-1 (2-Year)	SN03-1	SN04-1	13.286	13.483	42.607	43.093	▲ 1.14%	0.96	0.96	780210.8	931764.1	19.42%
10-Year	03-1/04-1	03-1/04-1 (10-Year)	SN03-1	SN04-1	13.686	13.639	87.143	88.1	▲ 1.10%	0.94	0.93	1724258.8	1859564.9	7.85%
100-Year	03-1/04-1	03-1/04-1 (100-Year)	SN03-1	SN04-1	13.442	13.364	168.176	169.395	▲ 0.72%	0.99	1.00	3009029.3	3138661.8	4.31%
EDV	03-3/03-3A	03-3/03-3A (EDV)	SN03-3	SN03-3A	#N/A	12.336	#N/A	0.158	#N/A	#N/A	1.07	#N/A	2150.5	#N/A
2-Year	03-3/03-3A	03-3/03-3A (2-Year)	SN03-3	SN03-3A	#N/A	12.347	#N/A	2.284	#N/A	#N/A	2.24	#N/A	15426.2	#N/A
10-Year	03-3/03-3A	03-3/03-3A (10-Year)	SN03-3	SN03-3A	#N/A	12.347	#N/A	4.818	#N/A	#N/A	2.38	#N/A	32494.5	#N/A
100-Year	03-3/03-3A	03-3/03-3A (100-Year)	SN03-3	SN03-3A	#N/A	12.344	#N/A	8.039	#N/A	#N/A	2.38	#N/A	54972.3	#N/A
EDV	04-1/04-2	04-1/04-2 (EDV)	SN04-1	SN04-2	12.881	12.906	1.069	1.066	▲ -0.28%	0.34	0.20	12851.5	12856.3	0.04%
2-Year	04-1/04-2	04-1/04-2 (2-Year)	SN04-1	SN04-2	12.875	12.872	12.294	12.286	▲ -0.07%	0.39	0.38	134772.9	134732.3	-0.03%
10-Year	04-1/04-2	04-1/04-2 (10-Year)	SN04-1	SN04-2	12.872	12.878	27.932	27.935	▲ 0.01%	0.38	0.37	298508.0	298435.9	-0.02%
100-Year	04-1/04-2	04-1/04-2 (100-Year)	SN04-1	SN04-2	12.872	12.872	48.622	48.637	▲ 0.03%	0.42	0.40	521643.6	521518.3	-0.02%
EDV	04-1/05-1	04-1/05-1 (EDV)	SN04-1	SN05-1	13.594	13.539	3.197	5.142	▲ 60.84%	0.74	0.80	61766.6	191188.0	209.53%
2-Year	04-1/05-1	04-1/05-1 (2-Year)	SN04-1	SN05-1	13.769	13.672	34.685	35.806	▲ 3.23%	0.98	0.98	641728.3	793233.1	23.61%
10-Year	04-1/05-1	04-1/05-1 (10-Year)	SN04-1	SN05-1	13.844	13.811	73.751	74.21	▲ 0.62%	1.01	1.01	1417519.7	1551912.7	9.48%
100-Year	04-1/05-1	04-1/05-1 (100-Year)	SN04-1	SN05-1	13.514	13.439	139.016	138.025	▲ -0.71%	0.99	0.98	2472946.3	2601377.5	5.19%
EDV	05-1/05-2	05-1/05-2 (EDV)	SN05-1	SN05-2	12.303	12.419	0.06	0.113	▲ 88.33%	0.34	0.43	375.5	1006.2	167.93%
2-Year	05-1/05-2	05-1/05-2 (2-Year)	SN05-1	SN05-2	12.492	13.536	0.365	0.441	▲ 20.82%	0.67	0.62	3942.4	7576.6	92.18%
10-Year	05-1/05-2	05-1/05-2 (10-Year)	SN05-1	SN05-2	12.511	15.875	0.512	0.594	▲ 16.02%	0.47	0.51	8733.7	15456.9	76.98%
100-Year	05-1/05-2	05-1/05-2 (100-Year)	SN05-1	SN05-2	15.469	17.125	0.521	0.736	▲ 41.27%	0.43	0.52	15265.3	25662.4	68.11%
EDV	05-1/06-1	05-1/06-1 (EDV)	SN05-1	SN06-1	13.506	13.425	3.177	5.136	▲ 61.66%	0.70	0.75	60825.2	189499.2	211.55%
2-Year	05-1/06-1	05-1/06-1 (2-Year)	SN05-1	SN06-1	13.55	13.558	34.455	35.283	▲ 2.40%	1.02	1.02	632012.2	779981.8	23.41%
10-Year	05-1/06-1	05-1/06-1 (10-Year)	SN05-1	SN06-1	13.753	13.714	73.104	73.445	▲ 0.47%	1.04	1.04	1396198.7	1523837.2	9.14%
100-Year	05-1/06-1	05-1/06-1 (100-Year)	SN05-1	SN06-1	13.453	13.381	138.188	137.107	▲ -0.78%	1.01	1.01	2435744.8	2553660.8	4.84%
EDV	05-3/05-3A	05-3/05-3A (EDV)	SN05-3	SN05-3A	#N/A	12.258	#N/A	0.028	#N/A	#N/A	0.33	#N/A	156.1	#N/A
2-Year	05-3/05-3A	05-3/05-3A (2-Year)	SN05-3	SN05-3A	#N/A	12.244	#N/A	0.314	#N/A	#N/A	0.82	#N/A	1638.2	#N/A
10-Year	05-3/05-3A	05-3/05-3A (10-Year)	SN05-3	SN05-3A	#N/A	12.242	#N/A	0.698	#N/A	#N/A	0.84	#N/A	3635.4	#N/A
100-Year	05-3/05-3A	05-3/05-3A (100-Year)	SN05-3	SN05-3A	#N/A	12.242	#N/A	1.205	#N/A	#N/A	0.63	#N/A	6372.3	#N/A
EDV	06-1/06-2	06-1/06-2 (EDV)	SN06-1	SN06-2	12.317	12.269	0.127	0.122	▲ -3.94%	0.38	0.37	789.8	689.1	-12.75%
2-Year	06-1/06-2	06-1/06-2 (2-Year)	SN06-1	SN06-2	12.308	12.261	1.432	1.367	▲ -4.54%	0.71	0.69	8282.5	7222.9	-12.79%
10-Year	06-1/06-2	06-1/06-2 (10-Year)	SN06-1	SN06-2	12.331	12.264	2.931	2.8	▲ -4.47%	0.42	0.44	18338.0	15970.4	-12.91%
100-Year	06-1/06-2	06-1/06-2 (100-Year)	SN06-1	SN06-2	12.364	12.303	3.987	3.712	▲ -6.90%	0.44	0.29	32049.2	27895.2	-12.96%
EDV	06-1/07-1	06-1/07-1 (EDV)	SN06-1	SN07-1	13.458	13.361	3.131	5.126	▲ 63.72%	0.95	1.10	59246.2	188054.8	217.41%
2-Year	06-1/07-1	06-1/07-1 (2-Year)	SN06-1	SN07-1	13.392	13.378	34.412	35.311	▲ 2.61%	1.47	1.47	615575.0	766107.9	24.45%
10-Year	06-1/07-1	06-1/07-1 (10-Year)	SN06-1	SN07-1	13.633	13.597	72.56	73.032	▲ 0.65%	1.48	1.49	1360079.9	1493075.8	9.78%
100-Year	06-1/07-1	06-1/07-1 (100-Year)	SN06-1	SN07-1	13.378	13.308	137.261	136.504	▲ -0.55%	1.46	1.47</td			

100-Year	08-1/08-2	08-1/08-2 (100-Year)	SN08-1	SN08-2	12.911	12.678	18.855	24.863	▲ 31.86%	0.34	1.05	232733.7	340856.7	▲ 46.46%
EDV	08-1/09-1	08-1/09-1 (EDV)	SN08-1	SN09-1	13.372	13.403	2.658	2.697	▲ 1.47%	0.71	0.67	48947.9	53203.1	▲ 8.69%
2-Year	08-1/09-1	08-1/09-1 (2-Year)	SN08-1	SN09-1	13.325	13.325	29.509	30.277	▲ 2.60%	1.04	1.04	509388.4	519589.5	▲ 2.00%
10-Year	08-1/09-1	08-1/09-1 (10-Year)	SN08-1	SN09-1	13.528	13.517	63.568	64.5	▲ 1.47%	1.08	1.07	1126306.6	1141416.6	▲ 1.34%
100-Year	08-1/09-1	08-1/09-1 (100-Year)	SN08-1	SN09-1	13.269	13.228	114.918	116.831	▲ 1.66%	1.05	1.05	1965184.5	1984122.5	▲ 0.96%
EDV	09-1/10-1	09-1/10-1 (EDV)	SN09-1	SN10-1	13.281	13.283	2.611	2.661	▲ 1.91%	0.61	0.61	47253.2	51594.1	▲ 9.19%
2-Year	09-1/10-1	09-1/10-1 (2-Year)	SN09-1	SN10-1	13.247	13.222	29.089	29.951	▲ 2.96%	0.94	0.95	492320.0	504072.4	▲ 2.39%
10-Year	09-1/10-1	09-1/10-1 (10-Year)	SN09-1	SN10-1	13.344	13.319	63.237	64.384	▲ 1.81%	0.95	0.95	1088545.7	1107075.3	▲ 1.70%
100-Year	09-1/10-1	09-1/10-1 (100-Year)	SN09-1	SN10-1	13.178	13.147	113.615	115.564	▲ 1.72%	0.95	0.94	1900169.6	1925140.1	▲ 1.31%
EDV	09-2/09-2A	09-2/09-2A (EDV)	SN09-2	SN09-2A	#N/A	12.289	#N/A	0.095	#N/A	#N/A	0.36	#N/A	587.9	#N/A
2-Year	09-2/09-2A	09-2/09-2A (2-Year)	SN09-2	SN09-2A	#N/A	12.275	#N/A	1.087	#N/A	#N/A	0.65	#N/A	6158.1	#N/A
10-Year	09-2/09-2A	09-2/09-2A (10-Year)	SN09-2	SN09-2A	#N/A	12.267	#N/A	2.424	#N/A	#N/A	1.04	#N/A	13629.3	#N/A
100-Year	09-2/09-2A	09-2/09-2A (100-Year)	SN09-2	SN09-2A	#N/A	12.269	#N/A	4.204	#N/A	#N/A	1.38	#N/A	23806.4	#N/A
EDV	09-2/09-2C	09-2/09-2C (EDV)	SN09-2	SN09-2C	#N/A	12.297	#N/A	0.008	#N/A	#N/A	0.10	#N/A	50.7	#N/A
2-Year	09-2/09-2C	09-2/09-2C (2-Year)	SN09-2	SN09-2C	#N/A	12.256	#N/A	0.1	#N/A	#N/A	0.12	#N/A	531.8	#N/A
10-Year	09-2/09-2C	09-2/09-2C (10-Year)	SN09-2	SN09-2C	#N/A	12.247	#N/A	0.226	#N/A	#N/A	0.12	#N/A	1177.7	#N/A
100-Year	09-2/09-2C	09-2/09-2C (100-Year)	SN09-2	SN09-2C	#N/A	12.242	#N/A	0.393	#N/A	#N/A	0.12	#N/A	2057.6	#N/A
EDV	10-1/10-2	10-1/10-2 (EDV)	SN10-1	SN10-2	12.406	12.389	0.217	0.246	▲ 13.36%	0.36	0.38	1591.4	1837.3	▲ 15.45%
2-Year	10-1/10-2	10-1/10-2 (2-Year)	SN10-1	SN10-2	12.358	12.353	2.414	2.388	▲ -1.08%	0.53	0.53	15671.8	16574.7	▲ 5.76%
10-Year	10-1/10-2	10-1/10-2 (10-Year)	SN10-1	SN10-2	12.353	12.325	5.238	5.492	▲ 4.85%	0.54	0.56	33808.0	35195.3	▲ 4.10%
100-Year	10-1/10-2	10-1/10-2 (100-Year)	SN10-1	SN10-2	12.342	12.319	8.523	8.892	▲ 4.33%	0.50	0.53	58063.8	59988.7	▲ 3.32%
EDV	10-1/11-1	10-1/11-1 (EDV)	SN10-1	SN11-1	13.225	13.231	2.533	2.573	▲ 1.58%	0.69	0.69	45315.6	49370.1	▲ 8.95%
2-Year	10-1/11-1	10-1/11-1 (2-Year)	SN10-1	SN11-1	13.178	13.144	28.476	29.318	▲ 2.96%	1.03	1.04	473284.1	484117.5	▲ 2.29%
10-Year	10-1/11-1	10-1/11-1 (10-Year)	SN10-1	SN11-1	13.233	13.214	62.555	63.761	▲ 1.93%	1.03	1.02	1047396.0	1064494.4	▲ 1.63%
100-Year	10-1/11-1	10-1/11-1 (100-Year)	SN10-1	SN11-1	13.108	13.069	111.323	113.238	▲ 1.72%	1.02	1.02	1829489.5	1852512.3	▲ 1.26%
EDV	11-1/11-2	11-1/11-2 (EDV)	SN11-1	SN11-2	13.203	13.203	2.443	2.487	▲ 1.80%	0.47	0.48	43073.1	47128.3	▲ 9.41%
2-Year	11-1/11-2	11-1/11-2 (2-Year)	SN11-1	SN11-2	13.139	13.072	27.679	28.541	▲ 3.11%	0.77	0.77	450822.1	461970.7	▲ 2.47%
10-Year	11-1/11-2	11-1/11-2 (10-Year)	SN11-1	SN11-2	13.156	13.1	61.496	62.655	▲ 1.88%	0.74	0.74	998677.6	1016516.7	▲ 1.79%
100-Year	11-1/11-2	11-1/11-2 (100-Year)	SN11-1	SN11-2	13.044	13.008	108.46	110.47	▲ 1.85%	0.75	0.75	1744454.4	1768523.2	▲ 1.38%
EDV	11-2/11-3	11-2/11-3 (EDV)	SN11-2	SN11-3	12.281	12.286	0.015	0.008	▲ -46.67%	0.17	0.13	90.4	46.7	▲ -48.29%
2-Year	11-2/11-3	11-2/11-3 (2-Year)	SN11-2	SN11-3	12.311	12.333	0.129	0.06	▲ -53.49%	0.18	0.13	912.7	473.6	▲ -48.12%
10-Year	11-2/11-3	11-2/11-3 (10-Year)	SN11-2	SN11-3	12.314	12.333	0.272	0.129	▲ -52.57%	0.17	0.13	1967.6	1022.5	▲ -48.04%
100-Year	11-2/11-3	11-2/11-3 (100-Year)	SN11-2	SN11-3	12.317	12.336	0.454	0.215	▲ -52.64%	0.15	0.11	3364.2	1747.2	▲ -48.07%
EDV	11-2/12-1	11-2/12-1 (EDV)	SN11-2	SN12-1	12.992	12.997	2.459	2.507	▲ 1.95%	0.78	0.78	42921.4	47002.7	▲ 9.51%
2-Year	11-2/12-1	11-2/12-1 (2-Year)	SN11-2	SN12-1	12.947	12.794	28.107	29.261	▲ 4.11%	1.21	1.23	449640.5	461266.8	▲ 2.59%
10-Year	11-2/12-1	11-2/12-1 (10-Year)	SN11-2	SN12-1	12.958	12.831	62.986	64.511	▲ 2.42%	1.29	1.29	995944.1	1014806.7	▲ 1.89%
100-Year	11-2/12-1	11-2/12-1 (100-Year)	SN11-2	SN12-1	12.931	12.836	109.464	111.75	▲ 2.09%	1.24	1.24	1739629.1	1765311.4	▲ 1.48%
EDV	12-1/12-2	12-1/12-2 (EDV)	SN12-1	SN12-2	13.431	13.461	1.799	1.856	▲ 3.17%	1.06	1.07	33411.3	37491.6	▲ 12.21%
2-Year	12-1/12-2	12-1/12-2 (2-Year)	SN12-1	SN12-2	13.317	13.306	20.148	20.716	▲ 2.82%	1.54	1.56	349986.5	361705.0	▲ 3.35%
10-Year	12-1/12-2	12-1/12-2 (10-Year)	SN12-1	SN12-2	13.278	13.272	45.104	45.843	▲ 1.64%	1.63	1.64	774774.9	793840.0	▲ 2.46%
100-Year	12-1/12-2	12-1/12-2 (100-Year)	SN12-1	SN12-2	13.281	13.281	78.134	79.138	▲ 1.28%	1.56	1.57	1353290.6	1379375.5	▲ 1.93%
EDV	12-2/13	12-2/13 (EDV)	SN12-2	SN13	13.431	13.481	1.767	1.799	▲ 1.81%	0.76	0.76	32366.5	35680.2	▲ 10.24%
2-Year	12-2/13	12-2/13 (2-Year)	SN12-2	SN13	13.325	13.308	19.794	20.207	▲ 2.09%	1.40	1.41	339766.3	348705.9	▲ 2.63%
10-Year	12-2/13	12-2/13 (10-Year)	SN12-2	SN13	13.289	13.286	44.274	44.807	▲ 1.20%	1.63	1.64	752663.1	767361.2	▲ 1.95%
100-Year														

100-Year	15-1/15-3	15-1/15-3 (100-Year)	SN15-1	SN15-3	12.319	12.331	42.254	43.405	—	2.72%	1.34	1.34	263330.1	283556.0	▲ 7.68%
EDV	15-2/15-2A	15-2/15-2A (EDV)	SN15-2	SN15-2A	#N/A	14.081	#N/A	0.06	#N/A	#N/A	1.08		#N/A	2919.0	#N/A
2-Year	15-2/15-2A	15-2/15-2A (2-Year)	SN15-2	SN15-2A	#N/A	12.342	#N/A	1.786	#N/A	#N/A	1.64		#N/A	12766.3	#N/A
10-Year	15-2/15-2A	15-2/15-2A (10-Year)	SN15-2	SN15-2A	#N/A	12.303	#N/A	3.736	#N/A	#N/A	1.99		#N/A	25379.7	#N/A
100-Year	15-2/15-2A	15-2/15-2A (100-Year)	SN15-2	SN15-2A	#N/A	12.281	#N/A	5.978	#N/A	#N/A	2.29		#N/A	40959.8	#N/A
EDV	15-3/15-2	15-3/15-2 (EDV)	SN15-3	SN15-2	12.261	14.072	0.056	0.062	▲	10.71%	0.82	0.79	305.2	2997.0	▲ 881.93%
2-Year	15-3/15-2	15-3/15-2 (2-Year)	SN15-3	SN15-2	12.242	12.339	0.613	1.887	▲	207.83%	0.92	1.12	3215.1	13563.4	▲ 321.87%
10-Year	15-3/15-2	15-3/15-2 (10-Year)	SN15-3	SN15-2	12.239	12.3	1.371	4.006	▲	192.20%	0.89	1.14	7112.8	27129.9	▲ 281.42%
100-Year	15-3/15-2	15-3/15-2 (100-Year)	SN15-3	SN15-2	12.236	12.281	2.381	6.495	▲	172.78%	0.84	1.23	12425.8	44002.5	▲ 254.12%
EDV	15-3/16-1	15-3/16-1 (EDV)	SN15-3	SN16-1	12.339	12.342	0.792	0.709	▼	-10.48%	0.68	0.66	6196.4	6812.8	▲ 9.95%
2-Year	15-3/16-1	15-3/16-1 (2-Year)	SN15-3	SN16-1	12.342	12.347	9.897	9.549	—	-3.52%	0.93	0.90	64842.2	63526.7	▼ -2.03%
10-Year	15-3/16-1	15-3/16-1 (10-Year)	SN15-3	SN16-1	12.328	12.333	22.939	21.771	▼	-5.09%	1.10	1.07	143682.6	138611.7	▼ -3.53%
100-Year	15-3/16-1	15-3/16-1 (100-Year)	SN15-3	SN16-1	12.311	12.322	40.723	37.378	▼	-8.21%	1.25	1.19	250861.8	239509.7	▼ -4.53%
EDV	16-1/16-2	16-1/16-2 (EDV)	SN16-1	SN16-2	12.25	12.264	0.079	0.07	▼	-11.39%	1.11	1.05	417.7	372.9	▼ -10.72%
2-Year	16-1/16-2	16-1/16-2 (2-Year)	SN16-1	SN16-2	12.242	12.253	0.841	0.727	▼	-13.56%	1.08	1.87	4395.7	3808.3	▼ -13.36%
10-Year	16-1/16-2	16-1/16-2 (10-Year)	SN16-1	SN16-2	12.242	12.244	1.875	1.602	▼	-14.56%	1.09	1.05	9727.7	8315.0	▼ -14.52%
100-Year	16-1/16-2	16-1/16-2 (100-Year)	SN16-1	SN16-2	12.236	12.239	3.257	2.754	▼	-15.44%	1.03	0.99	16994.7	14405.2	▼ -15.24%
EDV	16-1/16-3	16-1/16-3 (EDV)	SN16-1	SN16-3	#N/A	0	#N/A	0	#N/A	#N/A	0.00		#N/A	0.0	#N/A
2-Year	16-1/16-3	16-1/16-3 (2-Year)	SN16-1	SN16-3	#N/A	0	#N/A	0	#N/A	#N/A	0.00		#N/A	0.0	#N/A
10-Year	16-1/16-3	16-1/16-3 (10-Year)	SN16-1	SN16-3	#N/A	0	#N/A	0	#N/A	#N/A	0.00		#N/A	0.0	#N/A
100-Year	16-1/16-3	16-1/16-3 (100-Year)	SN16-1	SN16-3	#N/A	0	#N/A	0	#N/A	#N/A	0.00		#N/A	0.0	#N/A
EDV	16-1/17-1	16-1/17-1 (EDV)	SN16-1	SN17-1	12.358	12.364	0.494	0.45	▼	-8.91%	1.08	1.06	4123.5	5024.1	▲ 21.84%
2-Year	16-1/17-1	16-1/17-1 (2-Year)	SN16-1	SN17-1	12.353	12.364	6.554	6.73	—	2.69%	1.75	1.77	43084.8	44874.5	▲ 4.15%
10-Year	16-1/17-1	16-1/17-1 (10-Year)	SN16-1	SN17-1	12.331	12.336	15.283	15.302	—	0.12%	1.86	1.87	95480.7	97424.0	▲ 2.04%
100-Year	16-1/17-1	16-1/17-1 (100-Year)	SN16-1	SN17-1	12.308	12.325	27.244	26.03	—	-4.46%	2.06	2.04	166638.2	167672.0	▲ 0.62%
EDV	16-2/16-2A	16-2/16-2A (EDV)	SN16-2	SN16-2A	#N/A	12.247	#N/A	0.059	#N/A	#N/A	1.12		#N/A	329.1	#N/A
2-Year	16-2/16-2A	16-2/16-2A (2-Year)	SN16-2	SN16-2A	#N/A	12.242	#N/A	0.647	#N/A	#N/A	1.73		#N/A	3355.3	#N/A
10-Year	16-2/16-2A	16-2/16-2A (10-Year)	SN16-2	SN16-2A	#N/A	12.231	#N/A	1.423	#N/A	#N/A	1.71		#N/A	7342.1	#N/A
100-Year	16-2/16-2A	16-2/16-2A (100-Year)	SN16-2	SN16-2A	#N/A	12.228	#N/A	2.444	#N/A	#N/A	1.82		#N/A	12730.3	#N/A
EDV	17-1/17-2	17-1/17-2 (EDV)	SN17-1	SN17-2	12.242	12.242	0.032	0.003	▼	-90.63%	0.86	0.82	178.8	18.9	▼ -89.45%
2-Year	17-1/17-2	17-1/17-2 (2-Year)	SN17-1	SN17-2	12.236	12.239	0.36	0.035	▼	-90.28%	1.94	0.62	1877.9	181.6	▼ -90.33%
10-Year	17-1/17-2	17-1/17-2 (10-Year)	SN17-1	SN17-2	12.239	12.247	0.803	0.072	▼	-91.03%	1.77	0.51	4159.6	389.5	▼ -90.64%
100-Year	17-1/17-2	17-1/17-2 (100-Year)	SN17-1	SN17-2	12.228	12.253	1.396	0.122	▼	-91.26%	1.70	0.49	7265.3	664.5	▼ -90.85%
EDV	17-1/18-1	17-1/18-1 (EDV)	SN17-1	SN18-1	12.3	12.297	0.468	0.446	—	-4.70%	1.01	0.99	3811.6	4870.3	▲ 27.77%
2-Year	17-1/18-1	17-1/18-1 (2-Year)	SN17-1	SN18-1	12.311	12.317	6.313	6.763	▲	7.13%	1.81	1.81	39827.1	43297.6	▲ 8.71%
10-Year	17-1/18-1	17-1/18-1 (10-Year)	SN17-1	SN18-1	12.289	12.289	14.786	15.457	—	4.54%	1.87	1.88	88234.3	93929.6	▲ 6.45%
100-Year	17-1/18-1	17-1/18-1 (100-Year)	SN17-1	SN18-1	12.283	12.303	25.827	25.472	—	-1.37%	2.03	2.02	153986.0	161600.4	▲ 4.94%
EDV	18-1/18-2	18-1/18-2 (EDV)	SN18-1	SN18-2	12.369	12.244	0.039	0.004	▼	-89.74%	0.92	0.35	281.6	20.7	▼ -92.64%
2-Year	18-1/18-2	18-1/18-2 (2-Year)	SN18-1	SN18-2	12.361	12.242	0.448	0.04	▼	-91.07%	1.80	0.48	2953.2	214.1	▼ -92.75%
10-Year	18-1/18-2	18-1/18-2 (10-Year)	SN18-1	SN18-2	12.356	12.267	1.004	0.085	▼	-91.53%	1.76	0.45	6542.4	470.4	▼ -92.81%
100-Year	18-1/18-2	18-1/18-2 (100-Year)	SN18-1	SN18-2	12.353	12.267	1.748	0.147	▼	-91.59%	1.71	0.42	11434.9	816.6	▼ -92.86%
EDV	18-1/18-3	18-1/18-3 (EDV)	SN18-1	SN18-3	12.278	12.281	0.433	0.442	—	2.08%	1.08	1.09	3529.3	4848.1	▲ 37.37%
2-Year	18-1/18-3	18-1/18-3 (2-Year)	SN18-1	SN18-3	12.294	12.306	5.884	6.708	▲	14.00%	1.93	1.97	36872.8	43076.3	▲ 16.82%
10-Year	18-1/18-3	18-1/18-3 (10-Year)	SN18-1	SN18-3	12.275	12.278	13.876	15.359	▲	10.69%	1.98	2.01	81687.8	93449.0	▲ 14.40%
100-Year	18-1/18-3	18-1/18-3 (10													

100-Year	19-2/19-3	19-2/19-3 (100-Year)	SN19-2	SN19-3	12.236	12.314	0.802	5.401	▲ 573.44%	0.51	1.48	4187.2	33267.9	▲ 694.52%
EDV	19-2/20-1	19-2/20-1 (EDV)	SN19-2	SN20-1	12.3	12.283	0.205	0.149	▼ -27.32%	0.64	0.60	1293.5	886.1	▼ -31.49%
2-Year	19-2/20-1	19-2/20-1 (2-Year)	SN19-2	SN20-1	12.267	12.264	2.48	1.631	▼ -34.23%	0.89	0.74	13480.6	8710.2	▼ -35.39%
10-Year	19-2/20-1	19-2/20-1 (10-Year)	SN19-2	SN20-1	12.258	12.256	5.555	3.549	▼ -36.11%	1.13	0.94	29778.5	18790.4	▼ -36.90%
100-Year	19-2/20-1	19-2/20-1 (100-Year)	SN19-2	SN20-1	12.256	12.25	9.65	6.054	▼ -37.26%	1.33	1.11	51953.6	32300.6	▼ -37.83%
EDV	20-1/20-2	20-1/20-2 (EDV)	SN20-1	SN20-2	12.242	12.242	0.044	0.006	▼ -86.36%	0.53	0.16	245.2	31.0	▼ -87.37%
2-Year	20-1/20-2	20-1/20-2 (2-Year)	SN20-1	SN20-2	12.236	12.242	0.482	0.056	▼ -88.38%	0.63	0.22	2493.6	290.8	▼ -88.34%
10-Year	20-1/20-2	20-1/20-2 (10-Year)	SN20-1	SN20-2	12.228	12.242	1.056	0.118	▼ -88.83%	0.75	0.25	5451.5	616.5	▼ -88.69%
100-Year	20-1/20-2	20-1/20-2 (100-Year)	SN20-1	SN20-2	12.225	12.231	1.813	0.2	▼ -88.97%	0.88	0.28	9446.3	1048.0	▼ -88.91%
EDV	20-1/21-1	20-1/21-1 (EDV)	SN20-1	SN21-1	12.272	12.261	0.139	0.104	▼ -25.18%	0.83	0.80	826.1	593.8	▼ -28.12%
2-Year	20-1/21-1	20-1/21-1 (2-Year)	SN20-1	SN21-1	12.256	12.247	1.611	1.12	▼ -30.48%	0.98	0.87	8670.5	5883.9	▼ -32.14%
10-Year	20-1/21-1	20-1/21-1 (10-Year)	SN20-1	SN21-1	12.247	12.242	3.606	2.436	▼ -32.45%	1.25	1.11	19202.9	12732.0	▼ -33.70%
100-Year	20-1/21-1	20-1/21-1 (100-Year)	SN20-1	SN21-1	12.247	12.236	6.268	4.153	▼ -33.74%	1.47	1.31	33555.4	21922.8	▼ -34.67%
EDV	21-1/21-2	21-1/21-2 (EDV)	SN21-1	SN21-2	12.256	12.242	0.064	0.07	▲ 9.38%	0.86	0.93	366.3	391.5	▲ 6.89%
2-Year	21-1/21-2	21-1/21-2 (2-Year)	SN21-1	SN21-2	12.242	12.228	0.726	0.741	▲ 2.07%	0.98	1.11	3844.9	3873.4	▲ 0.74%
10-Year	21-1/21-2	21-1/21-2 (10-Year)	SN21-1	SN21-2	12.242	12.228	1.619	1.604	▲ -0.93%	1.14	1.19	8516.9	8375.8	▲ -1.66%
100-Year	21-1/21-2	21-1/21-2 (100-Year)	SN21-1	SN21-2	12.239	12.225	2.809	2.732	▲ -2.74%	1.35	1.41	14883.0	14413.2	▲ -3.16%
EDV	30-1/30-2	30-1/30-2 (EDV)	SN30-1	SN30-2	15.533	15.542	7.48	7.457	▲ -0.31%	0.29	0.29	206179.8	206760.5	▲ 0.28%
2-Year	30-1/30-2	30-1/30-2 (2-Year)	SN30-1	SN30-2	15.025	15.117	85.155	85.183	▲ 0.03%	0.53	0.52	2044454.3	2044489.4	▲ 0.00%
10-Year	30-1/30-2	30-1/30-2 (10-Year)	SN30-1	SN30-2	14.642	14.642	206.433	206.409	▲ -0.01%	0.68	0.68	4422318.9	4421827.4	▲ -0.01%
100-Year	30-1/30-2	30-1/30-2 (100-Year)	SN30-1	SN30-2	14.5	14.494	376.23	376.449	▲ 0.06%	0.80	0.80	7650000.0	7650000.0	▲ 0.00%
EDV	30-2/31	30-2/31 (EDV)	SN30-2	SN31	15.442	15.45	6.768	6.762	▲ -0.09%	0.42	0.42	174996.8	175473.4	▲ 0.27%
2-Year	30-2/31	30-2/31 (2-Year)	SN30-2	SN31	14.886	14.883	81.023	81.122	▲ 0.12%	0.78	0.78	1741504.8	1741542.9	▲ 0.00%
10-Year	30-2/31	30-2/31 (10-Year)	SN30-2	SN31	14.464	14.467	194.391	194.335	▲ -0.03%	0.82	0.82	3762928.6	3762270.0	▲ -0.02%
100-Year	30-2/31	30-2/31 (100-Year)	SN30-2	SN31	14.358	14.358	349.517	349.599	▲ 0.02%	0.93	0.93	6550000.0	6550000.0	▲ 0.00%
EDV	31/32	31/32 (EDV)	SN31	SN32	14.853	14.85	6.709	6.706	▲ -0.04%	0.56	0.56	159748.8	159938.4	▲ 0.12%
2-Year	31/32	31/32 (2-Year)	SN31	SN32	14.35	14.347	83.199	83.27	▲ 0.09%	0.94	0.94	1612501.2	1612570.7	▲ 0.00%
10-Year	31/32	31/32 (10-Year)	SN31	SN32	14.208	14.208	190.754	190.71	▲ -0.02%	1.13	1.13	3503568.1	3503442.4	▲ 0.00%
100-Year	31/32	31/32 (100-Year)	SN31	SN32	14.075	14.075	344.37	344.395	▲ 0.01%	1.20	1.20	6100000.0	6100000.0	▲ 0.00%
EDV	32/33	32/33 (EDV)	SN32	SN33	13.619	13.617	5.188	5.19	▲ 0.04%	0.83	0.83	86971.6	86982.8	▲ 0.01%
2-Year	32/33	32/33 (2-Year)	SN32	SN33	13.564	13.561	58.05	58.069	▲ 0.03%	1.06	1.06	912361.6	912355.8	▲ 0.00%
10-Year	32/33	32/33 (10-Year)	SN32	SN33	13.544	13.544	130.108	130.101	▲ -0.01%	1.16	1.16	2020106.2	2020288.6	▲ 0.01%
100-Year	32/33	32/33 (100-Year)	SN32	SN33	13.475	13.469	226.673	226.639	▲ -0.01%	1.24	1.24	3529779.1	3529783.3	▲ 0.00%
EDV	32/35	32/35 (EDV)	SN32	SN35	14.133	14.136	4.168	4.168	▲ 0.00%	0.72	0.72	72062.5	72067.7	▲ 0.01%
2-Year	32/35	32/35 (2-Year)	SN32	SN35	13.925	13.922	42.75	42.761	▲ 0.03%	1.04	1.04	713758.2	713780.1	▲ 0.00%
10-Year	32/35	32/35 (10-Year)	SN32	SN35	13.886	13.886	92.538	92.539	▲ 0.00%	1.10	1.10	1540451.8	1540576.2	▲ 0.01%
100-Year	32/35	32/35 (100-Year)	SN32	SN35	13.892	13.892	157.197	157.205	▲ 0.01%	1.11	1.11	2646192.7	2646258.0	▲ 0.00%
EDV	33/34	33/34 (EDV)	SN33	SN34	13.517	13.517	2.353	2.353	▲ 0.00%	0.67	0.67	36555.8	36562.5	▲ 0.02%
2-Year	33/34	33/34 (2-Year)	SN33	SN34	13.408	13.408	26.621	26.618	▲ -0.01%	1.00	1.00	383782.3	383760.2	▲ -0.01%
10-Year	33/34	33/34 (10-Year)	SN33	SN34	13.378	13.361	59.363	59.334	▲ -0.05%	1.04	1.03	849683.8	849795.2	▲ 0.01%
100-Year	33/34	33/34 (100-Year)	SN33	SN34	13.344	13.372	103.229	103.213	▲ -0.02%	1.05	1.05	1484536.5	1484526.2	▲ 0.00%
EDV	36/36A	36/36A (EDV)	SN36	SN36A	#N/A	12.314	#N/A	0.158	#N/A	#N/A	0.13	#N/A	1022.2	#N/A
2-Year	36/36A	36/36A (2-Year)	SN36	SN36A	#N/A	12.283	#N/A	1.681	#N/A	#N/A	0.24	#N/A	10038.0	#N/A
10-Year	36/36A	36/36A (10-Year)	SN36	SN36A	#N/A	12.278	#N/A	3.591	#N/A	#N/A	0.27	#N/A	21633.4	#N/A
100-Year	36/36A	36/36A (100-Year)	SN36	SN36A	#N/A	12.275	#N/A	5.973	#N/A	#N/A	0.27	#N/A	37140.3	#N/A
ED														

100-Year	C57200	C57200 (100-Year)	SN21-1	SN21-1A	#N/A	12.231	#N/A	1.198	#N/A	#N/A	3.76	#N/A	6245.1	#N/A
EDV	C57400	C57400 (EDV)	SN19-3	SN19-3A	#N/A	12.294	#N/A	0.069	#N/A	#N/A	2.19	#N/A	1575.3	#N/A
2-Year	C57400	C57400 (2-Year)	SN19-3	SN19-3A	#N/A	12.3	#N/A	1.58	#N/A	#N/A	6.57	#N/A	9509.8	#N/A
10-Year	C57400	C57400 (10-Year)	SN19-3	SN19-3A	#N/A	12.292	#N/A	3.242	#N/A	#N/A	9.01	#N/A	19564.9	#N/A
100-Year	C57400	C57400 (100-Year)	SN19-3	SN19-3A	#N/A	12.311	#N/A	5.286	#N/A	#N/A	10.51	#N/A	32438.1	#N/A
EDV	C57600	C57600 (EDV)	SN19-1A	SN19-1B	#N/A	12.261	#N/A	0.106	#N/A	#N/A	1.98	#N/A	684.5	#N/A
2-Year	C57600	C57600 (2-Year)	SN19-1A	SN19-1B	#N/A	12.258	#N/A	1.218	#N/A	#N/A	4.70	#N/A	7153.6	#N/A
10-Year	C57600	C57600 (10-Year)	SN19-1A	SN19-1B	#N/A	12.256	#N/A	2.717	#N/A	#N/A	6.66	#N/A	15819.0	#N/A
100-Year	C57600	C57600 (100-Year)	SN19-1A	SN19-1B	#N/A	12.256	#N/A	4.717	#N/A	#N/A	8.30	#N/A	27614.2	#N/A
EDV	C58400	C58400 (EDV)	SN16-2A	SN16-2B	#N/A	12.242	#N/A	0.059	#N/A	#N/A	2.34	#N/A	329.1	#N/A
2-Year	C58400	C58400 (2-Year)	SN16-2A	SN16-2B	#N/A	12.239	#N/A	0.648	#N/A	#N/A	4.41	#N/A	3354.8	#N/A
10-Year	C58400	C58400 (10-Year)	SN16-2A	SN16-2B	#N/A	12.228	#N/A	1.423	#N/A	#N/A	6.22	#N/A	7341.7	#N/A
100-Year	C58400	C58400 (100-Year)	SN16-2A	SN16-2B	#N/A	12.225	#N/A	2.445	#N/A	#N/A	7.95	#N/A	12729.9	#N/A
EDV	C58700	C58700 (EDV)	SN15-2A	SN15-2B	#N/A	12.242	#N/A	0.03	#N/A	#N/A	1.66	#N/A	166.6	#N/A
2-Year	C58700	C58700 (2-Year)	SN15-2A	SN15-2B	#N/A	12.239	#N/A	0.33	#N/A	#N/A	2.34	#N/A	1710.5	#N/A
10-Year	C58700	C58700 (10-Year)	SN15-2A	SN15-2B	#N/A	12.228	#N/A	0.728	#N/A	#N/A	3.57	#N/A	3754.1	#N/A
100-Year	C58700	C58700 (100-Year)	SN15-2A	SN15-2B	#N/A	12.225	#N/A	1.253	#N/A	#N/A	4.73	#N/A	6521.4	#N/A
EDV	C59400	C59400 (EDV)	SN11-3	SN11-3A	#N/A	12.247	#N/A	0.008	#N/A	#N/A	0.33	#N/A	46.7	#N/A
2-Year	C59400	C59400 (2-Year)	SN11-3	SN11-3A	#N/A	12.239	#N/A	0.089	#N/A	#N/A	1.62	#N/A	458.8	#N/A
10-Year	C59400	C59400 (10-Year)	SN11-3	SN11-3A	#N/A	12.228	#N/A	0.192	#N/A	#N/A	2.35	#N/A	989.6	#N/A
100-Year	C59400	C59400 (100-Year)	SN11-3	SN11-3A	#N/A	12.225	#N/A	0.326	#N/A	#N/A	2.96	#N/A	1700.2	#N/A
EDV	C59800	C59800 (EDV)	SN09-2A	SN09-2B	#N/A	12.275	#N/A	0.096	#N/A	#N/A	2.31	#N/A	587.9	#N/A
2-Year	C59800	C59800 (2-Year)	SN09-2A	SN09-2B	#N/A	12.272	#N/A	1.087	#N/A	#N/A	4.77	#N/A	6157.7	#N/A
10-Year	C59800	C59800 (10-Year)	SN09-2A	SN09-2B	#N/A	12.261	#N/A	2.425	#N/A	#N/A	5.80	#N/A	13628.8	#N/A
100-Year	C59800	C59800 (100-Year)	SN09-2A	SN09-2B	#N/A	12.264	#N/A	4.204	#N/A	#N/A	6.10	#N/A	23803.4	#N/A
EDV	C59900	C59900 (EDV)	SN09-2C	SN09-2D	#N/A	12.244	#N/A	0.009	#N/A	#N/A	1.83	#N/A	50.7	#N/A
2-Year	C59900	C59900 (2-Year)	SN09-2C	SN09-2D	#N/A	12.239	#N/A	0.102	#N/A	#N/A	2.58	#N/A	531.5	#N/A
10-Year	C59900	C59900 (10-Year)	SN09-2C	SN09-2D	#N/A	12.228	#N/A	0.228	#N/A	#N/A	3.35	#N/A	1177.3	#N/A
100-Year	C59900	C59900 (100-Year)	SN09-2C	SN09-2D	#N/A	12.225	#N/A	0.396	#N/A	#N/A	4.01	#N/A	2057.3	#N/A
EDV	C60200	C60200 (EDV)	SN08-3	SN08-3A	#N/A	13.425	#N/A	3.382	#N/A	#N/A	2.64	#N/A	30572.8	#N/A
2-Year	C60200	C60200 (2-Year)	SN08-3	SN08-3A	#N/A	12.8	#N/A	10.917	#N/A	#N/A	3.96	#N/A	80988.0	#N/A
10-Year	C60200	C60200 (10-Year)	SN08-3	SN08-3A	#N/A	12.481	#N/A	16.891	#N/A	#N/A	4.05	#N/A	153674.0	#N/A
100-Year	C60200	C60200 (100-Year)	SN08-3	SN08-3A	#N/A	12.678	#N/A	25.094	#N/A	#N/A	3.85	#N/A	259149.1	#N/A
EDV	C60800	C60800 (EDV)	SN07-3	SN07-3A	#N/A	12.369	#N/A	0.238	#N/A	#N/A	2.46	#N/A	1708.0	#N/A
2-Year	C60800	C60800 (2-Year)	SN07-3	SN07-3A	#N/A	12.356	#N/A	2.73	#N/A	#N/A	4.28	#N/A	17903.9	#N/A
10-Year	C60800	C60800 (10-Year)	SN07-3	SN07-3A	#N/A	12.353	#N/A	6.109	#N/A	#N/A	4.71	#N/A	39644.7	#N/A
100-Year	C60800	C60800 (100-Year)	SN07-3	SN07-3A	#N/A	12.322	#N/A	10.562	#N/A	#N/A	4.86	#N/A	69251.8	#N/A
EDV	C61100	C61100 (EDV)	SN06-3A	SN06-3B	#N/A	12.239	#N/A	0.115	#N/A	#N/A	2.94	#N/A	636.0	#N/A
2-Year	C61100	C61100 (2-Year)	SN06-3A	SN06-3B	#N/A	12.239	#N/A	1.298	#N/A	#N/A	5.86	#N/A	6658.6	#N/A
10-Year	C61100	C61100 (10-Year)	SN06-3A	SN06-3B	#N/A	12.228	#N/A	2.885	#N/A	#N/A	7.30	#N/A	14733.6	#N/A
100-Year	C61100	C61100 (100-Year)	SN06-3A	SN06-3B	#N/A	12.228	#N/A	4.997	#N/A	#N/A	7.27	#N/A	25726.9	#N/A
EDV	C61300	C61300 (EDV)	SN05-3A	SN05-3B	#N/A	12.242	#N/A	0.028	#N/A	#N/A	1.88	#N/A	155.9	#N/A
2-Year	C61300	C61300 (2-Year)	SN05-3A	SN05-3B	#N/A	12.239	#N/A	0.315	#N/A	#N/A	3.68	#N/A	1636.3	#N/A
10-Year	C61300	C61300 (10-Year)	SN05-3A	SN05-3B	#N/A	12.228	#N/A	0.702	#N/A	#N/A	4.63	#N/A	3624.2	#N/A
100-Year	C61300	C61300 (100-Year)	SN05-3A	SN05-3B	#N/A	12.225	#N/A	1.218	#N/A	#N/A	5.42	#N/A	6333.1	#N/A
EDV	C61600	C61600 (EDV)	SN03-3A	SN03-3B	#N/A	12.325	#N/A	0.159	#N/A	#N/A	1.94	#N/A	2149.4	#N/A
2-Year	C61600	C61600 (2-Year)	SN03-3A	SN03-3B	#N/A	12.339	#N/A	2.286	#N/A	#N/A	3.56	#N/A	15417.6	#N/A
10-Year	C61600	C61600 (10-Year)	SN03-3A	SN03-3B	#N/A	12.339	#N/A	4.828	#N/A	#N/A	3.59	#N/A	32481.0	#N/A
100-Year	C61600	C61600 (100-Year)	SN03-3A	SN03-3B	#N/A	12.333	#N/A	8.091	#N/A	#N/A	3.59	#N/A	54908.7	#N/A
EDV	C61900	C61900 (EDV)	SN02-2A	SN02-2B	#N/A	12.281	#N/A	0.142	#N/A	#N/A	1.00	#N/A	871.2	#N/A
2-Year	C61900	C61900 (2-Year)	SN02-2A	SN02-2B	#N/A	12.272	#N/A	1.546	#N/A	#N/A	1.57	#N/A	8726.6	#N/A
10-Year	C61900	C61900 (10-Year)	SN02-2A	SN02-2B	#N/A	12.267	#N/A	3.371	#N/A	#N/A	1.91	#N/A	18964.0	#N/A
100-Year	C61900	C61900 (100-Year)	SN02-2A	SN02-2B	#N/A	12.258	#N/A	5.77	#N/A	#N/A	2.91	#N/A	32734.7</td	

100-Year	C63500	C63500 (100-Year)	SN37A	SN37B	#N/A	12.244	#N/A	7.642	#N/A	#N/A	5.63	#N/A	47204.3	#N/A
EDV	C63800	C63800 (EDV)	SN36A	SN36B	#N/A	12.286	#N/A	0.166	#N/A	#N/A	1.77	#N/A	1021.7	#N/A
2-Year	C63800	C63800 (2-Year)	SN36A	SN36B	#N/A	12.272	#N/A	1.77	#N/A	#N/A	3.65	#N/A	10036.0	#N/A
10-Year	C63800	C63800 (10-Year)	SN36A	SN36B	#N/A	12.272	#N/A	3.819	#N/A	#N/A	4.01	#N/A	21635.0	#N/A
100-Year	C63800	C63800 (100-Year)	SN36A	SN36B	#N/A	12.269	#N/A	6.494	#N/A	#N/A	3.96	#N/A	37148.6	#N/A
EDV	E02/E01	E02/E01 (EDV)	Cut-E02	Cut-E01	#N/A	12.356	#N/A	0.002	#N/A	#N/A	0.19	#N/A	13.4	#N/A
2-Year	E02/E01	E02/E01 (2-Year)	Cut-E02	Cut-E01	#N/A	12.278	#N/A	0.021	#N/A	#N/A	0.53	#N/A	119.7	#N/A
10-Year	E02/E01	E02/E01 (10-Year)	Cut-E02	Cut-E01	#N/A	12.267	#N/A	0.045	#N/A	#N/A	0.71	#N/A	249.6	#N/A
100-Year	E02/E01	E02/E01 (100-Year)	Cut-E02	Cut-E01	#N/A	12.258	#N/A	0.076	#N/A	#N/A	0.87	#N/A	420.2	#N/A
EDV	E04/E03	E04/E03 (EDV)	Cut-E04	Cut-E03	#N/A	12.325	#N/A	0.001	#N/A	#N/A	0.21	#N/A	7.6	#N/A
2-Year	E04/E03	E04/E03 (2-Year)	Cut-E04	Cut-E03	#N/A	12.269	#N/A	0.013	#N/A	#N/A	0.55	#N/A	68.3	#N/A
10-Year	E04/E03	E04/E03 (10-Year)	Cut-E04	Cut-E03	#N/A	12.258	#N/A	0.026	#N/A	#N/A	0.73	#N/A	142.4	#N/A
100-Year	E04/E03	E04/E03 (100-Year)	Cut-E04	Cut-E03	#N/A	12.25	#N/A	0.044	#N/A	#N/A	0.90	#N/A	239.6	#N/A
EDV	E05/E04	E05/E04 (EDV)	Cut-E05	Cut-E04	#N/A	12.258	#N/A	0.005	#N/A	#N/A	0.41	#N/A	27.5	#N/A
2-Year	E05/E04	E05/E04 (2-Year)	Cut-E05	Cut-E04	#N/A	12.242	#N/A	0.047	#N/A	#N/A	1.07	#N/A	245.9	#N/A
10-Year	E05/E04	E05/E04 (10-Year)	Cut-E05	Cut-E04	#N/A	12.239	#N/A	0.098	#N/A	#N/A	1.43	#N/A	512.7	#N/A
100-Year	E05/E04	E05/E04 (100-Year)	Cut-E05	Cut-E04	#N/A	12.236	#N/A	0.162	#N/A	#N/A	1.74	#N/A	862.7	#N/A
EDV	E07/E06	E07/E06 (EDV)	Cut-E07	Cut-E06	#N/A	12.314	#N/A	0.038	#N/A	#N/A	0.98	#N/A	234.4	#N/A
2-Year	E07/E06	E07/E06 (2-Year)	Cut-E07	Cut-E06	#N/A	12.278	#N/A	0.362	#N/A	#N/A	2.33	#N/A	2034.4	#N/A
10-Year	E07/E06	E07/E06 (10-Year)	Cut-E07	Cut-E06	#N/A	12.272	#N/A	0.741	#N/A	#N/A	3.03	#N/A	4198.0	#N/A
100-Year	E07/E06	E07/E06 (100-Year)	Cut-E07	Cut-E06	#N/A	12.272	#N/A	1.219	#N/A	#N/A	3.61	#N/A	7023.2	#N/A
EDV	E10/E09	E10/E09 (EDV)	Cut-E10	Cut-E09	#N/A	12.281	#N/A	0.003	#N/A	#N/A	0.27	#N/A	19.6	#N/A
2-Year	E10/E09	E10/E09 (2-Year)	Cut-E10	Cut-E09	#N/A	12.247	#N/A	0.034	#N/A	#N/A	0.67	#N/A	175.2	#N/A
10-Year	E10/E09	E10/E09 (10-Year)	Cut-E10	Cut-E09	#N/A	12.242	#N/A	0.07	#N/A	#N/A	0.89	#N/A	365.3	#N/A
100-Year	E10/E09	E10/E09 (100-Year)	Cut-E10	Cut-E09	#N/A	12.239	#N/A	0.116	#N/A	#N/A	1.08	#N/A	614.6	#N/A
EDV	E11/E10	E11/E10 (EDV)	Cut-E11	Cut-E10	#N/A	12.311	#N/A	0.003	#N/A	#N/A	0.24	#N/A	21.2	#N/A
2-Year	E11/E10	E11/E10 (2-Year)	Cut-E11	Cut-E10	#N/A	12.261	#N/A	0.036	#N/A	#N/A	0.60	#N/A	188.9	#N/A
10-Year	E11/E10	E11/E10 (10-Year)	Cut-E11	Cut-E10	#N/A	12.25	#N/A	0.075	#N/A	#N/A	0.80	#N/A	393.8	#N/A
100-Year	E11/E10	E11/E10 (100-Year)	Cut-E11	Cut-E10	#N/A	12.244	#N/A	0.125	#N/A	#N/A	0.96	#N/A	662.6	#N/A
EDV	E13/E12	E13/E12 (EDV)	Cut-E13	Cut-E12	#N/A	12.4	#N/A	0.002	#N/A	#N/A	0.14	#N/A	19.3	#N/A
2-Year	E13/E12	E13/E12 (2-Year)	Cut-E13	Cut-E12	#N/A	12.319	#N/A	0.029	#N/A	#N/A	0.36	#N/A	173.1	#N/A
10-Year	E13/E12	E13/E12 (10-Year)	Cut-E13	Cut-E12	#N/A	12.306	#N/A	0.062	#N/A	#N/A	0.48	#N/A	361.0	#N/A
100-Year	E13/E12	E13/E12 (100-Year)	Cut-E13	Cut-E12	#N/A	12.297	#N/A	0.104	#N/A	#N/A	0.59	#N/A	607.5	#N/A
EDV	E15/E14	E15/E14 (EDV)	Cut-E15	Cut-E14	#N/A	12.325	#N/A	0.001	#N/A	#N/A	0.12	#N/A	15.2	#N/A
2-Year	E15/E14	E15/E14 (2-Year)	Cut-E15	Cut-E14	#N/A	12.286	#N/A	0.021	#N/A	#N/A	0.34	#N/A	135.8	#N/A
10-Year	E15/E14	E15/E14 (10-Year)	Cut-E15	Cut-E14	#N/A	12.278	#N/A	0.046	#N/A	#N/A	0.45	#N/A	283.1	#N/A
100-Year	E15/E14	E15/E14 (100-Year)	Cut-E15	Cut-E14	#N/A	12.256	#N/A	0.089	#N/A	#N/A	0.60	#N/A	476.8	#N/A
EDV	E17/E18	E17/E18 (EDV)	Cut-E17	Cut-E18	#N/A	12.475	#N/A	0.002	#N/A	#N/A	0.11	#N/A	21.2	#N/A
2-Year	E17/E18	E17/E18 (2-Year)	Cut-E17	Cut-E18	#N/A	12.317	#N/A	0.031	#N/A	#N/A	0.24	#N/A	190.0	#N/A
10-Year	E17/E18	E17/E18 (10-Year)	Cut-E17	Cut-E18	#N/A	12.297	#N/A	0.067	#N/A	#N/A	0.30	#N/A	396.4	#N/A
100-Year	E17/E18	E17/E18 (100-Year)	Cut-E17	Cut-E18	#N/A	12.258	#N/A	0.098	#N/A	#N/A	0.33	#N/A	667.1	#N/A
EDV	E18/E19	E18/E19 (EDV)	Cut-E18	Cut-E19	#N/A	12.325	#N/A	0.002	#N/A	#N/A	0.13	#N/A	13.1	#N/A
2-Year	E18/E19	E18/E19 (2-Year)	Cut-E18	Cut-E19	#N/A	12.272	#N/A	0.022	#N/A	#N/A	0.31	#N/A	117.7	#N/A
10-Year	E18/E19	E18/E19 (10-Year)	Cut-E18	Cut-E19	#N/A	12.261	#N/A	0.045	#N/A	#N/A	0.41	#N/A	245.3	#N/A
100-Year	E18/E19	E18/E19 (100-Year)	Cut-E18	Cut-E19	#N/A	12.258	#N/A	0.076	#N/A	#N/A	0.49	#N/A	412.9	#N/A
EDV	E21/E22	E21/E22 (EDV)	Cut-E21	Cut-E22	#N/A	12.342	#N/A	0.004	#N/A	#N/A	0.22	#N/A	27.5	#N/A
2-Year	E21/E22	E21/E22 (2-Year)	Cut-E21	Cut-E22	#N/A	12.269	#N/A	0.045	#N/A	#N/A	0.57	#N/A	246.8	#N/A
10-Year	E21/E22	E21/E22 (10-Year)	Cut-E21	Cut-E22	#N/A	12.256	#N/A	0.096	#N/A	#N/A	0.76	#N/A	514.4	#N/A
100-Year	E21/E22	E21/E22 (100-Year)	Cut-E21	Cut-E22	#N/A	12.25	#N/A	0.16	#N/A	#N/A	0.91	#N/A	865.6	#N/A
EDV	P57300IN	P57300IN (EDV)	P57300	Road01	#N/A	12.258	#N/A	0.188	#N/A	#N/A	3.93	#N/A	975.1	#N/A
2-Year	P57300IN	P57300IN (2-Year)	P57300	Road01	#N/A	12.244	#N/A	1.101	#N/A	#N/A	6.53	#N/A	5951.1	#N/A
10-Year	P57300IN	P57300IN (10-Year)	P57300	Road01	#N/A	12.244	#N/A	2.088	#N/A	#N/A	7.67	#N/A	11454.7	#N/A
100-Year	P57300IN	P57300IN (100-Year)	P57300	Road01	#N/A	12.247	#N/A	3.316	#N/A	#N/A	8.19	#N/A	18503.6	#N/A
EDV	P57300orof	P57300orof (EDV)	SN19-3A	P57300	#N/A	15.269	#N/A	0.015	#N/A	#N/A	1.59	#N/A	1083.4	#N/A
2-Year	P57300orof	P57300orof (2-Year)			#N/A	12.322	#N/A	0.022	#N/A	#N/A	2.3			

100-Year	P57300OUT	P57300OUT (100-Year)		#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	18501.0	#N/A	
EDV	P57300over	P57300over (EDV)	SN19-3A	P57300	#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	1083.4	#N/A
2-Year	P57300over	P57300over (2-Year)			#N/A	12.306	#N/A	0.941	#N/A	#N/A	0.00	#N/A	5848.2	#N/A
10-Year	P57300over	P57300over (10-Year)			#N/A	12.294	#N/A	1.871	#N/A	#N/A	0.00	#N/A	11452.2	#N/A
100-Year	P57300over	P57300over (100-Year)			#N/A	12.292	#N/A	3.061	#N/A	#N/A	0.00	#N/A	18501.0	#N/A
EDV	P58200IN	P58200IN (EDV)	P58200	Road02	#N/A	12.256	#N/A	0.249	#N/A	#N/A	2.33	#N/A	1238.0	#N/A
2-Year	P58200IN	P58200IN (2-Year)	P58200	Road02	#N/A	12.25	#N/A	1.078	#N/A	#N/A	3.54	#N/A	6083.8	#N/A
10-Year	P58200IN	P58200IN (10-Year)	P58200	Road02	#N/A	12.25	#N/A	1.911	#N/A	#N/A	4.11	#N/A	11063.0	#N/A
100-Year	P58200IN	P58200IN (100-Year)	P58200	Road02	#N/A	12.25	#N/A	2.959	#N/A	#N/A	4.51	#N/A	17332.9	#N/A
EDV	P58200orof	P58200orof (EDV)	Cut-W05	P58200	#N/A	14.153	#N/A	0.029	#N/A	#N/A	2.59	#N/A	1271.8	#N/A
2-Year	P58200orof	P58200orof (2-Year)			#N/A	12.353	#N/A	0.051	#N/A	#N/A	3.84	#N/A	6059.3	#N/A
10-Year	P58200orof	P58200orof (10-Year)			#N/A	12.325	#N/A	0.052	#N/A	#N/A	3.88	#N/A	11056.4	#N/A
100-Year	P58200orof	P58200orof (100-Year)			#N/A	12.311	#N/A	0.053	#N/A	#N/A	3.91	#N/A	17331.3	#N/A
EDV	P58200OUT	P58200OUT (EDV)	Cut-W05	P58200	#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	1271.8	#N/A
2-Year	P58200OUT	P58200OUT (2-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	6059.3	#N/A
10-Year	P58200OUT	P58200OUT (10-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	11056.4	#N/A
100-Year	P58200OUT	P58200OUT (100-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	17331.3	#N/A
EDV	P58200over	P58200over (EDV)	Cut-W05	P58200	#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	1271.8	#N/A
2-Year	P58200over	P58200over (2-Year)			#N/A	12.331	#N/A	0.816	#N/A	#N/A	0.00	#N/A	6059.3	#N/A
10-Year	P58200over	P58200over (10-Year)			#N/A	12.311	#N/A	1.612	#N/A	#N/A	0.00	#N/A	11056.4	#N/A
100-Year	P58200over	P58200over (100-Year)			#N/A	12.306	#N/A	2.587	#N/A	#N/A	0.00	#N/A	17331.3	#N/A
EDV	P58800INA	P58800INA (EDV)	P58800	Road03	#N/A	12.244	#N/A	0.101	#N/A	#N/A	2.20	#N/A	2227.7	#N/A
2-Year	P58800INA	P58800INA (2-Year)			#N/A	12.281	#N/A	0.85	#N/A	#N/A	4.09	#N/A	11547.9	#N/A
10-Year	P58800INA	P58800INA (10-Year)			#N/A	12.275	#N/A	1.674	#N/A	#N/A	4.84	#N/A	21644.8	#N/A
100-Year	P58800INA	P58800INA (100-Year)			#N/A	12.25	#N/A	2.567	#N/A	#N/A	5.09	#N/A	34438.5	#N/A
EDV	P58800INB	P58800INB (EDV)	P58800	Road03	#N/A	12.244	#N/A	0.101	#N/A	#N/A	2.20	#N/A	2227.7	#N/A
2-Year	P58800INB	P58800INB (2-Year)			#N/A	12.281	#N/A	0.85	#N/A	#N/A	4.09	#N/A	11547.9	#N/A
10-Year	P58800INB	P58800INB (10-Year)			#N/A	12.275	#N/A	1.674	#N/A	#N/A	4.84	#N/A	21644.8	#N/A
100-Year	P58800INB	P58800INB (100-Year)			#N/A	12.25	#N/A	2.567	#N/A	#N/A	5.09	#N/A	34438.5	#N/A
EDV	P58800orof	P58800orof (EDV)	SN15-2A	P58800	#N/A	13.525	#N/A	0.019	#N/A	#N/A	2.01	#N/A	2489.4	#N/A
2-Year	P58800orof	P58800orof (2-Year)			#N/A	12.369	#N/A	0.023	#N/A	#N/A	2.48	#N/A	11298.8	#N/A
10-Year	P58800orof	P58800orof (10-Year)			#N/A	12.336	#N/A	0.026	#N/A	#N/A	2.75	#N/A	21631.9	#N/A
100-Year	P58800orof	P58800orof (100-Year)			#N/A	12.378	#N/A	0.029	#N/A	#N/A	2.99	#N/A	34435.6	#N/A
EDV	P58800OUT	P58800OUT (EDV)	SN15-2A	P58800	#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	2489.4	#N/A
2-Year	P58800OUT	P58800OUT (2-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	11298.8	#N/A
10-Year	P58800OUT	P58800OUT (10-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	21631.9	#N/A
100-Year	P58800OUT	P58800OUT (100-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	34435.6	#N/A
EDV	P58800over	P58800over (EDV)	SN15-2A	P58800	#N/A	14.069	#N/A	0.036	#N/A	#N/A	0.00	#N/A	2489.4	#N/A
2-Year	P58800over	P58800over (2-Year)			#N/A	12.356	#N/A	1.546	#N/A	#N/A	0.00	#N/A	11298.8	#N/A
10-Year	P58800over	P58800over (10-Year)			#N/A	12.325	#N/A	3.151	#N/A	#N/A	0.00	#N/A	21631.9	#N/A
100-Year	P58800over	P58800over (100-Year)			#N/A	12.375	#N/A	5.009	#N/A	#N/A	0.00	#N/A	34435.6	#N/A
EDV	P59200IN	P59200IN (EDV)	P59200	Road04	#N/A	12.228	#N/A	0.198	#N/A	#N/A	5.05	#N/A	927.7	#N/A
2-Year	P59200IN	P59200IN (2-Year)	P59200	Road04	#N/A	12.225	#N/A	0.809	#N/A	#N/A	7.68	#N/A	4401.0	#N/A
10-Year	P59200IN	P59200IN (10-Year)	P59200	Road04	#N/A	12.225	#N/A	1.41	#N/A	#N/A	8.96	#N/A	7910.1	#N/A
100-Year	P59200IN	P59200IN (100-Year)	P59200	Road04	#N/A	12.225	#N/A	2.162	#N/A	#N/A	10.04	#N/A	12307.4	#N/A
EDV	P59200orof	P59200orof (EDV)	SN12-2	P59200	#N/A	12.314	#N/A	0.149	#N/A	#N/A	15.75	#N/A	927.9	#N/A
2-Year	P59200orof	P59200orof (2-Year)			#N/A	11.944	#N/A	0.166	#N/A	#N/A	15.72	#N/A	4401.3	#N/A
10-Year	P59200orof	P59200orof (10-Year)			#N/A	11.394	#N/A	0.166	#N/A	#N/A	15.69	#N/A	7910.2	#N/A
100-Year	P59200orof	P59200orof (100-Year)			#N/A	10.397	#N/A	0.166	#N/A	#N/A	15.68	#N/A	12305.7	#N/A
EDV	P59200OUT	P59200OUT (EDV)	SN12-2	P59200	#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	927.9	#N/A
2-Year	P59200OUT	P59200OUT (2-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	4401.3	#N/A
10-Year	P59200OUT	P59200OUT (10-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	7910.2	#N/A
100-Year	P59200OUT	P59200OUT (100-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	12305.7	#N/A
EDV	P59200over	P59200over (EDV)	SN12-2	P59200	#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	927.9	#N/A
2-Year	P59200over	P59200over (2-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	4401.3	#N/A
10-Year	P59200over	P59200over (10-Year)			#N/A	12.339	#N/A	0.736	#N/A	#N/A	0.00	#N/A	7910.2	#N/A
100-Year	P59200over	P59200over (100-Year)			#N/A	12.281	#N/A	1.739	#N/A	#N/A	0.00	#N/A	12305.7	#N/A

100-Year	P59600IN	P59600IN (100-Year)	P59600	Road05	#N/A	12.239	#N/A	0.941	#N/A	#N/A	5.49	#N/A	5281.6	#N/A
EDV	P59600orof	P59600orof (EDV)	SN10-2	P59600	#N/A	12.353	#N/A	0.042	#N/A	#N/A	11.26	#N/A	335.4	#N/A
2-Year	P59600orof	P59600orof (2-Year)			#N/A	12.444	#N/A	0.042	#N/A	#N/A	11.35	#N/A	1784.1	#N/A
10-Year	P59600orof	P59600orof (10-Year)			#N/A	12.244	#N/A	0.043	#N/A	#N/A	11.35	#N/A	3324.5	#N/A
100-Year	P59600orof	P59600orof (100-Year)			#N/A	12.175	#N/A	0.043	#N/A	#N/A	11.25	#N/A	5281.8	#N/A
EDV	P59600OUT	P59600OUT (EDV)	SN10-2	P59600	#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	335.4	#N/A
2-Year	P59600OUT	P59600OUT (2-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	1784.1	#N/A
10-Year	P59600OUT	P59600OUT (10-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	3324.5	#N/A
100-Year	P59600OUT	P59600OUT (100-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	5281.8	#N/A
EDV	P59600over	P59600over (EDV)	SN10-2	P59600	#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	335.4	#N/A
2-Year	P59600over	P59600over (2-Year)			#N/A	12.414	#N/A	0.122	#N/A	#N/A	0.00	#N/A	1784.1	#N/A
10-Year	P59600over	P59600over (10-Year)			#N/A	12.278	#N/A	0.52	#N/A	#N/A	0.00	#N/A	3324.5	#N/A
100-Year	P59600over	P59600over (100-Year)			#N/A	12.272	#N/A	0.857	#N/A	#N/A	0.00	#N/A	5281.8	#N/A
EDV	P60200IN	P60200IN (EDV)	P60200	Road06	#N/A	12.278	#N/A	0.13	#N/A	#N/A	1.96	#N/A	714.3	#N/A
2-Year	P60200IN	P60200IN (2-Year)	P60200	Road06	#N/A	12.267	#N/A	0.776	#N/A	#N/A	3.32	#N/A	4343.4	#N/A
10-Year	P60200IN	P60200IN (10-Year)	P60200	Road06	#N/A	12.264	#N/A	1.484	#N/A	#N/A	3.96	#N/A	8391.5	#N/A
100-Year	P60200IN	P60200IN (100-Year)	P60200	Road06	#N/A	12.264	#N/A	2.37	#N/A	#N/A	4.45	#N/A	13595.6	#N/A
EDV	P60200orof	P60200orof (EDV)	SN08-3A	P60200	#N/A	15.275	#N/A	0.011	#N/A	#N/A	1.57	#N/A	780.5	#N/A
2-Year	P60200orof	P60200orof (2-Year)			#N/A	12.336	#N/A	0.016	#N/A	#N/A	2.25	#N/A	4280.4	#N/A
10-Year	P60200orof	P60200orof (10-Year)			#N/A	12.322	#N/A	0.018	#N/A	#N/A	2.42	#N/A	8389.7	#N/A
100-Year	P60200orof	P60200orof (100-Year)			#N/A	12.317	#N/A	0.019	#N/A	#N/A	2.58	#N/A	13595.1	#N/A
EDV	P60200OUT	P60200OUT (EDV)	SN08-3A	P60200	#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	780.5	#N/A
2-Year	P60200OUT	P60200OUT (2-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	4280.4	#N/A
10-Year	P60200OUT	P60200OUT (10-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	8389.7	#N/A
100-Year	P60200OUT	P60200OUT (100-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	13595.1	#N/A
EDV	P60200over	P60200over (EDV)	SN08-3A	P60200	#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	780.5	#N/A
2-Year	P60200over	P60200over (2-Year)			#N/A	12.322	#N/A	0.686	#N/A	#N/A	0.00	#N/A	4280.4	#N/A
10-Year	P60200over	P60200over (10-Year)			#N/A	12.308	#N/A	1.366	#N/A	#N/A	0.00	#N/A	8389.7	#N/A
100-Year	P60200over	P60200over (100-Year)			#N/A	12.303	#N/A	2.228	#N/A	#N/A	0.00	#N/A	13595.1	#N/A
EDV	P60600IN	P60600IN (EDV)	P60600	Road07	#N/A	12.381	#N/A	0.127	#N/A	#N/A	1.53	#N/A	863.8	#N/A
2-Year	P60600IN	P60600IN (2-Year)	P60600	Road07	#N/A	12.383	#N/A	0.769	#N/A	#N/A	2.58	#N/A	5568.0	#N/A
10-Year	P60600IN	P60600IN (10-Year)	P60600	Road07	#N/A	12.386	#N/A	1.479	#N/A	#N/A	3.06	#N/A	10902.1	#N/A
100-Year	P60600IN	P60600IN (100-Year)	P60600	Road07	#N/A	12.397	#N/A	2.364	#N/A	#N/A	3.35	#N/A	17784.7	#N/A
EDV	P60600orof	P60600orof (EDV)	SN07-3	P60600	#N/A	12.575	#N/A	0.096	#N/A	#N/A	12.93	#N/A	864.3	#N/A
2-Year	P60600orof	P60600orof (2-Year)			#N/A	12.781	#N/A	0.097	#N/A	#N/A	12.97	#N/A	5568.5	#N/A
10-Year	P60600orof	P60600orof (10-Year)			#N/A	18.272	#N/A	0.097	#N/A	#N/A	12.98	#N/A	10902.8	#N/A
100-Year	P60600orof	P60600orof (100-Year)			#N/A	24.597	#N/A	0.097	#N/A	#N/A	13.12	#N/A	17786.5	#N/A
EDV	P60600OUT	P60600OUT (EDV)	SN07-3	P60600	#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	864.3	#N/A
2-Year	P60600OUT	P60600OUT (2-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	5568.5	#N/A
10-Year	P60600OUT	P60600OUT (10-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	10902.8	#N/A
100-Year	P60600OUT	P60600OUT (100-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	17786.5	#N/A
EDV	P60600over	P60600over (EDV)	SN07-3	P60600	#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	864.3	#N/A
2-Year	P60600over	P60600over (2-Year)			#N/A	12.572	#N/A	0.494	#N/A	#N/A	0.00	#N/A	5568.5	#N/A
10-Year	P60600over	P60600over (10-Year)			#N/A	12.456	#N/A	1.322	#N/A	#N/A	0.00	#N/A	10902.8	#N/A
100-Year	P60600over	P60600over (100-Year)			#N/A	12.453	#N/A	2.216	#N/A	#N/A	0.00	#N/A	17786.5	#N/A
EDV	P61400IN	P61400IN (EDV)	P61400	Road08	#N/A	12.339	#N/A	0.114	#N/A	#N/A	1.91	#N/A	731.2	#N/A
2-Year	P61400IN	P61400IN (2-Year)	P61400	Road08	#N/A	12.325	#N/A	0.705	#N/A	#N/A	3.25	#N/A	4634.9	#N/A
10-Year	P61400IN	P61400IN (10-Year)	P61400	Road08	#N/A	12.322	#N/A	1.366	#N/A	#N/A	3.86	#N/A	9043.6	#N/A
100-Year	P61400IN	P61400IN (100-Year)	P61400	Road08	#N/A	12.336	#N/A	2.309	#N/A	#N/A	4.23	#N/A	14705.6	#N/A
EDV	P61400orof	P61400orof (EDV)	SN05-3	P61400	#N/A	12.506	#N/A	0.086	#N/A	#N/A	13.29	#N/A	731.4	#N/A
2-Year	P61400orof	P61400orof (2-Year)			#N/A	14.414	#N/A	0.087	#N/A	#N/A	13.33	#N/A	4635.1	#N/A
10-Year	P61400orof	P61400orof (10-Year)			#N/A	18.203	#N/A	0.087	#N/A	#N/A	13.33	#N/A	9044.0	#N/A
100-Year	P61400orof	P61400orof (100-Year)			#N/A	10.703	#N/A	0.087	#N/A	#N/A	13.33	#N/A	14704.6	#N/A
EDV	P61400OUT	P61400OUT (EDV)	SN05-3	P61400	#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	731.4	#N/A
2-Year	P61400OUT	P61400OUT (2-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	4635.1	#N/A
10-Year	P61400OUT	P61400OUT (10-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	9044.0	#N/A
100-Year	P61400OUT	P61400OUT (100-Year)			#N/A	0	#N/A	0	#N/A	#N/A				

100-Year	P61400over	P61400over (100-Year)		#N/A	12.375	#N/A	1.997	#N/A	#N/A	0.00	#N/A	14704.6	#N/A	
EDV	P61600INA	P61600INA (EDV)	P61600	Road09	#N/A	12.353	#N/A	0.077	#N/A	#N/A	1.67	#N/A	957.8	#N/A
2-Year	P61600INA	P61600INA (2-Year)			#N/A	12.356	#N/A	0.408	#N/A	#N/A	2.70	#N/A	5487.9	#N/A
10-Year	P61600INA	P61600INA (10-Year)			#N/A	12.364	#N/A	0.749	#N/A	#N/A	3.16	#N/A	10425.7	#N/A
100-Year	P61600INA	P61600INA (100-Year)			#N/A	12.375	#N/A	1.132	#N/A	#N/A	3.46	#N/A	16727.6	#N/A
EDV	P61600INB	P61600INB (EDV)	P61600	Road09	#N/A	12.353	#N/A	0.077	#N/A	#N/A	1.67	#N/A	957.8	#N/A
2-Year	P61600INB	P61600INB (2-Year)			#N/A	12.356	#N/A	0.408	#N/A	#N/A	2.70	#N/A	5487.9	#N/A
10-Year	P61600INB	P61600INB (10-Year)			#N/A	12.364	#N/A	0.749	#N/A	#N/A	3.16	#N/A	10425.7	#N/A
100-Year	P61600INB	P61600INB (100-Year)			#N/A	12.375	#N/A	1.132	#N/A	#N/A	3.46	#N/A	16727.6	#N/A
EDV	P61600orof	P61600orof (EDV)	SN03-3B	P61600	#N/A	15.375	#N/A	0.015	#N/A	#N/A	1.60	#N/A	1054.7	#N/A
2-Year	P61600orof	P61600orof (2-Year)			#N/A	12.45	#N/A	0.021	#N/A	#N/A	2.30	#N/A	5397.5	#N/A
10-Year	P61600orof	P61600orof (10-Year)			#N/A	12.442	#N/A	0.023	#N/A	#N/A	2.46	#N/A	10423.7	#N/A
100-Year	P61600orof	P61600orof (100-Year)			#N/A	12.45	#N/A	0.025	#N/A	#N/A	2.61	#N/A	16726.1	#N/A
EDV	P61600OUT	P61600OUT (EDV)	SN03-3B	P61600	#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	1054.7	#N/A
2-Year	P61600OUT	P61600OUT (2-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	5397.5	#N/A
10-Year	P61600OUT	P61600OUT (10-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	10423.7	#N/A
100-Year	P61600OUT	P61600OUT (100-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	16726.1	#N/A
EDV	P61600over	P61600over (EDV)	SN03-3B	P61600	#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	1054.7	#N/A
2-Year	P61600over	P61600over (2-Year)			#N/A	12.436	#N/A	0.728	#N/A	#N/A	0.00	#N/A	5397.5	#N/A
10-Year	P61600over	P61600over (10-Year)			#N/A	12.431	#N/A	1.395	#N/A	#N/A	0.00	#N/A	10423.7	#N/A
100-Year	P61600over	P61600over (100-Year)			#N/A	12.436	#N/A	2.164	#N/A	#N/A	0.00	#N/A	16726.1	#N/A
EDV	P62600IN	P62600IN (EDV)	P62600	Road10	#N/A	12.264	#N/A	0.149	#N/A	#N/A	4.91	#N/A	827.2	#N/A
2-Year	P62600IN	P62600IN (2-Year)	P62600	Road10	#N/A	12.261	#N/A	0.94	#N/A	#N/A	8.43	#N/A	5485.9	#N/A
10-Year	P62600IN	P62600IN (10-Year)	P62600	Road10	#N/A	12.267	#N/A	1.828	#N/A	#N/A	10.11	#N/A	10816.6	#N/A
100-Year	P62600IN	P62600IN (100-Year)	P62600	Road10	#N/A	12.267	#N/A	2.95	#N/A	#N/A	11.31	#N/A	17713.4	#N/A
EDV	P62600orof	P62600orof (EDV)	SN01-2	P62600	#N/A	15.414	#N/A	0.012	#N/A	#N/A	1.63	#N/A	906.8	#N/A
2-Year	P62600orof	P62600orof (2-Year)			#N/A	12.339	#N/A	0.017	#N/A	#N/A	2.31	#N/A	5409.2	#N/A
10-Year	P62600orof	P62600orof (10-Year)			#N/A	12.328	#N/A	0.018	#N/A	#N/A	2.50	#N/A	10813.4	#N/A
100-Year	P62600orof	P62600orof (100-Year)			#N/A	12.319	#N/A	0.02	#N/A	#N/A	2.68	#N/A	17710.6	#N/A
EDV	P62600OUT	P62600OUT (EDV)	SN01-2	P62600	#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	906.8	#N/A
2-Year	P62600OUT	P62600OUT (2-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	5409.2	#N/A
10-Year	P62600OUT	P62600OUT (10-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	10813.4	#N/A
100-Year	P62600OUT	P62600OUT (100-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	17710.6	#N/A
EDV	P62600over	P62600over (EDV)	SN01-2	P62600	#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	906.8	#N/A
2-Year	P62600over	P62600over (2-Year)			#N/A	12.325	#N/A	0.838	#N/A	#N/A	0.00	#N/A	5409.2	#N/A
10-Year	P62600over	P62600over (10-Year)			#N/A	12.314	#N/A	1.693	#N/A	#N/A	0.00	#N/A	10813.4	#N/A
100-Year	P62600over	P62600over (100-Year)			#N/A	12.308	#N/A	2.787	#N/A	#N/A	0.00	#N/A	17710.6	#N/A
EDV	P62900IN	P62900IN (EDV)	P62900	Road11	#N/A	12.325	#N/A	0.204	#N/A	#N/A	4.29	#N/A	1303.1	#N/A
2-Year	P62900IN	P62900IN (2-Year)	P62900	Road11	#N/A	12.322	#N/A	1.257	#N/A	#N/A	7.22	#N/A	8152.4	#N/A
10-Year	P62900IN	P62900IN (10-Year)	P62900	Road11	#N/A	12.322	#N/A	2.337	#N/A	#N/A	8.42	#N/A	15543.4	#N/A
100-Year	P62900IN	P62900IN (100-Year)	P62900	Road11	#N/A	12.333	#N/A	3.65	#N/A	#N/A	8.95	#N/A	24937.1	#N/A
EDV	P62900orof	P62900orof (EDV)	SN00-5	P62900	#N/A	12.425	#N/A	0.102	#N/A	#N/A	8.23	#N/A	1304.8	#N/A
2-Year	P62900orof	P62900orof (2-Year)			#N/A	10.914	#N/A	0.101	#N/A	#N/A	8.14	#N/A	8152.6	#N/A
10-Year	P62900orof	P62900orof (10-Year)			#N/A	8.069	#N/A	0.101	#N/A	#N/A	8.19	#N/A	15542.3	#N/A
100-Year	P62900orof	P62900orof (100-Year)			#N/A	6.533	#N/A	0.101	#N/A	#N/A	8.11	#N/A	24935.0	#N/A
EDV	P62900OUT	P62900OUT (EDV)	SN00-5	P62900	#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	1304.8	#N/A
2-Year	P62900OUT	P62900OUT (2-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	8152.6	#N/A
10-Year	P62900OUT	P62900OUT (10-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	15542.3	#N/A
100-Year	P62900OUT	P62900OUT (100-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	24935.0	#N/A
EDV	P62900over	P62900over (EDV)	SN00-5	P62900	#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	1304.8	#N/A
2-Year	P62900over	P62900over (2-Year)			#N/A	12.492	#N/A	0.808	#N/A	#N/A	0.00	#N/A	8152.6	#N/A
10-Year	P62900over	P62900over (10-Year)			#N/A	12.4	#N/A	2.046	#N/A	#N/A	0.00	#N/A	15542.3	#N/A
100-Year	P62900over	P62900over (100-Year)			#N/A	12.4	#N/A	3.352	#N/A	#N/A	0.00	#N/A	24935.0	#N/A
EDV	P63600IN	P63600IN (EDV)	P63600	Road12	#N/A	12.383	#N/A	0.138	#N/A	#N/A	2.43	#N/A	883.3	#N/A
2-Year	P63600IN	P63600IN (2-Year)	P63600	Road12	#N/A	12.353	#N/A	0.642	#N/A	#N/A	3.78	#N/A	4593.7	#N/A
10-Year	P63600IN	P63600IN (10-Year)	P63600	Road12	#N/A	12.344	#N/A	1.156	#N/A	#N/A	4.38	#N/A	8502.9	#N/A
100-Year	P63600IN	P63600IN (100-Year)	P63600	Road12	#N/A	12.353	#N/A	1.786	#N/A	#N				

100-Year	P63600orof	P63600orof (100-Year)		#N/A	12.433	#N/A	0.024	#N/A	#N/A	2.54	#N/A	13457.7	#N/A	
EDV	P63600OUT	P63600OUT (EDV)	SN37B	P63600	#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	982.6	#N/A
2-Year	P63600OUT	P63600OUT (2-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	4500.4	#N/A
10-Year	P63600OUT	P63600OUT (10-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	8499.7	#N/A
100-Year	P63600OUT	P63600OUT (100-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	13457.7	#N/A
EDV	P63600over	P63600over (EDV)	SN37B	P63600	#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	982.6	#N/A
2-Year	P63600over	P63600over (2-Year)			#N/A	12.444	#N/A	0.573	#N/A	#N/A	0.00	#N/A	4500.4	#N/A
10-Year	P63600over	P63600over (10-Year)			#N/A	12.425	#N/A	1.073	#N/A	#N/A	0.00	#N/A	8499.7	#N/A
100-Year	P63600over	P63600over (100-Year)			#N/A	12.422	#N/A	1.696	#N/A	#N/A	0.00	#N/A	13457.7	#N/A
EDV	P64500IN	P64500IN (EDV)	P64500	Road13	#N/A	12.242	#N/A	0.022	#N/A	#N/A	2.35	#N/A	109.8	#N/A
2-Year	P64500IN	P64500IN (2-Year)	P64500	Road13	#N/A	12.231	#N/A	0.132	#N/A	#N/A	4.04	#N/A	683.5	#N/A
10-Year	P64500IN	P64500IN (10-Year)	P64500	Road13	#N/A	12.228	#N/A	0.24	#N/A	#N/A	4.80	#N/A	1291.0	#N/A
100-Year	P64500IN	P64500IN (100-Year)	P64500	Road13	#N/A	12.228	#N/A	0.374	#N/A	#N/A	5.43	#N/A	2058.4	#N/A
EDV	P64500orof	P64500orof (EDV)	SN39-2	P64500	#N/A	12.3	#N/A	0.019	#N/A	#N/A	12.13	#N/A	109.9	#N/A
2-Year	P64500orof	P64500orof (2-Year)			#N/A	11.772	#N/A	0.024	#N/A	#N/A	12.38	#N/A	683.6	#N/A
10-Year	P64500orof	P64500orof (10-Year)			#N/A	11.203	#N/A	0.024	#N/A	#N/A	12.27	#N/A	1291.1	#N/A
100-Year	P64500orof	P64500orof (100-Year)			#N/A	10.158	#N/A	0.024	#N/A	#N/A	12.26	#N/A	2058.7	#N/A
EDV	P64500OUT	P64500OUT (EDV)	SN39-2	P64500	#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	109.9	#N/A
2-Year	P64500OUT	P64500OUT (2-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	683.6	#N/A
10-Year	P64500OUT	P64500OUT (10-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	1291.1	#N/A
100-Year	P64500OUT	P64500OUT (100-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	2058.7	#N/A
EDV	P64500over	P64500over (EDV)	SN39-2	P64500	#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	109.9	#N/A
2-Year	P64500over	P64500over (2-Year)			#N/A	12.444	#N/A	0.034	#N/A	#N/A	0.00	#N/A	683.6	#N/A
10-Year	P64500over	P64500over (10-Year)			#N/A	12.267	#N/A	0.204	#N/A	#N/A	0.00	#N/A	1291.1	#N/A
100-Year	P64500over	P64500over (100-Year)			#N/A	12.256	#N/A	0.339	#N/A	#N/A	0.00	#N/A	2058.7	#N/A
EDV	RD01/E02	RD01/E02 (EDV)	Road01	Cut-E02	#N/A	12.272	#N/A	0.016	#N/A	#N/A	0.29	#N/A	94.9	#N/A
2-Year	RD01/E02	RD01/E02 (2-Year)	Road01	Cut-E02	#N/A	12.247	#N/A	0.152	#N/A	#N/A	0.82	#N/A	801.7	#N/A
10-Year	RD01/E02	RD01/E02 (10-Year)	Road01	Cut-E02	#N/A	12.242	#N/A	0.31	#N/A	#N/A	1.04	#N/A	1640.9	#N/A
100-Year	RD01/E02	RD01/E02 (100-Year)	Road01	Cut-E02	#N/A	12.242	#N/A	0.508	#N/A	#N/A	1.14	#N/A	2732.2	#N/A
EDV	RD01/W02	RD01/W02 (EDV)	Road01	Cut-W02	#N/A	12.269	#N/A	0.045	#N/A	#N/A	0.55	#N/A	259.9	#N/A
2-Year	RD01/W02	RD01/W02 (2-Year)	Road01	Cut-W02	#N/A	12.244	#N/A	0.424	#N/A	#N/A	1.46	#N/A	2208.4	#N/A
10-Year	RD01/W02	RD01/W02 (10-Year)	Road01	Cut-W02	#N/A	12.239	#N/A	0.861	#N/A	#N/A	1.85	#N/A	4528.9	#N/A
100-Year	RD01/W02	RD01/W02 (100-Year)	Road01	Cut-W02	#N/A	12.236	#N/A	1.411	#N/A	#N/A	2.05	#N/A	7549.9	#N/A
EDV	RD02/E05	RD02/E05 (EDV)	Road02	Cut-E05	#N/A	12.422	#N/A	0.003	#N/A	#N/A	0.36	#N/A	29.9	#N/A
2-Year	RD02/E05	RD02/E05 (2-Year)	Road02	Cut-E05	#N/A	12.269	#N/A	0.049	#N/A	#N/A	0.85	#N/A	267.2	#N/A
10-Year	RD02/E05	RD02/E05 (10-Year)	Road02	Cut-E05	#N/A	12.258	#N/A	0.104	#N/A	#N/A	0.89	#N/A	556.5	#N/A
100-Year	RD02/E05	RD02/E05 (100-Year)	Road02	Cut-E05	#N/A	12.253	#N/A	0.173	#N/A	#N/A	0.90	#N/A	936.5	#N/A
EDV	RD02/W04	RD02/W04 (EDV)	Road02	Cut-W04	#N/A	12.244	#N/A	0.003	#N/A	#N/A	0.27	#N/A	21.4	#N/A
2-Year	RD02/W04	RD02/W04 (2-Year)	Road02	Cut-W04	#N/A	12.239	#N/A	0.035	#N/A	#N/A	0.52	#N/A	189.9	#N/A
10-Year	RD02/W04	RD02/W04 (10-Year)	Road02	Cut-W04	#N/A	12.239	#N/A	0.073	#N/A	#N/A	0.55	#N/A	394.6	#N/A
100-Year	RD02/W04	RD02/W04 (100-Year)	Road02	Cut-W04	#N/A	12.214	#N/A	0.186	#N/A	#N/A	0.57	#N/A	662.5	#N/A
EDV	RD03/E07	RD03/E07 (EDV)	Road03	Cut-E07	#N/A	12.311	#N/A	0.041	#N/A	#N/A	0.68	#N/A	255.2	#N/A
2-Year	RD03/E07	RD03/E07 (2-Year)	Road03	Cut-E07	#N/A	12.275	#N/A	0.395	#N/A	#N/A	1.64	#N/A	2219.7	#N/A
10-Year	RD03/E07	RD03/E07 (10-Year)	Road03	Cut-E07	#N/A	12.269	#N/A	0.81	#N/A	#N/A	2.05	#N/A	4583.8	#N/A
100-Year	RD03/E07	RD03/E07 (100-Year)	Road03	Cut-E07	#N/A	12.267	#N/A	1.334	#N/A	#N/A	2.20	#N/A	7672.6	#N/A
EDV	RD03/W06	RD03/W06 (EDV)	Road03	Cut-W06	#N/A	12.253	#N/A	0.041	#N/A	#N/A	0.56	#N/A	1380.5	#N/A
2-Year	RD03/W06	RD03/W06 (2-Year)	Road03	Cut-W06	#N/A	12.342	#N/A	0.923	#N/A	#N/A	1.89	#N/A	6522.8	#N/A
10-Year	RD03/W06	RD03/W06 (10-Year)	Road03	Cut-W06	#N/A	12.319	#N/A	1.793	#N/A	#N/A	2.06	#N/A	12019.4	#N/A
100-Year	RD03/W06	RD03/W06 (100-Year)	Road03	Cut-W06	#N/A	12.311	#N/A	2.851	#N/A	#N/A	2.07	#N/A	18918.1	#N/A
EDV	RD05/E08	RD05/E08 (EDV)	Road05	Cut-E08	#N/A	12.361	#N/A	0	#N/A	#N/A	0.01	#N/A	2.2	#N/A
2-Year	RD05/E08	RD05/E08 (2-Year)	Road05	Cut-E08	#N/A	12.283	#N/A	0.003	#N/A	#N/A	0.05	#N/A	20.1	#N/A
10-Year	RD05/E08	RD05/E08 (10-Year)	Road05	Cut-E08	#N/A	12.275	#N/A	0.007	#N/A	#N/A	0.08	#N/A	41.9	#N/A
100-Year	RD05/E08	RD05/E08 (100-Year)	Road05	Cut-E08	#N/A	12.267	#N/A	0.013	#N/A	#N/A	0.09	#N/A	70.4	#N/A
EDV	RD05/W07	RD05/W07 (EDV)	Road05	Cut-W07	#N/A	12.272	#N/A	0.008	#N/A	#N/A	0.20	#N/A	43.7	#N/A
2-Year	RD05/W07	RD05/W07 (2-Year)	Road05	Cut-W07	#N/A	12.244	#N/A	0.076	#N/A	#N/A	0.63	#N/A	390.6	#N/A
10-Year	RD05/W07	RD05/W07 (10-Year)	Road05	Cut-W07	#N/A	12.239	#N/A	0.157	#N/A	#N/A	0.83	#N/A	814.2	

100-Year	RD06/E11	RD06/E11 (100-Year)	Road06	Cut-E11	#N/A	12.267	#N/A	0.151	#N/A	#N/A	0.36	#N/A	823.3	#N/A
EDV	RD06/W11	RD06/W11 (EDV)	Road06	Cut-W11	#N/A	12.278	#N/A	0.033	#N/A	#N/A	0.69	#N/A	201.6	#N/A
2-Year	RD06/W11	RD06/W11 (2-Year)	Road06	Cut-W11	#N/A	12.25	#N/A	0.346	#N/A	#N/A	1.37	#N/A	1802.2	#N/A
10-Year	RD06/W11	RD06/W11 (10-Year)	Road06	Cut-W11	#N/A	12.242	#N/A	0.719	#N/A	#N/A	1.80	#N/A	3756.8	#N/A
100-Year	RD06/W11	RD06/W11 (100-Year)	Road06	Cut-W11	#N/A	12.242	#N/A	1.193	#N/A	#N/A	2.10	#N/A	6321.7	#N/A
EDV	RD07/E13	RD07/E13 (EDV)	Road07	Cut-E13	#N/A	12.319	#N/A	0.007	#N/A	#N/A	0.18	#N/A	51.1	#N/A
2-Year	RD07/E13	RD07/E13 (2-Year)	Road07	Cut-E13	#N/A	12.283	#N/A	0.079	#N/A	#N/A	0.37	#N/A	456.5	#N/A
10-Year	RD07/E13	RD07/E13 (10-Year)	Road07	Cut-E13	#N/A	12.278	#N/A	0.167	#N/A	#N/A	0.48	#N/A	951.6	#N/A
100-Year	RD07/E13	RD07/E13 (100-Year)	Road07	Cut-E13	#N/A	12.275	#N/A	0.279	#N/A	#N/A	0.55	#N/A	1601.6	#N/A
EDV	RD07/W12	RD07/W12 (EDV)	Road07	Cut-W12	#N/A	12.472	#N/A	0.038	#N/A	#N/A	0.40	#N/A	302.4	#N/A
2-Year	RD07/W12	RD07/W12 (2-Year)	Road07	Cut-W12	#N/A	12.444	#N/A	0.367	#N/A	#N/A	1.05	#N/A	2691.1	#N/A
10-Year	RD07/W12	RD07/W12 (10-Year)	Road07	Cut-W12	#N/A	12.433	#N/A	0.762	#N/A	#N/A	1.29	#N/A	5600.0	#N/A
100-Year	RD07/W12	RD07/W12 (100-Year)	Road07	Cut-W12	#N/A	12.433	#N/A	1.26	#N/A	#N/A	1.34	#N/A	9413.7	#N/A
EDV	RD08/E15	RD08/E15 (EDV)	Road08	Cut-E15	#N/A	12.264	#N/A	0.005	#N/A	#N/A	0.29	#N/A	36.2	#N/A
2-Year	RD08/E15	RD08/E15 (2-Year)	Road08	Cut-E15	#N/A	12.256	#N/A	0.056	#N/A	#N/A	0.56	#N/A	323.8	#N/A
10-Year	RD08/E15	RD08/E15 (10-Year)	Road08	Cut-E15	#N/A	12.256	#N/A	0.119	#N/A	#N/A	0.47	#N/A	674.9	#N/A
100-Year	RD08/E15	RD08/E15 (100-Year)	Road08	Cut-E15	#N/A	12.339	#N/A	-1.193	#N/A	#N/A	1.29	#N/A	1126.3	#N/A
EDV	RD08/W14	RD08/W14 (EDV)	Road08	Cut-W14	#N/A	12.389	#N/A	0.031	#N/A	#N/A	0.37	#N/A	242.0	#N/A
2-Year	RD08/W14	RD08/W14 (2-Year)	Road08	Cut-W14	#N/A	12.331	#N/A	0.328	#N/A	#N/A	1.03	#N/A	2163.1	#N/A
10-Year	RD08/W14	RD08/W14 (10-Year)	Road08	Cut-W14	#N/A	12.325	#N/A	0.689	#N/A	#N/A	1.25	#N/A	4507.7	#N/A
100-Year	RD08/W14	RD08/W14 (100-Year)	Road08	Cut-W14	#N/A	12.328	#N/A	1.149	#N/A	#N/A	1.37	#N/A	7584.4	#N/A
EDV	RD09/E16	RD09/E16 (EDV)	Road09	Cut-E16	#N/A	12.336	#N/A	0.008	#N/A	#N/A	0.12	#N/A	47.7	#N/A
2-Year	RD09/E16	RD09/E16 (2-Year)	Road09	Cut-E16	#N/A	12.306	#N/A	0.074	#N/A	#N/A	0.37	#N/A	418.4	#N/A
10-Year	RD09/E16	RD09/E16 (10-Year)	Road09	Cut-E16	#N/A	12.297	#N/A	0.152	#N/A	#N/A	0.49	#N/A	866.4	#N/A
100-Year	RD09/E16	RD09/E16 (100-Year)	Road09	Cut-E16	#N/A	12.294	#N/A	0.251	#N/A	#N/A	0.58	#N/A	1452.4	#N/A
EDV	RD09/E17	RD09/E17 (EDV)	Road09	Cut-E17	#N/A	12.442	#N/A	0.003	#N/A	#N/A	0.06	#N/A	29.7	#N/A
2-Year	RD09/E17	RD09/E17 (2-Year)	Road09	Cut-E17	#N/A	12.447	#N/A	0.057	#N/A	#N/A	0.16	#N/A	266.4	#N/A
10-Year	RD09/E17	RD09/E17 (10-Year)	Road09	Cut-E17	#N/A	12.503	#N/A	0.129	#N/A	#N/A	0.19	#N/A	555.8	#N/A
100-Year	RD09/E17	RD09/E17 (100-Year)	Road09	Cut-E17	#N/A	12.55	#N/A	0.234	#N/A	#N/A	0.22	#N/A	934.2	#N/A
EDV	RD09/W15	RD09/W15 (EDV)	Road09	Cut-W15	#N/A	12.35	#N/A	0.012	#N/A	#N/A	0.17	#N/A	77.5	#N/A
2-Year	RD09/W15	RD09/W15 (2-Year)	Road09	Cut-W15	#N/A	12.319	#N/A	0.111	#N/A	#N/A	0.48	#N/A	670.8	#N/A
10-Year	RD09/W15	RD09/W15 (10-Year)	Road09	Cut-W15	#N/A	12.314	#N/A	0.227	#N/A	#N/A	0.63	#N/A	1383.5	#N/A
100-Year	RD09/W15	RD09/W15 (100-Year)	Road09	Cut-W15	#N/A	12.311	#N/A	0.374	#N/A	#N/A	0.75	#N/A	2313.7	#N/A
EDV	RD09/W16	RD09/W16 (EDV)	Road09	Cut-W16	#N/A	12.378	#N/A	0.01	#N/A	#N/A	0.13	#N/A	79.2	#N/A
2-Year	RD09/W16	RD09/W16 (2-Year)	Road09	Cut-W16	#N/A	12.397	#N/A	0.109	#N/A	#N/A	0.26	#N/A	696.1	#N/A
10-Year	RD09/W16	RD09/W16 (10-Year)	Road09	Cut-W16	#N/A	12.436	#N/A	0.222	#N/A	#N/A	0.28	#N/A	1442.8	#N/A
100-Year	RD09/W16	RD09/W16 (100-Year)	Road09	Cut-W16	#N/A	12.472	#N/A	0.37	#N/A	#N/A	0.30	#N/A	2418.5	#N/A
EDV	RD10/E20	RD10/E20 (EDV)	Road10	Cut-E20	#N/A	12.297	#N/A	0.014	#N/A	#N/A	0.29	#N/A	83.0	#N/A
2-Year	RD10/E20	RD10/E20 (2-Year)	Road10	Cut-E20	#N/A	12.275	#N/A	0.136	#N/A	#N/A	0.82	#N/A	742.1	#N/A
10-Year	RD10/E20	RD10/E20 (10-Year)	Road10	Cut-E20	#N/A	12.272	#N/A	0.281	#N/A	#N/A	1.08	#N/A	1547.0	#N/A
100-Year	RD10/E20	RD10/E20 (100-Year)	Road10	Cut-E20	#N/A	12.269	#N/A	0.465	#N/A	#N/A	1.27	#N/A	2603.4	#N/A
EDV	RD10/W18	RD10/W18 (EDV)	Road10	Cut-W18	#N/A	12.303	#N/A	0.046	#N/A	#N/A	0.59	#N/A	290.0	#N/A
2-Year	RD10/W18	RD10/W18 (2-Year)	Road10	Cut-W18	#N/A	12.289	#N/A	0.438	#N/A	#N/A	1.53	#N/A	2590.6	#N/A
10-Year	RD10/W18	RD10/W18 (10-Year)	Road10	Cut-W18	#N/A	12.286	#N/A	0.905	#N/A	#N/A	1.99	#N/A	5400.5	#N/A
100-Year	RD10/W18	RD10/W18 (100-Year)	Road10	Cut-W18	#N/A	12.281	#N/A	1.499	#N/A	#N/A	2.33	#N/A	9089.7	#N/A
EDV	RD11/W19	RD11/W19 (EDV)	Road11	Cut-W19	#N/A	12.383	#N/A	0.021	#N/A	#N/A	0.27	#N/A	146.0	#N/A
2-Year	RD11/W19	RD11/W19 (2-Year)	Road11	Cut-W19	#N/A	12.333	#N/A	0.211	#N/A	#N/A	0.72	#N/A	1305.6	#N/A
10-Year	RD11/W19	RD11/W19 (10-Year)	Road11	Cut-W19	#N/A	12.325	#N/A	0.44	#N/A	#N/A	0.93	#N/A	2721.9	#N/A
100-Year	RD11/W19	RD11/W19 (100-Year)	Road11	Cut-W19	#N/A	12.319	#N/A	0.731	#N/A	#N/A	1.03	#N/A	4580.7	#N/A
EDV	RD12/E21	RD12/E21 (EDV)	Road12	Cut-E21	#N/A	12.325	#N/A	0.005	#N/A	#N/A	0.16	#N/A	35.0	#N/A
2-Year	RD12/E21	RD12/E21 (2-Year)	Road12	Cut-E21	#N/A	12.272	#N/A	0.058	#N/A	#N/A	0.32	#N/A	314.3	#N/A
10-Year	RD12/E21	RD12/E21 (10-Year)	Road12	Cut-E21	#N/A	12.258	#N/A	0.122	#N/A	#N/A	0.44	#N/A	655.3	#N/A
100-Year	RD12/E21	RD12/E21 (100-Year)	Road12	Cut-E21	#N/A	12.253	#N/A	0.204	#N/A	#N/A	0.51	#N/A	1102.7	#N/A
EDV	RD12/W20	RD12/W20 (EDV)	Road12	Cut-W20	#N/A	12.272	#N/A	0.009	#N/A	#N/A	0.15	#N/A	60.7	#N/A
2-Year	RD12/W20	RD12/W20 (2-Year)	Road12	Cut-W20</										

100-Year	SH1-P2	SH1-P2 (100-Year)	SN36OUT	SN36	12.636	12.569	4.109	4.519	▲ 9.98%	2.57	2.95	46070.5	42082.2	▼ -8.66%
EDV	SH1-P3	SH1-P3 (EDV)	SN37OUT	SN37	13.208	12.678	0.052	0.074	▲ 42.31%	0.58	0.60	1213.1	2225.9	▲ 83.49%
2-Year	SH1-P3	SH1-P3 (2-Year)	SN37OUT	SN37	12.556	12.453	1.115	1.565	▲ 40.36%	1.43	1.44	11860.4	15193.5	▲ 28.10%
10-Year	SH1-P3	SH1-P3 (10-Year)	SN37OUT	SN37	12.544	12.481	2.373	3.032	▲ 27.77%	1.78	1.95	25586.0	31644.8	▲ 23.68%
100-Year	SH1-P3	SH1-P3 (100-Year)	SN37OUT	SN37	12.569	12.667	3.741	4.193	▲ 12.08%	2.32	2.74	43965.2	53064.7	▲ 20.70%
EDV	SH1-P3a	SH1-P3a (EDV)	SN38OUT	SN38	12.289	12.267	0.133	0.116	▼ -12.78%	1.80	1.73	809.5	652.5	▼ -19.40%
2-Year	SH1-P3a	SH1-P3a (2-Year)	SN38OUT	SN38	12.289	12.222	1.403	1.182	▼ -15.75%	3.09	3.07	7962.0	6382.7	▼ -19.83%
10-Year	SH1-P3a	SH1-P3a (10-Year)	SN38OUT	SN38	12.3	12.272	2.967	2.549	▼ -14.09%	3.55	3.68	17183.1	13751.7	▼ -19.97%
100-Year	SH1-P3a	SH1-P3a (100-Year)	SN38OUT	SN38	12.319	12.269	4.801	4.319	▼ -10.04%	2.89	2.56	29531.7	23623.3	▼ -20.01%
EDV	SH1-P5	SH1-P5 (EDV)	SN02-1	SN02-2	12.794	12.628	0.061	0.072	▲ 18.03%	0.87	0.91	1006.4	1053.2	▲ 4.65%
2-Year	SH1-P5	SH1-P5 (2-Year)	SN02-1	SN02-2	12.633	12.506	0.859	0.914	▲ 6.40%	1.98	2.10	10535.5	10526.8	▲ -0.08%
10-Year	SH1-P5	SH1-P5 (10-Year)	SN02-1	SN02-2	12.739	12.633	1.327	1.434	▲ 8.06%	2.99	3.23	23336.9	22899.0	▲ -1.88%
100-Year	SH1-P5	SH1-P5 (100-Year)	SN02-1	SN02-2	12.583	12.517	1.49	1.753	▲ 17.65%	3.32	3.89	40785.1	39632.8	▲ -2.83%
EDV	SH1-P6	SH1-P6 (EDV)	SN03-2	SN03-3	12.356	12.331	0.172	0.085	▼ -50.58%	0.98	1.11	1189.4	2326.9	▲ 95.64%
2-Year	SH1-P6	SH1-P6 (2-Year)			12.711	12.344	1.661	1.098	▼ -33.90%	2.80	1.81	12481.5	17194.6	▲ 37.76%
10-Year	SH1-P6	SH1-P6 (10-Year)			12.5	12.369	3.058	2.118	▼ -30.74%	4.74	3.37	27647.1	36347.2	▲ 31.47%
100-Year	SH1-P6	SH1-P6 (100-Year)			12.389	12.4	3.575	2.926	▼ -18.15%	5.51	4.53	48316.5	61675.9	▲ 27.65%
EDV	SH1-P6.nc	SH1-P6.nc (EDV)	SN03-2	SN03-3	#N/A	12.331	#N/A	0.096	#N/A	#N/A	1.11	#N/A	2326.9	#N/A
2-Year	SH1-P6.nc	SH1-P6.nc (2-Year)			#N/A	12.347	#N/A	1.405	#N/A	#N/A	1.67	#N/A	17194.6	#N/A
10-Year	SH1-P6.nc	SH1-P6.nc (10-Year)			#N/A	12.369	#N/A	3.082	#N/A	#N/A	3.20	#N/A	36347.2	#N/A
100-Year	SH1-P6.nc	SH1-P6.nc (100-Year)			#N/A	12.4	#N/A	4.765	#N/A	#N/A	4.74	#N/A	61675.9	#N/A
EDV	SH1-P6.w	SH1-P6.w (EDV)	SN03-2	SN03-3	0	0	0	0	#DIV/0!	0.00	0.00	1189.4	2326.9	▲ 95.64%
2-Year	SH1-P6.w	SH1-P6.w (2-Year)			0	0	0	0	#DIV/0!	0.00	0.00	12481.5	17194.6	▲ 37.76%
10-Year	SH1-P6.w	SH1-P6.w (10-Year)			0	0	0	0	#DIV/0!	0.00	0.00	27647.1	36347.2	▲ 31.47%
100-Year	SH1-P6.w	SH1-P6.w (100-Year)			12.428	0	3.022	0	▼ -100.00%	1.16	0.00	48316.5	61675.9	▲ 27.65%
EDV	SH1-P6a	SH1-P6a (EDV)	SN05-2	SN05-3	12.286	12.408	0.061	0.113	▲ 85.25%	1.61	1.59	375.5	1005.7	▲ 167.83%
2-Year	SH1-P6a	SH1-P6a (2-Year)	SN05-2	SN05-3	12.486	13.533	0.365	0.444	▲ 21.64%	2.43	2.87	3943.1	7542.2	▲ 91.28%
10-Year	SH1-P6a	SH1-P6a (10-Year)	SN05-2	SN05-3	12.464	12.469	0.559	0.592	▲ 5.90%	3.46	3.64	8733.7	15435.9	▲ 76.74%
100-Year	SH1-P6a	SH1-P6a (100-Year)	SN05-2	SN05-3	12.469	17.111	0.56	0.662	▲ 18.21%	3.43	4.04	15264.6	25767.2	▲ 68.80%
EDV	SH1-P7	SH1-P7 (EDV)	SN06-2	SN06-3	12.297	12.25	0.13	0.125	▼ -3.85%	1.38	1.36	789.7	689.9	▼ -12.64%
2-Year	SH1-P7	SH1-P7 (2-Year)	SN06-2	SN06-3	12.308	12.256	1.44	1.37	▼ -4.86%	1.83	1.82	8281.0	7220.0	▼ -12.81%
10-Year	SH1-P7	SH1-P7 (10-Year)	SN06-2	SN06-3	12.322	12.264	3.094	2.953	▼ -4.56%	2.72	2.61	18336.3	15968.5	▼ -12.91%
100-Year	SH1-P7	SH1-P7 (100-Year)	SN06-2	SN06-3	12.375	12.308	4.058	3.801	▼ -6.33%	3.56	3.33	32045.4	27890.7	▼ -12.96%
EDV	SH1-P8	SH1-P8 (EDV)	SN07-2	SN07-3	12.456	12.375	0.238	0.185	▼ -22.27%	1.67	1.73	1914.4	2659.8	▲ 38.93%
2-Year	SH1-P8	SH1-P8 (2-Year)			12.447	12.408	2.739	1.755	▼ -35.93%	2.44	2.16	20088.9	24417.6	▲ 21.55%
10-Year	SH1-P8	SH1-P8 (10-Year)			12.506	12.383	5.308	5.269	▼ -0.73%	4.65	4.62	44497.8	52529.3	▲ 18.05%
100-Year	SH1-P8	SH1-P8 (100-Year)			12.594	12.383	6.867	8.914	▲ 29.81%	5.94	7.63	77763.9	90419.8	▲ 16.27%
EDV	SH1-P8.nc	SH1-P8.nc (EDV)	SN07-2	SN07-3	#N/A	12.378	#N/A	0.148	#N/A	#N/A	1.70	#N/A	2659.8	#N/A
2-Year	SH1-P8.nc	SH1-P8.nc (2-Year)			#N/A	12.406	#N/A	1.198	#N/A	#N/A	2.29	#N/A	24417.6	#N/A
10-Year	SH1-P8.nc	SH1-P8.nc (10-Year)			#N/A	12.369	#N/A	2.247	#N/A	#N/A	4.14	#N/A	52529.3	#N/A
100-Year	SH1-P8.nc	SH1-P8.nc (100-Year)			#N/A	12.383	#N/A	3.801	#N/A	#N/A	6.77	#N/A	90419.8	#N/A
EDV	SH1-P8.w	SH1-P8.w (EDV)	SN07-2	SN07-3	#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	2659.8	#N/A
2-Year	SH1-P8.w	SH1-P8.w (2-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	24417.6	#N/A
10-Year	SH1-P8.w	SH1-P8.w (10-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	52529.3	#N/A
100-Year	SH1-P8.w	SH1-P8.w (100-Year)			#N/A	0	#N/A	0	#N/A	#N/A	0.00	#N/A	90419.8	#N/A
EDV	SH1-P9	SH1-P9 (EDV)	SN08-2	SN08-3	12.756	12.347	0.527	1.764	▲ 234.72%	2.04	3.35	5730.7	90405.6	▲ 1477.58%
2-Year	SH1-P9	SH1-P9 (2-Year)			12.742	12.7	5.832	6.101	▲ 4.61%	2.02	3.09	60128.6	147268.8	▲ 144.92%
10-Year	SH1-P9	SH1-P9 (10-Year)			12.767	12.553	12.341	12.094	▼ -2.00%	2.93	3.05	133180.1	207185.5	▲ 55.57%
100-Year	SH1-P9	SH1-P9 (100-Year)			12.914	12.681	18.972	17.275	▼ -8.94%	4.48	4.08	232734.6	306907.4	▲ 31.87%
EDV	SH1-P9.nc	SH1-P9.nc (EDV)	SN08-2	SN08-3	#N/A	13.831	#N/A	0.738	#N/A	#N/A	2.82	#N/A	90405.6	#N/A
2-Year	SH1-P9.nc	SH1-P9.nc (2-Year)												

100-Year	SH1-P9a	SH1-P9a (100-Year)		10.994	11.211	0.499	0.478	-4.21%	2.29	2.17	35325.0	29716.3	15.88%	
EDV	SH1-P9a.w	SH1-P9a.w (EDV)	SN09-1	SN09-2	0	0	0	#DIV/0!	0.00	0.00	871.7	741.7	14.91%	
2-Year	SH1-P9a.w	SH1-P9a.w (2-Year)			12.353	12.289	0.89	0.832	-6.52%	0.54	0.52	9144.5	7730.1	15.47%
10-Year	SH1-P9a.w	SH1-P9a.w (10-Year)			12.344	12.278	2.779	2.624	-5.58%	0.93	0.90	20232.1	17057.9	15.69%
100-Year	SH1-P9a.w	SH1-P9a.w (100-Year)			12.342	12.275	5.361	5.06	-5.61%	1.26	1.23	35325.0	29716.3	15.88%
EDV	W02/W01	W02/W01 (EDV)	Cut-W02	Cut-W01	#N/A	12.289	#N/A	0.014	#N/A	#N/A	0.53	#N/A	88.0	#N/A
2-Year	W02/W01	W02/W01 (2-Year)	Cut-W02	Cut-W01	#N/A	12.25	#N/A	0.15	#N/A	#N/A	1.32	#N/A	786.9	#N/A
10-Year	W02/W01	W02/W01 (10-Year)	Cut-W02	Cut-W01	#N/A	12.244	#N/A	0.313	#N/A	#N/A	1.73	#N/A	1640.3	#N/A
100-Year	W02/W01	W02/W01 (100-Year)	Cut-W02	Cut-W01	#N/A	12.242	#N/A	0.52	#N/A	#N/A	2.08	#N/A	2760.4	#N/A
EDV	W04/W03	W04/W03 (EDV)	Cut-W04	Cut-W03	#N/A	12.558	#N/A	0	#N/A	#N/A	0.10	#N/A	3.4	#N/A
2-Year	W04/W03	W04/W03 (2-Year)	Cut-W04	Cut-W03	#N/A	12.319	#N/A	0.004	#N/A	#N/A	0.34	#N/A	30.5	#N/A
10-Year	W04/W03	W04/W03 (10-Year)	Cut-W04	Cut-W03	#N/A	12.297	#N/A	0.01	#N/A	#N/A	0.47	#N/A	63.7	#N/A
100-Year	W04/W03	W04/W03 (100-Year)	Cut-W04	Cut-W03	#N/A	12.289	#N/A	0.017	#N/A	#N/A	0.58	#N/A	107.1	#N/A
EDV	W06/W05	W06/W05 (EDV)	Cut-W06	Cut-W05	#N/A	12.272	#N/A	0.035	#N/A	#N/A	0.93	#N/A	1346.3	#N/A
2-Year	W06/W05	W06/W05 (2-Year)	Cut-W06	Cut-W05	#N/A	12.347	#N/A	0.886	#N/A	#N/A	3.10	#N/A	6238.3	#N/A
10-Year	W06/W05	W06/W05 (10-Year)	Cut-W06	Cut-W05	#N/A	12.322	#N/A	1.707	#N/A	#N/A	3.76	#N/A	11424.0	#N/A
100-Year	W06/W05	W06/W05 (100-Year)	Cut-W06	Cut-W05	#N/A	12.317	#N/A	2.71	#N/A	#N/A	4.16	#N/A	17916.6	#N/A
EDV	W09/W08	W09/W08 (EDV)	Cut-W09	Cut-W08	#N/A	12.275	#N/A	0.009	#N/A	#N/A	0.37	#N/A	49.3	#N/A
2-Year	W09/W08	W09/W08 (2-Year)	Cut-W09	Cut-W08	#N/A	12.244	#N/A	0.085	#N/A	#N/A	0.89	#N/A	441.2	#N/A
10-Year	W09/W08	W09/W08 (10-Year)	Cut-W09	Cut-W08	#N/A	12.239	#N/A	0.177	#N/A	#N/A	1.17	#N/A	919.8	#N/A
100-Year	W09/W08	W09/W08 (100-Year)	Cut-W09	Cut-W08	#N/A	12.236	#N/A	0.293	#N/A	#N/A	1.41	#N/A	1547.9	#N/A
EDV	W10/W09	W10/W09 (EDV)	Cut-W10	Cut-W09	#N/A	12.283	#N/A	0.015	#N/A	#N/A	0.35	#N/A	89.7	#N/A
2-Year	W10/W09	W10/W09 (2-Year)	Cut-W10	Cut-W09	#N/A	12.247	#N/A	0.155	#N/A	#N/A	0.85	#N/A	802.1	#N/A
10-Year	W10/W09	W10/W09 (10-Year)	Cut-W10	Cut-W09	#N/A	12.242	#N/A	0.321	#N/A	#N/A	1.11	#N/A	1672.2	#N/A
100-Year	W10/W09	W10/W09 (100-Year)	Cut-W10	Cut-W09	#N/A	12.242	#N/A	0.532	#N/A	#N/A	1.33	#N/A	2814.0	#N/A
EDV	W11/W10	W11/W10 (EDV)	Cut-W11	Cut-W10	#N/A	12.294	#N/A	0.027	#N/A	#N/A	0.33	#N/A	161.7	#N/A
2-Year	W11/W10	W11/W10 (2-Year)	Cut-W11	Cut-W10	#N/A	12.256	#N/A	0.278	#N/A	#N/A	0.81	#N/A	1445.2	#N/A
10-Year	W11/W10	W11/W10 (10-Year)	Cut-W11	Cut-W10	#N/A	12.247	#N/A	0.577	#N/A	#N/A	1.06	#N/A	3012.8	#N/A
100-Year	W11/W10	W11/W10 (100-Year)	Cut-W11	Cut-W10	#N/A	12.244	#N/A	0.957	#N/A	#N/A	1.27	#N/A	5069.7	#N/A
EDV	W14/W13	W14/W13 (EDV)	Cut-W14	Cut-W13	#N/A	12.422	#N/A	0.024	#N/A	#N/A	0.34	#N/A	182.2	#N/A
2-Year	W14/W13	W14/W13 (2-Year)	Cut-W14	Cut-W13	#N/A	12.367	#N/A	0.251	#N/A	#N/A	0.82	#N/A	1629.9	#N/A
10-Year	W14/W13	W14/W13 (10-Year)	Cut-W14	Cut-W13	#N/A	12.347	#N/A	0.523	#N/A	#N/A	1.08	#N/A	3397.6	#N/A
100-Year	W14/W13	W14/W13 (100-Year)	Cut-W14	Cut-W13	#N/A	12.347	#N/A	0.872	#N/A	#N/A	1.31	#N/A	5717.7	#N/A
EDV	W16/W17	W16/W17 (EDV)	Cut-W16	Cut-W17	#N/A	12.397	#N/A	0.007	#N/A	#N/A	0.18	#N/A	58.4	#N/A
2-Year	W16/W17	W16/W17 (2-Year)	Cut-W16	Cut-W17	#N/A	12.314	#N/A	0.084	#N/A	#N/A	0.40	#N/A	510.5	#N/A
10-Year	W16/W17	W16/W17 (10-Year)	Cut-W16	Cut-W17	#N/A	12.3	#N/A	0.177	#N/A	#N/A	0.51	#N/A	1055.2	#N/A
100-Year	W16/W17	W16/W17 (100-Year)	Cut-W16	Cut-W17	#N/A	12.297	#N/A	0.291	#N/A	#N/A	0.58	#N/A	1767.0	#N/A
EDV	W20/W21	W20/W21 (EDV)	Cut-W20	Cut-W21	#N/A	12.339	#N/A	0.003	#N/A	#N/A	0.19	#N/A	25.1	#N/A
2-Year	W20/W21	W20/W21 (2-Year)	Cut-W20	Cut-W21	#N/A	12.275	#N/A	0.04	#N/A	#N/A	0.52	#N/A	225.0	#N/A
10-Year	W20/W21	W20/W21 (10-Year)	Cut-W20	Cut-W21	#N/A	12.264	#N/A	0.086	#N/A	#N/A	0.69	#N/A	469.1	#N/A
100-Year	W20/W21	W20/W21 (100-Year)	Cut-W20	Cut-W21	#N/A	12.256	#N/A	0.144	#N/A	#N/A	0.84	#N/A	789.4	#N/A

Appendix K – Existing SH1 culverts information

SH1 Culvert Survey Ref	Location	Ecological Reference	Culvert Data	Maintenance Issues
SH1 Culvert 1450Ø Ecological Ref: P2	600m North of Billings Road	P2	Length: 43.45m D/S IL: 0.60mRL U/S IL: 1.01mRL Diameter: 1.450m Road GL: 5.00mRL	
	Inlet:			Outlet:
				
SH1 Culvert 1450Ø Ecological Ref: P3	700m North of Billings Road	P3	Length: 38.95m D/S IL: 1.05mRL U/S IL: 1.14mRL Diameter: 1.450m Road GL: 5.00mRL	
	Inlet:			Outlet:
				
SH1 Culvert 1450Ø Ecological Ref: P3a	165m South of Pūhoi Road	P3a	Length: 46.96m D/S IL: -0.08mRL U/S IL: 1.40mRL Diameter: 1.450m Road GL: 7.00mRL	

SH1 Culvert Survey Ref	Location	Ecological Reference	Culvert Data	Maintenance Issues
	Inlet: 	Outlet: 		
SH1 Culvert 750Ø Ecological Ref: P5	5m North of house #600 driveway	P5	Length: 47.35m D/S IL: 1.85mRL U/S IL: 2.07mRL Diameter: 0.750m Road GL: 6.00mRL	
	Inlet: 	Outlet: 		
SH1 Culvert 900Ø Ecological Ref: P6	25m North of house #628 driveway	P6	Length: 21.54m D/S IL: 3.37mRL U/S IL: 3.75mRL Diameter: 0.900m Road GL: 7.50mRL	

SH1 Culvert Survey Ref	Location	Ecological Reference	Culvert Data	Maintenance Issues
	Inlet: 	Outlet: 		
SH1 Culvert 450ø Ecological Ref: P6a	150m South of house #682 driveway	P6a	Length: 51.89m D/S IL: 7.44mRL U/S IL: 9.00mRL Diameter: 0.450m Road GL: 15.50mRL	Inlet partially buried from slip of adjacent banks.
	Inlet: 	Outlet: 		
SH1 Culvert 1200ø Ecological Ref: P7	50m North of house #682 driveway	P7	Length: 47.27m D/S IL: 7.46mRL U/S IL: 8.04mRL Diameter: 1.200m Road GL: 13.50mRL	

SH1 Culvert Survey Ref	Location	Ecological Reference	Culvert Data	Maintenance Issues
	Inlet: 	Outlet: 		
SH1 Culvert 1200ø Ecological Ref: P8	550m South of Watson Road	P8	Length: 43.71m D/S IL: 11.68mRL U/S IL: 12.53mRL Diameter: 1.200m Road GL: 21.00mRL	
	Inlet: 	Outlet: 		
SH1 Culvert 2.00x2.10 Ecological Ref: P9	5m North of Watson Road	P9	Length: 29.63m D/S IL: 13.54mRL U/S IL: 14.29mRL Diameter: 2.0x 2.1m Road GL: 20.00mRL	

SH1 Culvert Survey Ref	Location	Ecological Reference	Culvert Data	Maintenance Issues
	<p>Inlet:</p>  <p>A9</p> <p>IL 14.29</p> <p>2.1 m</p> <p>Outlet:</p>  <p>IL 13.54</p> <p>2.1 m</p> <p>Water Level RL 14.84</p> <p>Approx. 2m</p>			