IN THE MATTER of the Resource Management Act 1991 (**RMA**)

AND

IN THE MATTER **Intensification Planning Instruments Plan Change (IPI)-– Plan Change 78 - to the Auckland Unitary Plan – Operative in Part (AUP)**

MINUTE FROM THE HEARING PANEL – 17 SEPTEMBER 2024

PLAN CHANGE 78 – RESPONDING TO LETTER FROM BALMORAL RESIDENTS' ASSOCIATION INC, EDEN PARK NEIGHBOURS ASSOCIATION INC AND SOUTH EPSOM PLANNING GROUP INC DATED 19 AUGUST 2024

1. The Panel has received a request from the Balmoral Residents Association Inc, Eden Park Neighbours Association Inc and South Epsom Planning Group Inc that the Panel require Council to carry out updated flood modelling and analysis for the Meola Catchment and require that this information be provided to submitters well in advance of the PC78 hearings.

2. The Council has indicated to the Panel that it anticipates lodging a natural hazards variation to PC78 that will include updated flood modelling. Similar to its 2 August Minute responding to St Marys Bay Association, it is the Panel's view that the Council is in the best position to manage the variation and associated provision of updated flood modelling at this time.

3. The request is therefore declined.

4. Any enquiries regarding this Minute, or related matters, should be directed to the Senior Hearings Advisor, Mr Sam Otter by email at npsudhearings@aucklandcouncil.govt.nz

Matthew Casey, KC Chairperson
17 September 2024

19 August 2024

The Chair

Independent Hearings Panel

Auckland

Dear Mr Casey

This letter is written on behalf of the following submitters on Auckland Council Plan Change 78 (PC78):

- Balmoral Residents Association Inc.
- Eden Park Neighbours Association Inc.
- South Epsom Planning Group Inc.

Each of the submitters is a community group representing a number of owners and occupiers of properties in the suburbs of Balmoral, Epsom, Mt Eden and Three Kings which are in the Meola water catchment.

The Meola catchment is a very large one. Significant areas of it were subjected to damaging flooding as a result of the 2023 Auckland Anniversary Day storm event. NIWA reported that an entire summer's worth of rain fell within one day in what it described as a 1-in-200-year event. The event is considered to be the worst flooding in Auckland's modern history.

The Panel has advised that hearings on those topics in PC78 which are of interest to us have been postponed until next year. However, the Panel is proceeding with the hearings about Metropolitan Centres now and asked Council for an update on its flood modelling for those Metropolitan Catchments.

Council has now provided that information, and the Panel has made it available on its website. The information shows that Council's re-modelling confirms that the extent of identified risk of flooding in those urban centres has increased significantly given Council's now increased knowledge of those risks. There already is old data available for the Meola residential areas in a dated 2010 AECOM report (attached) that was carried out prior to the construction of the Central Interceptor and the 2023 floods. Clearly that report now requires significant updating given the severity of the 2023 flooding events.

The purpose of this letter is to ask the Panel to require Council to:

1. Carry out similar updated flood modelling and analysis for the Meola catchment, and

2. Require that this information be made available to submitters well before any PC 78 hearings about the future zoning and use of land in our catchment are scheduled.

In our view, it will not be possible for us to present a complete case, nor for the Panel to make an informed decision, about Council's proposals in PC78 for further intensification of land in the Meola catchment without first having a clear and updated picture of the potential flood risk to our properties.

Would you please advise us whether the Panel is willing to issue a direction to Council to this effect?

Yours sincerely

John Burns

Chair

Balmoral Residents Assn Inc.

Colin Lucas

Colin Lucas

Chair

Eden Park Neighbours Assn Inc

Chris Mules

Chair

South Epsom Planning Group Inc

Report

Meola Catchment Modelling

Model Build and Validation

21 MARCH 2014

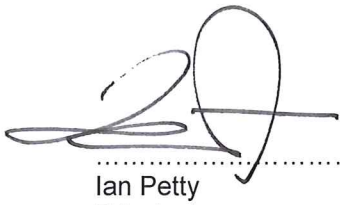
Prepared for

Auckland Council

42072848

URS

Project Manager:



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Abbreviations

Abbreviation	Description
1-D	One Dimensional
2-D	Two Dimensional
AC	Auckland Council
ACC	Auckland City Council
WCC	Waitakere City Council
ARC	Auckland Regional Council
AEP	Annual Exceedence Probability
ARI	Average Recurrence Interval
SCS	Soil Conservation Services
CN	Curve Number
Ia	Initial Abstraction
tc	Time of concentration
ED	Existing Development
MPD	Maximum Probable Development
HGL	Hydraulic Grade Line
EGL	Energy Grade Line
TP108	Auckland Regional Council Technical Publication 108
GIS	Geographical Information System
LiDAR	Light Detection and Ranging Survey

Executive Summary

The existing hydrological and hydraulic model of the Meola Creek Catchment has been updated using Infoworks ICM modelling software based on ARC TP108 rainfall-runoff modelling methods and 1-D and 2-D free surface gradually varied unsteady flow equations.

Model gauge validation results indicate the predicted peak flow and runoff volume at the gauge on Meola Creek were not validated within the Auckland Council model specification criteria for all of the three storm events. However, for the June 2000 and July 2012 events the model has been validated within reasonable agreement with the measured gauge data considering this large catchment with complex stormwater and combined sewer drainage network system.

The differences between the model results and measured data could be due to several issues such as missing features that are not accounted for within the model such as catch pits/ inlet blockages, soakage capacity assumption, rainfall variability over the catchment, missing ponding/storage features, and land use characteristics during the historical storm events.

Model event simulation results show a total of 108 habitable floors during the June 2000 event, a total of 112 habitable floors during the April 2003 storm event and a total of 38 habitable floors during the July 2012 storm event are predicted to be inundated based on available habitable floor level survey information.

Model results comparison against the previous model results show the number of habitable floors predicted by the current model is lower than that predicted by the previous model during the 10yr, 50yr and 100yr ARI MPD future storm events.

1

Introduction

1.1 Background

Auckland Council (AC) Stormwater Unit is responsible for the provision of stormwater services in the Auckland region. It works closely with Watercare Services Ltd (Watercare), who provide wastewater services to the region and have responsibility for all wastewater sewer systems, including the combined network. AC and Watercare are seeking to develop an integrated strategy for managing stormwater and wastewater in the Meola catchment area, in order to deliver the best outcomes for residents of the catchment, and best value for the ratepayers of Auckland. The final integrated approach to drainage is likely to involve various initiatives at a number of locations across the catchment. Auckland Council has initiated the Central Area Stormwater Initiative (CASI) project to investigate a full range of conceptual options to mitigate the stormwater drainage issues within the Oakley, Meola and Motions Catchments.

A flood hazard analysis of Meola Catchment was completed by AECOM in 2010 using the Infoworks CS 2D modelling software. This analysis included flood hazard mapping and identification of habitable floors susceptible to flooding based on the existing design rainfall scenario. The 2010 Meola Flood Hazard Mapping (FHM) model was rerun by AECOM in 2011 for the climate change design rainfall with revised private soakage assumption (2-year ARI capacity).

URS New Zealand Limited (URS) has been engaged by Auckland Council to update the existing hydrological and hydraulic model of Meola Catchment which can be used to identify habitable floors at risk of flooding, assess the performance of existing stormwater drainage network system and carryout the trunk drainage options investigations.

1.2 Study Objectives

The goal of this study is to build on the work already completed under CASI and undertake a robust assessment of the main recommended options for providing new stormwater trunks and network in the study area. In particular, it is a key requirement of this study to model a proposed new stormwater network that is sufficient in coverage and capacity to resolve large event flooding issues, where possible, and provide for some extra network capacity where required to support growth. This study aims to refine the likely design of such a network and to understand whether deep trunk or shallow trunk drainage offers the most cost-effective solution.

The objectives of Meola Catchment modelling study are:

- Update the existing Infoworks CS 2D FHM model of Meola Catchment into Infoworks ICM format (entire catchment)
- Improve the model to address the issues identified by an independent peer review (in July 2012) in the existing FHM model.
- Validate the model performance against recent historic storm events.
- Create a model of a proposed stormwater network to serve the study area.
- Develop and model two trunk drainage conveyance options.

1.3 Activities and Scope

The activities and scope of the present Meola Catchment modelling study are:

- Construction of new hydrological model to comply with TP108, as per AC modelling specification (2011).
- Updating of the existing model with Meola Creek surveyed cross-sections as 2-D representation of the watercourse with culvert inlets and outlets, including other structures likely to cause head loss.
- Improvement of the model to address the issues identified by an independent peer review.
- Verification of the updated ICM model against the existing FHM CS 2D model for the 2, 10, 50 and 100 year ARI events.
- Validation of the model performance against three recent historic storm events.
- System performance assessment of the stormwater drainage network.
- Identification of habitable floors at risk of flooding.
- Floodplain mapping for the 10-year, 50-year and 100-year ARI storm events under the Maximum Probable Development (MPD) land use with future rainfall scenario.

2

Catchment Description

2.1 Location

The Meola Catchment is located within the central / north-west portion of the Auckland isthmus. The stormwater catchment has an area of 1,518 ha, while the wastewater catchment has a total area of 1,572 ha. The upper part of the catchment is triangular in shape, and the volcanic cones of Mt Eden, Three Kings and Mt Albert lie approximately at the vertices of this triangle. The lower part of the catchment consists of a relatively narrow tongue of land downstream of Mt Albert and extending to the coastal marine area on the western aspect of Meola Reef (refer to Figure 2-1).

The catchment is bounded by Mt Eden Road to the east, Mt Albert Road to the southwest, Carrington Road to the west and New North Road to the northeast. The Meola Catchment has large sections of open watercourse and the catchment runoff drains to Waitemata Harbour via Meola Creek.

2.2 Topography

The Meola Catchment generally slopes from the southeast from Mt Eden and Three Kings down to Meola Creek and the harbour in the northwest. The topography of the Meola Catchment comprises mostly moderate gradient slopes. Elevations in the catchment range from 0m to approximately 190m above sea level. The eastern part of the catchment is the steepest and has the highest elevation rising to approximately 190 metres above sea level. To the southeast, the catchment rises in a gentle manner to approximately 90 metres in elevation. To the north the catchment drains to the sea.

2.3 Geology and Soils

The geology of the Meola Catchment consists of a series of basalt lava flows underlain by sandstones of the Waitemata series (Figure 2-2). These lava flows form an aquifer system that underlies much of the Meola catchment. The basalt soils are characterised by high permeability and soakage ability, with relatively low runoff potential. Some part of the catchment comprises Watemata residual soils which are characterised by low permeability, poor soakage ability and relatively high runoff potential.

2.4 Existing and Future Land Use

The catchment area is predominantly residential, with a few scattered areas of business, special purpose and open space/reserve land uses. Commercial activities within the Meola Catchment area are generally restricted to retail services along the main thoroughfares of Dominion Road, Mt Eden Road, Sandringham Road and Balmoral Road. There are a number of sizeable parks in the catchment, including; Chamberlain Park Golf Course, Fowlds Park, Three Kings Park, Kerr-Taylor Reserve, Mount Eden Domain and Eden Park. There are also a number of smaller parks and reserves throughout the catchment.

Land use in the catchment comprises of 72.2% residential, 8.4% business, 7.4% special purpose (schools and colleges), and 11.9% open space areas. The main business and industrial sites are located near the junctions of Morningside Drive/St Lukes Road, and Mt Eden/Mt Albert Roads. Table 2.1 provides a summary of the types of land use in the catchment as a percentage of the total Meola stormwater catchment area (AECOM, 2010).

2 Catchment Description

Table 2-1 Land Use in the Meola Catchment as Percentage of the Total Catchment Area

Land Use Zone	Percentage of Total Catchment Area
Residential	72.2%
Business	8.4%
Special Purpose	7.4%
Open Space	11.9%

Source: AECOM, 2010

2.5 Stormwater Drainage System

The drainage system in the Meola catchment consists mainly of combined sewers and limited separated wastewater and stormwater systems and soakage. Its main watercourse, Meola Creek, flows through the catchment to the Waitemata Harbour (Figure 2-1). Meola Creek is an urban waterway flowing from Mt Albert through to Point Chevalier, in the western suburbs of Central Auckland. Meola Creek is approximately 5.2 km long (including ~1.3 km of piped length) and flows through a highly modified urban watershed with approximately 49% catchment imperviousness.

The high level of catchment imperviousness is reflected in the modified nature of the watercourse, particularly in the channelised, concrete lined and piped sections. The creek is fed predominantly by overland surface flows, stormwater and wastewater discharges from the piped drainage network. Importantly, flow from the Western Springs Groundwater Aquifer contributes to baseflow via springs along the length of the watercourse.

Stormwater disposal in the Meola catchment is mainly by soakage although there are areas that are served by combined pipes with limited stormwater capacity. The existing capacity of the combined system is such that during storm events the combined sewer overflows operate and discharge a large volume of wastewater into the Meola Creek. Soakage discharges to the Western Springs aquifer which underlies the catchment.

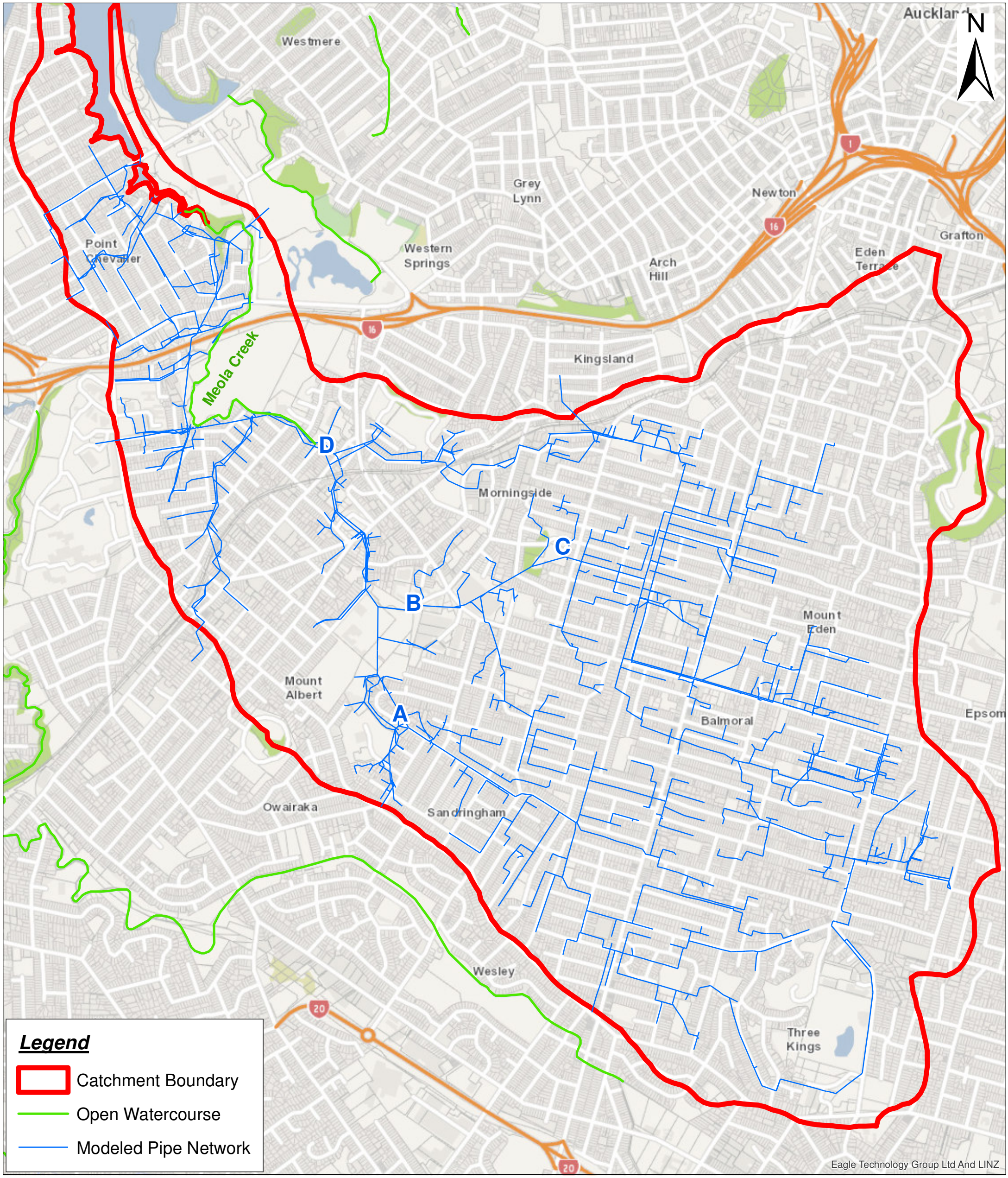
The upper reaches of the Meola catchment (upstream of the Alberton Ave culvert) can be broadly divided into three major valleys. The southernmost of these three valleys flows from the western slopes of the Three Kings volcanic cone to the head of the Meola Creek between Haverstock Road and Lyon Avenue. In this area there is some stormwater disposal to ground in the basalt from the Three Kings lava flow. Where disposal to ground is not possible, stormwater is currently conveyed by the Branch 8 wastewater trunk to Meola Creek at Haverstock Road (location A in Figure 2-1). It should be noted that the natural drainage path for most of this watershed is, in fact, to Lyons Ave (location B in Figure 2-1). The Branch 8 combined sewer deviates from the natural drainage path, presumably in order to avoid the basalt that exists there.

The central valley of the upper Meola catchment has its headwaters around St Andrews Road, and naturally drains to Meola Creek through the Morningside area. There is some stormwater disposal to ground in the basalt from the Mount Eden and Three Kings lava flows. Where disposal to ground is not possible, stormwater is currently conveyed by the Edendale Branch wastewater trunk. The latter follows closely the natural drainage paths to Gribblehurst Park (location C in Figure 2-1), at which point it crosses under a ridge and discharges to Meola Creek at Lyon Avenue (location B in

2 Catchment Description

Figure 2-1). It should be noted that the natural drainage path from Gribblehurst Park is, in fact, through Morningside to join Meola Creek near Amandale Ave (location D in Figure 2-1).

The northernmost valley of the upper Meola drains from the north-eastern corner to join Meola Creek through the Morningside area. It lies entirely on basalt and, as such, stormwater disposal is largely to ground. A small stormwater trunk exists downstream from Eden Park and joins Meola Creek at the Amandale Culvert (location D in Figure 2-1).



Auckland Council

MEOLA CREEK CATCHMENT MODEL VALIDATION

STORMWATER DRAINAGE SYSTEM

Final

URS

File:T:\JOBS\42072848\Meola_Catchment.mxd Drawn: **SS** Approved: **JI** Date: 14/03/2014

Figure: **2-1** Rev. **A** A3

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Legend

Catchment Boundary

Soil Types

Alluvial Soils

Isthmus Volcanic Soils

Waitemata Residual Soils

0 0.25 0.5 1 1.5 2 km

Scale 1:19,847

Auckland Council

MEOLA CREEK CATCHMENT MODEL VALIDATION

CATCHMENT SURFICIAL SOIL TYPE

Final

URS

File:T:\JOBS\42072848\Soil_Type.mxd Drawn: **SS** Approved: **JI** Date: 14/03/2014

Figure: **2-2**

Rev. **A** A3

3

Model Build

3.1 Modelling Software

The InfoWorks ICM (Integrated Catchment Modeling) modelling software package developed by Innovyze has been used to update the existing hydrological and hydraulic model of the Meola Catchment. InfoWorks ICM is a comprehensive, flexible system for fully integrated catchment / basin modelling and the management of those models. It provides the ability to model the complete natural and engineered above- and below- ground drainage system including sewers, surface water, rivers and floodplains. It combines 1D and 2D models in one software environment.

3.2 Hydrological Model

3.2.1 Method Used

Stormwater catchment runoff was modelled following the guidelines outlined in the ARC Technical Publication No. 108 document (ARC, 1999). The key features of the TP108 rainfall-runoff model are:

- A standard 24 hour temporal rainfall pattern, having peak rainfall intensity at mid-duration. Shorter duration rainfall bursts with a range of durations from 10 minutes to 24 hours are nested within the 24 hour temporal pattern,
- Runoff depth calculated using SCS (Soil Conservation Service) rainfall-runoff curves, with curve numbers determined from the SCS guidelines according to classifications assigned to Auckland soil types,
- Runoff hydrograph calculated using the standard SCS synthetic unit hydrograph,
- Time of concentration estimated using an empirical lag equation derived from a regression analysis of data from the Auckland Region.

3.2.2 Hydrological Model Extents

The stormwater sub-catchment boundaries used in the model are based on the Infoworks CS 2D model developed by AECOM in 2010. A total of 1779 stormwater sub-catchments were used in the model. Sub-catchment area ranges from 0.008 ha to 2.04 ha with an average value of 0.85 ha. Sub-catchment slopes were computed in ArcGIS based on the equal area method as specified in ARC TP108 document (ARC, 1999).

3.2.3 Hydrological Model Parameters

The TP108 methodology uses two rainfall loss parameters i.e. SCS Curve Number (CN) and Initial Abstraction (Ia) to describe rainfall losses and runoff timing parameter i.e. lag time or time of concentration to describe runoff routing process which provides attenuation and lag within the catchment. TP108 has derived CN and Ia values for use in the Auckland Region. These are tabulated as a function of soil type and land use.

Meola Catchment comprises Group A, Group B and Group C hydrological soil types that relate to volcanic basalt, alluvial and Waitemata residual soils. A SCS CN of 39 for Group A, 61 for Group B and 74 for Group C were used for pervious areas. A SCS CN of 98 was used for impervious areas in the model. An initial abstraction loss of 5mm for pervious areas and 0mm for impervious areas were used in the model. Rainfall losses are modelled separately for stormwater sub-catchment pervious and impervious areas.

3 Model Build

The time of concentration for each sub-catchment was estimated using the empirical lag equation given in ARC TP108, derived from a regression analysis of data from the Auckland Region.

The existing development (ED) and maximum probable development (MPD) impervious coverage areas were developed from the District Plan Zoning (ACC, 2008) as outlined in the AECOM model development report (AECOM, 2010). The imperviousness of the Meola Catchment under the existing development (ED) scenario is estimated at 49.0%. Under the MPD scenario the imperviousness of the Catchment is estimated at 62.5%.

A summary of various hydrological model components used in the model are given in Table 3-1 below.

Table 3-1 Summary of Hydrological Model Components

Hydrological Model Components	Values
Number of stormwater sub-catchments	1779
Range of stormwater sub-catchment size (in Hectares)	0.008 to 2.04
SCS curve number for pervious area	39, 61, & 74
SCS curve number for impervious area	98
Initial loss for pervious area (mm)	5
Initial loss for impervious area (mm)	0
Existing development imperviousness %	49.0
Maximum probable development imperviousness %	62.5

A detailed list of all sub-catchments information including node attachments and characteristics required in the model are presented in Appendix A.

3.3 Hydraulic Model

3.3.1 Method Used

The hydraulic model of the study area was developed incorporating the existing stormwater and wastewater pipe networks, culverts, and overland flow paths. The pipe networks and culverts were schematised in the one-dimensional model whereas overland flow paths and lower part of Meola Creek were modelled in a two-dimensional model of Infoworks ICM software. Meola Creek surveyed cross-sections were burned into the existing 1m grid LiDAR ground surface.

The hydraulic computation in Infoworks ICM 1-D model is based on an implicit, finite difference numerical solution of basic 1-D free surface gradually varied unsteady flow equations (Saint Venant).

The shallow water equations (SWE), that is, the depth-average version of the Navier-Stokes equations, are used for the mathematical representation of the 2D flow in Infoworks ICM model. The conservative SWE are discretised using a first-order finite volume explicit scheme. Finite volume schemes use control volumes to represent the area of interest. With finite volume methods the modelling domain is divided into geometric shapes over which the SWE are integrated to give

equations in terms of fluxes through the control volume boundaries. The scheme that is used to solve the SWE is based upon the Gudunov numerical scheme, with the numerical fluxes through the boundaries of the control volumes computed using the standard Roe's approximate Riemann solver. Finite volume methods are generally considered to have a number of advantages in terms of conservativeness, geometric flexibility and conceptual simplicity.

3.3.2 Hydraulic Model Network

The hydraulic model network is made up of two main hydraulic components; the primary drainage system, comprising the formal stormwater and wastewater drainage system made up of the pipe and culverts, and the secondary drainage system, comprising the overland flow paths and open channels. A summary of various hydraulic model components are given in Table 3-2, and briefly described below.

Table 3-2 Summary of Hydraulic Model Components

Hydrological Model Components	Values
Total number of manhole nodes	3681
Total number of storage nodes	1
Total number of outfall nodes	689
Total number of pipe conduits	2456
Total number of culvert inlets	10
Total number of culvert outlets	9
Total number of flap valves	4
Total number of pumps	1
Total number of weirs	68
Total number of orifices	1237
Total number of head discharge curves	1
Total number of elements in 2D mesh	980704
Total number of triangles in 2D mesh	1302043

1D Model Nodes

Infoworks ICM model nodes were utilised to represent the stormwater drainage network system attributes such as manholes, inlets and outlets. The nodes were defined by X-Y co-ordinates, ground levels, invert levels and manhole diameters.

1D Model Links

Infoworks ICM model links were utilised to represent stormwater and wastewater drainage pipes, culverts, culvert inlet & outlet structures, pumps, flap gates and control structures such as weir/orifices.

3 Model Build

The link data input to the model comprised of link size i.e. diameter or width/height, upstream and downstream inverts and connecting nodes. Details of soakage representation in the model are described in AECOM model development report (AECOM, 2010). The private soakage capacity is modelled as 2-year ARI flow capacity i.e. private soak holes are able to dispose of up to 2-year ARI peak flow from roofs.

A flap valve is modelled to represent the flap gate at the outlet of the 1600mm diameter pipeline under the channel along the Haverstock Road reserve area (refer to photo in Figure 3-1). The culvert from Amandale Avenue to Burnside Avenue is a large 3.8m x 3.7m culvert with an open channel running over it from Linwood Avenue to downstream of Martin Avenue. The culvert under Linwood Avenue is connected to the open channel (refer to Figure 3-2) by large openings upstream and downstream of the road culvert. These openings are modelled with rectangular weirs connecting the large culvert to the open channels.

Figure 3-1 Flap Gate at the 1600mm Diameter Culvert Outlet at Haverstock Road Reserve

2D Model Bathymetry

The bathymetry consists of the 2D ground surface (Digital Elevation Model) created from the LiDAR data. The dimension of the 2D ground surface (the grid size) is an important parameter as it sets the spatial resolution of the resultant floodplain extent. The 2D ground surface used in the model is based on flexible mesh covering the entire Meola Catchment area. Meola Creek surveyed cross-sections were burned into the existing 1m grid LiDAR ground surface.

3 Model Build

Initially interpolated cross-sections were generated at 5m to 10m intervals between the surveyed cross-sections along the centre line of the Meola Creek using interpolation tools in Infoworks ICM software. Later the interpolated cross-sections points (x, y, z data) were used to create a 1m grid DEM of Meola Creek which was finally burned into the existing 1m grid LiDAR ground surface.

The resolution of the flexible mesh ranges from $10m^2$ to $20m^2$ approximately in overland flow path areas and $2m^2$ to $6m^2$ approximately in Meola Creek including floodplain areas.

Figure 3-2 Culvert Inlet under Linwood Avenue

3.3.3 Energy Losses

Energy Losses due to Surface Friction

Hydraulic roughness factors were assigned to the links as a Colebrook-White “Ks” value of 1.5mm for stormwater and wastewater pipes (AECOM, 2010). Hydraulic roughness factors for stormwater culverts were assigned a Manning’s “n” value of 0.014. Roughness factors for Meola Creek were assigned as Manning’s “n” values of 0.05 to 0.065 for various river reaches based on materials, vegetation and irregularities. Hydraulic roughness over the 2D model domain is assigned a Manning’s n value of 0.05 for overland flow paths and a Manning’s n value of 0.1 for Meola Creek floodplain areas with vegetation/bushes. Table 3-3 below shows the summary of frictional energy loss parameter values used in the model for various types of links.

Table 3-3 Summary of Frictional Energy Parameter Values Used in the Model

Link Type	Frictional Energy Loss Parameter Values
1D stormwater and wastewater pipes	Colebrook-White “Ks” value = 1.5mm (top & bottom roughness)
1D stormwater culverts	Manning’s “n” value = 0.014 (top & bottom roughness)
2D Meola Creek main channel	Manning’s “n” value = 0.05 to 0.065
2D overland flow path areas	Manning’s “n” value = 0.05
2D road surface areas	Manning’s “n” value = 0.0167
2D floodplain areas (bush areas only)	Manning’s “n” value = 0.1

Energy Losses due to Turbulence

Head losses through manholes are calculated with the Infoworks ICM standard approach that automatically estimates a head loss coefficient based on the angle of approach to a manhole. Pipe and culvert outlets are generally set with an exit head loss coefficient of 1.0. Under outlet controlled conditions, pipe and culvert inlets are generally modelled with an entry head loss coefficient of 0.5. Under inlet controlled conditions, pipe and culvert inlets are modelled with Infoworks ICM standard equations governing inlet losses with inlet control parameters based on the culverts/pipes shape, material and inlet and edge type. Table 3-4 below shows the summary of turbulence energy loss parameter values used in the model for various types of nodes and links.

Table 3-4 Summary of Turbulence Energy Loss Parameter Values Used in the Model

Node/Link Type	Turbulence Energy Loss Parameter Values
Manholes	Infoworks ICM standard approach that automatically estimates a head loss coefficient based on the angle of approach to a manhole.
Pipe/Culvert outlets	Exit head loss coefficient (Ko) of 1.0
Pipe/Culvert inlets (outlet controlled)	Entry head loss coefficient (Ki) of 0.5
Pipe/Culvert inlets (inlet controlled)	Infoworks ICM standard equations governing inlet losses with inlet control parameters based on the culverts/pipes shape, material and inlet and edge type.

3.4 Boundary Conditions

3.4.1 Rainfall Boundary

The standard TP108 nested 24-hour duration temporal rainfall profile was adopted and utilised following the rainfall derivation procedure outlined within the TP108 guidelines (ARC, 1999). The 24-hour design rainfall depth for Meola Catchment was estimated from the design rainfall contour maps for a range of average recurrence intervals (ARIs) given in the TP108 document (ARC, 1999). The temporal rainfall profiles were developed based on the 24-hour design rainfall depth and the standard TP108 normalised 24-hour temporal design storm profile.

The future 24-hour design rainfall depth due to future climate change has been estimated in accordance to the guideline provided by the Ministry for the Environment (2008). The guideline provides a table of percentage increase in rainfall per degree Celsius of warming for a range of ARIs and durations. The projected average increase in annual mean temperature for Auckland Region is 2.1^{o}C for the period from 1990 to 2090. This is used for estimating the future 24-hour design rainfall depth and developing the future normalised 24-hour temporal design storm profile due to future climate change.

Three rainfall events were used for model validation against measured flow monitoring data at gauge 8106 Meola Creek at Motions Road Weir. Rainfall data at 5 minutes interval were sourced from Mt Albert Grammar rain gauge station.

3.4.2 Tidal Boundary

The Meola Catchment discharges into the Waitemata Harbour. The present modelling study has used a constant downstream tidal boundary condition of 1.39m RL (mean high water spring) for the existing development scenario and 1.89m RL for the maximum probable development scenario.

3.5 Model Limitations and Assumptions

3.5.1 Limitations

- Explicit calibration of the catchment model was not undertaken. The present modelling is limited by the ARC TP108 rainfall-runoff model which is expected to be within ± 25% at a confidence level of 90 percent for 2 to 100-year ARI storm events (ARC, 1999).
- The model accuracy for historical flood events will be dependent on the antecedent ground conditions and spatial rainfall variation. Antecedent ground conditions are variable, depending on the season and the timing of the storm within the sequence of storms. The TP108 runoff model is limited to the average antecedent moisture condition.

3.5.2 Hydrological Model Assumptions

- The sub-catchment SCS curve numbers were based on the available soil type map for the catchment.
- The sub-catchment slopes were calculated from the 0.25 metre intervals LiDAR contour data according to the Equal Area Method as outlined in ARC TP108 document.

3.5.3 Hydraulic Model Assumptions

- All sub-catchment runoff was assumed to enter freely into the reticulation system i.e. catch pit inlet control was not modelled for stormwater reticulation. The model effectively assumes catch pit inlet capacity is equal to or greater than the modelled pipe capacity.
- No blockage has been assumed in catch pits, manholes, pipes, culverts and entry points into the stormwater network system.

- No sedimentation has been allowed for in the pipes, i.e. all pipes are capable of performing at full capacity.

3.6 Initial Model Testing

Several model simulation runs were carried out to ensure that the model is performing correctly without mass errors and numerical instabilities. Finally no major instabilities were noticed within the model results. The mass continuity balance is used as a measure of system water volume balance error due to water generated within the model for various situations e.g. sharp changes in surface width or cross-section shape or surface area of basins with water depth. The mass continuity balance below 5% is considered acceptable. The mass error balance of the Meola Catchment model ranged from 0.04% to 0.1%.

3.7 Quality Assurance and Quality Checks

The Meola Catchment stormwater drainage network model has been internally quality assured and checked.

4

Model Validation

4.1 Model Gauge Validation

A flow monitoring gauge is located within the Meola Catchment in the lower part of the Catchment at Meola Creek at Motions Road (8106). A validation of model results was carried out by comparing the model results with the measured gauge data without changing the hydrological and hydraulic model parameter values. The model results were compared against measured data for three storm events.

The following three storm events from Mt Albert rain gauge were used for model validation runs:

- 28 – 29 June 2000, total rainfall of 97mm over 22 hours and a maximum intensity of 72.4mm/hr, 15 to 20-year ARI storm event;
- 20 – 21 April 2003, total rainfall of 87.7mm over 22 hours and a maximum intensity of 88.3mm/hr, 40 to 45-year ARI storm event;
- 3 July 2012, total rainfall of 44.2mm over 12 hours and a maximum intensity of 66mm/hr, 5 to 7-year ARI storm event.

The model predicted flow and runoff volume were compared against measured flow data based on revised gauge rating curves. The original rating curve is based on only a few gaugings resulting in a degree of uncertainty in terms of its high stage accuracy. Meola gauge rating is revised based on recent flow measurement using Acoustic Discharge Velocity (ADV) meter at this site. Basis of the revised gauge is provided in Appendix B.

A summary of model gauge validation results is presented in Table 4.1 below. Model gauge validation plots are presented in Figure 4.1 to Figure 4.3.

Table 4-1 Summary of model gauge validation results

Storm Events	Rainfall Depth (mm)	Rainfall ARI (years)	Total Runoff Volume (m^3)		Volume Difference (%)	Peak Flow Difference (%)	Correlation Coefficient (r^2)	Within Acceptable Criteria
			Model	Gauge Revised				
28-29 June 2000	97.1	15 to 20	368300	292300	+26.0%	8.7%	0.96	No
20-21 April 2003	87.7	40 to 45	317200	159200	+99.2%	+28.2%	0.72	No
3 July 2012	44.2	5 to 7	132500	103900	+27.5%	+31.2%	0.99	No

Notes: + indicates model over prediction and - model under prediction;

4 Model Validation

According to the AC standard stormwater hydraulic modelling specifications, the acceptable criteria for the model gauge validation are:

- Runoff volume error: +20% to -10%
- Peak flow error: +25% to -15%
- Peak depth error: +15% to -15%
- Correlation coefficient: 0.6 to 1.

Model gauge validation results indicate the predicted peak flow and runoff volume at the gauge on Meola Creek were not validated within the acceptable criteria for all of the three storm events. However, for the June 2000 and July 2012 events the model has been validated within reasonable agreement with the measured gauge data considering this large catchment with complex stormwater and combined sewer drainage network system.

The large differences in case of April 2003 event is expected to be due to significant spatial rainfall variability observed during this event. During this rainfall event a relatively small rainfall event (about 5-month ARI) is recorded at nearby Avondale rain gauge station.

In general the differences between the model results and measured data could be due to several issues e.g.:

- missing features that are not accounted for within the model such as catch pits/ inlet blockages,
- soakage capacity assumption,
- rainfall variability over the catchment,
- missing ponding/storage features,
- land use characteristics during the historical storm events, and
- accuracy of rating at the flow gauge site

4 Model Validation

Figure 4-1 Comparison of Measured and Simulated Flow (June 2000 Event)

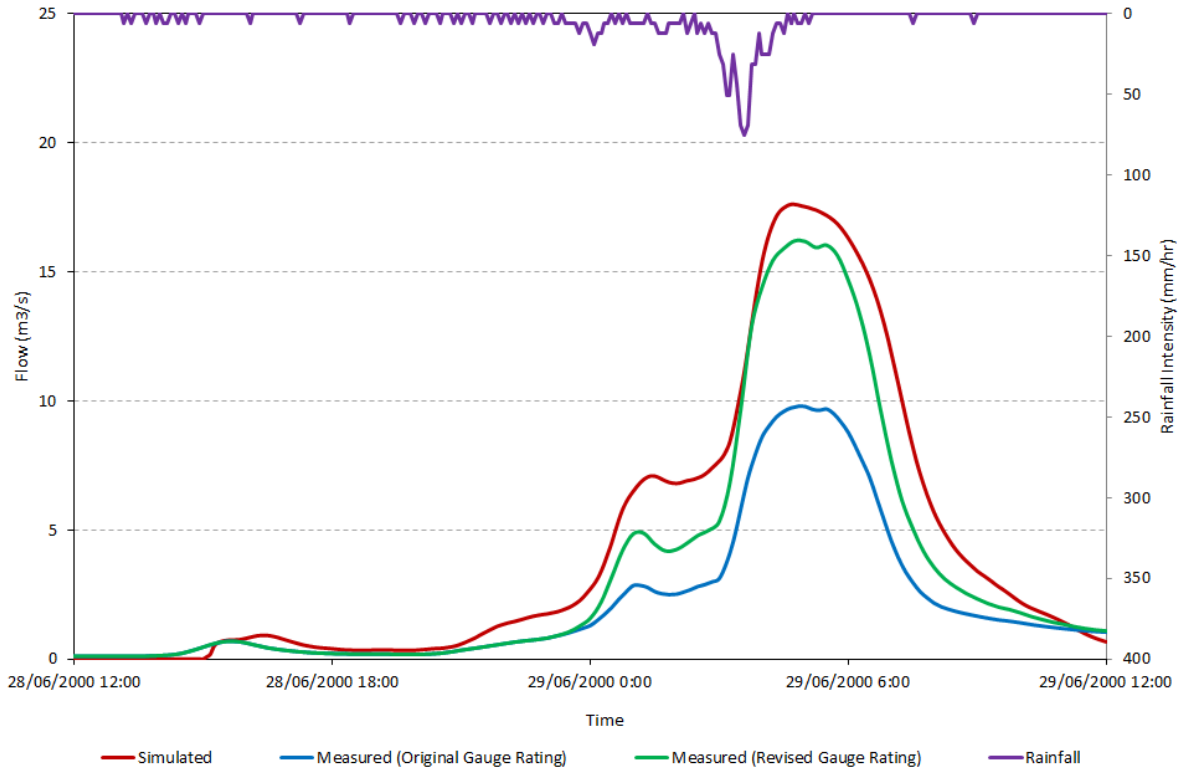
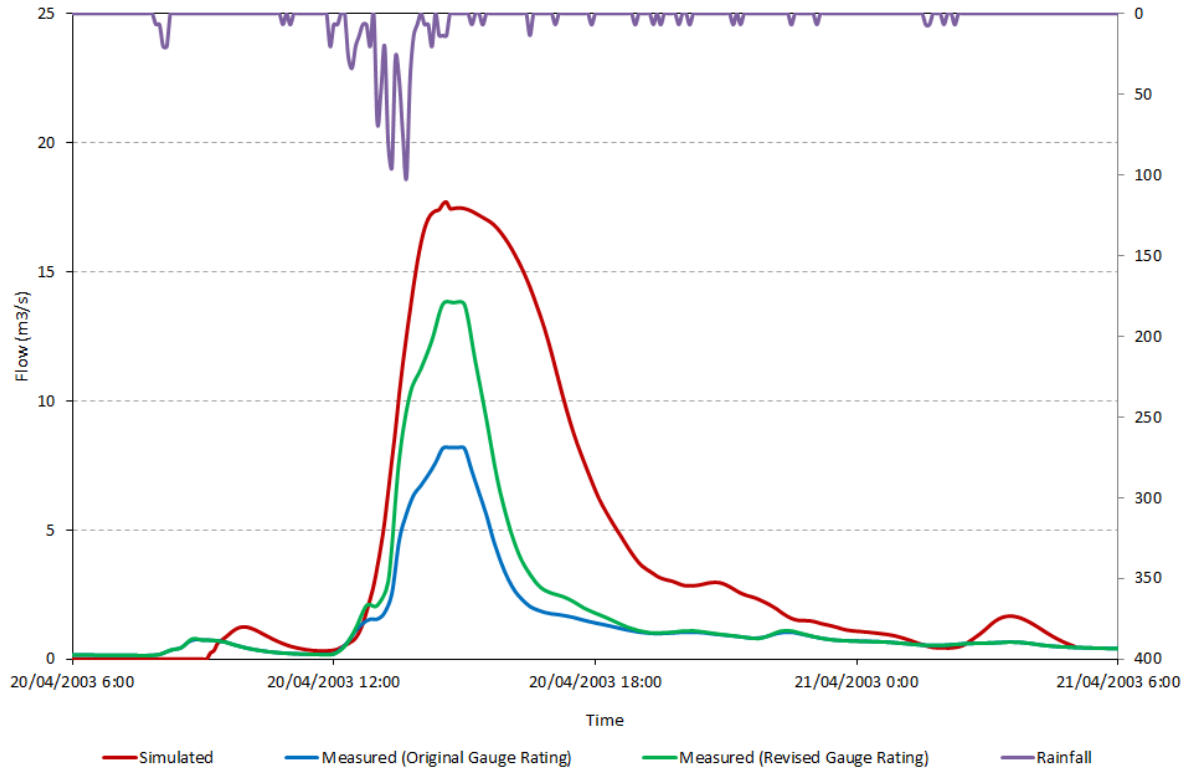
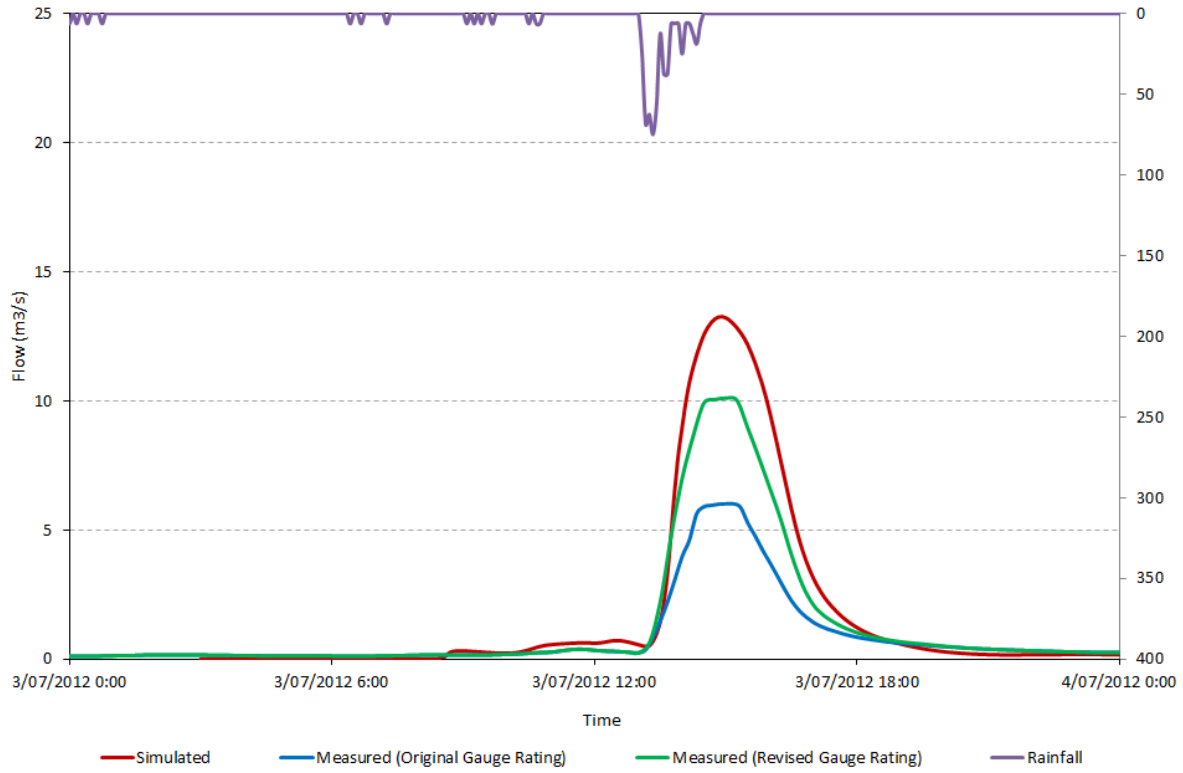


Figure 4-2 Comparison of Measured and Simulated Flow (April 2003 Event)



4 Model Validation

Figure 4-3 Comparison of Measured and Simulated Flow (July 2012 Event)



4.2 Model Historical Flood Incident Validation

A total of five habitable floors flooding and four garages (non-habitable) flooding were reported during the June 2000 storm event within the Meola Creek Catchment. Only one garage flooding was reported during the July 2012 event within the Meola Creek Catchment. No reporting of flooding incidents is available during the April 2003 storm event.

The model simulation results for the June 2000 storm event indicate only one habitable floor (12 St Leonards Road) flooding out of the five reported habitable floor flooding incidents. One reported habitable floor (14 St Leonards Road, floor level is not known) is located within the predicted floodplain. The remaining three reported habitable floors are located outside the predicted floodplain. Some of these reported flooding incidents could be related to local drainage issues.

The model is not replicating the reported habitable floor flooding. It is assumed that this could be due to blockage of the catch pits, inadequate capacity of the existing catch pits, or lack of adequate catch pits within the designated overland flow path to capture the surface runoff.

However, the model events simulation results show a total of 108 habitable floors during the June 2000 event, a total of 112 habitable floors during the April 2003 storm event and a total of 38 habitable floors during the July 2012 storm event are predicted to be inundated based on available habitable floor level survey information.

4 Model Validation

4.3 Previous Model Results Comparison

Previous model (2011 FHM) results indicated a total of 492 habitable floors were at risk of flooding during the 100yr ARI MPD future climate change storm event. This is based on 132 assumed floor levels out of the 492 habitable floors predicted at risk of flooding. Floor level information is available for only these 492 habitable floors. Current model results (10, 50, & 100yr ARI MPD future storm events) are compared against the previous model results in terms of habitable floor flooding for these 492 habitable floors. A summary of model results comparison is presented in Table 4-2. The detailed model results comparison is provided in Appendix C.

Table 4-2 Summary of Model Results Comparison

Storm Events	Number of Habitable Floors at Risk of Flooding		Number of Habitable Floors within 500mm of Predicted Flood Level		Number of Habitable Floors Not at Risk of Flooding (above 500mm of Predicted Flood Level)	
	2011 Model	2014 Model	2011 Model	2014 Model	2011 Model	2014 Model
10-Year ARI MPD Future Storm	197	160	208	186	87	146
50-Year ARI MPD Future Storm	407	379	80	73	5	40
100-Year ARI MPD Future Storm	492	398	0	61	0	33

Note: food levels less than 50mm below habitable floor assumed at risk of flooding

Table 4-2 shows the number of habitable floors predicted by the current model is lower than that predicted by the previous model during the 10yr, 50yr and 100yr ARI MPD future storm events. However the current model predicted floodplain extent is larger than that predicted by the previous model as shown in Figure 4-4 and Figure 4-5.

4 Model Validation

Figure 4-4 Comparison of 100yr ARI MPD Floodplain Extents Upstream of Great North Road

4 Model Validation

Figure 4-5 Comparison of 100yr ARI MPD Floodplain Extents Upstream of Railway Embankment

5

Conclusions and Recommendations

The existing hydrological and hydraulic model of the Meola Creek Catchment has been updated using Infoworks ICM modelling software based on ARC TP108 rainfall-runoff modelling methods and 1-D and 2-D free surface gradually varied unsteady flow equations.

Model gauge validation results indicate the predicted peak flow and runoff volume at the gauge on Meola Creek were not validated within the Auckland Council model specification criteria for all of the three storm events. However, for the June 2000 and July 2012 events the model has been validated within reasonable agreement with the measured gauge data considering this large catchment with complex stormwater and combined sewer drainage network system.

The differences between the model results and measured data could be due to several issues such as accuracy of rating at the flow gauge site and missing features that are not accounted for within the model such as catch pits/ inlet blockages, soakage capacity assumption, rainfall variability over the catchment, missing ponding/storage features, and land use characteristics during the historical storm events.

Model event simulation results show a total of 108 habitable floors during the June 2000 event, a total of 112 habitable floors during the April 2003 storm event and a total of 38 habitable floors during the July 2012 storm event are predicted to be inundated based on available habitable floor level survey information.

Model results comparison against the previous model results show the number of habitable floors predicted by the current model is lower than that predicted by the previous model during the 10yr, 50yr and 100yr ARI MPD future storm events.

Glossary

1D	One dimensional means only one spatial dimension is considered i.e. the horizontal direction of flow.
2D	Two dimensional means two spatial dimensions are considered i.e. the horizontal and lateral directions of flow.
Annual Exceedence Probability (AEP)	The probability that a given rainfall event or flow rate will be exceeded in a single year.
Average Recurrence Interval (ARI)	Average period of time between rainfall events or flow rates which exceed a certain magnitude.
Catchment	An area of land draining by force of gravity into a stream or watercourse at a given location.
Climate Change	Climate change resulting from global warming due to greenhouse gas emissions.
Curve Number (CN)	Defines the shape of the rainfall-runoff relationship and varies from 0 (no runoff) to 100 (complete rainfall).
Design Storm	The rainfall event calculated from historical record that can be expected for a specific AEP or ARI.
Design Flows	The flows estimated from various design storms, selected as a basis for the design of works in watercourses and catchments.
Drainage System	The networks of pipes, streams, open watercourses and secondary overland flow paths which carry flow within a catchment.
Existing Development (ED)	The current land use development within the catchment.
Energy Grade Line (EGL)	The total energy of flow at a given location, it is the sum of the elevation head, the pressure head, and the velocity head.
Energy Loss	Energy or head loss occurs due to frictional resistance, contraction and expansion at entrance and exit, change in flow direction, change in elevation and change in cross-section.
Floodplain	The plan extent of flooding in a given AEP or ARI storm.
Flood Sensitive Area	The plan extent of flooding for 500mm (freeboard) above the 100-year ARI flood levels.
Freeboard	Design margin to allow for factors omitted in the overall design (e.g. uncertainties in flood level estimation, wave action, and localised water level variations).
Hydraulic Grade Line (HGL)	A line coinciding with the level of flowing water in an open channel. In a closed conduit flowing under pressure, the HGL is the level to which water would rise in a vertical tube at any point along the pipe. It is equal to the energy grade line (EGL) elevation minus the velocity head.

6 Glossary

Hydrograph	A graph illustrating the variation of flow with time.
Hydrological Soil Group	Soil classification (A, B, C, or D) according to infiltration rate, where A is very high infiltration and D is very poor infiltration.
Initial Abstraction (Ia)	Rainfall losses occurring before runoff begins, includes water retained in surface depressions, intercepted by vegetation, evaporation, and infiltration.
Link	Link represents stormwater drainage pipes, culverts, bridges, stream channel reaches or overland flow paths.
Manning's "n"	Manning's roughness coefficient to account for energy losses due to frictional resistance to flow.
Maximum Probable Development (MPD)	The ultimate future land use development which will proceed up to the maximum permitted under the current District Plan.
Node	Node represents the drainage system attributes such as manholes, inlets, outlets, junction between open channels, ponds.
Overland Flow	Stormwater runoff travelling downhill over the surface of the ground along the path of least resistance towards streams and watercourses or the sea.
Primary Drainage System	The pipes, stream networks and open watercourses that carry the main, frequent stormwater within a catchment.
Runoff	The fraction of rainfall which runs off the land surface to the drainage system.
Secondary Drainage System	The overland flow path that carry the excess stormwater when the capacity of the primary drainage system is exceeded.
Subcatchment	A smaller sub-area of the catchment draining to a watercourse.
Time of Concentration	Time for a water particle to travel from the hydraulically most distant point of a catchment to the outlet.
Unit Hydrograph	Hydrograph produced by a unit depth of rainfall excess falling uniformly in time and space over a unit area catchment.

7

References

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Ministry for the Environment (2008). Climate Change Effects and Impacts Assessment, A Guidance Manual for Local Government in New Zealand. 2nd Edition, Ministry for the Environment, Wellington.

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A

Appendix A Hydrological Model Components

Table A1 Hydrological Model Components							
SubCatchment Name	Area (ha)	Loading Node	Length (km)	Slope (m/m)	Pervious Area CN	Imp. Area ED (%)	Imp. Area MPD (%)
MEO001S001	0.624	226498	0.045	0.018	39.0	24.8	42.0
MEO001S002	1.466	226463	0.103	0.007	39.0	29.3	40.4
MEO001S003	1.51	226457	0.079	0.013	39.0	10.1	26.8
MEO001S004	1.381	226499	0.057	0.008	39.0	25.0	42.0
MEO001S005	1.272	378170	0.054	0.015	39.0	29.2	43.5
MEO001S006	1.11	226499	0.042	0.071	39.0	40.6	52.8
MEO001S007	0.753	226450	0.047	0.009	39.0	23.0	40.9
MEO001S008	1.823	226466	0.094	0.003	39.0	0.0	18.3
MEO001S009	0.84	226450	0.029	0.011	39.0	19.7	30.3
MEO001S010	0.799	378175	0.030	0.045	39.0	39.3	46.2
MEO001S011	1.614	226433	0.049	0.071	39.0	28.8	46.6
MEO001S012	0.979	226499	0.017	0.066	39.0	12.5	49.5
MEO001S013	1.767	226499	0.025	0.047	39.0	35.5	68.0
MEO001S014	0.728	226538	0.033	0.048	39.0	68.1	78.0
MEO001S015	1.34	378303	0.026	0.058	39.0	49.3	60.9
MEO001S016	0.833	263990PU	0.037	0.086	39.0	24.9	25.3
MEO001S016PV	0.285	263990PV	0.021	0.086	98.0	100.0	100.0
MEO001S017	1.929	226535	0.063	0.038	39.0	33.1	45.5
MEO001S018	1.044	263990PUd2	0.028	0.059	39.0	18.1	27.7
MEO001S018PV	0.3	263990PV2	0.014	0.059	98.0	100.0	100.0
MEO001S019	0.937	263990PUd4	0.027	0.068	39.0	18.8	22.8
MEO001S019PV	0.318	263990PV4	0.015	0.068	98.0	100.0	100.0
MEO001S020	0.938	228836	0.019	0.008	60.6	47.2	47.4
MEO001S021	0.441	263990PUd3	0.010	0.072	39.0	20.0	23.2
MEO001S021PV	0.175	263990PV3	0.007	0.072	98.0	100.0	100.0
MEO001S022	0.688	228836	0.035	0.093	46.5	39.7	46.1
MEO001S023	0.87	263987PU	0.046	0.064	39.0	18.0	27.4
MEO001S023PV	0.293	263987PV	0.027	0.064	98.0	100.0	100.0
MEO001S024	0.882	226472	0.030	0.069	39.0	41.8	43.8
MEO001S025	0.876	378297	0.029	0.053	39.0	41.0	43.8
MEO001S026	1.778	229396	0.033	0.107	39.0	70.8	70.8
MEO001S027	1.895	192655.1	0.093	0.054	60.9	15.5	27.8
MEO001S028	1.101	264247PU	0.038	0.051	39.0	12.7	23.8
MEO001S028PV	0.346	264247PV	0.022	0.051	98.0	100.0	100.0
MEO001S029	1.092	264247PUd3	0.046	0.151	39.0	7.5	23.2
MEO001S029PV	0.307	264247PV3	0.021	0.151	98.0	100.0	100.0
MEO001S030	0.844	264244PUd3	0.014	0.051	39.0	24.4	55.1
MEO001S030PV	0.252	264244PV3	0.011	0.051	98.0	100.0	100.0
MEO001S031	1.432	263997PU	0.058	0.073	39.0	9.2	32.5
MEO001S031PV	0.297	263997PV	0.022	0.073	98.0	100.0	100.0
MEO001S032	1.707	226319	0.040	0.062	39.0	23.1	42.7
MEO001S033	1.389	226419	0.034	0.088	39.0	45.9	50.7
MEO001S034	1.761	226224	0.050	0.033	39.0	11.5	11.5
MEO001S035	1.586	226224	0.070	0.056	39.0	34.7	45.9
MEO001S036	1.466	226437	0.029	0.080	39.0	36.7	44.5
MEO001S037	1.066	378170	0.022	0.030	39.0	55.4	55.4
MEO001S038	1.343	378298	0.039	0.006	39.0	66.5	82.9
MEO001S039	1.235	226410	0.028	0.014	39.0	37.7	45.7
MEO001S040	1.15	378298	0.030	0.013	39.0	45.3	51.9
MEO001S041	1.21	378298	0.041	0.007	39.0	47.7	60.0
MEO001S042	1.254	226409	0.027	0.013	39.0	37.8	45.7
MEO001S043	1.136	378295	0.022	0.010	39.0	55.8	56.0
MEO001S044	1.237	378292	0.014	0.010	39.0	47.9	47.9
MEO001S045	1.131	378295	0.041	0.021	39.0	38.1	43.2
MEO001S046	1.12	378292	0.024	0.024	39.0	41.9	51.6

Table A1 Hydrological Model Components							
SubCatchment Name	Area (ha)	Loading Node	Length (km)	Slope (m/m)	Pervious Area CN	Imp. Area ED (%)	Imp. Area MPD (%)
MEO001S047	1.231	226403	0.028	0.014	39.0	40.7	44.5
MEO001S048	1.14	378283	0.048	0.016	39.0	41.9	42.9
MEO001S049	1.62	228835	0.045	0.020	43.9	36.9	44.6
MEO001S050	1.366	226522	0.135	0.002	47.4	40.5	44.3
MEO001S051	1.062	264412PU	0.035	0.007	48.1	21.5	21.5
MEO001S051PV	0.271	264412PV	0.014	0.007	98.0	100.0	100.0
MEO001S052	1.114	378292	0.029	0.010	39.0	44.8	44.8
MEO001S053	1.497	228754	0.069	0.010	48.6	30.7	30.7
MEO001S054	0.933	378295	0.027	0.014	39.0	38.3	42.3
MEO001S055	1.398	378295	0.046	0.007	39.7	33.7	43.7
MEO001S056	1.001	264247PUd2	0.019	0.174	39.0	5.4	17.7
MEO001S056PV	0.248	264247PV2	0.008	0.174	98.0	100.0	100.0
MEO001S057	1.32	264247PUd7	0.021	0.034	39.0	16.3	34.8
MEO001S057PV	0.423	264247PV7	0.014	0.034	98.0	100.0	100.0
MEO001S058	0.725	264231PU	0.109	0.051	39.0	16.7	34.8
MEO001S058PV	0.137	264231PV	0.038	0.051	98.0	100.0	100.0
MEO001S059	0.711	264231PUd2	0.015	0.013	39.0	0.0	31.4
MEO001S059PV	0.168	264231PV2	0.006	0.013	98.0	100.0	100.0
MEO001S060	0.681	264231PUd3	0.014	0.022	39.0	6.2	29.3
MEO001S060PV	0.161	264231PV3	0.006	0.022	98.0	100.0	100.0
MEO001S061	0.485	264410PUd2	0.044	0.033	39.0	27.7	37.7
MEO001S061PV	0.09	264410PV2	0.016	0.033	98.0	100.0	100.0
MEO001S062	1.044	264201PU	0.027	0.032	39.0	11.0	19.7
MEO001S062PV	0.394	264201PV3	0.016	0.032	98.0	100.0	100.0
MEO001S063	0.837	264201PUd2	0.013	0.015	39.0	4.4	21.1
MEO001S063PV	0.19	264201PV2	0.005	0.015	98.0	100.0	100.0
MEO001S064	0.472	264201pud	0.038	0.024	39.0	19.2	33.3
MEO001S064PV	0.143	264201PV	0.022	0.024	98.0	100.0	100.0
MEO001S065	1.11	264196PU	0.037	0.028	39.0	37.4	43.3
MEO001S065PV	0.334	264196PV	0.024	0.028	98.0	100.0	100.0
MEO001S066	0.65	264195PU	0.028	0.037	39.0	13.6	32.9
MEO001S066PV	0.218	264195PV3	0.017	0.037	98.0	100.0	100.0
MEO001S067	0.992	378146	0.081	0.043	39.0	38.3	48.7
MEO001S068	1.968	378136	0.056	0.032	39.0	33.3	43.0
MEO001S069	0.831	264194PUd2	0.040	0.034	39.0	14.0	28.6
MEO001S069PV	0.279	264194PV2	0.024	0.034	98.0	100.0	100.0
MEO001S070	0.825	378299	0.020	0.033	39.0	37.0	46.3
MEO001S071	1.353	378299	0.048	0.020	39.0	38.0	44.6
MEO001S072	0.945	264405PUd2	0.037	0.022	39.0	22.3	31.5
MEO001S072PV	0.282	264405PV2	0.020	0.022	98.0	100.0	100.0
MEO001S073	0.805	378256	0.028	0.021	39.0	23.3	46.3
MEO001S074	0.986	264414PUd2	0.025	0.025	39.0	15.4	29.4
MEO001S074PV	0.297	264414PV2	0.013	0.025	98.0	100.0	100.0
MEO001S075	0.49	264405PUd4	0.023	0.044	39.0	9.0	31.5
MEO001S075PV	0.125	264405PV4	0.010	0.044	98.0	100.0	100.0
MEO001S076	1.416	264200PU	0.061	0.016	39.0	15.0	26.7
MEO001S076PV	0.489	264200PV	0.036	0.016	98.0	100.0	100.0
MEO001S077	1.91	378178	0.064	0.028	39.0	34.0	45.1
MEO001S078	0.52	226276	0.006	0.047	39.0	8.5	38.4
MEO001S079	0.503	44.1	0.035	0.262	39.0	0.0	100.0
MEO001S080	1.271	226354	0.096	0.023	39.0	29.9	46.1
MEO001S081	0.819	264202PU	0.037	0.013	39.0	31.8	36.7
MEO001S081PV	0.369	264202PV	0.034	0.013	98.0	100.0	100.0
MEO001S082	1.3	407309PU	0.079	0.010	39.0	11.0	33.9
MEO001S082PV	0.364	407309PV	0.041	0.010	98.0	100.0	100.0

Table A1 Hydrological Model Components							
SubCatchment Name	Area (ha)	Loading Node	Length (km)	Slope (m/m)	Pervious Area CN	Imp. Area ED (%)	Imp. Area MPD (%)
MEO001S083	1.788	226533	0.036	0.010	39.0	30.9	39.0
MEO001S084	0.943	226532	0.065	0.007	39.0	36.4	41.0
MEO001S085	0.597	226533	0.017	0.044	39.0	42.0	44.9
MEO001S086	1.234	226399	0.046	0.008	39.0	41.3	50.4
MEO001S087	0.696	226533	0.039	0.015	39.0	34.4	46.0
MEO001S088	1.252	226530	0.053	0.005	39.0	56.7	64.3
MEO001S089	0.647	263998PU	0.027	0.010	39.0	18.8	33.6
MEO001S089PV	0.164	263998PV	0.013	0.010	98.0	100.0	100.0
MEO001S090	1.116	121056	0.106	0.039	39.0	22.7	43.2
MEO001S091	1.198	226466	0.030	0.024	39.0	30.6	43.1
MEO001S092	0.596	378195	0.037	0.038	39.0	36.0	46.5
MEO001S093	0.715	226466	0.015	0.089	39.0	34.5	48.0
MEO001S094	1.32	226466	0.044	0.065	39.0	27.2	42.6
MEO001S095	0.658	378171	0.023	0.058	39.0	22.0	44.2
MEO001S096	1.959	44.1	0.094	0.024	39.0	0.0	98.7
MEO001S097	1.779	226321	0.041	0.066	39.0	26.6	47.3
MEO001S098	1.404	226342	0.039	0.071	39.0	25.5	44.0
MEO001S099	1.958	226310	0.098	0.105	39.0	0.0	13.6
MEO001S100	0.858	226109	0.032	0.064	39.0	24.6	43.8
MEO001S101	1.111	226173	0.031	0.019	39.0	19.2	44.0
MEO001S102	1.066	226108	0.045	0.031	39.0	14.3	34.2
MEO001S103	0.695	263992PU	0.037	0.165	39.0	10.5	33.3
MEO001S103PV	0.138	263992PV	0.013	0.165	98.0	100.0	100.0
MEO001S104	1.577	226276	0.047	0.022	39.0	21.2	39.8
MEO001S105	1.066	226498	0.036	0.007	39.0	27.0	43.0
MEO001S106	0.909	264406PUd2	0.025	0.016	48.7	17.3	28.0
MEO001S106PV	0.285	264406PV2	0.014	0.016	98.0	100.0	100.0
MEO001S107	0.908	264406PU	0.021	0.009	46.7	12.9	31.9
MEO001S107PV	0.213	264406PV	0.009	0.009	98.0	100.0	100.0
MEO001S108	1.135	264405PU	0.035	0.008	39.0	12.2	24.2
MEO001S108PV	0.401	264405PV	0.021	0.008	98.0	100.0	100.0
MEO001S109	1.01	264402PU	0.044	0.004	52.6	8.5	24.8
MEO001S109PV	0.254	264402PV	0.018	0.004	98.0	100.0	100.0
MEO001S110	0.924	378280	0.026	0.016	42.3	32.5	46.4
MEO001S111	0.606	378276	0.033	0.006	53.2	39.1	39.1
MEO001S112	1.545	228830	0.079	0.099	71.5	38.2	46.9
MEO001S113	0.743	228830	0.017	0.149	74.0	25.2	46.1
MEO001S114	1.248	228830	0.067	0.016	57.3	31.6	44.3
MEO001S115	1.565	228829	0.044	0.051	74.0	25.2	43.6
MEO001S116	1.19	228829	0.023	0.069	74.0	40.6	47.2
MEO001S117	1.531	228834	0.072	0.004	61.0	27.2	35.8
MEO001S118	1.182	228751	0.086	0.007	61.0	25.3	41.5
MEO001S119	1.453	228756	0.097	0.001	61.0	30.6	41.0
MEO001S120	0.945	264401PUd2	0.021	0.058	74.0	22.3	33.0
MEO001S120PV	0.253	264401PV2	0.010	0.058	98.0	100.0	100.0
MEO001S121	1.669	226507	0.081	0.024	71.2	8.9	22.4
MEO001S122	0.54	264401PUd3	0.021	0.062	74.0	13.6	28.4
MEO001S122PV	0.146	264401PV3	0.010	0.062	98.0	100.0	100.0
MEO001S123	1.21	264401PU	0.035	0.027	72.3	10.5	26.2
MEO001S123PV	0.346	264401PV	0.017	0.027	98.0	100.0	100.0
MEO001S124	1.058	264401PUd4	0.063	0.006	62.1	6.4	16.9
MEO001S124PV	0.254	264401PV4	0.023	0.006	98.0	100.0	100.0
MEO001S125	0.612	264400PUd2	0.012	0.063	74.0	26.5	40.8
MEO001S125PV	0.163	264400PV2	0.007	0.063	98.0	100.0	100.0
MEO001S126	0.728	264400PUd3	0.015	0.086	74.0	18.2	29.2

Table A1 Hydrological Model Components							
SubCatchment Name	Area (ha)	Loading Node	Length (km)	Slope (m/m)	Pervious Area CN	Imp. Area ED (%)	Imp. Area MPD (%)
MEO001S126PV	0.201	264400PV3	0.007	0.086	98.0	100.0	100.0
MEO001S127	0.777	264400PU	0.036	0.046	74.0	15.4	31.5
MEO001S127PV	0.216	264400PV	0.018	0.046	98.0	100.0	100.0
MEO001S128	1.086	228768	0.036	0.020	53.3	39.1	40.6
MEO001S129	1.589	228772	0.041	0.006	61.0	35.2	40.8
MEO001S130	1.126	228762	0.034	0.008	61.0	29.9	43.6
MEO001S131	1.589	228757	0.060	0.004	61.0	28.9	40.9
MEO001S132	1.533	228866	0.118	0.006	69.7	28.5	45.3
MEO001S133	1.746	228853	0.149	0.008	61.0	18.1	35.3
MEO001S134	1.992	228504	0.071	0.006	61.8	27.7	45.6
MEO001S135	1.645	228508	0.044	0.005	61.0	38.9	46.3
MEO001S136	1.93	263139	0.046	0.002	61.0	33.3	47.1
MEO001S137	1.066	228858	0.037	0.067	74.0	40.2	44.4
MEO001S138	1.372	378472	0.045	0.072	74.0	34.6	45.2
MEO001S139	1.193	228924	0.043	0.036	74.0	45.0	45.8
MEO001S140	1.253	264397PU	0.047	0.021	66.6	17.6	29.0
MEO001S140PV	0.384	264397PV	0.025	0.021	98.0	100.0	100.0
MEO001S141	1.385	264399PU	0.070	0.010	61.0	31.0	41.8
MEO001S141PV	0.577	264399PV	0.069	0.010	98.0	100.0	100.0
MEO001S142	0.998	228931	0.041	0.034	71.7	36.6	43.4
MEO001S143	0.711	228932	0.029	0.075	74.0	35.6	42.2
MEO001S144	1.089	228932	0.021	0.072	74.0	38.7	43.4
MEO001S145	0.704	228916	0.062	0.048	74.0	36.3	44.9
MEO001S146	1.942	228547	0.061	0.007	61.0	29.4	41.1
MEO001S147	1.38	228548	0.047	0.010	61.0	32.6	39.8
MEO001S148	0.733	264388PU	0.047	0.019	61.3	15.5	18.8
MEO001S148PV	0.294	264388PV	0.032	0.019	98.0	100.0	100.0
MEO001S149	1.722	264537PUd2	0.030	0.147	39.0	18.6	41.3
MEO001S149PV	0.26	264537PV2	0.007	0.147	98.0	100.0	100.0
MEO001S150	1.292	264538PU	0.066	0.106	39.0	31.1	38.1
MEO001S150PV	0.251	264538PV	0.018	0.106	98.0	100.0	100.0
MEO001S151	1.391	264537PU	0.058	0.193	39.0	20.3	33.8
MEO001S151PV	0.195	264537PV	0.011	0.193	98.0	100.0	100.0
MEO001S152	1.053	229174	0.031	0.041	39.0	49.0	55.8
MEO001S153	2.04	420102	0.075	0.075	39.0	50.2	54.9
MEO001S154	1.447	378589	0.045	0.036	39.3	51.8	58.3
MEO001S155	1.274	6.1	0.036	0.093	39.0	47.5	59.2
MEO001S156	1.596	229350	0.028	0.058	39.0	44.2	55.6
MEO001S157	1.288	262576	0.017	0.104	39.0	22.3	64.7
MEO001S158	1.418	6.1	0.034	0.112	39.0	27.4	64.8
MEO001S159	1.282	50.1	0.027	0.028	74.0	46.5	67.0
MEO001S160	1.863	7.1	0.034	0.050	39.0	0.0	67.9
MEO001S161	1.717	7.1	0.067	0.033	39.0	1.3	67.3
MEO001S162	1.269	378589	0.035	0.030	72.5	65.0	66.8
MEO001S163	1.24	229351	0.032	0.046	51.9	48.1	66.8
MEO001S164	1.85	50.1	0.021	0.049	44.3	42.7	67.2
MEO001S165	0.864	50.1	0.032	0.036	74.0	20.7	67.0
MEO001S166	1.588	262574	0.031	0.075	39.0	44.8	59.8
MEO001S167	1.974	262577	0.038	0.099	39.0	7.9	68.3
MEO001S168	1.265	262573	0.036	0.106	39.0	49.0	67.2
MEO001S169	1.809	262574	0.057	0.130	39.0	38.3	67.0
MEO001S170	1.14	262575	0.032	0.087	39.0	48.4	63.7
MEO001S171	0.828	262575	0.039	0.102	39.0	23.3	66.9
MEO001S172	1.328	262576	0.041	0.055	39.0	35.4	69.4
MEO001S173	1.643	228572	0.048	0.019	74.0	0.3	68.1

Table A1 Hydrological Model Components							
SubCatchment Name	Area (ha)	Loading Node	Length (km)	Slope (m/m)	Pervious Area CN	Imp. Area ED (%)	Imp. Area MPD (%)
MEO001S174	2.03	192655.1	0.053	0.030	54.4	0.0	48.3
MEO001S175	1.634	192655.1	0.030	0.024	51.3	14.9	67.9
MEO001S176	1.232	228572	0.041	0.032	74.0	0.0	70.0
MEO001S177	1.302	228542	0.057	0.029	63.4	30.6	40.8
MEO001S178	1.1	228933	0.056	0.024	73.8	24.2	33.6
MEO001S179	1.165	228526	0.031	0.144	74.0	18.2	27.3
MEO001S180	0.645	228933	0.009	0.061	74.0	39.0	51.0
MEO001S181	1.378	228933	0.032	0.061	74.0	17.2	31.8
MEO001S182	1.263	228934	0.080	0.015	74.0	15.1	27.0
MEO001S183	1.697	228933	0.040	0.080	74.0	17.0	25.9
MEO001S184	1.33	229391	0.035	0.101	66.4	59.4	65.0
MEO001S185	0.926	229312	0.024	0.097	74.0	57.4	64.0
MEO001S186	1.244	229391	0.037	0.077	72.2	38.7	58.9
MEO001S187	0.891	264396PU	0.029	0.101	74.0	18.7	21.3
MEO001S187PV	0.349	264396PV	0.019	0.101	98.0	100.0	100.0
MEO001S188	1.162	228652	0.045	0.035	74.0	38.5	44.0
MEO001S189	1.157	264395PU	0.043	0.088	74.0	29.7	44.6
MEO001S189PV	0.29	264395PV	0.018	0.088	98.0	100.0	100.0
MEO001S190	1.577	228636	0.022	0.059	74.0	36.2	43.8
MEO001S191	1.744	228636	0.049	0.042	74.0	34.1	39.7
MEO001S192	1.392	228637	0.031	0.044	74.0	40.2	50.4
MEO001S193	1.994	229394	0.037	0.092	39.3	57.9	63.0
MEO001S194	1.799	229396	0.056	0.040	55.7	46.6	59.1
MEO001S195	1.469	228557	0.090	0.018	70.7	31.0	40.4
MEO001S196	1.518	192697	0.037	0.015	62.8	33.2	43.5
MEO001S197	1.385	264392PU	0.068	0.017	39.0	25.1	35.9
MEO001S197PV	0.484	264392PV	0.039	0.017	98.0	100.0	100.0
MEO001S198	0.638	378043	0.046	0.020	45.8	20.6	43.8
MEO001S199	1.319	264390PU	0.049	0.002	40.5	31.1	41.9
MEO001S199PV	0.442	264390PV	0.027	0.002	98.0	100.0	100.0
MEO001S200	0.856	228583	0.030	0.074	39.0	44.7	55.3
MEO001S201	1.038	228582	0.059	0.047	42.7	72.3	82.4
MEO001S202	0.885	229339	0.039	0.049	61.3	89.9	96.3
MEO001S203	1.154	229339	0.031	0.039	63.3	25.4	79.8
MEO001S204	1.209	264416PUd2	0.030	0.018	39.0	38.9	46.6
MEO001S204PV	0.473	264416PV2	0.018	0.018	98.0	100.0	100.0
MEO001S205	0.817	264416PU	0.044	0.016	43.7	37.0	47.4
MEO001S205PV	0.276	264416PV	0.023	0.016	98.0	100.0	100.0
MEO001S206	1.063	192653	0.037	0.039	67.8	37.2	49.6
MEO001S207	1.377	262587	0.052	0.054	72.4	54.1	59.7
MEO001S208	0.928	192648	0.032	0.078	74.0	56.3	59.7
MEO001S209	1.106	264538PUd2	0.041	0.030	39.0	0.0	11.5
MEO001S209PV	0.008	264538PV2	0.000	0.030	98.0	100.0	100.0
MEO001S210	1.421	264540PU	0.040	0.067	39.0	34.9	51.3
MEO001S210PV	0.389	264540PV	0.018	0.067	98.0	100.0	100.0
MEO001S211	1.441	264539PU	0.028	0.073	39.0	36.8	52.1
MEO001S211PV	0.366	264539PV	0.012	0.073	98.0	100.0	100.0
MEO001S212	0.693	264539PUd2	0.029	0.082	39.0	33.7	49.5
MEO001S212PV	0.168	264539PV2	0.012	0.082	98.0	100.0	100.0
MEO001S213	1.242	264522PU	0.019	0.076	39.0	35.5	42.3
MEO001S213PV	0.324	264522PV2	0.008	0.076	98.0	100.0	100.0
MEO001S214	0.611	6.1	0.014	0.022	39.0	57.6	64.4
MEO001S215	1.137	264523PU	0.024	0.145	39.0	28.2	38.4
MEO001S215PV	0.344	264523PV	0.010	0.145	98.0	100.0	100.0
MEO001S216	1.723	264538PU	0.047	0.073	39.0	0.0	11.7

Table A1 Hydrological Model Components							
SubCatchment Name	Area (ha)	Loading Node	Length (km)	Slope (m/m)	Pervious Area CN	Imp. Area ED (%)	Imp. Area MPD (%)
MEO001S217	0.853	264522PUD	0.029	0.225	39.0	18.8	46.2
MEO001S217PV	0.128	264522PV	0.007	0.225	98.0	100.0	100.0
MEO001S218	0.431	264405PUd3	0.019	0.032	39.0	12.3	35.6
MEO001S218PV	0.085	264405PV3	0.007	0.032	98.0	100.0	100.0
MEO001S219	1.191	415752	0.059	0.114	39.0	58.7	65.1
MEO001S220	1.642	229396	0.047	0.081	39.0	2.1	59.8
MEO001S221	1.492	194246	0.080	0.047	64.1	20.6	64.6
MEO001S222	1.568	262572	0.027	0.050	44.3	30.8	69.3
MEO001S223	1.473	229173	0.021	0.041	39.0	45.9	56.7
MEO001S224	1.733	229173	0.053	0.062	39.0	54.0	55.3
MEO001S225	1.247	229173	0.026	0.038	39.0	51.5	56.7
MEO001S226	1.033	229173	0.015	0.063	39.0	45.2	57.8
MEO001S227	1.443	229322	0.037	0.035	45.0	41.5	54.0
MEO001S228	1.218	192696	0.043	0.025	39.0	35.7	50.9
MEO001S229	1.312	408734	0.039	0.040	39.0	38.5	60.7
MEO001S230	1.046	408734	0.029	0.031	39.0	45.0	61.7
MEO001S231	1.317	229269	0.048	0.035	39.0	32.8	58.8
MEO001S232	0.686	228572	0.054	0.021	74.0	3.6	69.4
MEO001S233	0.906	377742	0.059	0.031	39.0	30.4	45.8
MEO001S234	0.883	226191	0.044	0.021	39.0	18.4	44.5
MEO001S235	1.758	226186	0.068	0.137	39.0	0.0	19.5
MEO001S236	1.174	226108	0.043	0.204	39.0	0.0	19.1
MEO001S237	0.811	226108	0.023	0.172	39.0	17.6	36.8
MEO001S238	1.534	226172	0.029	0.098	39.0	9.8	30.7
MEO001S239	1.208	377741	0.021	0.067	39.0	15.4	31.3
MEO001S240	1.055	377753	0.027	0.070	39.0	25.4	45.8
MEO001S241	0.495	264249PUd2	0.031	0.015	39.0	0.0	24.1
MEO001S241PV	0.058	264249PV2	0.006	0.015	98.0	100.0	100.0
MEO001S242	1.299	264249PU	0.073	0.060	39.0	0.0	19.4
MEO001S242PV	0.084	264249PV	0.006	0.060	98.0	100.0	100.0
MEO001S243	0.696	264277PU	0.030	0.018	39.0	32.2	32.8
MEO001S243PV	0.241	264277PV	0.019	0.018	98.0	100.0	100.0
MEO001S244	1.219	264283PU	0.039	0.046	39.0	36.3	40.5
MEO001S244PV	0.067	264283PV	0.004	0.046	98.0	100.0	100.0
MEO001S245	1.739	264283PUD3	0.060	0.024	39.0	0.0	24.3
MEO001S245PV	0.07	264283PV3	0.004	0.024	98.0	100.0	100.0
MEO001S246	0.77	264295PU	0.021	0.037	39.0	36.8	60.3
MEO001S246PV	0.128	264295PV	0.009	0.037	98.0	100.0	100.0
MEO001S247	1.046	264283PUD2	0.040	0.030	39.0	10.5	22.4
MEO001S247PV	0.042	264283PV2	0.002	0.030	98.0	100.0	100.0
MEO001S248	1.456	264293PU	0.031	0.038	39.0	39.0	54.9
MEO001S248PV	0.179	264293PV	0.009	0.038	98.0	100.0	100.0
MEO001S249	0.781	264292PU	0.010	0.053	39.0	50.1	59.4
MEO001S249PV	0.787	264292PV	0.041	0.053	98.0	100.0	100.0
MEO001S250	0.651	264280PU	0.018	0.033	39.0	8.7	30.1
MEO001S250PV	0.16	264280PV	0.008	0.033	98.0	100.0	100.0
MEO001S251	1.216	264279PUD2	0.035	0.028	39.0	2.2	32.1
MEO001S251PV	0.189	264279PV2	0.009	0.028	98.0	100.0	100.0
MEO001S252	1.169	264279PU	0.040	0.024	39.0	14.1	32.8
MEO001S252PV	0.215	264279PV	0.013	0.024	98.0	100.0	100.0
MEO001S253	0.666	264279PUD4	0.026	0.078	39.0	0.0	35.4
MEO001S253PV	0.085	264279PV4	0.006	0.078	98.0	100.0	100.0
MEO001S254	0.885	264279PUD6	0.018	0.028	39.0	2.8	29.9
MEO001S254PV	0.148	264279PV6	0.005	0.028	98.0	100.0	100.0
MEO001S255	0.728	264293PUD2	0.027	0.055	39.0	4.8	37.8

Table A1 Hydrological Model Components							
SubCatchment Name	Area (ha)	Loading Node	Length (km)	Slope (m/m)	Pervious Area CN	Imp. Area ED (%)	Imp. Area MPD (%)
MEO001S255PV	0.127	264293PV2	0.009	0.055	98.0	100.0	100.0
MEO001S256	1.775	44.1	0.070	0.222	39.0	0.0	84.2
MEO001S257	1.402	44.1	0.064	0.089	39.0	0.0	100.0
MEO001S258	1.731	44.1	0.055	0.029	39.0	0.0	88.8
MEO001S259	0.801	226196	0.027	0.059	39.0	15.8	43.8
MEO001S260	0.54	226411	0.018	0.053	39.0	31.4	44.2
MEO001S261	1.575	44.1	0.067	0.168	39.0	0.0	100.0
MEO001S262	1.977	44.1	0.031	0.134	39.0	8.7	60.3
MEO001S263	1.439	44.1	0.020	0.175	39.0	2.4	52.7
MEO001S264	1.356	264279PUD8	0.032	0.031	39.0	2.8	33.3
MEO001S264PV	0.179	264279PV8	0.007	0.031	98.0	100.0	100.0
MEO001S265	1.769	226276	0.036	0.104	39.0	11.6	30.1
MEO001S266	1.101	264279PUD7	0.020	0.037	39.0	0.0	19.6
MEO001S266PV	0.137	264279PV7	0.004	0.037	98.0	100.0	100.0
MEO001S267	0.755	226276	0.017	0.027	39.0	24.3	36.9
MEO001S268	1.405	44.1	0.013	0.006	39.0	0.0	66.6
MEO001S269	1.371	44.1	0.055	0.217	39.0	0.0	100.0
MEO001S270	1.714	44.1	0.029	0.060	39.0	0.2	65.3
MEO001S271	1.166	44.1	0.050	0.223	39.0	0.0	100.0
MEO001S272	1.972	63.1	0.029	0.205	39.0	0.0	9.8
MEO001S273	1.651	63.1	0.021	0.040	39.0	0.0	21.1
MEO001S274	1.142	264247PUd6	0.052	0.019	39.0	1.2	14.0
MEO001S274PV	0.203	264247PV6	0.013	0.019	98.0	100.0	100.0
MEO001S275	0.67	264247PUd5	0.019	0.009	39.0	27.7	38.6
MEO001S275PV	0.122	264247PV5	0.007	0.009	98.0	100.0	100.0
MEO001S276	0.457	264244PU	0.029	0.038	39.0	19.7	23.3
MEO001S276PV	0.157	264244PV	0.017	0.038	98.0	100.0	100.0
MEO001S277	0.928	48.1	0.021	0.091	39.0	0.0	44.4
MEO001S278	1.083	48.1	0.017	0.041	39.0	30.4	67.1
MEO001S279	1.153	48.1	0.036	0.037	39.0	72.1	78.6
MEO001S280	1.037	48.1	0.062	0.036	39.0	53.3	82.9
MEO001S281	1.45	47.1	0.033	0.289	39.0	35.5	82.9
MEO001S282	1.701	48.1	0.033	0.075	39.0	0.0	70.1
MEO001S283	1.038	46.1	0.027	0.275	39.0	0.0	80.0
MEO001S284	1.207	46.1	0.024	0.133	39.0	2.0	82.6
MEO001S285	0.535	44.1	0.027	0.224	39.0	0.0	99.6
MEO001S286	0.799	44.1	0.031	0.209	39.0	0.0	100.0
MEO001S287	0.742	378304	0.019	0.058	39.0	39.9	44.5
MEO001S288	0.903	264256PUd4	0.015	0.067	39.0	0.0	38.9
MEO001S288PV	0.169	264256PV4	0.005	0.067	98.0	100.0	100.0
MEO001S289	0.575	264251PU	0.013	0.029	39.0	12.0	28.0
MEO001S289PV	0.169	264251PV	0.006	0.029	98.0	100.0	100.0
MEO001S290	0.931	264256PUd3	0.025	0.042	39.0	4.8	30.1
MEO001S290PV	0.214	264256PV3	0.010	0.042	98.0	100.0	100.0
MEO001S291	1.227	264256PUd2	0.033	0.029	39.0	5.8	29.5
MEO001S291PV	0.31	264256PV2	0.015	0.029	98.0	100.0	100.0
MEO001S292	0.785	264259PU	0.023	0.025	39.0	18.5	27.4
MEO001S292PV	0.267	264259PV	0.014	0.025	98.0	100.0	100.0
MEO001S293	1.266	264256PU	0.026	0.034	39.0	13.7	23.0
MEO001S293PV	0.499	264256PV	0.017	0.034	98.0	100.0	100.0
MEO001S294	1.508	264262PU	0.041	0.023	39.0	13.3	30.3
MEO001S294PV	0.426	264262PV	0.020	0.023	98.0	100.0	100.0
MEO001S295	0.575	264257PU	0.023	0.014	39.0	4.2	25.9
MEO001S295PV	0.207	264257PV	0.014	0.014	98.0	100.0	100.0
MEO001S296	1.079	226362	0.021	0.031	39.0	19.8	43.7

Table A1 Hydrological Model Components							
SubCatchment Name	Area (ha)	Loading Node	Length (km)	Slope (m/m)	Pervious Area CN	Imp. Area ED (%)	Imp. Area MPD (%)
MEO001S297	0.801	378178	0.018	0.038	39.0	22.3	42.6
MEO001S298	1.859	226195	0.043	0.042	39.0	23.8	43.4
MEO001S299	1.345	378178	0.044	0.044	39.0	34.9	46.2
MEO001S300	1.33	226355	0.044	0.059	39.0	35.8	47.0
MEO001S301	1.439	264199PU	0.038	0.036	39.0	11.4	18.7
MEO001S301PV	0.444	264199PV	0.018	0.036	98.0	100.0	100.0
MEO001S302	1.318	378136	0.029	0.029	39.0	13.5	30.1
MEO001S303	0.753	264169PU	0.024	0.028	39.0	17.1	25.5
MEO001S303PV	0.302	264169PV	0.017	0.028	98.0	100.0	100.0
MEO001S304	0.765	264195PUd2	0.020	0.036	39.0	12.4	25.3
MEO001S304PV	0.31	264195PV2	0.014	0.036	98.0	100.0	100.0
MEO001S305	0.473	264170PU	0.034	0.018	39.0	0.0	31.6
MEO001S305PV	0.154	264170PV	0.019	0.018	98.0	100.0	100.0
MEO001S306	0.81	264195pud	0.029	0.063	39.0	22.4	32.7
MEO001S306PV	0.223	264195PV	0.015	0.063	98.0	100.0	100.0
MEO001S307	0.349	264170PUd2	0.012	0.021	39.0	25.6	39.3
MEO001S307PV	0.154	264170PV2	0.011	0.021	98.0	100.0	100.0
MEO001S308	0.417	264181pud	0.012	0.032	39.0	18.0	30.2
MEO001S308PV	0.119	264181PV	0.006	0.032	98.0	100.0	100.0
MEO001S309	0.822	264197PUd2	0.044	0.046	39.0	20.9	26.3
MEO001S309PV	0.296	264197PV2	0.029	0.046	98.0	100.0	100.0
MEO001S310	0.613	264196PUd2	0.043	0.041	39.0	16.0	33.2
MEO001S310PV	0.253	264196pv2	0.034	0.041	98.0	100.0	100.0
MEO001S311	0.574	264197PU	0.044	0.011	39.0	17.8	22.0
MEO001S311PV	0.264	264197PV3	0.035	0.011	98.0	100.0	100.0
MEO001S312	0.453	264410PUd3	0.018	0.022	39.0	9.1	36.9
MEO001S312PV	0.15	264410PV3	0.012	0.022	98.0	100.0	100.0
MEO001S313	0.726	264410PUd5	0.030	0.011	39.0	5.0	32.7
MEO001S313PV	0.199	264410PV5	0.015	0.011	98.0	100.0	100.0
MEO001S314	0.707	264315PUd2	0.021	0.000	39.0	19.4	22.5
MEO001S314PV	0.29	264315PV2	0.015	0.000	98.0	100.0	100.0
MEO001S315	0.478	264410PUd4	0.023	0.003	39.0	18.7	24.7
MEO001S315PV	0.215	264410PV4	0.018	0.003	98.0	100.0	100.0
MEO001S316	0.509	264194PU	0.023	0.021	39.0	17.1	28.4
MEO001S316PV	0.184	264194PV	0.015	0.021	98.0	100.0	100.0
MEO001S317	0.385	264414PU	0.030	0.025	39.0	19.0	25.4
MEO001S317PV	0.125	264414PV	0.016	0.025	98.0	100.0	100.0
MEO001S318	0.677	378254	0.064	0.016	39.0	27.6	46.0
MEO001S319	0.524	226383	0.034	0.032	39.0	23.4	40.1
MEO001S320	0.665	226352	0.028	0.084	39.0	38.9	46.5
MEO001S321	0.887	378276	0.025	0.009	39.0	39.5	47.5
MEO001S322	0.713	228874	0.027	0.063	74.0	39.6	45.4
MEO001S323	0.608	378606	0.019	0.105	39.0	54.8	63.5
MEO001S324	0.852	264520PU	0.058	0.372	39.0	4.0	7.1
MEO001S324PV	0	264520PV	0.000	0.372	98.0	100.0	100.0
MEO001S325	0.56	264539PUd4	0.011	0.076	39.0	32.4	44.1
MEO001S325PV	0.184	264539PV4	0.006	0.076	98.0	100.0	100.0
MEO001S326	0.538	Dummy1.1	0.008	0.036	39.0	53.4	62.6
MEO001S327	0.487	264539PUd3	0.008	0.111	39.0	32.5	60.4
MEO001S327PV	0.084	264539PV3	0.003	0.111	98.0	100.0	100.0
MEO001S328	0.544	262577	0.024	0.057	39.0	30.7	60.8
MEO001S329	0.639	264287PU	0.014	0.015	39.0	22.4	46.3
MEO001S329PV	0.157	264287PV	0.007	0.015	98.0	100.0	100.0
MEO001S330	0.74	48.1	0.023	0.036	39.0	31.2	47.4
MEO001S331	0.436	264279PUD5	0.024	0.087	39.0	1.2	29.7

Table A1 Hydrological Model Components							
SubCatchment Name	Area (ha)	Loading Node	Length (km)	Slope (m/m)	Pervious Area CN	Imp. Area ED (%)	Imp. Area MPD (%)
MEO001S331PV	0.076	264279PV5	0.007	0.087	98.0	100.0	100.0
MEO001S332	0.978	229351	0.032	0.066	39.0	43.2	55.8
MEO001S333	0.627	264247PUd4	0.023	0.018	39.0	28.1	35.3
MEO001S333PV	0.173	264247PV4	0.012	0.018	98.0	100.0	100.0
MEO001S334	0.615	264279PUD3	0.034	0.072	39.0	0.0	37.5
MEO001S334PV	0.074	264279PV3	0.007	0.072	98.0	100.0	100.0
MEO001S335	0.79	264279PUD1	0.019	0.097	39.0	0.0	34.5
MEO001S335PV	0.131	264279PV1	0.005	0.097	98.0	100.0	100.0
MEO001S336	0.796	264244PUd2	0.016	0.032	39.0	34.9	72.1
MEO001S336PV	0.22	264244PV2	0.009	0.032	98.0	100.0	100.0
MEO001S337	0.653	264284PU	0.021	0.031	39.0	67.1	74.8
MEO001S337PV	0.081	264284PV	0.005	0.031	98.0	100.0	100.0
MEO002S001	1.525	264002PU	0.046	0.073	39.0	12.1	19.4
MEO002S001PV	0.414	264002PV	0.022	0.073	98.0	100.0	100.0
MEO002S002	1.978	421729	0.038	0.030	39.0	30.9	37.6
MEO002S003	1.364	264228PU	0.045	0.047	39.0	4.4	21.5
MEO002S003PV	0.3	264228PV	0.017	0.047	98.0	100.0	100.0
MEO002S004	1.185	264228PUd2	0.032	0.123	39.0	9.8	17.7
MEO002S004PV	0.299	264228PV2	0.014	0.123	98.0	100.0	100.0
MEO002S005	0.506	264002PUd2	0.012	0.064	39.0	9.5	21.2
MEO002S005PV	0.115	264002PV2	0.005	0.064	98.0	100.0	100.0
MEO002S006	1.67	264224PU	0.050	0.099	39.0	2.4	18.9
MEO002S006PV	0.372	264224PV	0.019	0.099	98.0	100.0	100.0
MEO002S007	1.557	264225PU	0.047	0.100	39.0	0.0	27.3
MEO002S007PV	0.2	264225PV	0.011	0.100	98.0	100.0	100.0
MEO002S008	1.412	225970	0.039	0.109	39.0	23.8	34.8
MEO002S009	1.933	421729	0.063	0.064	39.0	28.4	34.9
MEO002S010	1.309	421729	0.018	0.181	39.0	22.2	34.1
MEO002S011	1.566	421729	0.023	0.081	39.0	18.2	35.8
MEO002S012	1.679	378819	0.023	0.146	39.0	30.3	36.4
MEO002S013	1.287	378743	0.029	0.094	39.0	26.1	34.8
MEO002S014	0.95	225695	0.023	0.055	39.0	34.7	34.9
MEO002S015	1.773	225696	0.042	0.061	39.0	36.7	39.1
MEO002S016	1.488	225694	0.038	0.054	39.0	38.5	38.5
MEO002S017	1.367	225977	0.025	0.069	39.0	36.5	36.6
MEO002S018	1.599	225977	0.070	0.073	39.0	33.4	35.0
MEO002S019	0.898	192659	0.025	0.087	39.0	28.2	40.9
MEO002S020	1.651	225975	0.035	0.081	39.0	18.5	37.7
MEO002S021	1.49	263999PU	0.102	0.019	39.0	0.0	13.9
MEO002S021PV	0.283	263999PV	0.028	0.019	98.0	100.0	100.0
MEO002S022	0.817	225774	0.026	0.082	39.0	37.7	39.8
MEO002S023	0.587	225677	0.014	0.064	39.0	44.4	52.7
MEO002S024	0.756	225624	0.023	0.066	39.0	34.0	46.8
MEO002S025	0.406	264066PUd2	0.021	0.029	39.0	0.0	21.5
MEO002S025PV	0.131	264066PV2	0.012	0.029	98.0	100.0	100.0
MEO002S026	0.776	377701	0.035	0.033	39.0	39.0	43.8
MEO002S027	0.473	264171pud	0.028	0.013	39.0	5.5	20.4
MEO002S027PV	0.166	264171PV	0.018	0.013	98.0	100.0	100.0
MEO002S028	1.377	378819	0.030	0.165	39.0	25.3	36.8
MEO002S029	1.188	225770	0.035	0.029	39.0	35.1	41.2
MEO002S030	1.761	225677	0.042	0.057	39.0	42.9	42.9
MEO002S031	1.23	225677	0.030	0.062	39.0	37.4	39.3
MEO002S032	0.804	264013PUd	0.018	0.079	39.0	50.1	62.3
MEO002S032PV	0.229	264013PV	0.009	0.079	98.0	100.0	100.0
MEO002S033	1.555	188161PU	0.081	0.255	39.0	8.3	12.4

Table A1 Hydrological Model Components							
SubCatchment Name	Area (ha)	Loading Node	Length (km)	Slope (m/m)	Pervious Area CN	Imp. Area ED (%)	Imp. Area MPD (%)
MEO002S033PV	0.105	188161PV	0.006	0.255	98.0	100.0	100.0
MEO002S034	1.143	263526PU	0.049	0.261	39.0	14.9	21.2
MEO002S034PV	0.136	263526PV	0.007	0.261	98.0	100.0	100.0
MEO002S035	0.736	263518PU	0.051	0.037	39.0	63.3	66.1
MEO002S035PV	0.168	263518PV	0.023	0.037	98.0	100.0	100.0
MEO002S036	1.728	263521PU	0.040	0.225	39.0	13.1	20.0
MEO002S036PV	0.158	263521PV	0.004	0.225	98.0	100.0	100.0
MEO002S037	1.163	263513PU	0.047	0.427	39.0	11.1	21.3
MEO002S037PV	0.083	263513PV	0.004	0.427	98.0	100.0	100.0
MEO002S038	1.126	263521PU	0.043	0.490	39.0	17.4	22.1
MEO002S038PV	0.096	263521PV2	0.004	0.490	98.0	100.0	100.0
MEO002S039	1.519	264013PUD3	0.028	0.101	39.0	37.7	51.7
MEO002S039PV	0.432	264013PVD3	0.013	0.101	98.0	100.0	100.0
MEO002S040	1.318	264014PU	0.058	0.065	39.0	19.6	51.1
MEO002S040PV	0.349	264014PV	0.025	0.065	98.0	100.0	100.0
MEO002S041	0.686	264023PUd2	0.015	0.153	39.0	32.4	48.0
MEO002S041PV	0.214	264023PV2	0.007	0.153	98.0	100.0	100.0
MEO002S042	0.807	264012PU	0.060	0.018	39.0	45.0	59.5
MEO002S042PV	0.394	264012PV	0.052	0.018	98.0	100.0	100.0
MEO002S043	1.351	264026PU	0.046	0.040	39.0	30.7	51.2
MEO002S043PV	0.462	264026PV	0.025	0.040	98.0	100.0	100.0
MEO002S044	1.054	264028PU	0.038	0.093	39.0	38.4	48.4
MEO002S044PV	0.381	264028PV	0.022	0.093	98.0	100.0	100.0
MEO002S045	0.899	264050PU	0.028	0.042	39.0	36.3	50.9
MEO002S045PV	0.277	264050PV	0.014	0.042	98.0	100.0	100.0
MEO002S046	0.874	264056PU	0.019	0.088	39.0	23.6	46.3
MEO002S046PV	0.304	264056PV	0.010	0.088	98.0	100.0	100.0
MEO002S047	0.545	264015PU	0.013	0.015	39.0	49.2	53.8
MEO002S047PV	0.123	264015PV	0.005	0.015	98.0	100.0	100.0
MEO002S048	0.662	264023PUd4	0.008	0.017	39.0	43.8	45.6
MEO002S048PV	0.298	264023PV4	0.006	0.017	98.0	100.0	100.0
MEO002S049	1.178	264023PUd	0.031	0.075	39.0	31.5	50.0
MEO002S049PV	0.365	264023PV3	0.015	0.075	98.0	100.0	100.0
MEO002S050	1.133	264053PU	0.035	0.043	39.0	4.8	20.5
MEO002S050PV	0.371	264053PV	0.021	0.043	98.0	100.0	100.0
MEO002S051	1.272	264053PUd1	0.024	0.063	39.0	6.0	38.8
MEO002S051PV	0.321	264053PV1	0.010	0.063	98.0	100.0	100.0
MEO002S052	0.829	264053PUd2	0.015	0.075	39.0	17.9	20.9
MEO002S052PV	0.302	264053PV2	0.010	0.075	98.0	100.0	100.0
MEO002S053	1.231	264018PUd2	0.021	0.083	39.0	37.8	50.3
MEO002S053PV	0.374	264018PV2	0.010	0.083	98.0	100.0	100.0
MEO002S054	0.68	264245PUD3	0.021	0.007	39.0	0.0	29.0
MEO002S054PV	0.197	264245PV3	0.011	0.007	98.0	100.0	100.0
MEO002S055	0.463	264171PUd3	0.024	0.041	39.0	12.6	22.3
MEO002S055PV	0.145	264171PV3	0.014	0.041	98.0	100.0	100.0
MEO002S056	0.519	264245PU	0.033	0.022	39.0	12.8	28.0
MEO002S056PV	0.124	264245PV	0.015	0.022	98.0	100.0	100.0
MEO002S057	0.544	264173PUd7	0.024	0.036	39.0	17.6	18.3
MEO002S057PV	0.223	264173PV7	0.018	0.036	98.0	100.0	100.0
MEO002S058	0.607	264018PU	0.024	0.037	39.0	46.8	51.2
MEO002S058PV	0.198	264018PV3	0.012	0.037	98.0	100.0	100.0
MEO002S059	1.082	264018pud	0.026	0.043	39.0	17.4	47.6
MEO002S059PV	0.267	264018PV	0.010	0.043	98.0	100.0	100.0
MEO002S060	1.93	377787	0.046	0.022	39.0	34.5	41.6
MEO002S061	1.054	264020PUd3	0.035	0.079	39.0	1.9	14.2

Table A1 Hydrological Model Components							
SubCatchment Name	Area (ha)	Loading Node	Length (km)	Slope (m/m)	Pervious Area CN	Imp. Area ED (%)	Imp. Area MPD (%)
MEO002S061PV	0.39	264020PV3	0.022	0.079	98.0	100.0	100.0
MEO002S062	1.393	264021PUd2	0.030	0.041	39.0	0.0	21.6
MEO002S062PV	0.41	264021PV2	0.015	0.041	98.0	100.0	100.0
MEO002S063	1.072	264020PUd5	0.023	0.057	39.0	4.8	20.6
MEO002S063PV	0.327	264020PV5	0.012	0.057	98.0	100.0	100.0
MEO002S064	0.754	264020PUd2	0.012	0.044	39.0	11.5	37.0
MEO002S064PV	0.365	264020PV2	0.014	0.044	98.0	100.0	100.0
MEO002S065	0.732	264020PUd4	0.017	0.043	39.0	2.7	20.4
MEO002S065PV	0.213	264020PV4	0.009	0.043	98.0	100.0	100.0
MEO002S066	0.871	264020PU	0.033	0.024	39.0	11.3	20.4
MEO002S066PV	0.306	264020PV6	0.021	0.024	98.0	100.0	100.0
MEO002S067	0.965	225770	0.047	0.048	39.0	43.0	49.3
MEO002S068	1.261	416386	0.038	0.082	39.0	34.4	41.6
MEO002S069	1.202	264020pud	0.036	0.047	39.0	10.9	15.2
MEO002S069PV	0.456	264020PV	0.023	0.047	98.0	100.0	100.0
MEO002S070	0.938	264021PU	0.048	0.030	39.0	4.9	19.6
MEO002S070PV	0.279	264021PV	0.025	0.030	98.0	100.0	100.0
MEO002S071	0.852	225669	0.012	0.086	39.0	32.5	47.5
MEO002S072	1.699	225785	0.033	0.115	39.0	21.0	38.9
MEO002S073	1.85	225786	0.042	0.094	39.0	24.0	40.5
MEO002S074	1.719	225786	0.049	0.062	39.0	28.8	40.2
MEO002S075	1.32	264193pud	0.085	0.017	39.0	6.3	24.7
MEO002S075PV	0.398	264193PV	0.048	0.017	98.0	100.0	100.0
MEO002S076	0.757	225785	0.034	0.050	39.0	17.4	19.8
MEO002S077	1.513	225801	0.039	0.109	39.0	29.2	41.9
MEO002S078	1.141	225786	0.027	0.086	39.0	33.3	42.7
MEO002S079	1.559	227472	0.029	0.104	39.0	33.0	40.5
MEO002S080	1.18	227543	0.032	0.089	39.0	36.4	43.0
MEO002S081	1.177	227568	0.041	0.031	39.0	23.0	40.2
MEO002S082	0.94	377781	0.036	0.023	39.0	30.3	40.8
MEO002S083	1.238	225566	0.080	0.033	39.0	31.0	44.0
MEO002S084	0.492	264252PU	0.019	0.019	39.0	21.6	21.6
MEO002S084PV	0.184	264252PV	0.013	0.019	98.0	100.0	100.0
MEO002S085	1.129	377708	0.036	0.010	39.0	22.3	40.9
MEO002S086	1.519	377792	0.063	0.045	39.0	36.7	43.7
MEO002S087	0.616	264072PU	0.035	0.033	39.0	10.8	24.2
MEO002S087PV	0.192	264072PV	0.021	0.033	98.0	100.0	100.0
MEO002S088	1.368	227542	0.056	0.051	39.0	34.6	42.3
MEO002S089	0.53	264066PUd4	0.011	0.071	39.0	5.5	21.6
MEO002S089PV	0.186	264066PV4	0.007	0.071	98.0	100.0	100.0
MEO002S090	0.537	264066PUd3	0.016	0.059	39.0	1.9	21.6
MEO002S090PV	0.173	264066PV3	0.009	0.059	98.0	100.0	100.0
MEO002S091	0.455	264066pud	0.014	0.006	39.0	19.7	19.7
MEO002S091PV	0.187	264066PV	0.010	0.006	98.0	100.0	100.0
MEO002S092	1.498	264066PU	0.041	0.013	39.0	0.0	33.1
MEO002S092PV	0.275	264066PV1	0.014	0.013	98.0	100.0	100.0
MEO002S093	1.149	378819	0.036	0.089	39.0	35.1	43.8
MEO002S094	1.418	225702	0.036	0.139	39.0	26.5	35.3
MEO002S095	1.155	225700	0.026	0.106	39.0	36.1	44.2
MEO002S096	1.194	225700	0.031	0.095	39.0	19.0	35.6
MEO002S097	1.479	264233PUd2	0.041	0.097	39.0	5.3	28.3
MEO002S097PV	0.342	264233PV2	0.018	0.097	98.0	100.0	100.0
MEO002S098	1.367	264240PUd4	0.047	0.040	39.0	2.7	28.2
MEO002S098PV	0.312	264240PV4	0.021	0.040	98.0	100.0	100.0
MEO002S099	1.32	264240PUd5	0.030	0.030	39.0	8.7	21.2

Table A1 Hydrological Model Components							
SubCatchment Name	Area (ha)	Loading Node	Length (km)	Slope (m/m)	Pervious Area CN	Imp. Area ED (%)	Imp. Area MPD (%)
MEO002S099PV	0.408	264240PV5	0.017	0.030	98.0	100.0	100.0
MEO002S100	1.213	264233PU	0.051	0.055	39.0	0.0	24.1
MEO002S100PV	0.332	264233PV	0.025	0.055	98.0	100.0	100.0
MEO002S101	1.305	264239PU	0.031	0.047	39.0	5.3	21.1
MEO002S101PV	0.41	264239PV	0.017	0.047	98.0	100.0	100.0
MEO002S102	0.74	264240PU	0.041	0.023	39.0	10.5	22.4
MEO002S102PV	0.234	264240PV	0.024	0.023	98.0	100.0	100.0
MEO002S103	1.125	264250PU	0.033	0.026	39.0	11.1	23.8
MEO002S103PV	0.349	264250PV	0.019	0.026	98.0	100.0	100.0
MEO002S104	0.736	264252PUd3	0.018	0.045	39.0	6.6	20.2
MEO002S104PV	0.238	264252PV3	0.010	0.045	98.0	100.0	100.0
MEO002S105	0.685	264254PU	0.030	0.035	39.0	10.7	19.2
MEO002S105PV	0.252	264254PV	0.020	0.035	98.0	100.0	100.0
MEO002S106	0.782	264252PUd4	0.020	0.039	39.0	16.2	16.2
MEO002S106PV	0.401	264252PV4	0.018	0.039	98.0	100.0	100.0
MEO002S107	0.803	264260PU	0.031	0.021	39.0	18.0	29.9
MEO002S107PV	0.211	264260PV	0.016	0.021	98.0	100.0	100.0
MEO002S108	1.004	264250PUd2	0.053	0.017	39.0	5.2	19.1
MEO002S108PV	0.354	264250PV2	0.033	0.017	98.0	100.0	100.0
MEO002S109	0.75	264263PU	0.050	0.028	39.0	9.0	19.0
MEO002S109PV	0.232	264263PV	0.026	0.028	98.0	100.0	100.0
MEO002S110	1.544	225546	0.030	0.067	39.0	19.8	39.5
MEO002S111	1.509	409496	0.034	0.039	39.0	13.6	25.3
MEO002S112	0.876	378742	0.051	0.030	39.0	33.7	43.6
MEO002S113	1.074	409496	0.034	0.042	39.0	36.7	40.4
MEO002S114	1.455	225700	0.052	0.008	39.0	38.3	41.5
MEO002S115	1.368	225546	0.030	0.066	39.0	35.6	43.5
MEO002S116	1.503	225596	0.049	0.102	39.0	27.1	46.3
MEO002S117	0.844	225618	0.021	0.114	39.0	38.6	42.0
MEO002S118	0.57	264248PUd2	0.016	0.112	39.0	9.8	23.2
MEO002S118PV	0.19	264248PV2	0.010	0.112	98.0	100.0	100.0
MEO002S119	1.569	225624	0.035	0.104	39.0	24.0	38.8
MEO002S120	1.131	225601	0.032	0.090	39.0	25.8	39.2
MEO002S121	1.415	264248PUd4	0.044	0.097	39.0	4.5	20.1
MEO002S121PV	0.35	264248PV4	0.019	0.097	98.0	100.0	100.0
MEO002S122	0.959	377897	0.038	0.013	39.0	26.6	42.1
MEO002S123	1.183	264193PUd2	0.038	0.008	39.0	11.9	21.4
MEO002S123PV	0.408	264193PV2	0.024	0.008	98.0	100.0	100.0
MEO002S124	1.66	227572	0.041	0.019	39.0	34.5	44.2
MEO002S125	0.687	264193PU	0.014	0.041	39.0	2.0	25.0
MEO002S125PV	0.203	264193PV3	0.008	0.041	98.0	100.0	100.0
MEO002S126	1.77	377815	0.061	0.037	39.0	20.9	47.7
MEO002S127	0.688	264245PUd4	0.026	0.060	39.0	6.6	20.3
MEO002S127PV	0.226	264245PV4	0.015	0.060	98.0	100.0	100.0
MEO002S128	1.436	225743	0.056	0.088	39.0	31.9	43.4
MEO002S129	0.932	264248PUd8	0.041	0.047	39.0	12.4	29.1
MEO002S129PV	0.366	264248PV8	0.033	0.047	98.0	100.0	100.0
MEO002S130	0.945	264248PUD10	0.081	0.019	39.0	6.0	16.7
MEO002S130PV	0.348	264248PV10	0.051	0.019	98.0	100.0	100.0
MEO002S131	0.646	264248PUd11	0.028	0.051	39.0	8.5	10.2
MEO002S131PV	0.307	264248PV11	0.022	0.051	98.0	100.0	100.0
MEO002S132	0.708	264245PUd2	0.077	0.027	39.0	0.0	27.4
MEO002S132PV	0.175	264245PV2	0.035	0.027	98.0	100.0	100.0
MEO002S133	0.807	377781	0.047	0.021	39.0	36.9	41.3
MEO002S134	0.537	264171PUd4	0.030	0.024	39.0	0.0	38.8

Table A1 Hydrological Model Components							
SubCatchment Name	Area (ha)	Loading Node	Length (km)	Slope (m/m)	Pervious Area CN	Imp. Area ED (%)	Imp. Area MPD (%)
MEO002S134PV	0.076	264171PV4	0.008	0.024	98.0	100.0	100.0
MEO002S135	1.239	264172PUD1	0.054	0.030	39.0	3.2	18.3
MEO002S135PV	0.406	264172PV1	0.034	0.030	98.0	100.0	100.0
MEO002S136	0.635	264173PUd6	0.025	0.038	39.0	7.2	16.4
MEO002S136PV	0.253	264173PV6	0.017	0.038	98.0	100.0	100.0
MEO002S137	0.715	264176PU	0.054	0.025	39.0	9.0	25.5
MEO002S137PV	0.239	264176PV	0.032	0.025	98.0	100.0	100.0
MEO002S138	0.584	264173PUd2	0.016	0.019	39.0	0.0	16.9
MEO002S138PV	0.229	264173PV2	0.010	0.019	98.0	100.0	100.0
MEO002S139	0.98	264173PUd3	0.026	0.016	39.0	0.0	30.0
MEO002S139PV	0.227	264173PV3	0.011	0.016	98.0	100.0	100.0
MEO002S140	0.495	264239PUd2	0.011	0.040	39.0	13.0	20.3
MEO002S140PV	0.161	264239PV2	0.006	0.040	98.0	100.0	100.0
MEO002S141	1.204	264173PU	0.047	0.016	39.0	3.8	21.7
MEO002S141PV	0.359	264173PV	0.025	0.016	98.0	100.0	100.0
MEO002S142	0.506	264172PU	0.022	0.013	39.0	6.9	26.7
MEO002S142PV	0.13	264172PV	0.011	0.013	98.0	100.0	100.0
MEO002S143	0.816	264240PUd2	0.023	0.019	39.0	14.4	24.3
MEO002S143PV	0.258	264240PV2	0.014	0.019	98.0	100.0	100.0
MEO002S144	0.485	264240PUd6	0.028	0.031	39.0	7.8	25.1
MEO002S144PV	0.127	264240PV6	0.013	0.031	98.0	100.0	100.0
MEO002S145	1.144	264240PUd3	0.059	0.024	39.0	12.0	27.9
MEO002S145PV	0.387	264240PV3	0.040	0.024	98.0	100.0	100.0
MEO002S146	0.709	264173PUd4	0.020	0.035	39.0	0.0	19.7
MEO002S146PV	0.242	264173PV4	0.012	0.035	98.0	100.0	100.0
MEO002S147	0.796	264173PUd5	0.039	0.021	39.0	0.9	22.7
MEO002S147PV	0.233	264173PV5	0.021	0.021	98.0	100.0	100.0
MEO002S148	0.617	264252PUd2	0.029	0.047	39.0	6.2	17.3
MEO002S148PV	0.219	264252PV2	0.018	0.047	98.0	100.0	100.0
MEO002S149	0.938	264172PUd2	0.025	0.025	39.0	7.8	17.9
MEO002S149PV	0.333	264172PV2	0.016	0.025	98.0	100.0	100.0
MEO002S150	0.905	264182PU	0.046	0.050	39.0	13.4	21.2
MEO002S150PV	0.338	264182PV	0.031	0.050	98.0	100.0	100.0
MEO002S151	1.202	264172PUd4	0.075	0.024	39.0	0.0	16.3
MEO002S151PV	0.268	264172PV4	0.026	0.024	98.0	100.0	100.0
MEO002S152	1.052	264172PUd3	0.035	0.019	39.0	0.0	18.4
MEO002S152PV	0.2	264172PV3	0.011	0.019	98.0	100.0	100.0
MEO002S153	0.768	264170PUd3	0.033	0.046	39.0	16.0	22.3
MEO002S153PV	0.314	264170PV3	0.022	0.046	98.0	100.0	100.0
MEO002S154	0.605	264169PUd2	0.049	0.095	39.0	9.4	28.4
MEO002S154PV	0.175	264169PV2	0.025	0.095	98.0	100.0	100.0
MEO002S155	0.741	264171PU	0.038	0.012	39.0	10.5	22.9
MEO002S155PV	0.207	264171PV2	0.019	0.012	98.0	100.0	100.0
MEO002S156	0.577	264174PU	0.031	0.008	39.0	10.6	23.6
MEO002S156PV	0.205	264174PV	0.021	0.008	98.0	100.0	100.0
MEO002S157	1.596	EDB029	0.095	0.034	39.0	29.8	41.6
MEO002S158	0.766	264178PU	0.060	0.036	39.0	0.3	15.0
MEO002S158PV	0.269	264178PV	0.039	0.036	98.0	100.0	100.0
MEO002S159	1.245	264181PU	0.056	0.022	39.0	24.4	34.8
MEO002S159PV	0.401	264181PV2	0.035	0.022	98.0	100.0	100.0
MEO002S160	0.801	264177PU	0.045	0.035	39.0	9.9	25.9
MEO002S160PV	0.294	264177PV	0.030	0.035	98.0	100.0	100.0
MEO002S161	0.503	264186PU	0.055	0.005	39.0	25.6	43.6
MEO002S161PV	0.159	264186PV	0.040	0.005	98.0	100.0	100.0
MEO002S162	0.892	264191PUd3	0.030	0.015	39.0	9.5	17.5

Table A1 Hydrological Model Components							
SubCatchment Name	Area (ha)	Loading Node	Length (km)	Slope (m/m)	Pervious Area CN	Imp. Area ED (%)	Imp. Area MPD (%)
MEO002S162PV	0.356	264191PV3	0.021	0.015	98.0	100.0	100.0
MEO002S163	0.758	264191PUd2	0.033	0.012	39.0	15.6	22.3
MEO002S163PV	0.256	264191PV2	0.020	0.012	98.0	100.0	100.0
MEO002S164	0.918	264188PU	0.043	0.025	39.0	6.3	20.5
MEO002S164PV	0.319	264188PV	0.027	0.025	98.0	100.0	100.0
MEO002S165	0.82	264190PU	0.053	0.005	39.0	26.8	37.4
MEO002S165PV	0.365	264190PV	0.056	0.005	98.0	100.0	100.0
MEO002S166	1.315	264064PUd3	0.049	0.037	39.2	40.1	54.1
MEO002S166PV	0.402	264064PV3	0.025	0.037	98.0	100.0	100.0
MEO002S167	0.497	263986PU	0.019	0.050	39.0	14.0	20.2
MEO002S167PV	0.12	263986PV	0.008	0.050	98.0	100.0	100.0
MEO002S168	0.703	225696	0.025	0.042	39.0	44.6	44.6
MEO002S169	1.95	1	0.053	0.035	39.0	53.6	72.3
MEO002S170	0.89	227874	0.033	0.070	74.0	33.5	42.9
MEO002S171	1.067	378080	0.044	0.066	74.0	5.4	21.4
MEO002S172	1.618	264124PU	0.055	0.058	74.0	0.0	8.8
MEO002S172PV	0.111	264124PV	0.005	0.058	98.0	100.0	100.0
MEO002S173	0.43	264128PU	0.015	0.028	59.7	20.1	21.0
MEO002S173PV	0.179	264128PV	0.011	0.028	98.0	100.0	100.0
MEO002S174	0.969	264122PU	0.027	0.016	74.0	12.6	21.7
MEO002S174PV	0.118	264122PV	0.006	0.016	98.0	100.0	100.0
MEO002S175	1.757	264127PU	0.043	0.007	70.3	0.0	11.5
MEO002S175PV	0.209	264127PV	0.008	0.007	98.0	100.0	100.0
MEO002S176	1.146	264132PU	0.015	0.004	39.0	55.6	55.6
MEO002S176PV	0.39	264132PV	0.016	0.004	98.0	100.0	100.0
MEO002S177	0.886	264134PU	0.036	0.007	39.0	26.0	26.3
MEO002S177PV	0.545	264134PV	0.048	0.007	98.0	100.0	100.0
MEO002S178	0.972	264129PUd3	0.019	0.009	39.0	18.2	21.4
MEO002S178PV	0.377	264129PV3	0.013	0.009	98.0	100.0	100.0
MEO002S179	0.764	264129PUd2	0.018	0.009	39.0	10.2	20.4
MEO002S179PV	0.27	264129PV2	0.011	0.009	98.0	100.0	100.0
MEO002S180	0.909	264129pud	0.019	0.029	39.0	12.1	25.7
MEO002S180PV	0.412	264129PV	0.017	0.029	98.0	100.0	100.0
MEO002S181	0.702	227833	0.030	0.005	39.3	68.7	70.4
MEO002S182	0.762	264129PUd4	0.035	0.013	39.0	14.5	21.6
MEO002S182PV	0.297	264129PV4	0.025	0.013	98.0	100.0	100.0
MEO002S183	0.602	264145PUd2	0.025	0.005	39.0	0.7	16.0
MEO002S183PV	0.252	264145PV2	0.018	0.005	98.0	100.0	100.0
MEO002S184	1.193	377655	0.032	0.031	39.0	61.9	72.0
MEO002S185	0.958	227816	0.020	0.031	39.0	60.6	75.0
MEO002S186	1.233	227956	0.027	0.018	39.0	55.6	65.8
MEO002S187	0.855	264219PU	0.035	0.022	39.0	37.7	54.8
MEO002S187PV	0.248	264219PV	0.017	0.022	98.0	100.0	100.0
MEO002S188	1.605	377668	0.029	0.025	51.2	66.3	75.9
MEO002S189	1.023	227948	0.028	0.044	73.3	55.8	63.9
MEO002S190	0.592	227807	0.024	0.044	74.0	68.1	71.1
MEO002S191	1.016	227948	0.026	0.074	74.0	58.2	65.9
MEO002S192	0.83	227948	0.018	0.085	74.0	59.9	74.2
MEO002S193	1.414	227431	0.031	0.037	74.0	36.3	62.8
MEO002S194	1.139	227885	0.027	0.091	74.0	42.2	70.8
MEO002S195	0.746	227885	0.020	0.126	74.0	56.5	73.3
MEO002S196	1.013	227948	0.020	0.078	74.0	55.3	65.0
MEO002S197	0.984	227885	0.020	0.069	74.0	59.2	73.0
MEO002S198	0.552	377886	0.022	0.026	74.0	60.8	62.9
MEO002S199	0.651	227880	0.023	0.065	74.0	58.1	62.9

Table A1 Hydrological Model Components							
SubCatchment Name	Area (ha)	Loading Node	Length (km)	Slope (m/m)	Pervious Area CN	Imp. Area ED (%)	Imp. Area MPD (%)
MEO002S200	1.779	227963	0.039	0.094	74.0	49.3	62.8
MEO002S201	0.799	227431	0.046	0.008	74.0	0.0	70.0
MEO002S202	1.203	227431	0.026	0.072	74.0	43.3	66.4
MEO002S203	1.19	377684	0.028	0.027	74.0	45.8	63.2
MEO002S204	1.285	227948	0.074	0.023	49.9	43.1	62.4
MEO002S205	0.849	227948	0.026	0.031	70.8	53.1	66.6
MEO002S206	1.649	377692	0.038	0.026	67.2	49.7	62.6
MEO002S207	0.598	264365PUd3	0.016	0.035	39.0	14.8	27.3
MEO002S207PV	0.163	264365PV3	0.008	0.035	98.0	100.0	100.0
MEO002S208	1.034	264365PUd4	0.047	0.019	45.2	0.4	23.0
MEO002S208PV	0.257	264365PV4	0.021	0.019	98.0	100.0	100.0
MEO002S209	1.123	451183PUd2	0.050	0.009	74.0	19.4	39.0
MEO002S209PV	0.27	451183PV2	0.021	0.009	98.0	100.0	100.0
MEO002S210	1.462	227432	0.051	0.032	74.0	44.5	60.9
MEO002S211	1.087	227432	0.024	0.057	74.0	48.3	61.1
MEO002S212	1.615	264365PUd7	0.049	0.006	39.0	7.1	22.4
MEO002S212PV	0.427	264365PV7	0.023	0.006	98.0	100.0	100.0
MEO002S213	1.032	264365PU	0.096	0.027	39.0	6.4	26.0
MEO002S213PV	0.257	264365PV	0.045	0.027	98.0	100.0	100.0
MEO002S214	1.19	264365PUd8	0.095	0.039	39.0	5.7	24.8
MEO002S214PV	0.318	264365PV8	0.046	0.039	98.0	100.0	100.0
MEO002S215	0.653	264365PUd2	0.040	0.073	39.0	7.8	16.0
MEO002S215PV	0.267	264365PV2	0.028	0.073	98.0	100.0	100.0
MEO002S216	1.112	264345PUd5	0.048	0.020	39.0	7.8	27.4
MEO002S216PV	0.302	264345PV5	0.025	0.020	98.0	100.0	100.0
MEO002S217	0.814	264345PUd4	0.051	0.033	39.0	0.4	21.4
MEO002S217PV	0.256	264345PV4	0.029	0.033	98.0	100.0	100.0
MEO002S218	0.431	264345PUd2	0.009	0.012	39.0	24.8	43.0
MEO002S218PV	0.357	264345PV2	0.017	0.012	98.0	100.0	100.0
MEO002S219	1.078	264345PUd3	0.037	0.040	39.0	8.5	21.9
MEO002S219PV	0.365	264345PV3	0.023	0.040	98.0	100.0	100.0
MEO002S220	0.342	264331PU	0.025	0.038	39.0	69.0	83.5
MEO002S220PV	0.273	264331PV	0.033	0.038	98.0	100.0	100.0
MEO002S221	1.245	264339PUd2	0.029	0.013	39.0	28.3	54.0
MEO002S221PV	0.499	264339PV2	0.021	0.013	98.0	100.0	100.0
MEO002S222	1.089	264330PU	0.038	0.003	39.0	31.0	47.4
MEO002S222PV	0.28	264330PV	0.016	0.003	98.0	100.0	100.0
MEO002S223	0.429	264339PU	0.016	0.030	39.0	12.1	28.8
MEO002S223PV	0.114	264339PV	0.008	0.030	98.0	100.0	100.0
MEO002S224	1.188	264364PUd8	0.059	0.048	39.0	10.4	10.4
MEO002S224PV	0.069	264364PV8	0.005	0.048	98.0	100.0	100.0
MEO002S225	1.414	264364PU	0.087	0.012	39.0	0.0	8.0
MEO002S225PV	0.045	264364PV	0.004	0.012	98.0	100.0	100.0
MEO002S226	1.216	264364PUd4	0.033	0.037	39.0	0.0	14.7
MEO002S226PV	0.248	264364PV4	0.010	0.037	98.0	100.0	100.0
MEO002S227	1.159	264327PUd5	0.018	0.020	39.0	15.4	33.1
MEO002S227PV	0.239	264327PV5	0.008	0.020	98.0	100.0	100.0
MEO002S228	0.718	225772	0.028	0.060	39.0	29.1	41.4
MEO002S229	1.043	264053PUd3	0.016	0.012	39.0	37.2	51.4
MEO002S229PV	0.359	264053PV3	0.009	0.012	98.0	100.0	100.0
MEO002S230	1.211	264072PUd2	0.031	0.015	39.0	20.5	24.0
MEO002S230PV	0.441	264072PV2	0.022	0.015	98.0	100.0	100.0
MEO002S231	1.14	264067PU	0.031	0.031	39.0	10.3	22.3
MEO002S231PV	0.38	264067PV	0.019	0.031	98.0	100.0	100.0
MEO002S232	1.543	377825	0.036	0.029	52.1	33.6	40.7

Table A1 Hydrological Model Components							
SubCatchment Name	Area (ha)	Loading Node	Length (km)	Slope (m/m)	Pervious Area CN	Imp. Area ED (%)	Imp. Area MPD (%)
MEO002S233	1.032	264065PU	0.055	0.028	47.5	8.9	25.0
MEO002S233PV	0.288	264065PV	0.028	0.028	98.0	100.0	100.0
MEO002S234	1.238	264065PUd2	0.037	0.039	62.6	4.9	20.6
MEO002S234PV	0.434	264065PV2	0.024	0.039	98.0	100.0	100.0
MEO002S235	1.52	227582	0.036	0.043	74.0	30.3	41.6
MEO002S236	0.717	264064PUd2	0.015	0.015	39.2	19.9	40.6
MEO002S236PV	0.188	264064PV2	0.007	0.015	98.0	100.0	100.0
MEO002S237	1.159	264064PU	0.037	0.040	64.2	14.0	38.3
MEO002S237PV	0.302	264064PV	0.017	0.040	98.0	100.0	100.0
MEO002S238	1.07	264059PU	0.027	0.025	53.3	37.6	50.4
MEO002S238PV	0.378	264059PV	0.015	0.025	98.0	100.0	100.0
MEO002S239	0.841	227602	0.025	0.025	58.5	49.6	63.8
MEO002S240	1.417	227602	0.049	0.069	74.0	49.8	62.8
MEO002S241	1.261	227602	0.038	0.054	74.0	45.6	57.0
MEO002S242	0.98	227681	0.025	0.017	74.0	40.5	44.2
MEO002S243	1.102	227591	0.035	0.015	74.0	42.7	48.3
MEO002S244	1.209	264068PUd2	0.030	0.052	70.9	10.9	22.3
MEO002S244PV	0.41	264068PV2	0.018	0.052	98.0	100.0	100.0
MEO002S245	1.5	227585	0.078	0.039	74.0	7.4	17.2
MEO002S246	1.222	227585	0.043	0.094	74.0	25.8	36.3
MEO002S247	1.471	264066PUd5	0.035	0.019	39.0	14.4	22.2
MEO002S247PV	0.52	264066PV5	0.023	0.019	98.0	100.0	100.0
MEO002S248	0.902	264068PU	0.034	0.021	56.9	9.5	17.4
MEO002S248PV	0.361	264068PV	0.024	0.021	98.0	100.0	100.0
MEO002S249	1.104	264075PU	0.069	0.019	39.0	15.9	20.5
MEO002S249PV	0.285	264075PV	0.031	0.019	98.0	100.0	100.0
MEO002S250	1.11	264128PUd2	0.041	0.038	53.8	10.9	18.5
MEO002S250PV	0.441	264128PV2	0.029	0.038	98.0	100.0	100.0
MEO002S251	0.841	264145PU	0.114	0.020	39.0	15.5	19.9
MEO002S251PV	0.244	264145PV	0.057	0.020	98.0	100.0	100.0
MEO002S252	0.515	264191PU	0.029	0.025	39.0	15.2	26.5
MEO002S252PV	0.125	264191PV	0.013	0.025	98.0	100.0	100.0
MEO002S253	0.554	264140PU	0.022	0.015	39.0	49.5	49.5
MEO002S253PV	0.183	264140PV	0.020	0.015	98.0	100.0	100.0
MEO002S254	1.951	227803	0.047	0.056	57.5	57.8	67.6
MEO002S255	1.342	264061pud	0.032	0.038	74.0	44.7	59.4
MEO002S255PV	0.55	264061PV	0.023	0.038	98.0	100.0	100.0
MEO002S256	0.901	264061PU	0.027	0.064	74.0	39.8	57.9
MEO002S256PV	0.344	264061PV2	0.018	0.064	98.0	100.0	100.0
MEO002S257	1.254	227686	0.037	0.038	74.0	40.9	55.4
MEO002S258	1.222	227686	0.030	0.040	74.0	29.0	29.0
MEO002S259	0.983	227681	0.043	0.101	74.0	36.2	43.0
MEO002S260	1.266	228499	0.052	0.010	61.0	49.7	52.9
MEO002S261	0.977	264316PU	0.040	0.007	39.0	10.9	11.1
MEO002S261PV	0.465	264316PV	0.032	0.007	98.0	100.0	100.0
MEO002S262	1.194	264317PUd2	0.033	0.020	39.0	21.9	24.8
MEO002S262PV	0.359	264317PV2	0.018	0.020	98.0	100.0	100.0
MEO002S263	1.38	264317PU	0.076	0.019	39.0	12.7	20.6
MEO002S263PV	0.495	264317PV	0.049	0.019	98.0	100.0	100.0
MEO002S264	0.887	264320PUd2	0.076	0.002	39.0	12.5	20.0
MEO002S264PV	0.308	264320PV2	0.047	0.002	98.0	100.0	100.0
MEO002S265	0.99	264379PU	0.037	0.002	39.0	15.8	21.1
MEO002S265PV	0.401	264379PV	0.027	0.002	98.0	100.0	100.0
MEO002S266	0.756	264380PU	0.027	0.033	39.0	20.2	20.2
MEO002S266PV	0.371	264380PV4	0.025	0.033	98.0	100.0	100.0

Table A1 Hydrological Model Components							
SubCatchment Name	Area (ha)	Loading Node	Length (km)	Slope (m/m)	Pervious Area CN	Imp. Area ED (%)	Imp. Area MPD (%)
MEO002S267	0.848	264316PUd2	0.065	0.044	39.0	13.3	21.0
MEO002S267PV	0.287	264316PV2	0.040	0.044	98.0	100.0	100.0
MEO002S268	0.606	264320PU	0.058	0.015	39.0	7.2	20.3
MEO002S268PV	0.195	264320PV	0.033	0.015	98.0	100.0	100.0
MEO002S269	0.856	264320PUd3	0.026	0.032	39.0	6.2	17.2
MEO002S269PV	0.336	264320PV3	0.018	0.032	98.0	100.0	100.0
MEO002S270	0.696	264360PUd2	0.022	0.015	39.0	12.8	22.1
MEO002S270PV	0.263	264360PV2	0.015	0.015	98.0	100.0	100.0
MEO002S271	0.726	264360PUd3	0.046	0.022	39.0	24.4	31.1
MEO002S271PV	0.364	264360PV3	0.051	0.022	98.0	100.0	100.0
MEO002S272	1.047	264361PU	0.017	0.013	39.0	15.0	22.8
MEO002S272PV	0.318	264361PV	0.009	0.013	98.0	100.0	100.0
MEO002S273	1.303	264378PU	0.042	0.035	39.0	17.1	21.5
MEO002S273PV	0.428	264378PV	0.025	0.035	98.0	100.0	100.0
MEO002S274	0.924	228567	0.019	0.005	39.0	32.3	40.9
MEO002S275	1.312	264361PUd2	0.030	0.007	39.0	13.4	18.7
MEO002S275PV	0.42	264361PV2	0.017	0.007	98.0	100.0	100.0
MEO002S276	0.799	264248PUd6	0.044	0.087	39.0	3.1	14.6
MEO002S276PV	0.256	264248PV6	0.024	0.087	98.0	100.0	100.0
MEO002S277	0.73	264248PUd3	0.030	0.031	39.0	9.4	12.1
MEO002S277PV	0.276	264248PV3	0.018	0.031	98.0	100.0	100.0
MEO002S278	0.619	227682	0.018	0.086	74.0	45.7	45.7
MEO002S279	0.561	264023PU	0.020	0.112	39.0	38.7	50.8
MEO002S279PV	0.185	264023PV	0.011	0.112	98.0	100.0	100.0
MEO002S280	0.828	263923PU	0.059	0.009	39.0	81.3	93.6
MEO002S280PV	0.411	263923PV	0.044	0.009	98.0	100.0	100.0
MEO002S281	0.495	264013PUd2	0.014	0.227	39.0	29.5	44.3
MEO002S281PV	0.235	264013PV2	0.010	0.227	98.0	100.0	100.0
MEO002S282	0.956	50.1	0.051	0.047	59.9	0.0	66.1
MEO002S283	1.178	264399PUd2	0.022	0.010	61.0	26.6	37.4
MEO002S283PV	0.426	264399PV2	0.017	0.010	98.0	100.0	100.0
MEO002S284	0.454	264312PU	0.022	0.028	39.0	10.2	18.0
MEO002S284PV	0.158	264312PV	0.013	0.028	98.0	100.0	100.0
MEO002S285	0.89	264315PU	0.038	0.016	39.0	6.1	17.4
MEO002S285PV	0.308	264315PV	0.023	0.016	98.0	100.0	100.0
MEO002S286	1.12	264408PUd2	0.072	0.029	39.0	7.9	18.8
MEO002S286PV	0.381	264408PV2	0.043	0.029	98.0	100.0	100.0
MEO002S287	1.298	228499	0.037	0.019	54.1	32.0	43.8
MEO002S288	1.067	264399PUd3	0.040	0.023	41.3	10.9	19.2
MEO002S288PV	0.371	264399PV3	0.025	0.023	98.0	100.0	100.0
MEO002S289	0.934	264409PU	0.025	0.004	39.0	9.9	13.0
MEO002S289PV	0.387	264409PV	0.018	0.004	98.0	100.0	100.0
MEO002S290	1.169	264394PUd5	0.036	0.006	59.2	7.1	17.7
MEO002S290PV	0.449	264394PV5	0.024	0.006	98.0	100.0	100.0
MEO002S291	0.897	264394PU	0.033	0.004	61.0	12.0	15.1
MEO002S291PV	0.373	264394PV	0.024	0.004	98.0	100.0	100.0
MEO002S292	1.13	228548	0.041	0.006	61.0	34.4	38.1
MEO002S293	1.288	264389PU	0.022	0.001	59.5	14.6	14.6
MEO002S293PV	0.633	264389PV	0.019	0.001	98.0	100.0	100.0
MEO002S294	1.131	264390PUd2	0.022	0.009	41.2	15.1	15.8
MEO002S294PV	0.467	264390PV2	0.016	0.009	98.0	100.0	100.0
MEO002S295	0.786	264394PUd2	0.106	0.015	44.1	7.0	19.4
MEO002S295PV	0.258	264394PV2	0.061	0.015	98.0	100.0	100.0
MEO002S296	1.276	264385PUd3	0.033	0.032	39.7	14.9	28.5
MEO002S296PV	0.242	264385PV3	0.012	0.032	98.0	100.0	100.0

Table A1 Hydrological Model Components							
SubCatchment Name	Area (ha)	Loading Node	Length (km)	Slope (m/m)	Pervious Area CN	Imp. Area ED (%)	Imp. Area MPD (%)
MEO002S297	1.016	264385PUd4	0.025	0.051	41.5	0.0	14.9
MEO002S297PV	0.447	264385PV4	0.017	0.051	98.0	100.0	100.0
MEO002S298	0.851	264385pud	0.039	0.022	39.0	21.2	23.1
MEO002S298PV	0.255	264385PV	0.021	0.022	98.0	100.0	100.0
MEO002S299	1.34	264407PUd2	0.027	0.000	39.0	7.3	18.9
MEO002S299PV	0.422	264407PV2	0.015	0.000	98.0	100.0	100.0
MEO002S300	1.033	264314PU	0.036	0.037	39.0	6.2	23.8
MEO002S300PV	0.286	264314PV	0.018	0.037	98.0	100.0	100.0
MEO002S301	1.613	264320PUd4	0.040	0.014	39.0	0.5	26.9
MEO002S301PV	0.347	264320PV4	0.016	0.014	98.0	100.0	100.0
MEO002S302	1.147	264407PU	0.058	0.006	39.0	11.1	16.0
MEO002S302PV	0.409	264407PV	0.035	0.006	98.0	100.0	100.0
MEO002S303	0.917	264385PU	0.038	0.011	39.0	25.4	25.4
MEO002S303PV	0.293	264385PV2	0.023	0.011	98.0	100.0	100.0
MEO002S304	1.139	264394PUd4	0.027	0.034	39.0	8.0	38.1
MEO002S304PV	0.193	264394PV4	0.010	0.034	98.0	100.0	100.0
MEO002S305	0.941	264394PUd3	0.057	0.045	39.0	1.0	28.4
MEO002S305PV	0.203	264394PV3	0.023	0.045	98.0	100.0	100.0
MEO002S306	1.298	264393PU	0.053	0.018	39.0	15.6	17.0
MEO002S306PV	0.514	264393PV	0.037	0.018	98.0	100.0	100.0
MEO002S307	1.155	264220PU	0.027	0.013	39.0	25.8	37.1
MEO002S307PV	0.444	264220PV	0.017	0.013	98.0	100.0	100.0
MEO002S308	1.583	227682	0.039	0.049	74.0	40.6	44.7
MEO002S309	1.566	227731	0.053	0.077	74.0	30.6	41.9
MEO002S310	0.569	227880	0.021	0.078	74.0	68.3	81.2
MEO002S311	0.497	264302PUd2	0.011	0.009	74.0	23.3	26.7
MEO002S311PV	0.167	264302PV2	0.007	0.009	98.0	100.0	100.0
MEO002S312	1.006	264302PUd3	0.046	0.016	74.0	32.1	45.4
MEO002S312PV	0.368	264302PV3	0.027	0.016	98.0	100.0	100.0
MEO002S313	1.092	378083	0.029	0.048	74.0	51.8	59.9
MEO002S314	0.843	264302PU	0.026	0.023	74.0	45.8	52.6
MEO002S314PV	0.263	264302PV	0.013	0.023	98.0	100.0	100.0
MEO002S315	0.956	264303PU	0.020	0.010	66.5	52.0	52.0
MEO002S315PV	0.315	264303PV	0.018	0.010	98.0	100.0	100.0
MEO002S316	0.837	264298PUd2	0.029	0.013	53.9	31.2	31.8
MEO002S316PV	0.235	264298PV2	0.014	0.013	98.0	100.0	100.0
MEO002S317	1.115	264298PUd3	0.016	0.020	39.0	37.4	39.2
MEO002S317PV	0.518	264298PV3	0.019	0.020	98.0	100.0	100.0
MEO002S318	0.761	264298PU	0.024	0.007	39.0	15.5	25.0
MEO002S318PV	0.257	264298PV	0.015	0.007	98.0	100.0	100.0
MEO002S319	0.752	264306PU	0.052	0.009	39.0	15.3	27.9
MEO002S319PV	0.218	264306PV	0.029	0.009	98.0	100.0	100.0
MEO002S320	0.79	264327PUd2	0.030	0.023	39.0	24.8	24.8
MEO002S320PV	0.344	264327PV2	0.026	0.023	98.0	100.0	100.0
MEO002S321	0.512	264298PUd4	0.018	0.022	39.0	9.6	21.2
MEO002S321PV	0.189	264298PV4	0.012	0.022	98.0	100.0	100.0
MEO002S322	0.866	264327PUd4	0.027	0.038	39.0	19.8	30.3
MEO002S322PV	0.358	264327PV4	0.024	0.038	98.0	100.0	100.0
MEO002S323	0.659	264327PUd3	0.013	0.009	39.0	25.3	39.9
MEO002S323PV	0.363	264327PV3	0.020	0.009	98.0	100.0	100.0
MEO002S324	0.843	264328PU	0.060	0.028	39.0	11.5	25.8
MEO002S324PV	0.243	264328PV	0.033	0.028	98.0	100.0	100.0
MEO002S325	1.061	264323PU	0.035	0.013	39.0	19.1	26.4
MEO002S325PV	0.454	264323PV	0.030	0.013	98.0	100.0	100.0
MEO002S326	0.971	264322PUd2	0.023	0.016	39.0	9.6	23.2

Table A1 Hydrological Model Components							
SubCatchment Name	Area (ha)	Loading Node	Length (km)	Slope (m/m)	Pervious Area CN	Imp. Area ED (%)	Imp. Area MPD (%)
MEO002S326PV	0.352	264322PV2	0.016	0.016	98.0	100.0	100.0
MEO002S327	0.957	264322PU	0.040	0.011	39.0	13.7	28.4
MEO002S327PV	0.297	264322PV	0.025	0.011	98.0	100.0	100.0
MEO002S328	0.601	264197pud	0.039	0.024	39.0	0.3	18.7
MEO002S328PV	0.224	264197PV	0.026	0.024	98.0	100.0	100.0
MEO002S329	1.149	264325PU	0.055	0.008	39.0	9.5	27.4
MEO002S329PV	0.293	264325PV	0.026	0.008	98.0	100.0	100.0
MEO002S330	1.064	264328PUd3	0.024	0.004	39.0	11.0	20.8
MEO002S330PV	0.379	264328PV3	0.016	0.004	98.0	100.0	100.0
MEO002S331	0.437	264328PUd2	0.021	0.033	39.0	1.4	20.2
MEO002S331PV	0.154	264328PV2	0.013	0.033	98.0	100.0	100.0
MEO002S332	1.326	264410PU	0.107	0.003	39.0	7.3	19.5
MEO002S332PV	0.46	264410PV	0.066	0.003	98.0	100.0	100.0
MEO002S333	1.086	264408PU	0.042	0.019	43.8	8.3	20.2
MEO002S333PV	0.384	264408PV	0.026	0.019	98.0	100.0	100.0
MEO002S334	0.8	264350PU	0.035	0.009	39.0	44.6	55.9
MEO002S334PV	0.297	264350PV	0.022	0.009	98.0	100.0	100.0
MEO002S335	0.424	264327PU	0.038	0.015	39.0	14.6	24.7
MEO002S335PV	0.148	264327PV	0.025	0.015	98.0	100.0	100.0
MEO002S336	0.829	264359PUd6	0.044	0.040	39.0	26.7	29.3
MEO002S336PV	0.135	264359PV6	0.013	0.040	98.0	100.0	100.0
MEO002S337	0.66	264355PU	0.014	0.006	39.0	16.8	22.0
MEO002S337PV	0.242	264355PV	0.009	0.006	98.0	100.0	100.0
MEO002S338	1.128	264422PU	0.034	0.017	39.0	8.0	39.5
MEO002S338PV	0.19	264422PV	0.012	0.017	98.0	100.0	100.0
MEO002S339	1.254	264421PUd4	0.050	0.038	39.0	0.0	44.7
MEO002S339PV	0.351	264421PV4	0.028	0.038	98.0	100.0	100.0
MEO002S340	0.722	264376PU	0.006	0.009	39.0	43.5	53.8
MEO002S340PV	0.615	264376PV	0.025	0.009	98.0	100.0	100.0
MEO002S341	0.915	264421PU	0.012	0.066	39.0	1.3	26.8
MEO002S341PV	0.426	264421PV	0.011	0.066	98.0	100.0	100.0
MEO002S342	1.092	264421PUd2	0.018	0.064	39.0	17.9	36.9
MEO002S342PV	0.276	264421PV2	0.010	0.064	98.0	100.0	100.0
MEO002S343	1.113	264373PU	0.033	0.071	39.0	17.5	30.9
MEO002S343PV	0.296	264373PV	0.018	0.071	98.0	100.0	100.0
MEO002S344	0.732	264421PUd3	0.013	0.048	39.0	23.2	37.6
MEO002S344PV	0.249	264421PV3	0.010	0.048	98.0	100.0	100.0
MEO002S345	1.418	264377PUd3	0.031	0.011	39.0	19.8	32.4
MEO002S345PV	0.538	264377PV3	0.025	0.011	98.0	100.0	100.0
MEO002S346	0.845	264377PUd4	0.009	0.020	39.0	34.0	57.0
MEO002S346PV	0.619	264377PV4	0.029	0.020	98.0	100.0	100.0
MEO002S347	1.863	1	0.044	0.024	64.8	19.2	67.1
MEO002S348	2.007	49	0.029	0.015	39.0	65.0	74.3
MEO002S349	1.164	264383PU	0.024	0.021	39.0	25.0	43.5
MEO002S349PV	0.297	264383PV	0.015	0.021	98.0	100.0	100.0
MEO002S350	1.021	49	0.023	0.027	39.0	54.0	77.9
MEO002S351	1.667	49	0.065	0.030	39.0	67.8	82.2
MEO002S352	2.038	52.1	0.125	0.032	46.5	25.4	62.3
MEO002S353	0.914	264449PU	0.020	0.011	39.0	16.2	41.1
MEO002S353PV	0.56	264449PV	0.034	0.011	98.0	100.0	100.0
MEO002S354	1.092	51.1	0.033	0.036	59.6	2.8	58.2
MEO002S355	0.73	264449PU	0.020	0.072	39.0	14.0	21.6
MEO002S355PV	0.247	264449PV2	0.012	0.072	98.0	100.0	100.0
MEO002S356	1.005	264350PUd1	0.037	0.034	39.0	19.3	43.7
MEO002S356PV	0.311	264350PV1	0.021	0.034	98.0	100.0	100.0

Table A1 Hydrological Model Components							
SubCatchment Name	Area (ha)	Loading Node	Length (km)	Slope (m/m)	Pervious Area CN	Imp. Area ED (%)	Imp. Area MPD (%)
MEO002S357	1.143	227949	0.020	0.023	43.8	56.7	64.9
MEO002S358	1.851	377686	0.069	0.014	39.0	38.2	46.9
MEO002S359	0.777	227636	0.068	0.010	39.5	35.5	39.3
MEO002S360	0.931	451183PU	0.016	0.026	39.0	11.2	26.0
MEO002S360PV	0.272	451183PV	0.009	0.026	98.0	100.0	100.0
MEO002S361	1.261	264364PUd3	0.054	0.005	39.0	0.0	14.5
MEO002S361PV	0.066	264364PV3	0.004	0.005	98.0	100.0	100.0
MEO002S362	0.884	264364PUd2	0.020	0.026	39.0	17.2	21.8
MEO002S362PV	0.199	264364PV2	0.008	0.026	98.0	100.0	100.0
MEO002S363	0.982	264345PU	0.034	0.047	39.0	1.2	24.8
MEO002S363PV	0.239	264345PV	0.015	0.047	98.0	100.0	100.0
MEO002S364	0.844	264363PU	0.051	0.056	39.0	2.2	13.0
MEO002S364PV	0.158	264363PV	0.015	0.056	98.0	100.0	100.0
MEO002S365	0.964	264364PUd5	0.028	0.033	39.0	0.0	7.7
MEO002S365PV	0.227	264364PV5	0.009	0.033	98.0	100.0	100.0
MEO002S366	0.95	264364PUd7	0.040	0.100	39.0	3.0	13.8
MEO002S366PV	0.146	264364PV7	0.010	0.100	98.0	100.0	100.0
MEO002S367	0.778	264364PUd6	0.037	0.004	39.0	0.0	9.8
MEO002S367PV	0.14	264364PV6	0.010	0.004	98.0	100.0	100.0
MEO002S368	1.335	451183PUd4	0.081	0.015	39.0	1.3	21.7
MEO002S368PV	0.337	451183PV4	0.036	0.015	98.0	100.0	100.0
MEO002S369	1.516	264367PU	0.057	0.023	39.0	5.7	27.5
MEO002S369PV	0.367	264367PV	0.025	0.023	98.0	100.0	100.0
MEO002S370	0.991	264364PUd9	0.096	0.014	39.0	9.4	25.1
MEO002S370PV	0.263	264364PV9	0.047	0.014	98.0	100.0	100.0
MEO002S371	0.813	264364PUd10	0.061	0.012	39.0	10.6	23.9
MEO002S371PV	0.23	264364PV10	0.032	0.012	98.0	100.0	100.0
MEO002S372	1.385	264367PUd2	0.092	0.020	61.5	16.3	33.9
MEO002S372PV	0.406	264367PV2	0.044	0.020	98.0	100.0	100.0
MEO002S373	1.122	264365PUd6	0.050	0.008	39.0	4.7	20.7
MEO002S373PV	0.311	264365PV6	0.024	0.008	98.0	100.0	100.0
MEO002S374	0.582	264365PUd5	0.036	0.013	39.5	3.6	22.7
MEO002S374PV	0.134	264365PV5	0.015	0.013	98.0	100.0	100.0
MEO002S375	0.603	451183PUd3	0.057	0.007	65.1	6.9	21.9
MEO002S375PV	0.146	451183PV3	0.024	0.007	98.0	100.0	100.0
MEO002S376	0.989	264318PU	0.037	0.024	71.3	25.4	41.5
MEO002S376PV	0.34	264318PV	0.023	0.024	98.0	100.0	100.0
MEO002S377	0.832	264382PU	0.041	0.010	39.0	16.8	21.7
MEO002S377PV	0.296	264382PV	0.026	0.010	98.0	100.0	100.0
MEO002S378	0.676	264368PUd2	0.025	0.064	74.0	21.2	38.1
MEO002S378PV	0.212	264368PV2	0.013	0.064	98.0	100.0	100.0
MEO002S379	0.748	264368PU	0.026	0.018	67.3	3.7	24.4
MEO002S379PV	0.173	264368PV	0.011	0.018	98.0	100.0	100.0
MEO002S380	0.879	264381pud	0.019	0.005	48.3	17.3	22.3
MEO002S380PV	0.304	264381PV	0.012	0.005	98.0	100.0	100.0
MEO002S381	1.125	264380PUd3	0.036	0.028	39.0	25.7	39.6
MEO002S381PV	0.298	264380PV3	0.022	0.028	98.0	100.0	100.0
MEO002S382	0.986	264380pud	0.035	0.030	39.0	15.2	27.3
MEO002S382PV	0.259	264380PV	0.018	0.030	98.0	100.0	100.0
MEO002S383	1.351	264367PUd3	0.048	0.018	41.5	18.3	28.6
MEO002S383PV	0.47	264367PV3	0.027	0.018	98.0	100.0	100.0
MEO002S384	0.742	264367PUd4	0.032	0.021	39.0	22.0	26.4
MEO002S384PV	0.291	264367PV4	0.021	0.021	98.0	100.0	100.0
MEO002S385	0.86	228567	0.043	0.065	39.0	25.1	39.5
MEO002S386	0.768	264360PU	0.016	0.019	39.0	10.7	11.0

Table A1 Hydrological Model Components							
SubCatchment Name	Area (ha)	Loading Node	Length (km)	Slope (m/m)	Pervious Area CN	Imp. Area ED (%)	Imp. Area MPD (%)
MEO002S386PV	0.367	264360PV	0.013	0.019	98.0	100.0	100.0
MEO002S387	0.945	264391PUd2	0.026	0.035	39.0	10.5	19.1
MEO002S387PV	0.339	264391PV2	0.016	0.035	98.0	100.0	100.0
MEO002S388	1.356	264377PUd2	0.029	0.024	39.0	15.8	15.8
MEO002S388PV	0.509	264377PV2	0.019	0.024	98.0	100.0	100.0
MEO002S389	0.654	264391PU	0.019	0.052	39.0	17.6	38.1
MEO002S389PV	0.184	264391PV	0.012	0.052	98.0	100.0	100.0
MEO002S390	1.618	264359PUd4	0.040	0.062	39.0	26.1	44.8
MEO002S390PV	0.407	264359PV4	0.025	0.062	98.0	100.0	100.0
MEO002S391	1.36	264359PUd9	0.050	0.035	39.0	11.3	14.8
MEO002S391PV	0.305	264359PV9	0.018	0.035	98.0	100.0	100.0
MEO002S392	0.805	264359PUd2	0.015	0.030	39.0	42.0	52.1
MEO002S392PV	0.739	264359PV2	0.065	0.030	98.0	100.0	100.0
MEO002S393	0.095	264377PUd5	0.000	0.008	39.0	0.0	27.3
MEO002S393PV	1.593	264377PV5	0.079	0.008	98.0	100.0	100.0
MEO002S394	1.059	264359PUd7	0.052	0.030	39.0	0.0	11.1
MEO002S394PV	0.249	264359PV7	0.018	0.030	98.0	100.0	100.0
MEO002S395	1.197	264359PUd5	0.026	0.111	39.0	0.0	33.2
MEO002S395PV	0.228	264359PV5	0.009	0.111	98.0	100.0	100.0
MEO002S396	0.89	264359PUd3	0.026	0.035	39.0	27.5	51.6
MEO002S396PV	0.254	264359PV3	0.021	0.035	98.0	100.0	100.0
MEO002S397	0.937	264359PUd8	0.032	0.022	39.0	0.0	10.4
MEO002S397PV	0.097	264359PV8	0.004	0.022	98.0	100.0	100.0
MEO002S398	0.608	264359PU	0.017	0.041	39.0	27.4	56.0
MEO002S398PV	0.086	264359PV	0.007	0.041	98.0	100.0	100.0
MEO002S399	0.852	264377PU	0.022	0.017	39.0	41.6	51.1
MEO002S399PV	0.671	264377PV	0.072	0.017	98.0	100.0	100.0
MEO002S400	0.67	264380PUd2	0.018	0.003	39.0	23.5	23.5
MEO002S400PV	0.331	264380PV2	0.018	0.003	98.0	100.0	100.0
MEO002S401	0.557	225694	0.014	0.085	39.0	22.6	37.7
MEO002S402	0.663	225975	0.060	0.034	39.0	0.0	15.4
MEO002S403	0.382	264129PU	0.024	0.026	39.0	4.9	18.0
MEO002S403PV	0.155	264129PV5	0.018	0.026	98.0	100.0	100.0
MEO002S404	0.693	225622	0.035	0.073	39.0	34.2	42.8
MEO002S405	0.572	225546	0.041	0.016	39.0	21.2	38.2
MEO002S406	0.806	264248PU	0.035	0.013	39.0	21.9	31.4
MEO002S406PV	0.178	264248PV	0.015	0.013	98.0	100.0	100.0
MEO002S407	1.346	264248PUd7	0.068	0.064	39.0	8.9	16.4
MEO002S407PV	0.451	264248PV7	0.039	0.064	98.0	100.0	100.0
MEO002S408	1.542	225975	0.018	0.058	39.0	26.7	38.0
MEO002S409	0.832	192659	0.014	0.072	39.0	34.8	37.3
MEO002S410	1.814	225500	0.031	0.050	39.0	20.7	28.2
MEO002S411	1.801	225500	0.036	0.066	39.0	31.1	37.3
MEO002S412	0.647	407908	0.030	0.077	39.0	36.6	36.6
MEO002S413	1.033	409496	0.012	0.040	39.0	33.3	40.7
MEO002S414	1.032	264248PUd5	0.024	0.042	39.0	10.9	15.4
MEO002S414PV	0.347	264248PV5	0.013	0.042	98.0	100.0	100.0
MEO002S415	0.583	225742	0.025	0.088	39.0	32.2	40.0
MEO002S416	0.521	227963	0.034	0.012	74.0	33.2	65.0
MEO002S417	0.339	264338PU	0.012	0.025	39.0	59.0	62.3
MEO002S417PV	0.421	264338PV	0.048	0.025	98.0	100.0	100.0
MEO003S001	1.945	226987	0.062	0.047	59.9	35.9	50.4
MEO003S002	1.493	226994	0.051	0.033	73.7	47.3	60.9
MEO003S003	1.611	400521	0.045	0.031	39.0	48.9	56.0
MEO003S004	1.632	226912	0.074	0.050	39.0	44.7	53.3

Table A1 Hydrological Model Components							
SubCatchment Name	Area (ha)	Loading Node	Length (km)	Slope (m/m)	Pervious Area CN	Imp. Area ED (%)	Imp. Area MPD (%)
MEO003S005	1.552	226920	0.031	0.044	39.0	44.1	54.6
MEO003S006	1.328	227209	0.030	0.045	39.0	45.5	54.6
MEO003S007	0.668	377627	0.038	0.054	39.0	37.3	52.9
MEO003S008	2.004	226989	0.046	0.024	48.5	42.4	53.7
MEO003S009	1.91	226829	0.037	0.043	50.0	58.3	62.5
MEO003S010	0.643	226760	0.045	0.033	39.0	32.1	51.1
MEO003S011	1.274	226920	0.011	0.064	39.0	53.0	54.4
MEO003S012	1.073	226915	0.018	0.066	39.0	49.2	53.7
MEO003S013	1.669	226920	0.021	0.036	39.0	45.1	61.2
MEO003S014	1.113	226913	0.039	0.063	39.0	40.5	54.7
MEO003S015	1.221	226920	0.023	0.021	39.0	47.1	55.3
MEO003S016	1.003	226915	0.030	0.063	39.0	46.0	56.7
MEO003S017	0.986	226915	0.022	0.086	39.0	59.0	59.0
MEO003S018	1.162	226920	0.012	0.072	39.0	61.1	61.1
MEO004S001	1.16	10.1	0.047	0.019	68.1	54.0	54.0
MEO004S002	1.656	377591	0.089	0.010	70.9	45.8	53.5
MEO004S003	1.332	226999	0.030	0.032	66.3	73.0	73.0
MEO004S004	1.63	195775	0.052	0.015	61.0	48.4	53.2
MEO004S005	1.147	226997	0.025	0.036	64.6	61.2	61.2
MEO004S006	1.007	226937	0.029	0.017	65.3	59.7	59.7
MEO004S007	1	226841	0.037	0.024	61.0	63.5	65.6
MEO004S008	1.642	377590	0.066	0.009	72.7	50.5	58.9
MEO004S009	1.118	4.1	0.063	0.063	70.1	38.4	54.0
MEO004S010	1.825	227195	0.053	0.038	74.0	50.0	54.8
MEO004S011	1.84	227243	0.045	0.030	74.0	52.6	55.5
MEO004S012	1.023	227002	0.022	0.014	74.0	52.6	57.9
MEO004S013	1.826	436225	0.042	0.017	74.0	46.1	52.2
MEO004S014	1.119	227207	0.039	0.005	74.0	56.0	61.3
MEO004S015	1.206	178964	0.034	0.007	74.0	43.0	51.8
MEO004S016	1.401	436226	0.026	0.008	74.0	55.6	59.1
MEO004S017	1.28	227139	0.055	0.006	74.0	60.0	60.0
MEO004S018	0.93	41.1	0.059	0.057	74.0	14.1	43.1
MEO004S019	1.329	378456	0.040	0.029	74.0	56.2	60.4
MEO004S020	0.633	226848	0.030	0.018	67.7	51.1	67.1
MEO004S021	0.875	378456	0.036	0.034	74.0	44.0	55.4
MEO004S022	1.174	227201	0.040	0.051	74.0	45.6	53.6
MEO004S023	1.617	227113	0.036	0.027	74.0	40.0	52.8
MEO004S024	1.336	35	0.033	0.092	74.0	42.0	49.3
MEO004S025	1.08	227201	0.047	0.042	74.0	41.6	52.7
MEO004S026	1.855	227166	0.052	0.038	74.0	43.5	51.7
MEO004S027	0.947	402228	0.025	0.047	74.0	33.2	52.8
MEO004S028	1.55	402199	0.068	0.053	74.0	38.5	52.5
MEO004S029	1.26	226924	0.028	0.063	73.2	42.6	53.7
MEO004S030	1.74	227186	0.033	0.037	63.2	55.1	55.8
MEO004S031	1.568	227178	0.041	0.033	67.9	43.8	57.2
MEO004S032	1.564	227188	0.043	0.038	61.8	46.9	55.5
MEO004S033	0.875	378430	0.026	0.048	61.0	49.3	54.4
MEO004S034	0.769	227177	0.022	0.057	61.0	35.9	52.9
MEO004S035	1.365	227180	0.035	0.029	61.0	50.1	54.5
MEO004S036	0.74	227177	0.034	0.041	62.4	38.5	53.0
MEO004S037	1.376	226924	0.042	0.063	73.7	22.5	42.8
MEO004S038	1.006	226924	0.020	0.053	62.9	41.7	50.7
MEO004S039	1.379	34.1	0.050	0.055	74.0	18.6	40.7
MEO004S040	1.99	22.1	0.055	0.086	74.0	18.4	37.1
MEO004S041	0.821	34.1	0.020	0.053	74.0	48.7	53.4

Table A1 Hydrological Model Components							
SubCatchment Name	Area (ha)	Loading Node	Length (km)	Slope (m/m)	Pervious Area CN	Imp. Area ED (%)	Imp. Area MPD (%)
MEO004S042	1.77	264499	0.060	0.055	74.0	30.1	46.1
MEO004S043	1.63	264499	0.024	0.045	74.0	48.0	53.9
MEO004S044	1.481	264499	0.038	0.046	74.0	22.0	45.3
MEO004S045	1.803	36.1	0.049	0.036	74.0	23.0	41.7
MEO004S046	1.534	20.1	0.044	0.100	74.0	15.0	33.0
MEO004S047	1.346	377599	0.053	0.041	74.0	32.5	48.3
MEO004S048	1.536	226942	0.053	0.015	74.0	48.0	56.4
MEO004S049	0.957	41.1	0.015	0.095	73.9	38.6	57.1
MEO004S051	1.833	41.1	0.038	0.021	73.9	35.6	52.5
MEO004S052	1.076	10.1	0.057	0.038	73.9	35.9	51.4
MEO004S053	1.178	405764	0.023	0.017	74.0	32.4	53.1
MEO004S054	1.784	39.1	0.063	0.065	74.0	14.6	48.4
MEO004S055	0.944	405764	0.034	0.056	74.0	35.3	53.4
MEO004S056	1.452	226637	0.040	0.039	74.0	30.3	54.9
MEO004S057	0.758	226636	0.031	0.040	74.0	33.7	52.7
MEO004S058	0.582	40.1	0.035	0.110	74.0	16.0	50.2
MEO004S059	0.664	37.1	0.048	0.094	74.0	22.4	43.9
MEO004S060	1.882	226848	0.057	0.021	73.0	45.9	57.9
MEO004S061	1.701	226656	0.047	0.026	74.0	46.5	59.3
MEO004S062	0.695	378461	0.020	0.017	74.0	54.2	54.2
MEO004S063	1.048	227155	0.022	0.015	74.0	43.8	54.3
MEO004S064	0.528	227178	0.031	0.038	72.9	51.5	55.0
MEO004S065	0.512	264499	0.020	0.062	74.0	51.5	63.5
MEO005S001	0.805	264101PU	0.039	0.017	39.0	82.4	97.6
MEO005S001PV	0.494	264101PV	0.034	0.017	98.0	100.0	100.0
MEO005S002	1.377	264205PU	0.058	0.044	39.0	44.3	53.7
MEO005S002PV	0.486	264205PV	0.034	0.044	98.0	100.0	100.0
MEO005S003	0.832	264219PU	0.035	0.025	39.0	25.2	36.0
MEO005S003PV	0.312	264219PV2	0.022	0.025	98.0	100.0	100.0
MEO005S004	0.726	264215PU	0.029	0.003	39.0	42.5	46.8
MEO005S004PV	0.31	264215PV	0.019	0.003	98.0	100.0	100.0
MEO005S005	1.226	264222PU	0.052	0.017	39.0	31.1	51.7
MEO005S005PV	0.41	264222PV	0.028	0.017	98.0	100.0	100.0
MEO005S006	0.93	264351PU	0.042	0.011	39.0	40.8	60.0
MEO005S006PV	0.267	264351PV	0.022	0.011	98.0	100.0	100.0
MEO005S007	0.677	264351PUd2	0.020	0.036	39.0	36.1	51.6
MEO005S007PV	0.221	264351PV2	0.011	0.036	98.0	100.0	100.0
MEO005S008	0.382	264351PUd3	0.019	0.063	39.0	28.2	49.7
MEO005S008PV	0.135	264351PV3	0.011	0.063	98.0	100.0	100.0
MEO005S009	0.816	264351PUd4	0.028	0.039	39.0	31.3	48.3
MEO005S009PV	0.285	264351PV4	0.015	0.039	98.0	100.0	100.0
MEO005S010	0.854	264217PU	0.023	0.006	39.0	37.1	49.9
MEO005S010PV	0.314	264217PV	0.014	0.006	98.0	100.0	100.0
MEO005S011	1.29	264217PUd2	0.046	0.019	39.0	33.1	53.6
MEO005S011PV	0.407	264217PV2	0.024	0.019	98.0	100.0	100.0
MEO005S012	0.619	264215PUd2	0.019	0.032	39.0	23.5	48.2
MEO005S012PV	0.224	264215PV2	0.011	0.032	98.0	100.0	100.0
MEO005S013	0.567	264148PUd2	0.016	0.029	39.0	35.9	49.3
MEO005S013PV	0.207	264148PV2	0.009	0.029	98.0	100.0	100.0
MEO005S014	0.803	264214PUd2	0.034	0.028	39.0	31.6	52.8
MEO005S014PV	0.254	264214PV2	0.018	0.028	98.0	100.0	100.0
MEO005S015	0.639	264214PU	0.033	0.038	39.0	33.3	53.5
MEO005S015PV	0.197	264214PV3	0.017	0.038	98.0	100.0	100.0
MEO005S016	0.849	264148PU	0.036	0.026	39.0	84.9	84.9
MEO005S016PV	0.124	264148PV	0.009	0.026	98.0	100.0	100.0

Table A1 Hydrological Model Components							
SubCatchment Name	Area (ha)	Loading Node	Length (km)	Slope (m/m)	Pervious Area CN	Imp. Area ED (%)	Imp. Area MPD (%)
MEO005S017	2.035	227410	0.058	0.027	39.0	63.4	69.9
MEO005S018	1.219	227410	0.017	0.044	39.0	35.6	66.5
MEO005S019	1.518	188703PUD1	0.022	0.036	42.2	40.7	51.6
MEO005S019PV	0.193	188703PV1	0.005	0.036	98.0	100.0	100.0
MEO005S020	0.806	264159PU	0.031	0.068	39.0	30.5	47.2
MEO005S020PV	0.227	264159PV	0.013	0.068	98.0	100.0	100.0
MEO005S021	1.431	264155PU	0.060	0.061	39.0	35.0	53.8
MEO005S021PV	0.53	264155PV	0.037	0.061	98.0	100.0	100.0
MEO005S022	1.561	264151PUD	0.023	0.037	39.0	23.4	58.9
MEO005S022PV	0.275	264151PV	0.007	0.037	98.0	100.0	100.0
MEO005S023	1.213	264156pu	0.033	0.100	39.0	35.6	52.1
MEO005S023PV	0.373	264156PV	0.016	0.100	98.0	100.0	100.0
MEO005S024	0.973	264111PUD	0.021	0.129	39.0	43.3	62.4
MEO005S024PV	0.324	264111PV	0.013	0.129	98.0	100.0	100.0
MEO005S025	0.844	264115PU	0.038	0.094	39.0	44.9	58.0
MEO005S025PV	0.212	264115PV	0.017	0.094	98.0	100.0	100.0
MEO005S026	1.49	264156PU	0.045	0.034	39.0	39.5	55.3
MEO005S026PV	0.439	264156PV2	0.023	0.034	98.0	100.0	100.0
MEO005S027	0.856	264151PUd2	0.015	0.016	39.0	39.5	54.3
MEO005S027PV	0.238	264151PV2	0.007	0.016	98.0	100.0	100.0
MEO005S028	1.077	264162PU	0.040	0.027	39.0	69.9	78.0
MEO005S028PV	0.482	264162PV	0.032	0.027	98.0	100.0	100.0
MEO005S029	0.785	264151PUd4	0.017	0.057	39.0	46.3	54.6
MEO005S029PV	0.249	264151PV4	0.009	0.057	98.0	100.0	100.0
MEO005S030	1.489	264151PUd3	0.043	0.066	39.0	35.7	49.7
MEO005S030PV	0.498	264151PV3	0.023	0.066	98.0	100.0	100.0
MEO005S031	1.193	264214pud	0.027	0.056	39.0	38.1	52.2
MEO005S031PV	0.411	264214PV	0.015	0.056	98.0	100.0	100.0
MEO005S032	1.204	264211PU	0.032	0.029	39.0	36.4	60.7
MEO005S032PV	0.311	264211PV2	0.015	0.029	98.0	100.0	100.0
MEO005S033	0.823	264101PUd1	0.017	0.012	39.0	32.9	74.9
MEO005S033PV	0.275	264101PV1	0.011	0.012	98.0	100.0	100.0
MEO005S034	1.053	188703PUD	0.032	0.032	49.7	42.3	51.6
MEO005S034PV	0.29	188703PVD	0.014	0.032	98.0	100.0	100.0
MEO005S035	0.816	188703PU	0.051	0.036	61.3	48.0	57.9
MEO005S035PV	0.194	188703PV2	0.021	0.036	98.0	100.0	100.0
MEO005S036	1.274	264168PU	0.036	0.036	39.0	38.6	53.6
MEO005S036PV	0.408	264168PV	0.019	0.036	98.0	100.0	100.0
MEO005S037	0.764	264168PU	0.024	0.042	40.9	37.3	49.1
MEO005S037PV	0.325	264168PV2	0.016	0.042	98.0	100.0	100.0
MEO005S038	1.036	EdenPark1	0.034	0.056	39.0	66.6	75.5
MEO005S039	1.871	228012	0.047	0.019	39.0	62.3	75.4
MEO005S040	1.237	264206PU	0.044	0.022	39.0	54.4	69.5
MEO005S040PV	0.485	264206PV	0.035	0.022	98.0	100.0	100.0
MEO005S041	1.023	264209PU	0.014	0.018	39.0	62.1	70.2
MEO005S041PV	0.579	264209PV	0.016	0.018	98.0	100.0	100.0
MEO005S042	1.36	227330	0.037	0.017	39.0	70.5	81.5
MEO005S043	1.318	264054PUd1	0.028	0.054	39.0	27.4	49.8
MEO005S043PV	0.383	264054PV1	0.013	0.054	98.0	100.0	100.0
MEO005S044	1.294	264054PU	0.051	0.022	39.0	31.1	49.5
MEO005S044PV	0.438	264054PV	0.027	0.022	98.0	100.0	100.0
MEO005S045	1.513	264058PU	0.037	0.033	39.0	33.4	50.0
MEO005S045PV	0.512	264058PV	0.020	0.033	98.0	100.0	100.0
MEO005S046	0.93	264213PU	0.025	0.047	39.0	57.1	64.8
MEO005S046PV	0.407	264213PV	0.021	0.047	98.0	100.0	100.0

Table A1 Hydrological Model Components							
SubCatchment Name	Area (ha)	Loading Node	Length (km)	Slope (m/m)	Pervious Area CN	Imp. Area ED (%)	Imp. Area MPD (%)
MEO005S047	0.8	264206PU	0.024	0.005	39.0	56.7	74.2
MEO005S047PV	0.364	264206PV2	0.021	0.005	98.0	100.0	100.0
MEO005S048	0.779	264080PU	0.025	0.030	39.0	43.2	49.5
MEO005S048PV	0.282	264080PV	0.014	0.030	98.0	100.0	100.0
MEO005S049	1.356	264024pud	0.018	0.062	39.0	52.6	57.5
MEO005S049PV	0.437	264024PV	0.010	0.062	98.0	100.0	100.0
MEO005S050	1.206	264082PU	0.035	0.047	39.0	21.5	54.3
MEO005S050PV	0.26	264082PV	0.012	0.047	98.0	100.0	100.0
MEO005S051	1.414	264033PU	0.054	0.107	39.0	35.7	53.4
MEO005S051PV	0.352	264033PV	0.022	0.107	98.0	100.0	100.0
MEO005S052	0.614	264025PU	0.040	0.100	39.0	28.9	50.3
MEO005S052PV	0.197	264025PV	0.021	0.100	98.0	100.0	100.0
MEO005S053	0.761	264038PUd2	0.021	0.103	39.0	24.8	49.9
MEO005S053PV	0.247	264038PV2	0.011	0.103	98.0	100.0	100.0
MEO005S054	1.081	264038PU	0.034	0.038	39.0	33.0	50.9
MEO005S054PV	0.337	264038PV	0.017	0.038	98.0	100.0	100.0
MEO005S055	1.081	264030PU	0.017	0.050	39.0	35.1	50.9
MEO005S055PV	0.352	264030PV2	0.009	0.050	98.0	100.0	100.0
MEO005S056	0.429	264030PUD	0.019	0.062	39.0	42.3	59.3
MEO005S056PV	0.098	264030PV	0.008	0.062	98.0	100.0	100.0
MEO005S057	1.151	264084PU	0.044	0.051	39.0	39.4	48.6
MEO005S057PV	0.477	264084PV	0.029	0.051	98.0	100.0	100.0
MEO005S058	1.322	264102PUd1	0.032	0.005	39.0	63.8	77.4
MEO005S058PV	0.364	264102PV1	0.016	0.005	98.0	100.0	100.0
MEO005S059	0.795	264102PU	0.018	0.020	39.0	55.6	70.0
MEO005S059PV	0.502	264102PV	0.023	0.020	98.0	100.0	100.0
MEO005S060	1.367	264024PUd2	0.041	0.039	39.0	36.5	51.6
MEO005S060PV	0.422	264024PV2	0.021	0.039	98.0	100.0	100.0
MEO005S061	0.774	264024PU	0.030	0.070	39.0	36.2	48.7
MEO005S061PV	0.269	264024PV3	0.016	0.070	98.0	100.0	100.0
MEO005S062	1.054	264035PU	0.029	0.067	39.0	40.1	55.9
MEO005S062PV	0.248	264035PV	0.012	0.067	98.0	100.0	100.0
MEO005S063	1.041	264036PU	0.032	0.086	39.0	50.3	57.8
MEO005S063PV	0.342	264036PV	0.018	0.086	98.0	100.0	100.0
MEO005S064	1.114	264046PU	0.055	0.027	39.0	30.5	49.7
MEO005S064PV	0.357	264046PV	0.028	0.027	98.0	100.0	100.0
MEO005S065	1.259	264043PU	0.024	0.097	39.0	20.8	52.6
MEO005S065PV	0.326	264043PV	0.010	0.097	98.0	100.0	100.0
MEO005S066	1.163	264041PU	0.052	0.042	39.0	30.6	53.9
MEO005S066PV	0.289	264041PV	0.021	0.042	98.0	100.0	100.0
MEO005S067	0.828	264211PU	0.019	0.030	39.0	43.0	62.4
MEO005S067PV	0.35	264211PV	0.015	0.030	98.0	100.0	100.0
MEO005S068	0.668	264209PUd1	0.011	0.060	39.0	35.3	50.3
MEO005S068PV	0.239	264209PV1	0.006	0.060	98.0	100.0	100.0
MEO005S069	1.095	264049PU	0.031	0.057	39.0	24.7	50.9
MEO005S069PV	0.317	264049PV	0.014	0.057	98.0	100.0	100.0
MEO005S070	0.833	264048PU	0.018	0.040	39.0	35.1	52.0
MEO005S070PV	0.282	264048PV	0.010	0.040	98.0	100.0	100.0
MEO005S071	1.085	264107pud	0.030	0.084	39.0	22.8	47.4
MEO005S071PV	0.338	264107PV	0.014	0.084	98.0	100.0	100.0
MEO005S072	1.468	264005PU	0.041	0.091	39.0	39.9	52.8
MEO005S072PV	0.443	264005PV	0.020	0.091	98.0	100.0	100.0
MEO005S073	1.132	264085PU	0.029	0.052	39.0	44.7	44.7
MEO005S073PV	0.598	264085PV	0.023	0.052	98.0	100.0	100.0
MEO005S074	1.112	264010PU	0.041	0.064	39.0	36.4	52.3

Table A1 Hydrological Model Components							
SubCatchment Name	Area (ha)	Loading Node	Length (km)	Slope (m/m)	Pervious Area CN	Imp. Area ED (%)	Imp. Area MPD (%)
MEO005S074PV	0.322	264010PV	0.019	0.064	98.0	100.0	100.0
MEO005S075	0.721	264010PUD3	0.019	0.063	39.0	38.2	51.6
MEO005S075PV	0.267	264010PV3	0.012	0.063	98.0	100.0	100.0
MEO005S076	0.963	264011PU	0.023	0.053	39.0	44.6	53.2
MEO005S076PV	0.27	264011PV2	0.010	0.053	98.0	100.0	100.0
MEO005S077	1.053	264086PU	0.047	0.034	39.0	36.0	50.1
MEO005S077PV	0.316	264086PV	0.023	0.034	98.0	100.0	100.0
MEO005S078	1.031	264109PUd2	0.023	0.064	39.0	22.7	53.8
MEO005S078PV	0.344	264109PV2	0.013	0.064	98.0	100.0	100.0
MEO005S079	0.965	264106PU	0.024	0.028	39.0	37.2	52.3
MEO005S079PV	0.345	264106PV	0.014	0.028	98.0	100.0	100.0
MEO005S080	0.703	264106PUd2	0.015	0.033	39.0	44.3	49.6
MEO005S080PV	0.296	264106PV2	0.010	0.033	98.0	100.0	100.0
MEO005S081	1.474	264087PU	0.034	0.028	39.0	38.9	52.8
MEO005S081PV	0.447	264087PV	0.017	0.028	98.0	100.0	100.0
MEO005S082	1.388	264094PU	0.050	0.057	39.0	30.4	52.4
MEO005S082PV	0.443	264094PV	0.026	0.057	98.0	100.0	100.0
MEO005S083	1.185	264117PUD	0.026	0.034	39.0	54.4	64.7
MEO005S083PV	0.465	264117PV	0.020	0.034	98.0	100.0	100.0
MEO005S084	1.163	264117pud1	0.024	0.045	39.0	39.6	50.2
MEO005S084PV	0.437	264117PV1	0.014	0.045	98.0	100.0	100.0
MEO005S085	1.006	264105PU	0.029	0.013	39.0	60.6	73.6
MEO005S085PV	0.494	264105PV	0.027	0.013	98.0	100.0	100.0
MEO005S086	1.437	264079PU	0.043	0.057	39.0	32.7	54.6
MEO005S086PV	0.3	264079PV	0.015	0.057	98.0	100.0	100.0
MEO005S087	0.911	264115PUd2	0.029	0.048	39.0	34.6	44.4
MEO005S087PV	0.13	264115PV2	0.006	0.048	98.0	100.0	100.0
MEO005S088	0.856	264109pu	0.021	0.045	39.0	58.7	68.2
MEO005S088PV	0.359	264109PV	0.018	0.045	98.0	100.0	100.0
MEO005S089	1.099	264009PUD2	0.045	0.074	39.0	33.8	48.3
MEO005S089PV	0.375	264009PV2	0.024	0.074	98.0	100.0	100.0
MEO005S090	1.521	264010PUD2	0.026	0.064	39.0	32.6	52.5
MEO005S090PV	0.416	264010PV2	0.012	0.064	98.0	100.0	100.0
MEO005S091	0.629	264009PU	0.023	0.084	39.0	20.8	51.4
MEO005S091PV	0.14	264009PV	0.008	0.084	98.0	100.0	100.0
MEO005S092	0.822	263520PU	0.047	0.005	39.0	50.1	50.8
MEO005S092PV	0.232	263520PV	0.021	0.005	98.0	100.0	100.0
MEO005S093	1.549	264011PU	0.035	0.069	39.0	45.0	55.0
MEO005S093PV	0.436	264011PV	0.017	0.069	98.0	100.0	100.0
MEO005S094	1.121	264004PU	0.025	0.111	39.0	37.6	51.5
MEO005S094PV	0.297	264004PV	0.011	0.111	98.0	100.0	100.0
MEO005S095	0.679	264344PUd2	0.028	0.011	39.0	60.9	71.3
MEO005S095PV	0.796	264344PV2	0.065	0.011	98.0	100.0	100.0
MEO005S096	1.333	264346PU	0.030	0.037	39.0	40.3	57.4
MEO005S096PV	0.543	264346PV	0.021	0.037	98.0	100.0	100.0
MEO005S097	1.265	264348PU	0.046	0.041	39.0	35.8	49.7
MEO005S097PV	0.402	264348PV	0.023	0.041	98.0	100.0	100.0
MEO005S098	1.163	264343PU	0.074	0.041	39.0	36.7	51.2
MEO005S098PV	0.364	264343PV	0.037	0.041	98.0	100.0	100.0
MEO005S099	1.331	228123	0.033	0.018	39.0	55.6	65.6
MEO005S100	0.904	227980	0.054	0.019	39.0	54.0	63.9
MEO005S101	1.859	228123	0.056	0.013	39.0	87.4	87.4
MEO005S102	0.369	264344PUd3	0.015	0.047	39.0	76.7	88.3
MEO005S102PV	0.471	264344PV3	0.030	0.047	98.0	100.0	100.0
MEO005S103	1.541	228028	0.017	0.043	73.6	68.1	75.6

Table A1 Hydrological Model Components							
SubCatchment Name	Area (ha)	Loading Node	Length (km)	Slope (m/m)	Pervious Area CN	Imp. Area ED (%)	Imp. Area MPD (%)
MEO005S104	1.813	EdenPark1	0.045	0.044	39.8	29.7	76.2
MEO005S105	1.499	228118	0.037	0.105	65.3	64.5	64.9
MEO005S106	1.64	423220	0.038	0.120	70.9	45.2	52.5
MEO005S107	1.168	228028	0.034	0.134	72.6	46.3	58.3
MEO005S108	1.83	226578	0.073	0.049	39.0	74.0	74.9
MEO005S109	1.594	228012	0.035	0.003	39.0	31.5	74.0
MEO005S110	0.805	264218PU	0.032	0.034	39.0	27.3	43.3
MEO005S110PV	0.37	264218PV	0.022	0.034	98.0	100.0	100.0
MEO005S111	1.157	264222PUd3	0.027	0.039	39.0	76.9	76.9
MEO005S111PV	0.406	264222PV3	0.017	0.039	98.0	100.0	100.0
MEO005S112	1.069	264222PUd2	0.036	0.030	39.0	82.8	82.8
MEO005S112PV	0.104	264222PV2	0.006	0.030	98.0	100.0	100.0
MEO005S113	0.636	264149PU	0.035	0.034	39.0	34.0	57.3
MEO005S113PV	0.184	264149PV	0.017	0.034	98.0	100.0	100.0
MEO006S001	1.528	4.1	0.073	0.026	39.0	32.2	38.5
MEO006S002	1.424	10.1	0.082	0.097	39.6	20.0	32.1
MEO006S003	1.509	14.1	0.103	0.131	74.0	0.0	7.7
MEO006S004	0.918	17.1	0.035	0.053	39.0	56.2	73.5
MEO006S005	1.357	11	0.129	0.156	74.0	0.0	9.7
MEO006S006	1.8	13.1	0.101	0.092	74.0	0.0	7.1
MEO006S007	0.936	15.1	0.032	0.042	74.0	0.0	7.8
MEO006S008	1.258	12.1	0.079	0.104	74.0	0.0	8.1
MEO006S009	1.947	16.1	0.057	0.014	65.7	60.2	74.5
MEO006S010	1.192	17.1	0.060	0.126	39.0	20.4	44.8
MEO006S011	0.956	18.1	0.026	0.170	74.0	0.0	64.8
MEO006S012	1.795	16.1	0.110	0.107	66.9	8.0	64.0
MEO006S013	1.381	15.1	0.033	0.075	74.0	0.0	56.5
MEO006S014	1.141	23	0.038	0.008	74.0	59.7	70.0
MEO006S015	1.48	38.1	0.069	0.186	74.0	4.3	63.9
MEO006S016	1.331	38.1	0.069	0.009	74.0	25.4	71.6
MEO006S017	1.133	19.1	0.037	0.008	74.0	3.7	67.4
MEO006S018	1.083	20.1	0.073	0.019	74.0	0.0	51.2
MEO006S019	1.018	10.1	0.035	0.017	39.0	5.2	15.0
MEO006S020	0.782	30.1	0.028	0.102	39.0	24.5	74.6
MEO006S021	0.817	62	0.149	0.033	39.0	18.1	28.6
MEO006S022	1.218	17.1	0.043	0.055	39.0	54.4	76.7
MEO006S023	1.801	16.1	0.092	0.062	65.2	0.0	53.8
MEO007S001	2.02	378597	0.121	0.018	39.0	37.7	74.0
MEO007S002	1.148	229228	0.021	0.050	39.0	56.6	60.0
MEO007S003	1.181	392857	0.046	0.029	39.0	59.6	76.6
MEO007S004	0.905	392857	0.045	0.030	39.0	74.1	85.2
MEO007S005	1.979	392857	0.047	0.039	39.0	51.1	61.1
MEO007S006	0.92	264459PU	0.036	0.034	39.0	26.9	44.7
MEO007S006PV	0.297	264459PV	0.018	0.034	98.0	100.0	100.0
MEO007S007	0.61	264497PU	0.025	0.035	39.0	45.6	47.3
MEO007S007PV	0.067	264497PV	0.004	0.035	98.0	100.0	100.0
MEO007S008	1.154	192677PU	0.058	0.108	39.0	21.9	36.6
MEO007S008PV	0.259	192677PV	0.019	0.108	98.0	100.0	100.0
MEO007S009	1.17	264490PUd2	0.054	0.052	39.0	25.1	39.4
MEO007S009PV	0.196	264490PV2	0.013	0.052	98.0	100.0	100.0
MEO007S010	1.231	420154	0.067	0.061	39.0	9.7	43.4
MEO007S011	1.305	420154	0.041	0.050	39.0	25.5	64.8
MEO007S012	0.94	264485PUd5	0.025	0.021	39.0	36.2	50.4
MEO007S012PV	0.285	264485PV5	0.013	0.021	98.0	100.0	100.0
MEO007S013	1.23	420160	0.041	0.031	39.0	41.5	74.5

Table A1 Hydrological Model Components							
SubCatchment Name	Area (ha)	Loading Node	Length (km)	Slope (m/m)	Pervious Area CN	Imp. Area ED (%)	Imp. Area MPD (%)
MEO007S014	0.66	264485PU	0.018	0.044	39.0	58.9	64.5
MEO007S014PV	0.178	264485PV	0.009	0.044	98.0	100.0	100.0
MEO007S015	0.464	264431PU	0.028	0.043	39.0	35.8	50.9
MEO007S015PV	0.121	264431PV	0.012	0.043	98.0	100.0	100.0
MEO007S016	1.037	264429pud	0.033	0.055	39.0	9.1	51.9
MEO007S016PV	0.147	264429PV	0.008	0.055	98.0	100.0	100.0
MEO007S017	0.883	264429PUd2	0.025	0.085	39.0	27.6	48.2
MEO007S017PV	0.244	264429PV2	0.011	0.085	98.0	100.0	100.0
MEO007S018	0.636	264433PU	0.052	0.050	39.0	36.4	53.0
MEO007S018PV	0.18	264433PV	0.025	0.050	98.0	100.0	100.0
MEO007S019	0.949	264428PU	0.031	0.019	39.0	61.5	61.5
MEO007S019PV	0.209	264428PV	0.013	0.019	98.0	100.0	100.0
MEO007S020	0.703	264442PU	0.027	0.036	39.0	64.6	64.6
MEO007S020PV	0.174	264442PV	0.013	0.036	98.0	100.0	100.0
MEO007S021	0.87	264445PU	0.040	0.035	39.0	95.8	95.8
MEO007S021PV	0.249	264445PV	0.017	0.035	98.0	100.0	100.0
MEO007S022	1.089	229223	0.037	0.021	39.0	50.5	63.0
MEO007S023	1.199	264427PU	0.035	0.033	39.0	42.6	47.7
MEO007S023PV	0.325	264427PV	0.015	0.033	98.0	100.0	100.0
MEO007S024	0.843	264426PU	0.029	0.021	39.0	91.7	91.7
MEO007S024PV	0.198	264426PV	0.010	0.021	98.0	100.0	100.0
MEO007S025	1.299	264434PU	0.048	0.063	39.0	35.9	49.6
MEO007S025PV	0.418	264434PV	0.025	0.063	98.0	100.0	100.0
MEO007S026	1.093	229228	0.030	0.017	39.0	61.7	66.9
MEO007S027	1.226	264478PU	0.041	0.032	39.0	28.6	51.7
MEO007S027PV	0.191	264478PV	0.011	0.032	98.0	100.0	100.0
MEO007S028	0.491	264472PU	0.027	0.054	39.0	42.9	49.3
MEO007S028PV	0.132	264472PV	0.012	0.054	98.0	100.0	100.0
MEO007S029	1.414	264477PU	0.039	0.029	39.0	36.4	44.9
MEO007S029PV	0.481	264477PV	0.021	0.029	98.0	100.0	100.0
MEO007S030	1.631	264476PU	0.070	0.048	39.0	29.1	39.9
MEO007S030PV	0.24	264476PV	0.015	0.048	98.0	100.0	100.0
MEO007S031	0.983	264480PU	0.026	0.037	39.0	29.4	44.2
MEO007S031PV	0.313	264480PV	0.013	0.037	98.0	100.0	100.0
MEO007S032	1.477	264485PUd6	0.056	0.038	39.0	36.4	50.3
MEO007S032PV	0.5	264485PV6	0.032	0.038	98.0	100.0	100.0
MEO007S033	0.884	264485PUd2	0.031	0.039	39.0	44.1	44.1
MEO007S033PV	0.349	264485PV2	0.019	0.039	98.0	100.0	100.0
MEO007S034	1.207	264459PUd2	0.024	0.027	39.0	28.1	38.2
MEO007S034PV	0.299	264459PV2	0.008	0.027	98.0	100.0	100.0
MEO007S035	0.817	264485PUd3	0.056	0.050	39.0	37.3	46.6
MEO007S035PV	0.264	264485PV3	0.029	0.050	98.0	100.0	100.0
MEO007S036	1.017	264483PU	0.065	0.023	39.0	32.2	44.9
MEO007S036PV	0.343	264483PV	0.035	0.023	98.0	100.0	100.0
MEO007S037	1.964	378597	0.026	0.029	39.0	57.1	59.4
MEO007S038	0.398	264490PU	0.024	0.034	39.0	36.0	46.4
MEO007S038PV	0.12	264490PV	0.011	0.034	98.0	100.0	100.0
MEO007S039	0.78	264485PUd4	0.028	0.027	39.0	33.4	45.2
MEO007S039PV	0.28	264485PV4	0.016	0.027	98.0	100.0	100.0
MEO007S040	1.241	264504PU	0.050	0.031	39.0	22.3	36.4
MEO007S040PV	0.176	264504PV	0.010	0.031	98.0	100.0	100.0
MEO007S041	0.989	264503PU	0.084	0.040	39.0	34.2	34.8
MEO007S041PV	0.16	264503PV	0.019	0.040	98.0	100.0	100.0
MEO007S042	1.719	392857	0.054	0.004	39.0	65.7	82.3
MEO007S043	0.989	264469PU	0.028	0.089	39.0	9.8	75.6

Table A1 Hydrological Model Components							
SubCatchment Name	Area (ha)	Loading Node	Length (km)	Slope (m/m)	Pervious Area CN	Imp. Area ED (%)	Imp. Area MPD (%)
MEO007S043PV	0.496	264469PV	0.026	0.089	98.0	100.0	100.0
MEO007S044	0.562	264503PUd2	0.036	0.029	39.0	40.5	52.4
MEO007S044PV	0.106	264503PV2	0.011	0.029	98.0	100.0	100.0
MEO007S045	1.861	229239	0.054	0.062	39.0	53.4	70.8
MEO007S046	0.688	1926773	0.032	0.050	39.0	33.5	42.6
MEO007S047	1.355	264519PU	0.040	0.096	39.0	24.1	36.1
MEO007S047PV	0.362	264519PV	0.017	0.096	98.0	100.0	100.0
MEO007S048	0.841	264532PU	0.023	0.045	39.0	36.6	42.2
MEO007S048PV	0.24	264532PV	0.010	0.045	98.0	100.0	100.0
MEO007S049	1.065	264534PU	0.059	0.058	39.0	35.8	43.5
MEO007S049PV	0.316	264534PV	0.027	0.058	98.0	100.0	100.0
MEO007S050	0.837	Dummy1.1	0.008	0.097	39.0	50.5	58.3
MEO007S051	0.697	264534PUd2	0.019	0.074	39.0	37.4	49.1
MEO007S051PV	0.185	264534PV2	0.008	0.074	98.0	100.0	100.0
MEO007S052	0.771	264486pud	0.013	0.030	39.0	25.9	37.7
MEO007S052PV	0.242	264486PV	0.006	0.030	98.0	100.0	100.0
MEO007S053	0.705	264532PUd2	0.011	0.046	39.0	35.8	36.4
MEO007S053PV	0.26	264532PV2	0.006	0.046	98.0	100.0	100.0
MEO007S054	0.656	264536pud	0.029	0.049	39.0	34.5	42.9
MEO007S054PV	0.203	264536PV	0.014	0.049	98.0	100.0	100.0
MEO007S055	1.249	229059	0.061	0.023	39.0	84.5	84.5
MEO007S056	1.039	264489PU	0.053	0.021	39.0	37.0	41.0
MEO007S056PV	0.368	264489PV	0.028	0.021	98.0	100.0	100.0
MEO007S057	1.063	264425PUd2	0.024	0.030	39.0	54.2	61.0
MEO007S057PV	0.343	264425PV2	0.015	0.030	98.0	100.0	100.0
MEO007S058	0.729	264425PU	0.020	0.047	39.0	47.7	65.8
MEO007S058PV	0.195	264425PV	0.011	0.047	98.0	100.0	100.0
MEO007S059	0.707	264447PU	0.037	0.041	39.0	26.0	32.5
MEO007S059PV	0.234	264447PV	0.020	0.041	98.0	100.0	100.0
MEO007S060	1.008	264483PUd2	0.037	0.055	39.0	43.4	43.4
MEO007S060PV	0.385	264483PV2	0.022	0.055	98.0	100.0	100.0
MEO007S061	1.27	264470PUd2	0.039	0.053	39.0	41.0	46.0
MEO007S061PV	0.419	264470PV2	0.020	0.053	98.0	100.0	100.0
MEO007S062	1.174	264536PUd2	0.031	0.065	39.0	32.2	42.6
MEO007S062PV	0.308	264536PV2	0.012	0.065	98.0	100.0	100.0
MEO007S063	1.187	264470PUd3	0.024	0.049	39.0	44.4	48.7
MEO007S063PV	0.406	264470PV3	0.013	0.049	98.0	100.0	100.0
MEO007S064	0.631	264487PU	0.037	0.032	39.0	30.4	41.6
MEO007S064PV	0.187	264487PV	0.017	0.032	98.0	100.0	100.0
MEO007S065	0.931	264470PU	0.050	0.035	39.0	37.3	45.1
MEO007S065PV	0.291	264470PV	0.025	0.035	98.0	100.0	100.0
MEO008S001	1.241	264460PU	0.039	0.013	39.0	16.4	62.3
MEO008S001PV	0.157	264460PV	0.009	0.013	98.0	100.0	100.0
MEO008S002	1.191	264506PU	0.050	0.032	39.0	39.8	47.7
MEO008S002PV	0.223	264506PV	0.015	0.032	98.0	100.0	100.0
MEO008S003	1.116	264502PU	0.042	0.016	39.0	23.4	38.5
MEO008S003PV	0.075	264502PV	0.004	0.016	98.0	100.0	100.0
MEO008S004	1.665	100	0.032	0.063	69.6	14.3	26.4
MEO008S005	1.767	229130	0.055	0.021	39.0	37.1	50.6
MEO008S006	1.745	377548	0.071	0.012	39.0	13.6	19.3
MEO008S007	1.394	229130	0.027	0.082	55.3	19.2	19.2
MEO008S008	0.994	229130	0.028	0.087	39.0	8.7	17.0
MEO008S009	0.973	229130	0.020	0.090	50.0	8.1	20.7
MEO008S010	0.743	229130	0.028	0.039	39.0	0.0	17.1
MEO008S011	0.944	229130	0.027	0.083	52.0	24.1	24.1

Table A1 Hydrological Model Components							
SubCatchment Name	Area (ha)	Loading Node	Length (km)	Slope (m/m)	Pervious Area CN	Imp. Area ED (%)	Imp. Area MPD (%)
MEO008S012	1.448	229130	0.072	0.026	39.0	12.4	17.0
MEO008S013	1.266	377548	0.040	0.039	60.3	15.0	20.7
MEO008S014	0.606	264463PU	0.026	0.025	39.0	40.9	48.0
MEO008S014PV	0.057	264463PV	0.004	0.025	98.0	100.0	100.0
MEO008S015	1.851	229154	0.079	0.020	39.0	44.3	58.7
MEO008S016	1.269	229154	0.034	0.042	39.0	31.6	49.1
MEO008S017	1.643	264508PU	0.059	0.023	53.0	31.6	50.4
MEO008S017PV	0.307	264508PV	0.018	0.023	98.0	100.0	100.0
MEO008S018	0.812	377548	0.015	0.041	39.0	44.8	54.1
MEO008S019	1.696	228185	0.057	0.035	74.0	78.9	92.9
MEO008S020	0.66	264430PU	0.020	0.019	39.0	69.7	69.7
MEO008S020PV	0.173	264430PV	0.011	0.019	98.0	100.0	100.0
MEO008S021	1.045	264465PU	0.028	0.036	39.0	38.7	42.3
MEO008S021PV	0.08	264465PV2	0.003	0.036	98.0	100.0	100.0
MEO008S022	1.071	264466PU	0.039	0.032	39.0	29.5	39.1
MEO008S022PV	0.224	264466PV	0.012	0.032	98.0	100.0	100.0
MEO008S023	0.887	264465pud	0.060	0.030	39.0	17.5	30.9
MEO008S023PV	0.174	264465PV	0.016	0.030	98.0	100.0	100.0
MEO008S024	0.617	229149	0.028	0.044	39.0	34.5	46.0
MEO008S025	1.022	264461pud	0.032	0.009	39.0	27.9	42.5
MEO008S025PV	0.259	264461PV	0.012	0.009	98.0	100.0	100.0
MEO008S026	1.146	264461PUd3	0.026	0.027	39.0	10.1	48.3
MEO008S026PV	0.191	264461PV3	0.007	0.027	98.0	100.0	100.0
MEO008S027	1.161	378362	0.073	0.056	39.0	34.1	45.1
MEO008S028	1.258	264462PU	0.079	0.059	39.1	28.0	42.7
MEO008S028PV	0.234	264462PV	0.022	0.059	98.0	100.0	100.0
MEO008S029	0.961	264452PU	0.034	0.048	46.8	37.9	51.2
MEO008S029PV	0.307	264452PV2	0.018	0.048	98.0	100.0	100.0
MEO008S030	1.11	378362	0.042	0.024	39.0	28.4	40.3
MEO008S031	0.929	264453PUD	0.024	0.038	73.9	35.2	48.5
MEO008S031PV	0.289	264453PV	0.012	0.038	98.0	100.0	100.0
MEO008S032	1.146	264464PU	0.039	0.064	70.1	25.2	43.7
MEO008S032PV	0.298	264464PV	0.015	0.064	98.0	100.0	100.0
MEO008S033	1.077	264452PUD	0.015	0.122	74.0	29.6	51.7
MEO008S033PV	0.29	264452PV	0.007	0.122	98.0	100.0	100.0
MEO008S034	0.953	228185	0.019	0.020	74.0	57.5	70.2
MEO008S035	1.235	264344PU	0.029	0.013	59.6	56.6	70.7
MEO008S035PV	0.732	264344PV	0.034	0.013	98.0	100.0	100.0
MEO008S036	1.674	377948	0.052	0.071	65.5	66.0	66.0
MEO008S037	1.652	228213	0.090	0.010	39.1	88.1	93.8
MEO008S038	0.953	228213	0.032	0.047	39.0	89.5	96.0
MEO008S039	1.386	228185	0.049	0.004	74.0	52.0	56.0
MEO008S040	1.091	228185	0.063	0.005	62.6	80.5	93.3
MEO008S041	1.687	226597	0.060	0.021	39.0	88.1	91.5
MEO008S042	1.351	264419PUd3	0.024	0.039	39.0	48.0	65.5
MEO008S042PV	0.43	264419PV3	0.015	0.039	98.0	100.0	100.0
MEO008S043	0.907	264420PU	0.024	0.015	39.0	82.5	86.0
MEO008S043PV	0.42	264420PV	0.018	0.015	98.0	100.0	100.0
MEO008S044	0.517	264419PU	0.015	0.049	39.0	77.5	81.1
MEO008S044PV	0.621	264419PV	0.031	0.049	98.0	100.0	100.0
MEO008S045	0.797	264419PUd2	0.019	0.038	39.0	61.9	83.4
MEO008S045PV	0.939	264419PV2	0.037	0.038	98.0	100.0	100.0
MEO008S046	1.241	377973	0.086	0.008	66.1	70.1	74.1
MEO008S047	0.787	264454PU	0.020	0.031	47.9	38.4	62.4
MEO008S047PV	0.17	264454PV	0.008	0.031	98.0	100.0	100.0

Table A1 Hydrological Model Components							
SubCatchment Name	Area (ha)	Loading Node	Length (km)	Slope (m/m)	Pervious Area CN	Imp. Area ED (%)	Imp. Area MPD (%)
MEO008S048	1.022	264460PUd2	0.020	0.010	41.7	62.1	64.8
MEO008S048PV	0.37	264460PV2	0.015	0.010	98.0	100.0	100.0
MEO008S049	1.017	264420PUd2	0.017	0.027	39.0	47.6	65.0
MEO008S049PV	0.113	264420PV2	0.004	0.027	98.0	100.0	100.0
MEO008S050	0.6	264430PUd2	0.011	0.015	39.0	23.6	48.2
MEO008S050PV	0.168	264430PV2	0.005	0.015	98.0	100.0	100.0
MEO008S051	1.048	264461PU	0.022	0.022	39.0	55.1	60.6
MEO008S051PV	0.182	264461PV2	0.007	0.022	98.0	100.0	100.0
MEO008S052	0.72	264444PU	0.015	0.050	39.0	62.4	70.1
MEO008S052PV	0.031	264444PV	0.001	0.050	98.0	100.0	100.0
MEO009S001	0.888	264526PU	0.018	0.053	39.0	24.2	37.5
MEO009S001PV	0.218	264526PV	0.007	0.053	98.0	100.0	100.0
MEO009S002	1.79	226791	0.054	0.049	39.0	43.1	55.3
MEO009S003	0.811	226792	0.026	0.048	39.0	39.4	43.6
MEO009S004	0.794	226793	0.062	0.027	39.0	34.3	45.6
MEO009S005	0.808	378391	0.015	0.068	39.0	49.0	56.5
MEO009S006	0.696	192673	0.025	0.043	39.0	38.6	54.3
MEO009S007	1.245	378391	0.029	0.063	39.0	43.5	56.3
MEO009S009	1.304	264529PUd2	0.070	0.022	39.0	29.5	33.0
MEO009S009PV	0.246	264529PV2	0.020	0.022	98.0	100.0	100.0
MEO009S010	1.166	264533PU	0.033	0.019	39.0	31.3	34.4
MEO009S010PV	0.373	264533PV	0.016	0.019	98.0	100.0	100.0
MEO009S011	0.678	264529PUd3	0.023	0.015	39.0	29.6	35.4
MEO009S011PV	0.249	264529PV3	0.013	0.015	98.0	100.0	100.0
MEO009S012	0.831	264528PU	0.025	0.055	39.0	47.6	51.5
MEO009S012PV	0.302	264528PV	0.018	0.055	98.0	100.0	100.0
MEO009S013	0.698	264529PU	0.025	0.025	39.0	42.2	42.2
MEO009S013PV	0.188	264529PV	0.011	0.025	98.0	100.0	100.0
MEO009S014	0.751	264526PUd2	0.055	0.095	39.0	36.1	36.2
MEO009S014PV	0.247	264526PV2	0.028	0.095	98.0	100.0	100.0
MEO009S015	1.785	229677	0.027	0.050	39.0	62.1	66.2
MEO009S016	0.697	229677	0.031	0.005	39.0	39.2	41.2
MEO009S017	1.211	229594	0.105	0.054	39.0	52.8	55.8
MEO009S018	1.477	229578	0.025	0.057	39.0	40.4	51.1
MEO009S019	1.189	229594	0.046	0.049	39.0	49.8	49.8
MEO009S020	0.528	229538	0.008	0.070	39.0	61.8	66.0
MEO009S021	1.701	226805	0.128	0.076	39.0	42.7	49.6
MEO009S022	1.206	226792	0.038	0.074	39.0	53.6	55.7
MEO009S023	1.743	229595	0.024	0.038	39.0	30.5	59.7
MEO009S024	0.995	229595	0.017	0.030	39.0	54.4	61.0
MEO009S025	0.789	264486PUd2	0.024	0.032	39.0	26.7	35.9
MEO009S025PV	0.228	264486PV2	0.010	0.032	98.0	100.0	100.0
MEO009S026	1.253	229595	0.016	0.056	39.0	42.4	50.8
MEO009S027	1.315	229595	0.027	0.032	39.0	42.2	50.4
MEO009S028	1.561	420101	0.018	0.034	39.0	34.5	51.6
MEO009S029	1.337	420101	0.023	0.045	39.0	45.8	54.9
MEO009S030	0.615	264484PU	0.037	0.025	39.0	18.3	30.8
MEO009S030PV	0.173	264484PV	0.015	0.025	98.0	100.0	100.0
MEO009S031	1.911	61.1	0.037	0.049	39.0	37.4	49.2
MEO009S032	1.731	61.1	0.030	0.035	39.0	35.9	54.4
MEO009S033	1.856	192674	0.098	0.026	39.0	45.6	57.2
MEO009S034	0.933	226764	0.014	0.012	41.0	39.3	52.7
MEO009S035	1.843	226795	0.079	0.054	39.0	38.4	49.4
MEO009S036	1.859	226798	0.065	0.056	39.0	40.3	49.7
MEO009S037	0.619	192676	0.015	0.037	39.0	34.8	46.9

Table A1 Hydrological Model Components							
SubCatchment Name	Area (ha)	Loading Node	Length (km)	Slope (m/m)	Pervious Area CN	Imp. Area ED (%)	Imp. Area MPD (%)
MEO009S038	1.744	378657	0.030	0.026	39.0	48.4	57.7
MEO009S039	1.853	226723	0.073	0.023	39.0	48.5	61.3
MEO009S040	1.463	377571	0.025	0.036	39.0	40.1	56.6
MEO009S041	1.102	377571	0.032	0.031	58.6	43.8	55.5
MEO009S042	1.651	57.1	0.061	0.017	39.0	54.3	61.9
MEO009S043	1.77	43.1	0.041	0.038	39.0	41.6	52.5
MEO009S044	1.155	226722	0.028	0.055	39.0	45.6	53.9
MEO009S045	0.776	57.1	0.034	0.041	39.0	53.8	60.3
MEO009S046	1.062	43.1	0.062	0.049	39.5	39.6	51.4
MEO009S047	1.012	226725	0.023	0.029	48.0	45.6	55.2
MEO009S048	1.715	226703	0.106	0.014	39.0	34.8	46.9
MEO009S049	1.733	192676	0.028	0.053	39.0	39.8	53.1
MEO009S054	1.435	264530PU	0.035	0.036	39.0	28.3	36.7
MEO009S054PV	0.456	264530PV	0.018	0.036	98.0	100.0	100.0
MEO009S056	0.901	61.1	0.024	0.049	39.0	42.3	54.4
MEO009S057	0.788	229551	0.012	0.040	39.0	68.0	71.0
MEO010S001	1.484	226964	0.051	0.006	61.2	35.6	70.4
MEO010S002	1.897	417728	0.023	0.051	59.0	19.2	50.1
MEO010S003	1.827	227080	0.052	0.042	62.0	71.3	71.3
MEO010S004	1.165	227097	0.022	0.141	72.9	74.9	77.0
MEO010S005	1.243	377619	0.036	0.025	61.0	78.6	82.9
MEO010S006	1.153	226840	0.044	0.024	61.0	51.5	58.4
MEO010S007	1.314	417728	0.031	0.044	61.0	60.1	60.1
MEO010S008	1.437	30.1	0.051	0.075	45.6	33.9	64.4
MEO010S009	1.269	377585	0.023	0.057	51.2	38.1	59.5
MEO010S010	1.413	417728	0.081	0.023	54.3	45.2	52.7
MEO010S011	1.804	227076	0.048	0.022	61.0	80.3	82.2
MEO010S012	1.007	417728	0.033	0.049	61.0	27.9	49.5
MEO010S013	1.75	28.1	0.024	0.068	62.9	32.5	48.1
MEO010S014	1.839	377578	0.110	0.033	73.8	33.4	47.2
MEO010S015	1.992	227015	0.091	0.020	54.4	22.7	29.4
MEO010S016	1.644	227074	0.042	0.011	61.1	47.1	50.0
MEO010S017	1.474	227074	0.051	0.072	61.0	36.9	45.9
MEO010S018	0.611	377604	0.014	0.039	61.0	38.0	48.9
MEO010S019	1.019	227098	0.036	0.018	70.6	46.2	61.2
MEO010S020	1.473	32.1	0.067	0.052	54.0	6.1	12.8
MEO010S021	0.82	226993	0.020	0.061	74.0	30.8	61.0
MEO010S022	1.606	226830	0.022	0.081	61.8	51.2	65.2
MEO010S023	1.026	29.1	0.046	0.081	60.1	17.4	32.4
MEO010S024	1.338	29.1	0.077	0.061	59.8	23.4	35.2
MEO010S025	1.541	226961	0.042	0.043	72.3	47.3	72.4
MEO010S026	1.939	226993	0.049	0.030	70.4	59.6	70.1
MEO010S027	0.867	226961	0.048	0.044	74.0	61.3	74.5
MEO010S028	1.748	226960	0.041	0.015	69.3	53.4	67.4
MEO010S029	1.112	226960	0.024	0.031	63.8	45.2	73.2
MEO010S030	0.764	226960	0.015	0.021	74.0	73.0	74.5
MEO010S031	1.505	42.1	0.043	0.037	74.0	29.9	44.4
MEO010S032	0.655	192681	0.048	0.059	74.0	18.9	37.3
MEO010S033	0.777	192683	0.021	0.055	61.0	54.4	56.0
MEO010S034	0.593	33.1	0.018	0.155	67.6	21.0	42.5
MEO011S001	1.945	27.1	0.073	0.031	39.0	0.0	20.0
MEO011S002	1.541	25	0.068	0.015	39.0	0.3	19.9
MEO011S003	1.755	26.1	0.064	0.017	39.0	0.0	20.0
MEO011S004	1.515	27.1	0.133	0.051	39.0	0.0	19.6
MEO011S005	0.887	29.1	0.032	0.016	39.0	0.0	20.0

Table A1 Hydrological Model Components							
SubCatchment Name	**Area (ha)**	**Loading Node**	**Length (km)**	**Slope (m/m)**	**Pervious Area CN**	**Imp. Area ED (%)**	**Imp. Area MPD (%)**
MEO011S006	1.861	192683	0.160	0.093	45.6	0.6	19.9
MEO011S007	0.855	377578	0.071	0.220	54.7	0.6	19.8
MEO011S008	1.035	26.1	0.023	0.087	39.0	0.8	20.0
MEO011S009	1.439	31.1	0.047	0.036	39.0	11.0	26.5
MEO011S010	1.275	227015	0.071	0.049	39.0	1.7	20.0
MEO011S011	1.153	31.1	0.049	0.078	39.0	15.4	28.2
MEO011S012	1.333	25	0.086	0.034	39.0	1.2	20.1
MEO011S013	1.211	25	0.049	0.016	39.0	32.4	43.2
MEO011S014	1.622	25	0.170	0.021	39.0	5.6	23.0
MEO011S015	1.085	25	0.067	0.041	39.0	0.0	20.0
MEO011S016	0.754	25	0.034	0.012	39.0	0.0	20.0
MEO011S017	1.563	53.1	0.058	0.043	39.0	53.6	68.2
MEO011S018	0.922	54.1	0.023	0.039	39.0	34.1	56.5
MEO011S019	1.522	53.1	0.091	0.041	39.0	53.2	57.8
MEO011S020	0.599	54.1	0.027	0.020	39.0	17.9	36.0
MEO011S021	1.603	27.1	0.039	0.034	39.0	0.6	20.0
MEO011S022	1.886	54.1	0.086	0.034	39.0	0.8	19.9
MEO011S023	1.413	54.1	0.154	0.037	39.0	9.7	24.2
MEO011S024	0.59	28.1	0.061	0.062	44.9	0.0	20.0

B

Appendix B Basis of Meola Revised Flow Gauge Rating Curve

Memo

17/01/2014

To: Nick Brown

cc: Simon Mathews, Tim Lockie

From: Kris Fordham

Subject: Meola Flow FHM

The Meola flow record has recently come under question due to this data being compared to the Flood Hazard Model (FHM) in the catchment.

There are limitations with the flow rating as it currently stands. The top end of the rating being based on only a few gaugings of dubious quality has created a degree of uncertainty in terms of its high stage accuracy. Because of this uncertainty there is concern for the flow record as a comparison to the model output.

The following outlines the thought process and reasoning behind the provisional changes to the Meola rating.
A stage discharge rating in the majority of cases works well for defining stream flow, however the development and quality of these ratings is governed by the range of flows gauged and the quality of each individual gauging.
Generally there is little emphasis in terms of the number of gauging at the top end of a rating and in most cases these ratings are extrapolated using various techniques and assumptions of stream conditions. These assumptions have errors that will propagate into a flow record.

The Meola flow site has 68 gaugings on record with only 4 of these above 1 m in stage. These 4 gaugings anchor the top end of the rating although there is some doubt as to the accuracy of these gaugings, however they are given weight due to the fact that it is the only information available. Fortunately RIMU have begun to look at the validity of the top end of this rating and have recently (3 weeks old) installed an Acoustic Discharge Velocity(ADV) meter at this site. Although no significant events have been experienced at the site since there seems to be a difference in rated flow(stage discharge) and measured flow using a theoretical velocity area calculation from the ADV, see figure 1

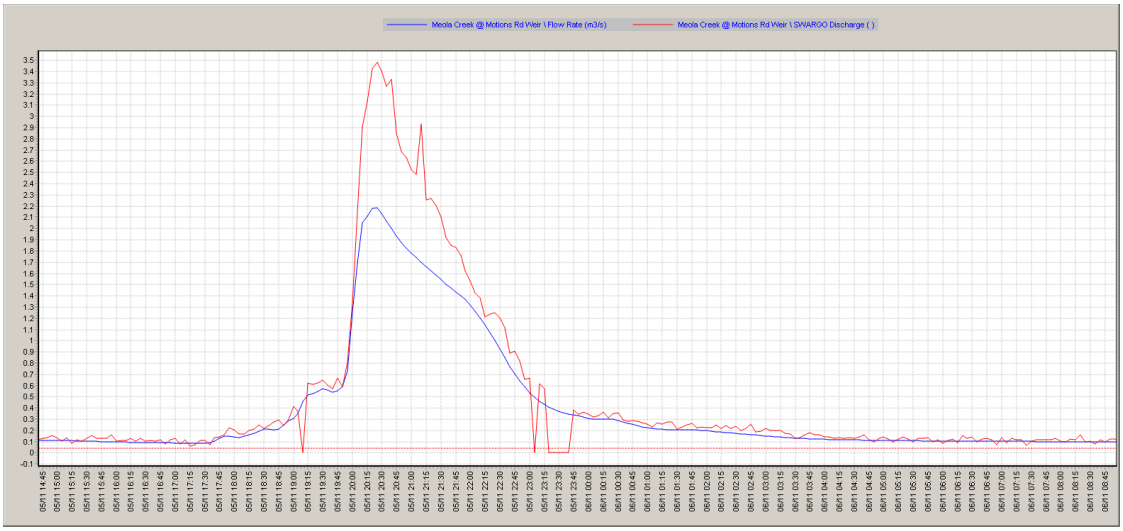


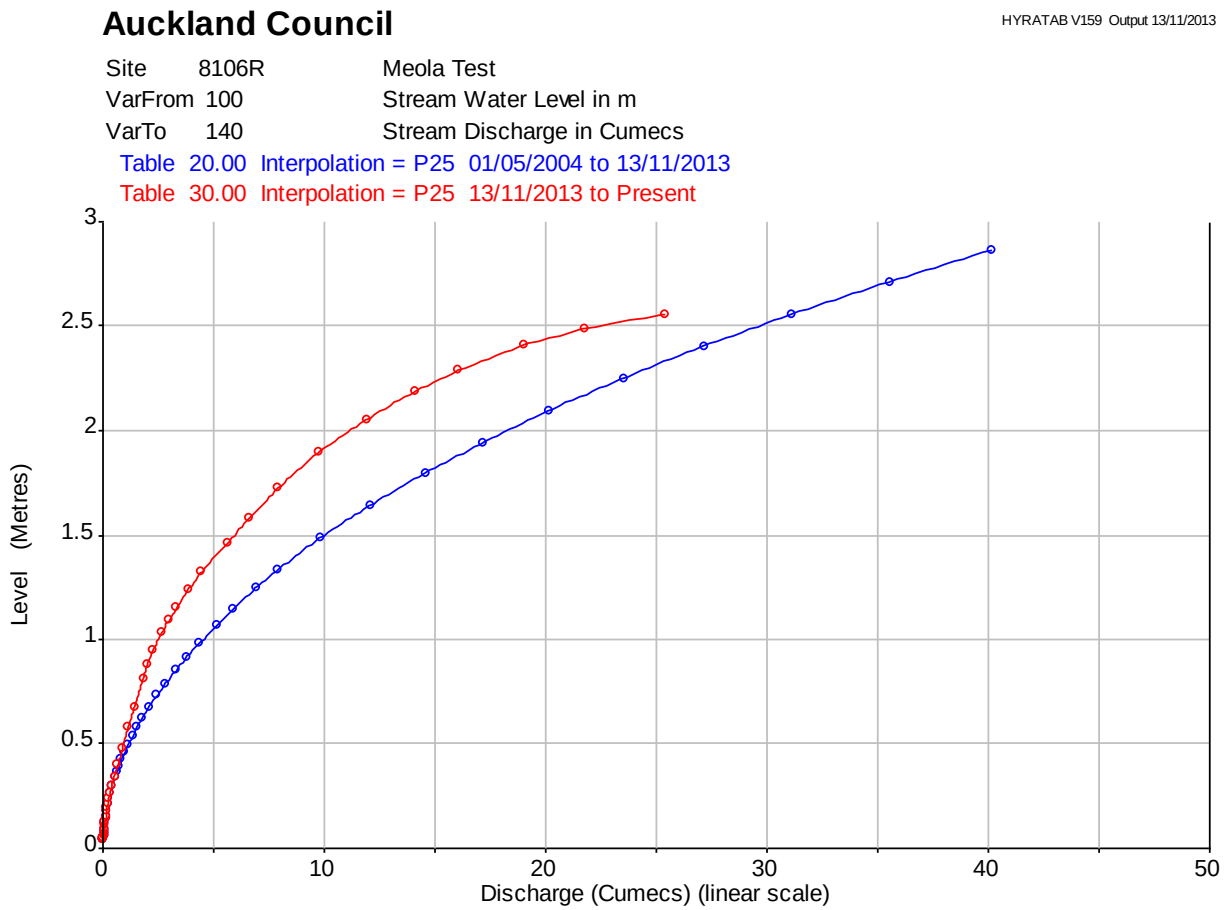
Figure 1: Rated flow (blue) vs Argonaut flow (red)

This difference along with the general consensus that there are errors in the stage discharge rating has led to the **provisional shift** of the rating at high stage. Using the percent discharge difference seen on the event on the 5/11/2013 and applying this to historical events creates the basis for the top end rating shift.

	Stage	Stage/Discharge	Area/Discharge	%Difference
5/11/2013	0.928	2.186	3.479	159.1491308
29/06/2000	1.897	9.785	15.57274245	
21/04/2003	1.759	8.202	13.05341171	
3/07/2012	1.507	6.55	10.42426807	

I have adjusted the ratings and provided the flow record for the three validated events in the URS Meola Catchment Report(September 2013). The attached files provide an estimate of the new rated flow, however this is under the proviso that this is provisional data only and is an indication of the possible new rating only. This information will be updated and finalised as the site experiences more events that are recorded by the ADV.

Current Rating in Red
Provisional Rating in Blue



I am happy to discuss this and provide more information if required.

Regards
Kris

C

Appendix C List of Properties at Risk of Flooding

Address	Floor Type	Floor Area (m2)	Adjusted Floor Area (m2)	Survey Level (RL m)	Ground EL (m) Max_GRID	Floor Level (RL)	Floor Level Source	2011 FHM with Climate Change						2014 FHM Results with Climate Change					
								10-Year Flood Elevation	50-Year Flood Elevation	100-Year Flood Elevation	10-Year Flood	50-Year Flood	100-Year Flood	10-Year Flood Elevation	50-Year Flood Elevation	100-Year Flood Elevation	10-Year Flood	50-Year Flood	100-Year Flood
128 Landscape Road Mt Eden	H	82	81	0	59.78	59.93	Assumed	-	59.90	60.0	H-Not at Risk	H-At Risk	H-At Risk	-	59.74	59.76	H-Not at Risk	H-WI500	H-WI500
47 Renfrew Avenue Sandringham	H	122	119	44.52	44.26	44.52	Morphum	44.6	44.7	44.7	H-At Risk	H-At Risk	H-At Risk	44.66	44.69	44.70	H-At Risk	H-At Risk	H-At Risk
45 Renfrew Avenue Sandringham	H	114	112	44.59	44.22	44.59	Morphum	44.6	44.7	44.7	H-At Risk	H-At Risk	H-At Risk	44.66	44.69	44.70	H-At Risk	H-At Risk	H-At Risk
30 Foch Avenue Three Kings	H	185	182	45.08	45.1	45.08	Morphum	45.4	45.4	45.5	H-At Risk	H-At Risk	H-At Risk	45.43	45.48	45.51	H-At Risk	H-At Risk	H-At Risk
35A Haig Avenue Three Kings	H	142	140	44.72	44.78	44.72	Morphum	44.9	45	45	H-At Risk	H-At Risk	H-At Risk	44.76	44.80	44.81	H-At Risk	H-At Risk	H-At Risk
1 Cedar Road Epsom	H	199	195	75.07	74.88	75.07	Site Inspection	75.1	75.1	75.1	H-At Risk	H-At Risk	H-At Risk	73.90	73.91	73.92	H-Not at Risk	H-Not at Risk	H-Not at Risk
4 Cedar Road Epsom	H	218	214	75.89	76.38	75.89	Site Inspection	-	76.2	76.2	H-Not at Risk	H-At Risk	H-At Risk	-	75.81	75.82	H-Not at Risk	H-WI500	H-WI500
Proposed 911A Mt Eden Road Three Kings	H	165	162	0	68.6	68.75	Assumed	69.2	69.2	69.2	H-At Risk	H-At Risk	H-At Risk	66.87	66.14	66.14	H-Not at Risk	H-Not at Risk	H-Not at Risk
19 Haig Avenue Three Kings	H	173	170	45.62	45.55	45.62	Site Inspection	45.6	45.7	45.7	H-WI500	H-At Risk	H-At Risk	45.52	45.58	45.60	H-WI500	H-At Risk	H-At Risk
915 Mt Eden Road Three Kings	H	218	214	71.23	72.33	71.23	Site Inspection	71.8	72.9	72.9	H-At Risk	H-At Risk	H-At Risk	70.23	70.25	70.97	H-Not at Risk	H-Not at Risk	H-WI500
23 Kings Road Three Kings	H	195	192	51.67	52.35	51.67	Morphum	51.9	51.9	51.9	H-At Risk	H-At Risk	H-At Risk	51.60	51.88	51.90	H-WI500	H-At Risk	H-At Risk
12 Cedar Road Epsom	H	174	170	0	81.18	81.33	Assumed	81.3	81.3	81.4	H-WI500	H-At Risk	H-At Risk	80.24	80.35	80.37	H-Not at Risk	H-Not at Risk	H-Not at Risk
159 St Andrews Road Epsom	H	267	263	0	87.03	87.18	Assumed	-	87.2	87.2	H-Not at Risk	H-At Risk	H-At Risk	-	-	-	H-Not at Risk	H-Not at Risk	H-Not at Risk
49 Kings Road Three Kings	H	171	168	0	57.01	57.16	Assumed	57	57.3	57.3	H-WI500	H-At Risk	H-At Risk	56.29	56.52	56.53	H-Not at Risk	H-Not at Risk	H-Not at Risk
40 Princes Avenue Three Kings	H	178	175	51.54	51.93	51.54	Site Inspection	51.8	52.1	52.1	H-At Risk	H-At Risk	H-At Risk	51.24	51.27	51.28	H-WI500	H-WI500	H-WI500
31 Princes Avenue Three Kings	H	103	101	48.45	50.77	48.45	SKM	49.7	49.9	49.9	H-At Risk	H-At Risk	H-At Risk	49.67	49.90	49.94	H-At Risk	H-At Risk	H-At Risk
3 Duke Street Three Kings	H	122	120	49.12	48.62	49.12	Morphum	48.8	49	49.2	H-WI500	H-WI500	H-At Risk	48.79	49.13	49.20	H-WI500	H-At Risk	H-At Risk
41a Princes Avenue Three Kings	H	74	72	49.9	50.05	49.9	SKM	-	49.9	49.9	H-Not at Risk	H-WI500	H-At Risk	-	49.90	49.94	H-Not at Risk	H-At Risk	H-At Risk
13 Duke Street Three Kings	H	105	103	48.4	48.85	48.4	Site Inspection	-	49	49.2	H-Not at Risk	H-At Risk	H-At Risk	-	49.13	49.20	H-Not at Risk	H-At Risk	H-At Risk
34 Duke Street Three Kings	H	174	171	49.26	48.89	49.26	SKM	49.7	49.9	49.9	H-At Risk	H-At Risk	H-At Risk	49.67	49.90	49.94	H-At Risk	H-At Risk	H-At Risk
36 Duke Street Three Kings	H	132	130	49.38	49.23	49.38	SKM	49.7	49.9	49.9	H-At Risk	H-At Risk	H-At Risk	49.67	49.90	49.94	H-At Risk	H-At Risk	H-At Risk
27 Duke Street Three Kings	H	143	140	49.73	49.76	49.73	SKM	49.7	49.9	49.9	H-WI500	H-At Risk	H-At Risk	49.60	49.90	49.94	H-WI500	H-At Risk	H-At Risk
29 Duke Street Three Kings	H	148	145	49.62	49.76	49.62	SKM	49.7	49.9	49.9	H-At Risk	H-At Risk	H-At Risk	49.66	49.90	49.94	H-At Risk	H-At Risk	H-At Risk
12 Fearon Avenue Three Kings	H	137	135	48.04	47.84	48.04	Morphum	48	49	49.2	H-WI500	H-At Risk	H-At Risk	47.90	49.13	49.20	H-WI500	H-At Risk	H-At Risk
3/1 Louvain Avenue Three Kings	H	170	167	47.12	47.29	47.12	SKM	47.2	47.2	47.2	H-At Risk	H-At Risk	H-At Risk	47.22	47.27	47.34	H-At Risk	H-At Risk	H-At Risk
14 Fearon Avenue Three Kings	H	112	110	48.92	48.92	48.92	Site Inspection	48	49	49.2	H-Not at Risk	H-At Risk	H-At Risk	47.90	49.13	49.20	H-Not at Risk	H-At Risk	H-At Risk
33 Duke Street Three Kings	H	130	127	49.64	49.47	49.64	SKM	49.7	49.9	49.9	H-At Risk	H-At Risk	H-At Risk	49.67	49.90	49.94	H-At Risk	H-At Risk	H-At Risk
31 Duke Street Three Kings	H	102	100	49.77	49.65	49.77	SKM	49.7	49.9	49.9	H-WI500	H-At Risk	H-At Risk	49.67	49.90	49.94	H-WI500	H-At Risk	H-At Risk
25 Duke Street Three Kings	H	186	183	49.4	49.58	49.4	SKM	49.7	49.9	49.9	H-At Risk	H-At Risk	H-At Risk	49.57	49.90	49.94	H-At Risk	H-At Risk	H-At Risk
27a Duke Street Three Kings	H	129	127	49.87	49.43	49.87	SKM	49.7	49.9	49.9	H-WI500	H-WI500	H-At Risk	49.58	49.90	49.94	H-WI500	H-At Risk	H-At Risk
2 Duncumb Street Three Kings	H	197	194	49.46	49.28	49.46	SKM	49.7	49.9	49.9	H-At Risk	H-At Risk	H-At Risk	49.57	49.90	49.94	H-At Risk	H-At Risk	H-At Risk
5 Donald Crescent Three Kings	H	77	76	48.66	48.15	48.66	SKM	48.2	48.5	48.7	H-WI500	H-WI500	H-At Risk	48.18	48.77	48.92	H-WI500	H-At Risk	H-At Risk
1202 Dominion Road Mt Roskill	H	119	117	48.49	48.11	48.49	SKM	48.2	48.5	48.7	H-WI500	H-WI500	H-At Risk	48.18	48.77	48.92	H-WI500	H-At Risk	H-At Risk
7 Donald Crescent Three Kings	H	84	82	48.64	48.08	48.64	SKM	48.2	48.5	48.7	H-WI500	H-WI500	H-At Risk	48.18	48.77	48.92	H-WI500	H-At Risk	H-At Risk
4 Duncumb Street Three Kings	H	85	83	49.64	49.17	49.64	Morphum	49.7	49.9	49.9	H-At Risk	H-At Risk	H-At Risk	49.57	49.90	49.94	H-WI500	H-At Risk	H-At Risk
28 Fearon Avenue Three Kings	H	122	120	49.5	49.3	49.5	Morphum	49.7	49.9	49.9	H-At Risk	H-At Risk	H-At Risk	49.57	49.90	49.94	H-At Risk	H-At Risk	H-At Risk
26 Fearon Avenue Three Kings	H	113	111	49.36	49.15	49.36	Morphum	49.7	49.9	49.9	H-At Risk	H-At Risk	H-At Risk	49.57	49.90	49.94	H-At Risk	H-At Risk	H-At Risk
24 Fearon Avenue Three Kings	H	101	99	49.51	49.33	49.51	Morphum	49.7	49.9	49.9	H-At Risk	H-At Risk	H-At Risk	49.57	49.90	49.94	H-At Risk	H-At Risk	H-At Risk
9 Donald Crescent Three Kings	H	153	150	48.51	48.04	48.51	SKM	48.2	48.5	48.7	H-WI500	H-WI500	H-At Risk	48.18	48.77	48.92	H-WI500	H-At Risk	H-At Risk
15 Fearon Avenue Three Kings	H	88	87	49.21	49.06	49.21	Morphum	49.7	49.9	49.9	H-At Risk	H-At Risk	H-At Risk	49.57	49.90	49.94	H-At Risk	H-At Risk	H-At Risk
17 Fearon Avenue Three Kings	H	79	77	49.3	48.92	49.3	Morphum	49.7	49.9	49.9	H-At Risk	H-At Risk	H-At Risk	49.57	49.90	49.94	H-At Risk	H-At Risk	H-At Risk
11 Donald Crescent Three Kings	H	131	129	48.53	48.09	48.53	SKM	48.2	48.5	48.7	H-WI500	H-WI500	H-At Risk	48.18	48.77	48.92	H-WI500	H-At Risk	H-At Risk
19 Fearon Avenue Three Kings	H	120	117	49.35	48.92	49.35	Morphum	49.7	49.9	49.9	H-At Risk	H-At Risk	H-At Risk	49.57	49.90	49.94	H-At Risk	H-At Risk	H-At Risk
108 McCullough Avenue Three Kings	H	132	130	69.89	69.93	69.89	Site Inspection	69.9	70.1	70.2	H-At Risk	H-At Risk	H-At Risk	69.92	70.15	70.22	H-At Risk	H-At Risk	H-At Risk
21 Fearon Avenue Three Kings	H	115	113	49.6	49	49.6	Morphum	49.7	49.9	49.9	H-At Risk	H-At Risk	H-At Risk	49.57	49.90	49.94	H-At Risk	H-At Risk	H-At Risk
10 Cleghorn Avenue Three Kings	H	300	295	49.11	48.61	49.11	Morphum	48.9	49.2	49.2	H-WI500	H-At Risk	H-At Risk	48.92	49.21	49.26	H-WI500	H-At Risk	H-At Risk
6 Cleghorn Avenue Three Kings	H	93	91	49.01	48.38	49.01	Morphum	48.9	49.2	49.2	H-WI500	H-At Risk	H-At Risk	48.92	49.21	49.26	H-WI500	H-At Risk	H-At Risk
15 Bridgman Avenue Three Kings	H	80	79	49.13	48.46	49.13	Morphum	48.9	49.2	49.2	H-WI500	H-At Risk	H-At Risk	48.92	49.21	49.26	H-WI500	H-At Risk	H-At Risk
8 Cleghorn Avenue Three Kings	H	90	88	49.11	48.4	49.11	Morphum	48.9	49.2	49.2	H-WI500	H-At Risk	H-At Risk	48.92	49.21	49.26	H-WI500	H-At Risk	H-At Risk
12 Cleghorn Avenue Three Kings	H	93	91	49.18	48.49	49.18	Morphum	48.9	49.2	49.2	H-WI500	H-WI500	H-At Risk	48.92	49.21	49.26	H-WI500	H-At Risk	H-At Risk
3 Cleghorn Avenue Three Kings	H	138	135	49.1	48.42	49.1	Morphum	48.9	49.2	49.2	H-WI500	H-At Risk	H-At Risk	48.92	49.21	49.26	H-WI500	H-At Risk	H-At Risk
3A Cleghorn Avenue Three Kings	H	81	79	48.19	48.35	48.19	Morphum	48.9	49.2	49.2	H-At Risk	H-At Risk	H-At Risk	48.92	49.21	49.26	H-At Risk	H-At Risk	H-At Risk
5 Cleghorn Avenue Three Kings	H	102	101	49.08	48.67	49.08	Morphum	48.9	49.2	49.2	H-WI500	H-At Risk	H-At Risk	48.92	49.21	49.26	H-WI500	H-At Risk	H-At Risk
49 Fearon Avenue Three Kings	H	110	108	0	51.03	51.18	Assumed	-	51.2	51.2	H-Not at Risk	H-At Risk	H-At Risk	-	50.80	50.61	H-Not at Risk	H-WI500	H-Not at Risk
62 Fearon Avenue Three Kings	H	170	167	0	53.65	53.8	Assumed	-	53.8	53.9	H-Not at Risk	H-WI500	H-At Risk	-	52.92	52.89	H-Not at Risk	H-Not at Risk	H-Not at Risk
57 Fearon Avenue Three Kings	H	140	137	0	50.64	50.79	Assumed	50.9	51	51	H-At Risk	H-At Risk	H-At Risk	50.25	50.30	50.31	H-Not at Risk	H-WI500	H-WI500
53 McCullough Avenue Three Kings	H	103	102	0	78.66	78.81	Assumed	-	-	78.8	H-Not at Risk	H-Not at Risk	H-At Risk	-	77.69	77.69	H-Not at Risk	H-Not at Risk	H-Not at Risk
33_2 Kitchener Road Sandringham	H	474	466	37.79	37.54	37.79	SKM	37.7	37.9	38	H-WI500	H-At Risk	H-At Risk	37.69	38.02	38.05	H-WI500	H-At Risk	H-At Risk
33/5 Kitchener Road Sandringham	H	474	466	37.81	37.64	37.81	SKM	37.7	37.9	38	H-WI500	H-At Risk	H-At Risk	37.69	38.02	38.05	H-WI500	H-At Risk	H-At Risk
13/3 Queens Avenue Balmoral	H	374	368	48.86	49.04	48.86	SKM	48.6	48.9	49.1	H-WI500	H-At Risk	H-At Risk	48.66	48.86	49.17	H-WI500	H-At Risk	H-At Risk
1/1 Kingsford Road Balmoral	H	315	309	50.87	53.64	50.87	SKM	52	52.4	52.5	H-At Risk	H-At Risk	H-At Risk	51.74	52.20	52.35	H-At Risk	H-At Risk	H-At Risk
1/3 Kingsford Road Balmoral	H	315	309	50.54	52.59	50.54	SKM	52	52.4	52.5	H-At Risk	H-At Risk	H-At Risk	51.74	52.20	52.35	H-At Risk	H-At Risk	H-At Risk
12/3 St Leonards Road Mt Eden	H	376	369	59.97	60.09	59.97	SKM	60.2	60.5	60.6	H-At Risk	H-At Risk	H-At Risk	60.13	60.60	60.77	H-At Risk	H-At Risk	H-At Risk
12/1 St Leonards Road Mt Eden	H	376	369	59.94	60.14	59.94	SKM	60.3	60.5	60.6	H-At Risk	H-At Risk	H-At Risk	60.15	60.60	60.77	H-At Risk	H-At Risk	H-At Risk
36/3 Margaret Avenue Mt Albert	H	239	235	19.99	19.96	19.99	SKM	20.2	20.3	20.4	H-At Risk	H-At Risk	H-At Risk	20.25	20.36	20.38	H-At Risk	H-At Risk	H-At Risk
27 Bellwood Avenue Mt Eden	H	151	148	36.66	36.31	36.66	SKM	36.2	37.3	37.8	H-WI500	H-At Risk	H-At Risk	36.21	37.50	37.98	H-WI500	H-At Risk	H-At Risk
781A/1 New North Road Mt Albert	H	254	249	22.2	22.57	22.2	SKM	22.6	23.6	24	H-At Risk	H-At Risk	H-At Risk	-	23.97	24.53	H-Not at Risk	H-At Risk	H-At Risk
11/1 Kingsway Avenue Sandringham	H	295	290	36.68	37.67	36.68	SKM	36.7	37	37.1	H-At Risk	H-At Risk	H-At Risk	36.69	37.04	37.11	H-At Risk	H-At Risk	H-At Risk
43/1 Queens Avenue Balmoral	H	415	408	48.81	49.02	48.81	SKM	48.6	48.9	49.1	H-WI500	H-At Risk	H-At Risk	-	48.87	49.17	H-Not at Risk	H-At Risk	H-At Risk
6/5 Peary Road Mt Eden	H	506	497	58.15	58.76	58.15	SKM	58.6	59	59.1	H-At Risk	H-At Risk	H-At Risk	58.49	58.84	58.99	H-At Risk	H-At Risk	H-At Risk
849/1 Mt Eden Road Three Kings	H	156	153	58.71	59.83	58.71	SKM	-	59	59.1	H-Not at Risk	H-At Risk	H-At Risk	-	-	58.99	H-Not at Risk	H-Not at Risk	H-At Risk
5/2 Shackleton Road Mt Eden	H	362	356	58.32	58.38	58.32	SKM	58.6	59	59.1	H-At Risk	H-At Risk	H-At Risk	58.49	58.84	58.99	H-At Risk	H-At Risk	H-At Risk
36 Shorwell Street Sandringham	H	114	112	38.34	37.82	38.34	SKM	38.3	38.5	38.5	H-WI500	H-At Risk	H-At Risk	-	38.53	38.57	H-Not at Risk	H-At Risk	H-At Risk
21 Shorwell Street Sandringham	H	101	99	37.84	37.41	37.84	SKM	38.3	38.5	38.5	H-At Risk	H-At Risk	H-At Risk	37.54	38.53	38.58	H-WI500	H-At Risk	H-At Risk
1 Westminster Road Balmoral	H	187	184	54.1	54.08	54.1	Morphum	54.1	54.3	54.3	H-WI500	H-At Risk	H-At Risk	54.09	54.33	54.36	H-At Risk	H-At Risk	H-At Risk
21 Arabi Street Sandringham	H	88	86	0	43.35	43.5	Assumed	43.4	43.6	43.7	H-WI500	H-At Risk	H-At Risk	-	43.67	43.73	H-Not at Risk	H-At Risk	H-At Risk

Address	Floor Type	Floor Area (m2)	Adjusted Floor Area (m2)	Survey Level (RL m)	Ground EL (m) Max_GRID	Floor Level (RL)	Floor Level Source	2011 FHM with Climate Change						2014 FHM Results with Climate Change					
								10-Year Flood Elevation	50-Year Flood Elevation	100-Year Flood Elevation	10-Year Flood	50-Year Flood	100-Year Flood	10-Year Flood Elevation	50-Year Flood Elevation	100-Year Flood Elevation	10-Year Flood	50-Year Flood	100-Year Flood
34 Shorwell Street Sandringham	H	77	76	38.34	37.72	38.34	SKM	38.3	38.5	38.5	H-WI500	H-At Risk	H-At Risk	-	38.52	38.57	H-Not at Risk	H-At Risk	H-At Risk
19 Shorwell Street Sandringham	H	134	131	37.83	38.42	37.83	SKM	38.3	38.5	38.5	H-At Risk	H-At Risk	H-At Risk	37.54	38.53	38.57	H-WI500	H-At Risk	H-At Risk
2A Westminster Road Balmoral	H	110	108	53.89	53.95	53.89	Morphum	53.9	54.1	54.2	H-WI500	H-At Risk	H-At Risk	-	54.16	54.20	H-Not at Risk	H-At Risk	H-At Risk
21A Arabi Street Sandringham	H	212	208	43.22	43.49	43.22	Morphum	43.4	43.6	43.7	H-At Risk	H-At Risk	H-At Risk	-	43.67	43.73	H-Not at Risk	H-At Risk	H-At Risk
32 Shorwell Street Sandringham	H	149	147	38.32	37.88	38.32	SKM	38.3	38.5	38.5	H-WI500	H-At Risk	H-At Risk	-	38.53	38.57	H-Not at Risk	H-At Risk	H-At Risk
12 Mars Avenue Sandringham	H	184	180	0	43.49	43.64	Assumed	43.6	43.6	43.7	H-WI500	H-WI500	H-At Risk	43.54	43.64	43.68	H-WI500	H-At Risk	H-At Risk
129 Balmoral Road Balmoral	H	146	143	54.06	53.96	54.06	Morphum	53.8	54.1	54.2	H-WI500	H-At Risk	H-At Risk	53.72	54.16	54.20	H-WI500	H-At Risk	H-At Risk
30 Shorwell Street Sandringham	H	124	122	38.47	38.06	38.47	Morphum	38.3	38.5	38.5	H-WI500	H-WI500	H-At Risk	-	38.53	38.57	H-Not at Risk	H-At Risk	H-At Risk
7 Shorwell Street Sandringham	H	100	98	38.42	38.44	38.42	Site Inspection	38.4	38.5	38.6	H-WI500	H-At Risk	H-At Risk	38.18	38.64	38.70	H-WI500	H-At Risk	H-At Risk
123 Balmoral Road Balmoral	H	155	152	54.21	53.74	54.21	Morphum	54.1	54.3	54.3	H-WI500	H-At Risk	H-At Risk	54.09	54.33	54.36	H-WI500	H-At Risk	H-At Risk
16 Rocklands Avenue Balmoral	H	188	185	0	50.27	50.42	Assumed	50.1	50.4	50.5	H-WI500	H-At Risk	H-At Risk	49.94	50.47	50.53	H-WI500	H-At Risk	H-At Risk
52 Fowlds Avenue Sandringham	H	132	129	0	37.79	37.94	Assumed	37.9	38	38	H-WI500	H-At Risk	H-At Risk	37.95	37.99	38.00	H-At Risk	H-At Risk	H-At Risk
111 Balmoral Road Mt Eden	H	157	154	0	55.45	55.6	Assumed	55.6	55.6	55.6	H-WI500	H-At Risk	H-At Risk	55.34	55.38	55.39	H-WI500	H-WI500	H-WI500
17 Tennyson Street Balmoral	H	191	187	47.13	47.26	47.13	Site Inspection	46.9	47.3	47.4	H-WI500	H-At Risk	H-At Risk	47.22	47.29	47.33	H-At Risk	H-At Risk	H-At Risk
2A Matipo Street Balmoral	H	198	195	0	51.98	52.13	Assumed	52	52.1	52.2	H-WI500	H-WI500	H-At Risk	-	52.18	52.21	H-Not at Risk	H-At Risk	H-At Risk
32 Rocklands Avenue Balmoral	H	176	173	0	50.62	50.77	Assumed	50.7	50.8	50.8	H-WI500	H-At Risk	H-At Risk	50.61	50.76	50.78	H-WI500	H-At Risk	H-At Risk
3 Pickett Avenue Sandringham	H	150	147	33.66	33.87	33.66	Site Inspection	33.6	33.7	33.7	H-WI500	H-At Risk	H-At Risk	33.65	33.69	33.71	H-At Risk	H-At Risk	H-At Risk
95 Balmoral Road Mt Eden	H	199	195	0	56.5	56.65	Assumed	56.7	56.8	56.8	H-At Risk	H-At Risk	H-At Risk	56.36	56.40	56.41	H-WI500	H-WI500	H-WI500
104A Balmoral Road Balmoral	H	157	154	0	53.8	53.95	Assumed	-	-	54	H-Not at Risk	H-Not at Risk	H-At Risk	-	53.56	53.57	H-Not at Risk	H-WI500	H-WI500
2 Pickett Avenue Sandringham	H	183	180	33.2	33.34	33.2	Site Inspection	33.4	33.4	33.4	H-At Risk	H-At Risk	H-At Risk	33.17	33.22	33.23	H-At Risk	H-At Risk	H-At Risk
22A Hazelmere Road Sandringham	H	202	198	34.74	34.83	34.74	Morphum	35	35	35	H-At Risk	H-At Risk	H-At Risk	34.71	34.76	34.79	H-At Risk	H-At Risk	H-At Risk
439 Sandringham Road Sandringham	H	130	127	0	39.08	39.23	Assumed	39.2	39.3	39.4	H-WI500	H-At Risk	H-At Risk	38.59	38.92	38.96	H-Not at Risk	H-WI500	H-WI500
480/1 Sandringham Road Sandringham	H	107	105	39.5	39.38	39.5	Morphum	39.7	39.8	39.8	H-At Risk	H-At Risk	H-At Risk	39.42	39.80	39.82	H-WI500	H-At Risk	H-At Risk
482 Sandringham Road Sandringham	H	140	138	39.48	39.4	39.48	Morphum	39.7	39.8	39.8	H-At Risk	H-At Risk	H-At Risk	39.42	39.83	39.87	H-WI500	H-At Risk	H-At Risk
77/4 Haverstock Road Sandringham	H	88	87	36.25	36.72	36.25	SKM	36.9	37	37	H-At Risk	H-At Risk	H-At Risk	37.00	37.05	37.10	H-At Risk	H-At Risk	H-At Risk
28 Tennyson Street Balmoral	H	70	68	47.04	47.07	47.04	Site Inspection	47.2	47.4	47.4	H-At Risk	H-At Risk	H-At Risk	47.01	47.34	47.38	H-At Risk	H-At Risk	H-At Risk
20 Coyle Street Sandringham	H	127	125	38.53	38.38	38.53	Morphum	38.5	38.6	38.6	H-At Risk	H-At Risk	H-At Risk	38.54	38.57	38.58	H-At Risk	H-At Risk	H-At Risk
2 Tranmere Road Sandringham	H	82	80	39.81	39.4	39.81	Morphum	39.7	39.8	39.8	H-WI500	H-WI500	H-At Risk	39.42	39.87	39.92	H-WI500	H-At Risk	H-At Risk
4 Tranmere Road Sandringham	H	101	99	39.81	39.15	39.81	Assumed	39.7	39.8	39.8	H-WI500	H-WI500	H-At Risk	39.42	39.87	39.92	H-WI500	H-At Risk	H-At Risk
27 Oxton Road Sandringham	H	148	145	43.23	43.1	43.23	Site Inspection	43.1	43.2	43.3	H-WI500	H-At Risk	H-At Risk	-	43.22	43.31	H-Not at Risk	H-At Risk	H-At Risk
15 Carmen Avenue Balmoral	H	203	200	46.66	46.9	46.66	Site Inspection	46.3	47.1	47.1	H-WI500	H-At Risk	H-At Risk	46.33	46.92	46.96	H-WI500	H-At Risk	H-At Risk
6 Tranmere Road Sandringham	H	109	107	39.66	39.31	39.66	Morphum	39.7	39.8	39.8	H-At Risk	H-At Risk	H-At Risk	39.42	39.87	39.92	H-WI500	H-At Risk	H-At Risk
77/2 Haverstock Road Sandringham	H	79	78	36.81	36.76	36.81	SKM	36.9	37	37	H-At Risk	H-At Risk	H-At Risk	36.95	37.00	37.04	H-At Risk	H-At Risk	H-At Risk
39 Kitchener Road Sandringham	H	114	112	37.71	37.12	37.71	Morphum	37.7	37.9	38	H-WI500	H-At Risk	H-At Risk	37.69	38.02	38.05	H-At Risk	H-At Risk	H-At Risk
33/6 Kitchener Road Sandringham	H	474	466	37.81	38.83	37.81	SKM	37.7	37.9	38	H-WI500	H-At Risk	H-At Risk	37.69	38.02	38.05	H-WI500	H-At Risk	H-At Risk
37 Kitchener Road Sandringham	H	119	117	37.85	37.31	37.85	Morphum	37.7	37.9	38	H-WI500	H-At Risk	H-At Risk	37.69	38.02	38.05	H-WI500	H-At Risk	H-At Risk
7 Carmen Avenue Balmoral	H	144	142	0	47.25	47.4	Assumed	47.2	47.4	47.4	H-WI500	H-WI500	H-At Risk	47.14	47.34	47.38	H-WI500	H-WI500	H-At Risk
3 Carmen Avenue Balmoral	H	177	174	0	47.21	47.36	Assumed	47.2	47.4	47.4	H-WI500	H-At Risk	H-At Risk	47.14	47.34	47.38	H-WI500	H-At Risk	H-At Risk
1 Carmen Avenue Balmoral	H	147	144	0	47.24	47.39	Assumed	47.2	47.4	47.4	H-WI500	H-At Risk	H-At Risk	47.13	47.34	47.38	H-WI500	H-WI500	H-At Risk
9 Queens Avenue Balmoral	H	158	155	0	48.8	48.95	Assumed	-	48.9	49.1	H-Not at Risk	H-WI500	H-At Risk	-	48.75	49.17	H-Not at Risk	H-WI500	H-At Risk
28 Tranmere Road Sandringham	H	122	120	0	43.14	43.29	Assumed	43.2	43.3	43.3	H-WI500	H-WI500	H-At Risk	43.24	43.28	43.31	H-WI500	H-At Risk	H-At Risk
17 Queens Avenue Balmoral	H	125	123	48.67	48.74	48.67	SKM	48.7	48.9	49.1	H-At Risk	H-At Risk	H-At Risk	48.67	48.86	49.17	H-At Risk	H-At Risk	H-At Risk
3 Tranmere Road Sandringham	H	121	119	39.52	39.48	39.52	Morphum	39.7	39.8	39.9	H-At Risk	H-At Risk	H-At Risk	39.42	39.90	39.96	H-WI500	H-At Risk	H-At Risk
33 Queens Avenue Balmoral	H	123	121	48.85	49.43	48.85	SKM	-	48.9	49.1	H-Not at Risk	H-At Risk	H-At Risk	-	48.87	49.17	H-Not at Risk	H-At Risk	H-At Risk
80 Wairiki Road Mt Eden	H	255	250	50.13	50.13	50.13	Site Inspection	49.9	50.4	50.6	H-WI500	H-At Risk	H-At Risk	49.92	50.53	50.66	H-WI500	H-At Risk	H-At Risk
512 Sandringham Road Sandringham	H	239	235	0	40.05	40.2	Assumed	40.3	40.3	40.3	H-At Risk	H-At Risk	H-At Risk	40.02	40.25	40.27	H-WI500	H-At Risk	H-At Risk
4 Halesowen Avenue Sandringham	H	181	178	40.59	40.33	40.59	Site Inspection	39.7	39.9	40.6	H-Not at Risk	H-Not at Risk	H-At Risk	-	40.10	40.16	H-Not at Risk	H-WI500	H-WI500
37 Queens Avenue Balmoral	H	150	147	49.01	48.98	49.01	Site Inspection	48.6	48.9	49.1	H-WI500	H-WI500	H-At Risk	-	48.87	49.17	H-Not at Risk	H-WI500	H-At Risk
41 Queens Avenue Balmoral	H	206	202	49.07	48.46	49.07	SKM	48.6	48.9	49.1	H-WI500	H-WI500	H-At Risk	48.49	48.87	49.17	H-Not at Risk	H-WI500	H-At Risk
43/6 Queens Avenue Balmoral	H	415	408	48.82	48.84	48.82	SKM	48.6	48.9	49.1	H-WI500	H-At Risk	H-At Risk	48.61	48.87	49.17	H-WI500	H-At Risk	H-At Risk
6 Halesowen Avenue Sandringham	H	133	131	0	40.53	40.68	Assumed	39.7	40.8	40.8	H-Not at Risk	H-At Risk	H-At Risk	-	40.15	40.19	H-Not at Risk	H-Not at Risk	H-WI500
2 Thames Street Balmoral	H	133	130	49.94	50.07	49.94	Site Inspection	49.9	50.4	50.6	H-At Risk	H-At Risk	H-At Risk	49.92	50.53	50.66	H-At Risk	H-At Risk	H-At Risk
4 Thames Street Balmoral	H	133	131	50.25	49.63	50.25	Morphum	49.9	50.4	50.6	H-WI500	H-At Risk	H-At Risk	49.92	50.53	50.66	H-WI500	H-At Risk	H-At Risk
6 Thames Street Balmoral	H	165	162	50	50.05	50	Site Inspection	49.9	50.4	50.6	H-WI500	H-At Risk	H-At Risk	49.92	50.53	50.66	H-WI500	H-At Risk	H-At Risk
26 Kensington Avenue Balmoral	H	76	74	0	48.52	48.67	Assumed	49.1	49.4	49.5	H-At Risk	H-At Risk	H-At Risk	49.03	49.56	49.57	H-At Risk	H-At Risk	H-At Risk
1 Halesowen Avenue Sandringham	H	268	263	40.97	41.37	40.97	Site Inspection	41	41.1	41.1	H-WI500	H-At Risk	H-At Risk	-	41.58	40.77	H-Not at Risk	H-At Risk	H-WI500
32 Kitchener Road Sandringham	H	115	113	0	38.79	38.94	Assumed	38.7	38.9	39	H-WI500	H-WI500	H-At Risk	38.80	39.01	39.04	H-WI500	H-At Risk	H-At Risk
1 Thames Street Balmoral	H	243	239	49.42	49.57	49.42	Morphum	49.9	50.4	50.6	H-At Risk	H-At Risk	H-At Risk	49.92	50.53	50.66	H-At Risk	H-At Risk	H-At Risk
7 Halesowen Avenue Sandringham	H	178	175	40.78	40.62	40.78	Morphum	40.7	41	41.1	H-WI500	H-At Risk	H-At Risk	40.33	41.10	41.15	H-WI500	H-At Risk	H-At Risk
9 Halesowen Avenue Sandringham	H	123	121	40.23	40.01	40.23	Morphum	40.7	41	41.1	H-At Risk	H-At Risk	H-At Risk	40.33	41.10	41.15	H-At Risk	H-At Risk	H-At Risk
11 Halesowen Avenue Sandringham	H	168	165	40.72	40.01	40.72	Morphum	40.7	41	41.1	H-WI500	H-At Risk	H-At Risk	40.33	41.10	41.15	H-WI500	H-At Risk	H-At Risk
3 Thames Street Balmoral	H	213	209	0	49.71	49.86	Assumed	49.9	50.4	50.6	H-At Risk	H-At Risk	H-At Risk	49.92	50.53	50.66	H-At Risk	H-At Risk	H-At Risk
5 Thames Street Balmoral	H	199	195	0	50.23	50.38	Assumed	50.4	50.4	50.6	H-WI500	H-At Risk	H-At Risk	50.24	50.53	50.66	H-WI500	H-At Risk	H-At Risk
13 Halesowen Avenue Sandringham	H	225	221	40.71	40.64	40.71	Morphum	40.7	41	41.1	H-At Risk	H-At Risk	H-At Risk	40.33	41.10	41.15	H-WI500	H-At Risk	H-At Risk
15 Halesowen Avenue Sandringham	H	186	183	41.06	40.78	41.06	Morphum	40.7	41	41.1	H-WI500	H-WI500	H-At Risk	-	41.10	41.15	H-Not at Risk	H-At Risk	H-At Risk
30A Wairiki Road Mt Eden	H	125	123	0	55.15	55.3	Assumed	55.1	55.3	55.4	H-WI500	H-At Risk	H-At Risk	-	55.31	55.34	H-Not at Risk	H-At Risk	H-At Risk
32 Haverstock Road Sandringham	H	159	156	0	38.99	39.14	Assumed	39.1	39.1	39.1	H-WI500	H-WI500	H-At Risk	39.12	39.20	39.22	H-At Risk	H-At Risk	H-At Risk
1 Calgary Street Sandringham	H	269	265	0	41.93	42.08	Assumed	42.1	42.1	42.1	H-WI500	H-At Risk	H-At Risk	42.02	42.11	42.12	H-WI500	H-At Risk	H-At Risk
3 Calgary Street Sandringham	H	170	167	41.84	41.86	41.84	Site Inspection	42.1	42.1	42.1	H-At Risk	H-At Risk	H-At Risk	42.04	42.14	42.16	H-At Risk	H-At Risk	H-At Risk
44/2 Calgary Street Sandringham	H	110	108	43.18	43.37	43.18	SKM	43.7	43.8	43.8	H-At Risk	H-At Risk	H-At Risk	43.42	43.75	43.80	H-At Risk	H-At Risk	H-At Risk
58 Ellerton Road Mt Eden	H	141	138	0	52.89	53.04	Assumed	53	53	53.1	H-WI500	H-WI500	H-At Risk	52.96	52.99	53.01	H-WI500	H-At Risk	H-At Risk
709 Mt Eden Road Three Kings	H	141	139	59.06	58.96	59.06	Site Inspection	-	59.2	59.2	H-Not at Risk	H-At Risk	H-At Risk	-	59.17	59.18	H-Not at Risk	H-At Risk	H-At Risk
70 Ellerton Road Mt Eden	H	127	125	52.17	52.11	52.17	Morphum	52.2	52.3	52.3	H-At Risk	H-At Risk	H-At Risk	52.25	52.32	52.34	H-At Risk	H-At Risk	H-At Risk
19 Calgary Street Sandringham	H	171	168	0	41.73	41.88	Assumed	41.9	41.9	41.9	H-WI500	H-At Risk	H-At Risk	41.89	41.95	41.96	H-At Risk	H-At Risk	H-At Risk
21 Calgary Street Sandringham	H	137	134	0	41.76	41.91	Assumed	41.9	41.9	41.9	H-WI500	H-WI500	H-At Risk	41.89	41.95	41.96	H-At Risk	H-At Risk	H-At Risk
99/1 Lambeth Road Sandringham	H	117	115	0	41.89	42.04	Assumed	42.2	42.3	42.3	H-At Risk	H-At Risk	H-At Risk	42.25	42.36	42.38	H-At Risk	H-At Risk	H-At Risk

Address	Floor Type	Floor Area (m2)	Adjusted Floor Area (m2)	Survey Level (RL m)	Ground EL (m) Max_GRID	Floor Level (RL)	Floor Level Source	2011 FHM with Climate Change						2014 FHM Results with Climate Change					
								10-Year Flood Elevation	50-Year Flood Elevation	100-Year Flood Elevation	10-Year Flood	50-Year Flood	100-Year Flood	10-Year Flood Elevation	50-Year Flood Elevation	100-Year Flood Elevation	10-Year Flood	50-Year Flood	100-Year Flood
99/2 Lambeth Road Sandringham	H	121	119	0	42.04	42.19	Assumed	42.2	42.3	42.3	H-At Risk	H-At Risk	H-At Risk	42.25	42.36	42.39	H-At Risk	H-At Risk	H-At Risk
46 Calgary Street Balmoral	H	139	137	43.7	43.45	43.7	Morphum	43.7	43.8	43.8	H-WI500	H-At Risk	H-At Risk	43.42	43.75	43.80	H-WI500	H-At Risk	H-At Risk
9 Ellerton Road Mt Eden	H	208	204	0	57.57	57.72	Assumed	-	57.7	57.8	H-Not at Risk	H-At Risk	H-At Risk	-	57.45	57.42	H-Not at Risk	H-WI500	H-WI500
67 Marsden Avenue Balmoral	H	101	99	51.39	54.23	51.39	Morphum	52	52.4	52.5	H-At Risk	H-At Risk	H-At Risk	51.45	52.20	52.35	H-At Risk	H-At Risk	H-At Risk
47 Asquith Avenue Mt Albert	H	163	148	0	26.48	26.63	Assumed	26.2	26.6	26.6	H-WI500	H-WI500	H-At Risk	26.01	25.86	25.87	H-Not at Risk	H-Not at Risk	H-Not at Risk
17 Wairere Avenue Mt Albert	H	148	135	22.71	22.12	22.71	Morphum	22.6	23.6	24	H-WI500	H-At Risk	H-At Risk	-	23.97	24.53	H-Not at Risk	H-At Risk	H-At Risk
28 Wairere Avenue Mt Albert	H	152	150	0	23.83	23.98	Assumed	-	23.6	24	H-Not at Risk	H-WI500	H-At Risk	-	23.97	24.53	H-Not at Risk	H-At Risk	H-At Risk
13a Wairere Avenue Mt Albert	H	174	171	21.34	21.53	21.34	SKM	22.6	23.6	24	H-At Risk	H-At Risk	H-At Risk	21.65	23.97	24.53	H-At Risk	H-At Risk	H-At Risk
9 Pentland Avenue Mt Eden	H	119	117	0	68.36	68.51	Assumed	68.3	68.6	68.6	H-WI500	H-At Risk	H-At Risk	66.85	66.93	66.95	H-Not at Risk	H-Not at Risk	H-Not at Risk
15 Wairere Avenue Mt Albert	H	163	148	21.96	21.88	21.96	Morphum	22.6	23.6	24	H-At Risk	H-At Risk	H-At Risk	21.73	23.97	24.53	H-WI500	H-At Risk	H-At Risk
26 Wairere Avenue Mt Albert	H	180	164	22.79	23.26	22.79	Morphum	23.3	23.6	24	H-At Risk	H-At Risk	H-At Risk	22.97	23.97	24.53	H-At Risk	H-At Risk	H-At Risk
45A-45B Asquith Avenue Mt Albert	H	273	248	25.12	25.21	25.12	Site Inspection	25.3	25.4	25.4	H-At Risk	H-At Risk	H-At Risk	24.44	25.12	25.13	H-Not at Risk	H-At Risk	H-At Risk
11A Wairere Avenue Mt Albert	H	118	107	22.37	21.97	22.37	Morphum	22.6	23.6	24	H-At Risk	H-At Risk	H-At Risk	21.71	23.97	24.53	H-Not at Risk	H-At Risk	H-At Risk
43 Asquith Avenue Mt Albert	H	183	180	0	26.91	27.06	Assumed	-	27.1	27.1	H-Not at Risk	H-At Risk	H-At Risk	26.83	26.71	26.81	H-WI500	H-WI500	H-WI500
13 Wairere Avenue Mt Albert	H	158	144	21.93	21.98	21.93	Morphum	22.6	23.6	24	H-At Risk	H-At Risk	H-At Risk	21.73	23.97	24.53	H-WI500	H-At Risk	H-At Risk
24 Wairere Avenue Mt Albert	H	175	159	23.26	22.74	23.26	Morphum	22.7	23.6	24	H-Not at Risk	H-At Risk	H-At Risk	22.75	23.97	24.53	H-Not at Risk	H-At Risk	H-At Risk
53 Cromwell Street Mt Eden	H	228	224	46.47	46.3	46.47	SKM	46.4	46.6	46.6	H-WI500	H-At Risk	H-At Risk	46.16	46.59	46.64	H-WI500	H-At Risk	H-At Risk
9/4 Wairere Avenue Mt Albert	H	212	208	21.62	21.6	21.62	SKM	22.6	23.6	24	H-At Risk	H-At Risk	H-At Risk	21.39	23.97	24.53	H-WI500	H-At Risk	H-At Risk
56 Marlborough Street Mt Eden	H	146	133	0	45.65	45.8	Assumed	-	45.8	45.9	H-Not at Risk	H-WI500	H-At Risk	-	44.88	45.60	H-Not at Risk	H-Not at Risk	H-WI500
12 Pentland Avenue Mt Eden	H	200	197	70.47	71.26	70.47	Site Inspection	71.2	71.2	71.2	H-At Risk	H-At Risk	H-At Risk	71.19	71.22	71.23	H-At Risk	H-At Risk	H-At Risk
11 Wairere Avenue Mt Albert	H	163	148	21.91	21.48	21.91	Morphum	22.6	23.6	24	H-At Risk	H-At Risk	H-At Risk	21.73	23.97	24.53	H-WI500	H-At Risk	H-At Risk
22 Wairere Avenue Mt Albert	H	193	176	0	22.69	22.84	Assumed	22.6	23.6	24	H-WI500	H-At Risk	H-At Risk	22.33	23.97	24.53	H-Not at Risk	H-At Risk	H-At Risk
29 Sainsbury Road Mt Albert	H	211	208	0	32.35	32.5	Assumed	32.5	32.6	32.7	H-WI500	H-At Risk	H-At Risk	32.23	32.62	32.69	H-WI500	H-At Risk	H-At Risk
55/2 Cromwell Street Mt Eden	H	217	214	46.53	46.45	46.53	SKM	46.4	46.6	46.6	H-WI500	H-At Risk	H-At Risk	-	46.57	46.61	H-Not at Risk	H-At Risk	H-At Risk
58 Marlborough Street Mt Eden	H	187	170	0	45.38	45.53	Assumed	44	45.6	45.6	H-Not at Risk	H-At Risk	H-At Risk	-	44.66	44.68	H-Not at Risk	H-Not at Risk	H-Not at Risk
24 Kenyon Avenue Mt Eden	H	250	227	0	62.18	62.33	Assumed	-	62	62.5	H-Not at Risk	H-WI500	H-At Risk	-	60.86	60.87	H-Not at Risk	H-Not at Risk	H-Not at Risk
9/2 Wairere Avenue Mt Albert	H	167	152	21.57	21.6	21.57	SKM	22.6	23.6	24	H-At Risk	H-At Risk	H-At Risk	21.72	23.97	24.53	H-At Risk	H-At Risk	H-At Risk
20 Wairere Avenue Mt Albert	H	181	165	22.63	22.45	22.63	Morphum	22.6	23.6	24	H-At Risk	H-At Risk	H-At Risk	22.03	23.97	24.53	H-Not at Risk	H-At Risk	H-At Risk
36A Kenneth Avenue Sandringham	H	91	89	34.08	34.25	34.08	Morphum	34.2	34.3	34.3	H-At Risk	H-At Risk	H-At Risk	34.26	34.28	34.43	H-At Risk	H-At Risk	H-At Risk
18 Wairere Avenue Mt Albert	H	149	136	22.92	22.71	22.92	Morphum	22.6	23.6	24	H-WI500	H-At Risk	H-At Risk	22.05	23.97	24.53	H-Not at Risk	H-At Risk	H-At Risk
34 Kenneth Avenue Sandringham	H	91	89	34.31	34.47	34.31	Morphum	-	34.3	34.3	H-Not at Risk	H-WI500	H-At Risk	-	-	34.43	H-Not at Risk	H-Not at Risk	H-At Risk
23A Burch Street Mt Albert	H	155	141	0	24.73	24.88	Assumed	-	-	25	H-Not at Risk	H-Not at Risk	H-At Risk	-	-	24.53	H-Not at Risk	H-Not at Risk	H-WI500
16 Wairere Avenue Mt Albert	H	145	143	22.6	22.66	22.6	Morphum	22.6	23.6	24	H-At Risk	H-At Risk	H-At Risk	-	23.97	24.53	H-Not at Risk	H-At Risk	H-At Risk
29 Burch Street Mt Albert	H	247	225	0	27.15	27.3	Assumed	-	27.4	27.4	H-Not at Risk	H-At Risk	H-At Risk	26.30	26.31	26.31	H-Not at Risk	H-Not at Risk	H-Not at Risk
5 Wairere Avenue Mt Albert	H	150	136	22.06	21.7	22.06	SKM	22.6	23.6	24	H-At Risk	H-At Risk	H-At Risk	21.77	23.97	24.52	H-WI500	H-At Risk	H-At Risk
14 Wairere Avenue Mt Albert	H	185	168	21.62	21.49	21.62	SKM	22.6	23.6	24	H-At Risk	H-At Risk	H-At Risk	21.79	23.97	24.53	H-At Risk	H-At Risk	H-At Risk
3A Wairere Avenue Mt Albert	H	96	88	23.54	23.44	23.54	Morphum	22.6	23.6	24	H-Not at Risk	H-At Risk	H-At Risk	21.78	23.97	24.53	H-Not at Risk	H-At Risk	H-At Risk
53 King Edward Street Sandringham	H	193	175	40.54	40.47	40.54	SKM	40.4	40.5	40.6	H-WI500	H-WI500	H-At Risk	40.43	40.56	40.60	H-WI500	H-At Risk	H-At Risk
12 Wairere Avenue Mt Albert	H	136	133	21.62	21.2	21.62	SKM	22.6	23.6	24	H-At Risk	H-At Risk	H-At Risk	21.79	23.97	24.53	H-At Risk	H-At Risk	H-At Risk
25 Ewington Avenue Mt Eden	H	248	243	0	56.08	56.23	Assumed	56.1	56.2	56.2	H-WI500	H-At Risk	H-At Risk	-	55.74	55.75	H-Not at Risk	H-WI500	H-WI500
10 Wairere Avenue Mt Albert	H	187	171	21.78	21.12	21.78	SKM	22.6	23.6	24	H-At Risk	H-At Risk	H-At Risk	21.80	23.97	24.53	H-At Risk	H-At Risk	H-At Risk
21 Ewington Avenue Mt Eden	H	167	164	55.32	55.59	55.32	Site Inspection	55.2	55.7	55.7	H-WI500	H-At Risk	H-At Risk	55.13	55.17	55.18	H-WI500	H-WI500	H-WI500
9 Burch Street Mt Albert	H	385	378	22.85	22.77	22.85	Morphum	22.6	23.6	24	H-WI500	H-At Risk	H-At Risk	21.80	23.97	24.53	H-Not at Risk	H-At Risk	H-At Risk
87 Prospect Terrace Mt Eden	H	98	97	53.06	53.01	53.06	Site Inspection	53	53.1	53.1	H-WI500	H-WI500	H-At Risk	53.01	53.11	53.14	H-WI500	H-At Risk	H-At Risk
8 Wairere Avenue Mt Albert	H	175	159	21.43	21.3	21.43	SKM	22.6	23.6	24	H-At Risk	H-At Risk	H-At Risk	21.80	23.97	24.53	H-At Risk	H-At Risk	H-At Risk
44/2 Asquith Avenue Mt Albert	H	178	175	37.15	37.22	37.15	Morphum	37.3	37.4	37.4	H-At Risk	H-At Risk	H-At Risk	37.32	37.36	37.37	H-At Risk	H-At Risk	H-At Risk
781A/3 New North Road Mt Albert	H	254	231	22.19	22.08	22.19	SKM	22.6	23.6	24	H-At Risk	H-At Risk	H-At Risk	21.80	23.97	24.53	H-WI500	H-At Risk	H-At Risk
6 Wairere Avenue Mt Albert	H	204	201	21.84	21.86	21.84	SKM	22.6	23.6	24	H-At Risk	H-At Risk	H-At Risk	21.80	23.97	24.53	H-At Risk	H-At Risk	H-At Risk
1B Burch Street Mt Albert	H	101	99	0	23.83	23.98	Assumed	-	23.6	24	H-Not at Risk	H-WI500	H-At Risk	23.69	23.97	24.53	H-WI500	H-At Risk	H-At Risk
4 Wairere Avenue Mt Albert	H	244	240	22.24	22.38	22.24	SKM	22.6	23.6	24	H-At Risk	H-At Risk	H-At Risk	22.21	23.97	24.53	H-At Risk	H-At Risk	H-At Risk
38 King Edward Street Mt Eden	H	330	324	41.49	41.8	41.49	SKM	41.5	41.6	41.6	H-At Risk	H-At Risk	H-At Risk	41.00	41.13	41.13	H-WI500	H-WI500	H-WI500
80 Paice Avenue Sandringham	H	146	143	0	34.68	34.83	Assumed	34.7	34.8	34.9	H-WI500	H-WI500	H-At Risk	34.69	34.97	35.05	H-WI500	H-At Risk	H-At Risk
17 King Edward Street Mt Eden	H	116	114	0	45.73	45.88	Assumed	-	45.9	45.9	H-Not at Risk	H-At Risk	H-At Risk	45.69	45.65	45.66	H-WI500	H-WI500	H-WI500
2 Wairere Avenue Mt Albert	H	246	224	23.69	23.04	23.69	Morphum	22.7	23.6	24	H-Not at Risk	H-WI500	H-At Risk	22.69	23.97	24.53	H-Not at Risk	H-At Risk	H-At Risk
15 King Edward Street Mt Eden	H	147	134	0	46.03	46.18	Assumed	-	46.1	46.3	H-Not at Risk	H-WI500	H-At Risk	45.81	45.84	45.85	H-WI500	H-WI500	H-WI500
74 Paice Avenue Sandringham	H	174	158	0	34.62	34.77	Assumed	34.7	34.8	34.9	H-WI500	H-At Risk	H-At Risk	34.69	34.97	35.05	H-WI500	H-At Risk	H-At Risk
66 Taylors Road St Lukes	H	74	68	34.05	34.06	34.05	Morphum	33.9	34.2	34.3	H-WI500	H-At Risk	H-At Risk	33.82	34.20	34.29	H-WI500	H-At Risk	H-At Risk
70 Paice Avenue Sandringham	H	104	94	0	34.87	35.02	Assumed	34.8	34.9	35.2	H-WI500	H-WI500	H-At Risk	34.78	34.97	35.05	H-WI500	H-WI500	H-At Risk
47 Paice Avenue Sandringham	H	194	177	39.7	39.48	39.7	SKM	39.5	39.7	39.7	H-WI500	H-WI500	H-At Risk	39.42	39.72	39.78	H-WI500	H-At Risk	H-At Risk
783 New North Road Mt Albert	H	136	123	23.95	22.88	23.95	Morphum	22.9	23.6	24	H-Not at Risk	H-WI500	H-At Risk	22.64	23.97	24.53	H-Not at Risk	H-At Risk	H-At Risk
785 New North Road Mt Albert	H	184	168	23.97	23.4	23.97	Morphum	22.6	23.6	24	H-Not at Risk	H-WI500	H-At Risk	-	23.97	24.53	H-Not at Risk	H-At Risk	H-At Risk
39 St Lukes Road St Lukes	H	161	158	28.18	28.46	28.18	Morphum	28.4	28.6	28.7	H-At Risk	H-At Risk	H-At Risk	28.29	28.57	28.67	H-At Risk	H-At Risk	H-At Risk
53 Prospect Terrace Mt Eden	H	124	113	59.58	59.88	59.58	SKM	59.9	59.9	59.9	H-At Risk	H-At Risk	H-At Risk	59.70	59.81	59.84	H-At Risk	H-At Risk	H-At Risk
72 Paice Avenue Sandringham	H	114	112	0	34.63	34.78	Assumed	34.7	34.8	34.9	H-WI500	H-At Risk	H-At Risk	34.70	34.97	35.05	H-WI500	H-At Risk	H-At Risk
16 Knight Avenue Mt Albert	H	140	128	34.23	34.81	34.23	Site Inspection	34.2	34.9	35.1	H-WI500	H-At Risk	H-At Risk	34.14	34.96	35.19	H-WI500	H-At Risk	H-At Risk
91 Gribblehirst Road Sandringham	H	141	138	34.61	33.92	34.61	Morphum	34.3	34.8	34.9	H-WI500	H-At Risk	H-At Risk	33.71	34.97	35.05	H-Not at Risk	H-At Risk	H-At Risk
89 Gribblehirst Road Sandringham	H	125	113	34.69	34.16	34.69	Morphum	34.3	34.8	34.9	H-WI500	H-At Risk	H-At Risk	-	34.97	35.05	H-Not at Risk	H-At Risk	H-At Risk
87 Gribblehirst Road Sandringham	H	123	121	0	34.67	34.82	Assumed	34.3	34.8	34.9	H-Not at Risk	H-WI500	H-At Risk	-	34.97	35.05	H-Not at Risk	H-At Risk	H-At Risk
37 Prospect Terrace Mt Eden	H	218	214	64.35	64.8	64.35	Site Inspection	-	64.4	64.4	H-Not at Risk	H-At Risk	H-At Risk	64.34	64.39	64.28	H-At Risk	H-At Risk	H-WI500
15 Alberton Avenue Mt Albert	H	177	161	23.83	23.61	23.83	SKM	24.2	24.3	24.3	H-At Risk	H-At Risk	H-At Risk	24.14	24.31	24.53	H-At Risk	H-At Risk	H-At Risk
71 Gribblehirst Road Sandringham	H	154	151	34.8	34.76	34.8	Site Inspection	34.7	34.8	34.9	H-WI500	H-WI500	H-At Risk	-	34.97	35.05	H-Not at Risk	H-At Risk	H-At Risk
237 Sandringham Road Sandringham	H	202	199	33.28	33.56	33.28	Site Inspection	33.3	33.7	33.9	H-At Risk	H-At Risk	H-At Risk	33.23	33.77	34.13	H-WI500	H-At Risk	H-At Risk
88 Gribblehirst Road Sandringham	H	124	113	0	34.63	34.78	Assumed	-	34.8	34.9	H-Not at Risk	H-At Risk	H-At Risk	-	34.97	35.05	H-Not at Risk	H-At Risk	H-At Risk
7 Fowler Avenue Mt Albert	H	190	173	0	34.89	35.04	Assumed	34.2	34.9	35.1	H-Not at Risk	H-WI500	H-At Risk	34.14	34.96	35.19	H-Not at Risk	H-WI500	H-At Risk
84 Gribblehirst Road Sandringham	H	139	127	0	34.71	34.86	Assumed	34.4	34.8	34.9	H-WI500	H-WI500	H-At Risk	34.40	34.97	35.05	H-WI500	H-At Risk	H-At Risk
782 New North Road Mt Albert	H	284	278	0	26.93	27.08	Assumed	27	27.2	27.2	H-WI500	H-At Risk	H-At Risk	26.14	26.17	26.18	H-Not at Risk	H-Not at Risk	H-Not at Risk

Address	Floor Type	Floor Area (m2)	Adjusted Floor Area (m2)	Survey Level (RL m)	Ground EL (m) Max_GRID	Floor Level (RL)	Floor Level Source	2011 FHM with Climate Change						2014 FHM Results with Climate Change					
								10-Year Flood Elevation	50-Year Flood Elevation	100-Year Flood Elevation	10-Year Flood	50-Year Flood	100-Year Flood	10-Year Flood Elevation	50-Year Flood Elevation	100-Year Flood Elevation	10-Year Flood	50-Year Flood	100-Year Flood
5 Ashton Road Mt Eden	H	171	168	0	81.79	81.94	Assumed	-	81.8	82	H-Not at Risk	H-WI500	H-At Risk	81.77	81.65	81.66	H-WI500	H-WI500	H-WI500
84 Taylors Road St Lukes	H	146	133	34.22	34.13	34.22	Morphum	34.2	34.3	34.3	H-WI500	H-At Risk	H-At Risk	34.01	34.29	34.33	H-WI500	H-At Risk	H-At Risk
784 New North Road Mt Albert	H	427	420	0	28.2	28.35	Assumed	27.8	28.4	28.4	H-Not at Risk	H-At Risk	H-At Risk	27.59	27.28	27.28	H-Not at Risk	H-Not at Risk	H-Not at Risk
238 Sandringham Road Sandringham	H	246	241	33.38	34.41	33.38	Morphum	34.2	34.8	34.9	H-At Risk	H-At Risk	H-At Risk	34.02	34.97	35.05	H-At Risk	H-At Risk	H-At Risk
3 Tarata Street Mt Eden	H	167	152	0	78.53	78.68	Assumed	78.6	78.7	78.7	H-WI500	H-WI500	H-At Risk	78.58	78.62	78.63	H-WI500	H-WI500	H-At Risk
82 Gribblehirst Road Sandringham	H	100	91	0	34.52	34.67	Assumed	34.4	34.8	34.9	H-WI500	H-At Risk	H-At Risk	34.40	34.97	35.05	H-WI500	H-At Risk	H-At Risk
105 Grange Road Mt Eden	H	226	206	0	56.39	56.54	Assumed	56	56.7	56.7	H-Not at Risk	H-At Risk	H-At Risk	55.50	55.53	55.55	H-Not at Risk	H-Not at Risk	H-Not at Risk
2 Parrish Road Sandringham	H	84	76	34.27	33.68	34.27	Morphum	34.2	34.8	34.9	H-WI500	H-At Risk	H-At Risk	34.02	34.97	35.05	H-WI500	H-At Risk	H-At Risk
4 Parrish Road Sandringham	H	90	88	34.36	33.86	34.36	Morphum	34.2	34.8	34.9	H-WI500	H-At Risk	H-At Risk	34.02	34.97	35.05	H-WI500	H-At Risk	H-At Risk
14 Prospect Terrace Mt Eden	H	165	162	0	75.81	75.96	Assumed	76	76.1	76.1	H-At Risk	H-At Risk	H-At Risk	75.96	76.01	76.02	H-At Risk	H-At Risk	H-At Risk
6 Parrish Road Sandringham	H	75	68	34.51	34.17	34.51	Morphum	34.2	34.8	34.9	H-WI500	H-At Risk	H-At Risk	-	34.97	35.05	H-Not at Risk	H-At Risk	H-At Risk
10 Parrish Road Sandringham	H	178	162	34.52	34.01	34.52	Morphum	34.2	34.8	34.9	H-WI500	H-At Risk	H-At Risk	34.02	34.97	35.05	H-Not at Risk	H-At Risk	H-At Risk
67 Marsden Avenue Balmoral	H	159	156	51.57	51.43	51.57	SKM	52	52.4	52.5	H-At Risk	H-At Risk	H-At Risk	51.45	52.20	52.35	H-WI500	H-At Risk	H-At Risk
65 Marsden Avenue Balmoral	H	150	148	52.05	51.79	52.05	SKM	52	52.4	52.5	H-WI500	H-At Risk	H-At Risk	51.45	52.20	52.35	H-Not at Risk	H-At Risk	H-At Risk
63 Marsden Avenue Balmoral	H	164	161	51.58	51.69	51.58	SKM	52	52.4	52.5	H-At Risk	H-At Risk	H-At Risk	51.46	52.20	52.35	H-WI500	H-At Risk	H-At Risk
61 Marsden Avenue Balmoral	H	136	134	52.12	52.29	52.12	Site Inspection	52	52.4	52.5	H-WI500	H-At Risk	H-At Risk	-	52.20	52.35	H-Not at Risk	H-At Risk	H-At Risk
6A Kiwitea Street Sandringham	H	138	136	43.4	43.48	43.4	Morphum	-	43.7	43.8	H-Not at Risk	H-At Risk	H-At Risk	-	43.60	43.76	H-Not at Risk	H-At Risk	H-At Risk
70 Marsden Avenue Balmoral	H	152	149	52.19	51.91	52.19	SKM	52	52.4	52.5	H-WI500	H-At Risk	H-At Risk	51.46	52.20	52.35	H-Not at Risk	H-At Risk	H-At Risk
68 Marsden Avenue Balmoral	H	149	146	52.09	51.8	52.09	SKM	52	52.4	52.5	H-WI500	H-At Risk	H-At Risk	51.47	52.20	52.35	H-Not at Risk	H-At Risk	H-At Risk
92 Lambeth Road Sandringham	H	165	162	42.28	42.27	42.28	Morphum	42.6	42.7	42.7	H-At Risk	H-At Risk	H-At Risk	42.59	42.69	42.72	H-At Risk	H-At Risk	H-At Risk
840 Dominion Road Mt Roskill	H	128	126	0	46.95	47.1	Assumed	46.8	47.2	47.2	H-WI500	H-At Risk	H-At Risk	46.83	46.89	46.91	H-WI500	H-WI500	H-WI500
76 Marsden Avenue Balmoral	H	232	227	0	52.57	52.72	Assumed	52.7	52.8	52.8	H-At Risk	H-At Risk	H-At Risk	52.16	52.52	52.53	H-Not at Risk	H-WI500	H-WI500
64 Marsden Avenue Balmoral	H	112	110	52.23	52.5	52.23	Site Inspection	52	52.4	52.5	H-WI500	H-At Risk	H-At Risk	51.86	52.20	52.35	H-WI500	H-At Risk	H-At Risk
70A-70B Marsden Avenue Balmoral	H	153	150	0	51.83	51.98	Assumed	52	52.4	52.5	H-At Risk	H-At Risk	H-At Risk	51.74	52.20	52.35	H-WI500	H-At Risk	H-At Risk
1/2 Kingsford Road Balmoral	H	315	309	50.78	53.01	50.78	SKM	52	52.4	52.5	H-At Risk	H-At Risk	H-At Risk	51.74	52.20	52.35	H-At Risk	H-At Risk	H-At Risk
86 Lambeth Road Sandringham	H	140	138	42.69	42.63	42.69	Site Inspection	42.7	42.7	42.7	H-WI500	H-At Risk	H-At Risk	42.65	42.76	42.79	H-At Risk	H-At Risk	H-At Risk
70A-70B Marsden Avenue Balmoral	H	185	181	51.67	52.93	51.67	SKM	-	52.4	52.5	H-Not at Risk	H-At Risk	H-At Risk	51.74	52.20	52.35	H-At Risk	H-At Risk	H-At Risk
10 Harwood Street Sandringham	H	139	137	42.5	42.31	42.5	Morphum	42.6	42.7	42.7	H-At Risk	H-At Risk	H-At Risk	42.60	42.72	42.75	H-At Risk	H-At Risk	H-At Risk
11 Glenalmond Road Mt Eden	H	110	108	66.97	67.48	66.97	Morphum	67.3	67.9	67.9	H-At Risk	H-At Risk	H-At Risk	67.13	67.40	67.53	H-At Risk	H-At Risk	H-At Risk
16 Kiwitea Street Sandringham	H	128	126	43.59	43.66	43.59	Morphum	43.6	43.7	43.8	H-At Risk	H-At Risk	H-At Risk	43.56	43.78	43.85	H-At Risk	H-At Risk	H-At Risk
3 Kingsford Road Balmoral	H	366	360	51.87	52.25	51.87	Site Inspection	52	52.4	52.5	H-At Risk	H-At Risk	H-At Risk	51.75	52.20	52.35	H-WI500	H-At Risk	H-At Risk
84 Lambeth Road Sandringham	H	102	100	42.79	42.63	42.79	Site Inspection	42.8	42.8	42.8	H-WI500	H-At Risk	H-At Risk	42.75	42.84	42.87	H-At Risk	H-At Risk	H-At Risk
52 Wembley Road Mt Eden	H	234	230	0	43.6	43.75	Assumed	43.6	43.7	43.8	H-WI500	H-WI500	H-At Risk	43.56	43.78	43.85	H-WI500	H-At Risk	H-At Risk
16 Harwood Street Sandringham	H	150	148	42.78	42.7	42.78	Site Inspection	42.7	42.8	42.8	H-WI500	H-At Risk	H-At Risk	42.92	43.00	43.02	H-At Risk	H-At Risk	H-At Risk
42 Marsden Avenue Balmoral	H	128	126	53.72	53.57	53.72	Morphum	53.9	54	54.1	H-At Risk	H-At Risk	H-At Risk	53.62	54.04	54.05	H-WI500	H-At Risk	H-At Risk
7 Kingsford Road Balmoral	H	146	143	52.46	52.03	52.46	SKM	52	52.4	52.5	H-WI500	H-WI500	H-At Risk	51.93	52.20	52.35	H-Not at Risk	H-WI500	H-WI500
69 Lambeth Road Sandringham	H	74	73	0	43.57	43.72	Assumed	43.6	43.7	43.8	H-WI500	H-At Risk	H-At Risk	43.56	43.78	43.85	H-WI500	H-At Risk	H-At Risk
67 Peary Road Mt Eden	H	127	125	51.92	53.11	51.92	SKM	52	52.4	52.5	H-At Risk	H-At Risk	H-At Risk	52.00	52.20	52.35	H-At Risk	H-At Risk	H-At Risk
57 Peary Road Mt Eden	H	188	184	52.26	52.58	52.26	Site Inspection	52	52.6	52.6	H-WI500	H-At Risk	H-At Risk	51.81	52.20	52.35	H-WI500	H-WI500	H-At Risk
11A Harwood Street Sandringham	H	128	126	43.07	43.14	43.07	Morphum	43.3	43.3	43.4	H-At Risk	H-At Risk	H-At Risk	43.31	43.37	43.38	H-At Risk	H-At Risk	H-At Risk
60a Peary Road Mt Eden	H	74	73	52.36	52.06	52.36	SKM	52	52.4	52.5	H-WI500	H-At Risk	H-At Risk	52.01	52.20	52.35	H-WI500	H-WI500	H-At Risk
58a Peary Road Mt Eden	H	142	140	52.29	52.34	52.29	SKM	52	52.4	52.5	H-WI500	H-At Risk	H-At Risk	52.01	52.20	52.35	H-WI500	H-WI500	H-At Risk
56/1 Peary Road Mt Eden	H	185	182	52.22	53.24	52.22	SKM	-	52.4	52.5	H-Not at Risk	H-At Risk	H-At Risk	52.01	52.20	52.35	H-WI500	H-At Risk	H-At Risk
17 Harwood Street Sandringham	H	72	70	43.34	43.17	43.34	Site Inspection	43.3	43.3	43.4	H-WI500	H-At Risk	H-At Risk	43.33	43.41	43.43	H-At Risk	H-At Risk	H-At Risk
15c Peary Road Mt Eden	H	209	205	58.53	58.61	58.53	SKM	58.4	58.6	58.6	H-WI500	H-At Risk	H-At Risk	58.18	58.52	58.61	H-WI500	H-At Risk	H-At Risk
47 Watling Street Mt Eden	H	292	287	71.22	71.84	71.22	SKM	70.6	71.3	71.3	H-Not at Risk	H-At Risk	H-At Risk	70.65	71.47	71.47	H-Not at Risk	H-At Risk	H-At Risk
15d Peary Road Mt Eden	H	138	136	58.5	58.47	58.5	SKM	58.4	58.6	58.6	H-WI500	H-At Risk	H-At Risk	58.18	58.52	58.61	H-WI500	H-At Risk	H-At Risk
15b Peary Road Mt Eden	H	146	143	57.93	57.87	57.93	SKM	58.4	58.6	58.6	H-At Risk	H-At Risk	H-At Risk	58.18	58.52	58.61	H-At Risk	H-At Risk	H-At Risk
24 Parry Street Sandringham	H	113	111	43.4	43.34	43.4	Site Inspection	43.5	43.5	43.5	H-At Risk	H-At Risk	H-At Risk	43.50	43.56	43.58	H-At Risk	H-At Risk	H-At Risk
722C Mt Eden Road Three Kings	H	237	232	60.48	60.45	60.48	SKM	60.4	60.5	60.6	H-WI500	H-At Risk	H-At Risk	60.13	60.60	60.77	H-WI500	H-At Risk	H-At Risk
5 Parry Street Sandringham	H	89	88	0	43.49	43.64	Assumed	43.6	43.7	43.7	H-WI500	H-At Risk	H-At Risk	43.66	43.70	43.72	H-At Risk	H-At Risk	H-At Risk
15a Peary Road Mt Eden	H	172	169	58.27	58.24	58.27	SKM	58.4	58.6	58.6	H-At Risk	H-At Risk	H-At Risk	58.18	58.52	58.61	H-WI500	H-At Risk	H-At Risk
722B Mt Eden Road Three Kings	H	187	183	60.41	60.12	60.41	SKM	60.1	60.5	60.6	H-WI500	H-At Risk	H-At Risk	60.13	60.60	60.77	H-WI500	H-At Risk	H-At Risk
26 Parry Street Sandringham	H	77	76	43.23	43.35	43.23	Site Inspection	43.5	43.5	43.6	H-At Risk	H-At Risk	H-At Risk	43.52	43.60	43.62	H-At Risk	H-At Risk	H-At Risk
732B Mt Eden Road Three Kings	H	177	174	60.32	60.07	60.32	SKM	60.1	60.5	60.6	H-WI500	H-At Risk	H-At Risk	60.13	60.60	60.77	H-WI500	H-At Risk	H-At Risk
23 Invermay Avenue Three Kings	H	119	117	0	44.88	45.03	Assumed	44.9	45	45	H-WI500	H-At Risk	H-At Risk	-	44.80	44.82	H-Not at Risk	H-WI500	H-WI500
59 Shackleton Road Mt Eden	H	169	166	56.76	56.75	56.76	Site Inspection	56.8	56.8	56.8	H-At Risk	H-At Risk	H-At Risk	56.78	56.84	56.86	H-At Risk	H-At Risk	H-At Risk
9 Invermay Avenue Three Kings	H	193	190	47.86	47.92	47.86	Site Inspection	48	48	48	H-At Risk	H-At Risk	H-At Risk	47.94	48.01	48.03	H-At Risk	H-At Risk	H-At Risk
11 Invermay Avenue Three Kings	H	120	118	47.59	47.58	47.59	Site Inspection	47.6	47.7	47.7	H-At Risk	H-At Risk	H-At Risk	47.23	47.31	47.34	H-WI500	H-WI500	H-WI500
6B St Leonards Road Mt Eden	H	211	208	60.29	59.61	60.29	SKM	60.1	60.5	60.6	H-WI500	H-At Risk	H-At Risk	60.13	60.60	60.77	H-WI500	H-At Risk	H-At Risk
6A St Leonards Road Mt Eden	H	261	257	60.32	59.71	60.32	SKM	60.1	60.5	60.6	H-WI500	H-At Risk	H-At Risk	60.13	60.60	60.77	H-WI500	H-At Risk	H-At Risk
12/2 St Leonards Road Mt Eden	H	376	369	59.97	60.04	59.97	SKM	60.1	60.5	60.6	H-At Risk	H-At Risk	H-At Risk	60.13	60.60	60.77	H-At Risk	H-At Risk	H-At Risk
4 Atanga Avenue Mt Eden	H	130	128	0	62.91	63.06	Assumed	62.5	62.9	63.1	H-Not at Risk	H-WI500	H-At Risk	62.62	62.72	62.73	H-WI500	H-WI500	H-WI500
14 St Leonards Road Mt Eden	H	143	141	60.66	60.47	60.66	Site Inspection	60.6	60.7	60.7	H-WI500	H-WI500	H-At Risk	60.48	60.60	60.77	H-WI500	H-WI500	H-At Risk
5/66 Shackleton Road Mt Eden	H	94	92	58.33	58.55	58.33	Morphum	58.6	58.8	58.8	H-At Risk	H-At Risk	H-At Risk	58.50	58.72	58.80	H-At Risk	H-At Risk	H-At Risk
9b Shackleton Road Mt Eden	H	110	108	58.46	58.98	58.46	SKM	58.6	59	59.1	H-At Risk	H-At Risk	H-At Risk	58.49	58.84	58.99	H-At Risk	H-At Risk	H-At Risk
18 St Leonards Road Mt Eden	H	145	142	0	61.24	61.39	Assumed	61.3	61.4	61.4	H-WI500	H-At Risk	H-At Risk	61.33	61.35	61.36	H-WI500	H-At Risk	H-At Risk
10 Waitomo Avenue Mt Eden	H	151	148	0	59.59	59.74	Assumed	59.7	59.7	59.8	H-WI500	H-WI500	H-At Risk	59.47	59.56	59.61	H-WI500	H-WI500	H-WI500
2 St Leonards Road Mt Eden	H	149	146	60.43	59.98	60.43	SKM	60.1	60.5	60.6	H-WI500	H-At Risk	H-At Risk	60.13	60.60	60.77	H-WI500	H-At Risk	H-At Risk
3C Shackleton Road Mt Eden	H	166	163	58.26	58.19	58.26	SKM	58.6	59	59.1	H-At Risk	H-At Risk	H-At Risk	58.49	58.84	58.99	H-At Risk	H-At Risk	H-At Risk
6 St Leonards Road Mt Eden	H	189	185	60.29	59.85	60.29	SKM	60.1	60.5	60.6	H-WI500	H-At Risk	H-At Risk	60.13	60.60	60.77	H-WI500	H-At Risk	H-At Risk
4 St Leonards Road Mt Eden	H	152	149	60.32	59.84	60.32	SKM	60.1	60.5	60.6	H-WI500	H-At Risk	H-At Risk	60.13	60.60	60.77	H-WI500	H-At Risk	H-At Risk
5/8 Shackleton Road Mt Eden	H	362	356	58.29	58.4	58.29	SKM	58.6	59	59.1	H-At Risk	H-At Risk	H-At Risk	58.49	58.84	58.99	H-At Risk	H-At Risk	H-At Risk
14 St Leonards Road Mt Eden	H	152	150	60.6	60.44	60.6	Site Inspection	60.6	60.7	60.7	H-At Risk	H-At Risk	H-At Risk	60.48	60.60	60.77	H-WI500	H-At Risk	H-At Risk
9 Shackleton Road Mt Eden	H	243	239	58.87	58.64	58.87	SKM	58.6	59	59.1	H-WI500	H-At Risk	H-At Risk	58.49	58.84	58.99	H-WI500	H-At Risk	H-At Risk
8 St Leonards Road Mt Eden	H	157	154	60.17	59.9	60.17	SKM	60.1	60.5	60.6	H-WI500	H-At Risk	H-At Risk	60.13	60.60	60.77	H-At Risk	H-At Risk	H-At Risk

Address	Floor Type	Floor Area (m2)	Adjusted Floor Area (m2)	Survey Level (RL m)	Ground EL (m) Max_GRID	Floor Level (RL)	Floor Level Source	2011 FHM with Climate Change						2014 FHM Results with Climate Change					
								10-Year Flood Elevation	50-Year Flood Elevation	100-Year Flood Elevation	10-Year Flood	50-Year Flood	100-Year Flood	10-Year Flood Elevation	50-Year Flood Elevation	100-Year Flood Elevation	10-Year Flood	50-Year Flood	100-Year Flood
60 St Leonards Road Epsom	H	328	322	72.64	74.45	72.64	Site Inspection	72.9	73.9	74.7	H-At Risk	H-At Risk	H-At Risk	74.61	74.62	74.63	H-At Risk	H-At Risk	H-At Risk
24 St Leonards Road Mt Eden	H	159	156	0	61.89	62.04	Assumed	62.1	62.1	62.1	H-At Risk	H-At Risk	H-At Risk	61.78	62.00	61.58	H-WI500	H-At Risk	H-WI500
3B Shackleton Road Mt Eden	H	161	158	58.18	58.17	58.18	SKM	58.6	59	59.1	H-At Risk	H-At Risk	H-At Risk	58.49	58.84	58.99	H-At Risk	H-At Risk	H-At Risk
26 St Leonards Road Mt Eden	H	183	180	0	62.63	62.78	Assumed	62.8	62.8	62.8	H-WI500	H-At Risk	H-At Risk	62.42	62.44	62.45	H-WI500	H-WI500	H-WI500
7 Shackleton Road Mt Eden	H	130	128	0	58.31	58.46	Assumed	58.6	59	59.1	H-At Risk	H-At Risk	H-At Risk	58.49	58.84	58.99	H-At Risk	H-At Risk	H-At Risk
10 Whitworth Road Mt Eden	H	157	154	56.13	60.73	56.13	Site Inspection	58.6	58.8	58.9	H-At Risk	H-At Risk	H-At Risk	58.48	58.82	58.93	H-At Risk	H-At Risk	H-At Risk
3A Shackleton Road Mt Eden	H	82	80	58.74	58.01	58.74	SKM	58.6	59	59.1	H-WI500	H-At Risk	H-At Risk	58.49	58.84	58.99	H-WI500	H-At Risk	H-At Risk
3 Shackleton Road Mt Eden	H	118	116	58.68	58.16	58.68	SKM	58.6	59	59.1	H-WI500	H-At Risk	H-At Risk	58.49	58.84	58.99	H-WI500	H-At Risk	H-At Risk
1 St Leonards Road Mt Eden	H	197	194	60.25	59.78	60.25	SKM	60.1	60.5	60.6	H-WI500	H-At Risk	H-At Risk	60.13	60.60	60.77	H-WI500	H-At Risk	H-At Risk
57 Renfrew Avenue Sandringham	H	102	100	0	44.26	44.41	Assumed	44.4	44.4	44.4	H-WI500	H-At Risk	H-At Risk	44.42	44.45	44.45	H-At Risk	H-At Risk	H-At Risk
5 St Leonards Road Mt Eden	H	304	299	59.97	60.5	59.97	SKM	60.1	60.5	60.6	H-At Risk	H-At Risk	H-At Risk	60.13	60.60	60.77	H-At Risk	H-At Risk	H-At Risk
178 Landscape Road Mt Eden	H	139	137	51.67	51.66	51.67	Site Inspection	51.5	51.6	51.7	H-WI500	H-WI500	H-At Risk	51.54	51.61	51.63	H-WI500	H-WI500	H-At Risk
28 Shackleton Road Mt Eden	H	146	144	0	59.17	59.32	Assumed	59.1	59.3	59.4	H-WI500	H-WI500	H-At Risk	58.93	59.42	59.56	H-WI500	H-At Risk	H-At Risk
12a Shackleton Road Mt Eden	H	156	153	58.95	58.79	58.95	SKM	58.8	59	59.1	H-WI500	H-At Risk	H-At Risk	58.80	58.88	58.99	H-WI500	H-WI500	H-At Risk
12b Shackleton Road Mt Eden	H	146	144	58.68	58.91	58.68	SKM	58.8	59	59.1	H-At Risk	H-At Risk	H-At Risk	58.82	58.90	58.99	H-At Risk	H-At Risk	H-At Risk
3/1 St Leonards Road Mt Eden	H	158	155	60.13	62.55	60.13	SKM	-	60.5	60.6	H-Not at Risk	H-At Risk	H-At Risk	-	60.60	60.77	H-Not at Risk	H-At Risk	H-At Risk
16a Shackleton Road Mt Eden	H	167	164	59.28	59.42	59.28	SKM	59.2	59.3	59.3	H-WI500	H-At Risk	H-At Risk	59.10	59.13	59.15	H-WI500	H-WI500	H-WI500
52A Kiwitea Street Sandringham	H	129	127	44.29	44.17	44.29	Site Inspection	44.3	44.3	44.3	H-At Risk	H-At Risk	H-At Risk	44.28	44.33	44.35	H-At Risk	H-At Risk	H-At Risk
1/79 Landscape Road Mt Eden	H	140	137	58.93	58.9	58.93	Morphum	59.1	59.3	59.4	H-At Risk	H-At Risk	H-At Risk	58.93	59.42	59.56	H-At Risk	H-At Risk	H-At Risk
6b Shackleton Road Mt Eden	H	182	179	59.76	60.22	59.76	SKM	-	60.3	60.4	H-Not at Risk	H-At Risk	H-At Risk	-	60.15	60.21	H-Not at Risk	H-At Risk	H-At Risk
8 Parrish Road Sandringham	H	92	90	34.52	34.1	34.52	Morphum	34.2	34.8	34.9	H-WI500	H-At Risk	H-At Risk	-	34.97	35.05	H-Not at Risk	H-At Risk	H-At Risk
12 Parrish Road Sandringham	H	138	125	34.37	34.12	34.37	Morphum	34.2	34.8	34.9	H-WI500	H-At Risk	H-At Risk	34.02	34.97	35.05	H-WI500	H-At Risk	H-At Risk
14 Parrish Road Sandringham	H	120	109	0	34.65	34.8	Assumed	34.2	34.8	34.9	H-Not at Risk	H-At Risk	H-At Risk	-	34.97	35.05	H-Not at Risk	H-At Risk	H-At Risk
6 Fowler Avenue Mt Albert	H	166	163	34.52	34.29	34.52	Morphum	34.4	34.9	35.1	H-WI500	H-At Risk	H-At Risk	34.14	34.96	35.19	H-WI500	H-At Risk	H-At Risk
22 Parrish Road Sandringham	H	159	156	34.81	34.69	34.81	Site Inspection	34.7	34.8	34.9	H-WI500	H-At Risk	H-At Risk	34.53	34.97	35.06	H-WI500	H-At Risk	H-At Risk
250-252 Sandringham Road Sandringham	H	546	496	34.72	34.4	34.72	Morphum	34.2	34.8	34.9	H-Not at Risk	H-At Risk	H-At Risk	34.02	34.97	35.05	H-Not at Risk	H-At Risk	H-At Risk
2 Fowler Avenue Mt Albert	H	122	120	35.02	34.83	35.02	Site Inspection	34.8	34.9	35.1	H-WI500	H-WI500	H-At Risk	34.79	34.96	35.19	H-WI500	H-WI500	H-At Risk
40 Elizabeth Street Mt Eden	H	222	218	0	36.58	36.73	Assumed	-	36.8	36.8	H-Not at Risk	H-At Risk	H-At Risk	35.86	35.76	35.80	H-Not at Risk	H-Not at Risk	H-Not at Risk
9 Parrish Road Sandringham	H	136	134	34.69	34.18	34.69	Morphum	34.2	34.8	34.9	H-WI500	H-At Risk	H-At Risk	34.10	34.97	35.05	H-Not at Risk	H-At Risk	H-At Risk
42 Elizabeth Street Mt Eden	H	165	162	0	35.66	35.81	Assumed	35.8	35.9	35.9	H-At Risk	H-At Risk	H-At Risk	35.80	35.87	35.91	H-At Risk	H-At Risk	H-At Risk
24/2 Cornwallis Street Mt Albert	H	289	263	31.74	32.97	31.74	Morphum	32.2	32.4	32.5	H-At Risk	H-At Risk	H-At Risk	32.15	32.37	32.45	H-At Risk	H-At Risk	H-At Risk
50 Gribblehirst Road Sandringham	H	130	118	35.27	34.9	35.27	Morphum	35.2	35.3	35.3	H-WI500	H-At Risk	H-At Risk	35.21	35.34	35.37	H-WI500	H-At Risk	H-At Risk
254 Sandringham Road Sandringham	H	123	111	34.25	34.08	34.25	Morphum	34.2	34.8	34.9	H-WI500	H-At Risk	H-At Risk	33.94	34.97	35.05	H-WI500	H-At Risk	H-At Risk
34 Parrish Road Sandringham	H	128	116	35.15	34.93	35.15	Morphum	35.2	35.3	35.3	H-At Risk	H-At Risk	H-At Risk	35.20	35.32	35.35	H-At Risk	H-At Risk	H-At Risk
24/3 Cornwallis Street Mt Albert	H	99	97	32.11	32.2	32.11	Morphum	32.2	32.4	32.5	H-At Risk	H-At Risk	H-At Risk	32.16	32.37	32.61	H-At Risk	H-At Risk	H-At Risk
24/1 Cornwallis Street Mt Albert	H	211	207	31.85	31.89	31.85	Morphum	32.2	32.4	32.5	H-At Risk	H-At Risk	H-At Risk	32.15	32.37	32.45	H-At Risk	H-At Risk	H-At Risk
28 Lloyd Avenue Mt Albert	H	162	159	0	35.46	35.61	Assumed	35.6	35.8	35.9	H-At Risk	H-At Risk	H-At Risk	35.09	35.13	35.20	H-Not at Risk	H-WI500	H-WI500
258 Sandringham Road Sandringham	H	160	157	33.85	34.98	33.85	Site Inspection	34.2	34.8	34.9	H-At Risk	H-At Risk	H-At Risk	-	34.97	35.05	H-Not at Risk	H-At Risk	H-At Risk
53 St Albans Avenue Mt Eden	H	102	101	35.27	34.52	35.27	Morphum	35.2	35.3	35.3	H-WI500	H-At Risk	H-At Risk	35.21	35.34	35.37	H-WI500	H-At Risk	H-At Risk
46 Parrish Road Sandringham	H	107	97	35.19	34.66	35.19	Morphum	35.2	35.3	35.3	H-At Risk	H-At Risk	H-At Risk	35.21	35.34	35.37	H-At Risk	H-At Risk	H-At Risk
39 Parrish Road Sandringham	H	161	147	35.25	34.83	35.25	Morphum	35.2	35.3	35.3	H-WI500	H-At Risk	H-At Risk	35.21	35.33	35.36	H-At Risk	H-At Risk	H-At Risk
41 Parrish Road Sandringham	H	148	145	35.08	34.56	35.08	Morphum	35.2	35.3	35.3	H-At Risk	H-At Risk	H-At Risk	35.21	35.33	35.36	H-At Risk	H-At Risk	H-At Risk
43 Parrish Road Sandringham	H	119	117	35.16	34.68	35.16	Morphum	35.2	35.3	35.3	H-At Risk	H-At Risk	H-At Risk	35.21	35.33	35.36	H-At Risk	H-At Risk	H-At Risk
45 Parrish Road Sandringham	H	94	85	35.18	34.82	35.18	Morphum	35.2	35.3	35.3	H-At Risk	H-At Risk	H-At Risk	35.21	35.33	35.36	H-At Risk	H-At Risk	H-At Risk
28 Cambourne Road Sandringham	H	177	173	0	35.15	35.3	Assumed	35.2	35.3	35.3	H-WI500	H-At Risk	H-At Risk	35.20	35.32	35.35	H-WI500	H-At Risk	H-At Risk
840 New North Road Mt Albert	H	176	172	0	43.37	43.52	Assumed	-	43.6	43.6	H-Not at Risk	H-At Risk	H-At Risk	-	42.23	42.24	H-Not at Risk	H-Not at Risk	H-Not at Risk
15 Cornwallis Street Mt Albert	H	154	151	35.35	35.49	35.35	Morphum	35.7	35.9	35.9	H-At Risk	H-At Risk	H-At Risk	35.52	35.85	35.88	H-At Risk	H-At Risk	H-At Risk
24A Aroha Avenue Sandringham	H	170	167	34.48	35.33	34.48	Morphum	35.7	35.9	35.9	H-At Risk	H-At Risk	H-At Risk	35.52	35.85	35.88	H-At Risk	H-At Risk	H-At Risk
18/3 Aroha Avenue Sandringham	H	131	129	35.62	35.63	35.62	Morphum	35.7	35.9	35.9	H-At Risk	H-At Risk	H-At Risk	35.52	35.85	35.88	H-WI500	H-At Risk	H-At Risk
38 Eldon Road Balmoral	H	138	135	35.17	35.03	35.17	Morphum	35.2	35.3	35.3	H-At Risk	H-At Risk	H-At Risk	35.22	35.34	35.37	H-At Risk	H-At Risk	H-At Risk
66A Grange Road Mt Eden	H	157	143	71.2	71.63	71.2	Site Inspection	71.2	71.5	71.5	H-At Risk	H-At Risk	H-At Risk	71.07	71.11	71.12	H-WI500	H-WI500	H-WI500
35 Goring Road Sandringham	H	225	221	35	35.23	35	Site Inspection	35.2	35.3	35.3	H-At Risk	H-At Risk	H-At Risk	35.21	35.33	35.36	H-At Risk	H-At Risk	H-At Risk
882 New North Road Mt Albert	H	200	182	47.72	47.63	47.72	Site Inspection	47.4	48.1	48.4	H-WI500	H-At Risk	H-At Risk	47.24	47.27	47.28	H-WI500	H-WI500	H-WI500
884 New North Road Mt Albert	H	458	417	50.35	50.77	50.35	Site Inspection	50.6	50.8	50.8	H-At Risk	H-At Risk	H-At Risk	49.67	50.01	50.02	H-Not at Risk	H-WI500	H-WI500
73b Alberton Avenue Mt Albert	H	161	158	33.48	36.08	33.48	SKM	34.2	34.4	34.4	H-At Risk	H-At Risk	H-At Risk	34.31	34.42	34.46	H-At Risk	H-At Risk	H-At Risk
41 Alexis Avenue Mt Albert	H	200	197	36.77	36.12	36.77	Morphum	36.9	36.9	36.9	H-At Risk	H-At Risk	H-At Risk	36.65	36.70	36.72	H-WI500	H-WI500	H-At Risk
35 Fairview Road Mt Eden	H	231	226	0	74.02	74.17	Assumed	74.3	74.3	74.3	H-At Risk	H-At Risk	H-At Risk	74.03	73.76	73.76	H-WI500	H-WI500	H-WI500
21 Fairview Road Mt Eden	H	130	127	79.43	79.88	79.43	Site Inspection	-	79.7	79.7	H-Not at Risk	H-At Risk	H-At Risk	79.17	79.20	79.20	H-WI500	H-WI500	H-WI500
273 Balmoral Road Sandringham	H	131	129	41.24	41.07	41.24	Site Inspection	40.9	41.2	41.2	H-WI500	H-WI500	H-At Risk	40.81	41.13	41.35	H-WI500	H-WI500	H-At Risk
63 Woodside Road Mt Eden	H	176	173	63.75	63.79	63.75	Site Inspection	63.9	63.9	64	H-At Risk	H-At Risk	H-At Risk	63.92	63.97	63.98	H-At Risk	H-At Risk	H-At Risk
62 Woodside Road Mt Eden	H	428	420	0	61.64	61.79	Assumed	61.9	61.9	61.9	H-At Risk	H-At Risk	H-At Risk	61.41	61.43	61.44	H-WI500	H-WI500	H-WI500
272 Balmoral Road Sandringham	H	169	166	41.48	41.17	41.48	Morphum	40.6	41.4	41.8	H-Not at Risk	H-WI500	H-At Risk	-	41.58	41.88	H-Not at Risk	H-At Risk	H-At Risk
270 Balmoral Road Sandringham	H	194	191	41.13	40.82	41.13	Morphum	40.6	41.4	41.8	H-Not at Risk	H-At Risk	H-At Risk	40.38	41.58	41.88	H-Not at Risk	H-At Risk	H-At Risk
272A Balmoral Road Sandringham	H	144	141	40.18	40.34	40.18	Morphum	40.6	41.4	41.8	H-At Risk	H-At Risk	H-At Risk	40.38	41.58	41.88	H-At Risk	H-At Risk	H-At Risk
266A Balmoral Road Sandringham	H	116	114	40.15	40.13	40.15	Morphum	40.6	41.4	41.8	H-At Risk	H-At Risk	H-At Risk	40.38	41.58	41.88	H-At Risk	H-At Risk	H-At Risk
270 Balmoral Road Sandringham	H	245	241	39.96	40.2	39.96	Morphum	40.6	41.4	41.8	H-At Risk	H-At Risk	H-At Risk	40.38	41.58	41.88	H-At Risk	H-At Risk	H-At Risk
30 Grove Road Sandringham	H	167	164	37.03	37.42	37.03	SKM	36.6	36.9	37.1	H-WI500	H-WI500	H-At Risk	36.47	37.01	37.13	H-Not at Risk	H-At Risk	H-At Risk
19A Fowlds Avenue Sandringham	H	110	108	35.61	34.98	35.61	Morphum	34.7	35.7	35.8	H-Not at Risk	H-At Risk	H-At Risk	34.56	35.81	35.89	H-Not at Risk	H-At Risk	H-At Risk
268A Balmoral Road Sandringham	H	101	100	40.81	40.55	40.81	Morphum	40.6	41.4	41.8	H-WI500	H-At Risk	H-At Risk	40.38	41.58	41.88	H-WI500	H-At Risk	H-At Risk
26 Westminster Road Balmoral	H	155	152	50.04	58.69	50.04	Morphum	58.8	58.9	58.9	H-At Risk	H-At Risk	H-At Risk	58.70	58.74	58.75	H-At Risk	H-At Risk	H-At Risk
24 Westminster Road Balmoral	H	190	187	58.73	58.58	58.73	Site Inspection	58.7	58.7	58.7	H-WI500	H-WI500	H-At Risk	58.62	58.65	58.67	H-WI500	H-WI500	H-WI500
8 Kingsway Avenue Sandringham	H	146	143	36.44	38.01	36.44	SKM	36.6	36.9	37	H-At Risk	H-At Risk	H-At Risk	36.47	37.01	37.13	H-At Risk	H-At Risk	H-At Risk
21B Kingsway Avenue Sandringham	H	131	129	35.76	37.03	35.76	SKM	35.8	35.9	35.9	H-WI500	H-At Risk	H-At Risk	-	35.94	35.98	H-Not at Risk	H-At Risk	H-At Risk
8a Kingsway Avenue Sandringham	H	178	175	36.36	36.53	36.36	SKM	36.6	36.9	37	H-At Risk	H-At Risk	H-At Risk	36.47	37.01	37.13	H-At Risk	H-At Risk	H-At Risk
51 Dexter Avenue Balmoral	H	280	275	53.82	53.7	53.82	Site Inspection	53.6	53.8	53.8	H-WI500	H-WI500	H-At Risk	53.74	53.89	53.93	H-WI500	H-At Risk	H-At Risk
55 Dexter Avenue Balmoral	H	154	151	53.7	53.55	53.7	Site Inspection	53.6	53.8	53.8	H-WI500	H-At Risk	H-At Risk	53.74	53.89	53.93	H-At Risk	H-At Risk	H-At Risk

Address	Floor Type	Floor Area (m2)	Adjusted Floor Area (m2)	Survey Level (RL m)	Ground EL (m) Max_GRID	Floor Level (RL)	Floor Level Source	2011 FHM with Climate Change						2014 FHM Results with Climate Change					
								10-Year Flood Elevation	50-Year Flood Elevation	100-Year Flood Elevation	10-Year Flood	50-Year Flood	100-Year Flood	10-Year Flood Elevation	50-Year Flood Elevation	100-Year Flood Elevation	10-Year Flood	50-Year Flood	100-Year Flood
53 Dexter Avenue Balmoral	H	180	177	53.82	53.75	53.82	Site Inspection	53.6	53.8	53.8	H-WI500	H-WI500	H-At Risk	53.74	53.89	53.93	H-WI500	H-At Risk	H-At Risk
28 Fowlds Avenue Sandringham	H	250	245	35.86	35.79	35.86	SKM	35.8	35.9	36	H-WI500	H-At Risk	H-At Risk	35.57	35.96	36.00	H-WI500	H-At Risk	H-At Risk
26 Mewburn Avenue Balmoral	H	168	165	0	55.5	55.65	Assumed	55.9	55.9	55.9	H-At Risk	H-At Risk	H-At Risk	55.18	55.25	55.27	H-WI500	H-WI500	H-WI500
28 Mewburn Avenue Balmoral	H	152	149	55.06	54.96	55.06	Site Inspection	55.2	55.2	55.2	H-At Risk	H-At Risk	H-At Risk	55.09	55.16	55.19	H-At Risk	H-At Risk	H-At Risk
30 Mewburn Avenue Balmoral	H	127	125	54.92	54.97	54.92	Site Inspection	55.1	55.1	55.2	H-At Risk	H-At Risk	H-At Risk	55.08	55.16	55.18	H-At Risk	H-At Risk	H-At Risk
43 Mt Albert Road Mt Albert	H	137	135	0	62.97	63.12	Assumed	-	63.3	63.3	H-Not at Risk	H-At Risk	H-At Risk	62.72	62.45	62.46	H-WI500	H-Not at Risk	H-Not at Risk
32 Fowlds Avenue Sandringham	H	327	322	36.05	35.91	36.05	SKM	35.9	36	36.1	H-WI500	H-WI500	H-At Risk	35.88	35.97	36.01	H-WI500	H-WI500	H-At Risk
37 Shorwell Street Sandringham	H	118	116	35.67	35.91	35.67	Site Inspection	-	35.9	36	H-Not at Risk	H-At Risk	H-At Risk	-	35.97	36.01	H-Not at Risk	H-At Risk	H-At Risk
29a Kingsway Avenue Sandringham	H	96	95	35.35	36.76	35.35	SKM	-	35.9	36	H-Not at Risk	H-At Risk	H-At Risk	-	35.97	36.01	H-Not at Risk	H-At Risk	H-At Risk
10A Arabi Street Sandringham	H	321	315	42.92	43.85	42.92	Site Inspection	43.4	43.7	43.9	H-At Risk	H-At Risk	H-At Risk	43.37	43.74	43.80	H-At Risk	H-At Risk	H-At Risk
9 Arabi Street Sandringham	H	183	179	0	43.57	43.72	Assumed	43.4	43.7	43.7	H-WI500	H-WI500	H-At Risk	43.32	43.73	43.78	H-WI500	H-At Risk	H-At Risk
35 Mewburn Avenue Balmoral	H	192	189	0	53.82	53.97	Assumed	54	54	54	H-At Risk	H-At Risk	H-At Risk	53.79	53.74	53.76	H-WI500	H-WI500	H-WI500
34A Fowlds Avenue Sandringham	H	70	69	36.28	36.39	36.28	Morphum	36.4	36.6	36.7	H-At Risk	H-At Risk	H-At Risk	36.34	36.67	36.71	H-At Risk	H-At Risk	H-At Risk
32 Wiremu Street Balmoral	H	116	114	0	46.84	46.99	Assumed	-	47	47.1	H-Not at Risk	H-At Risk	H-At Risk	-	45.72	45.73	H-Not at Risk	H-Not at Risk	H-Not at Risk
20 Jason Avenue Sandringham	H	84	82	0	43.5	43.65	Assumed	-	43.7	43.7	H-Not at Risk	H-At Risk	H-At Risk	-	43.71	43.75	H-Not at Risk	H-At Risk	H-At Risk
15A Arabi Street Sandringham	H	88	86	0	43.57	43.72	Assumed	43.4	43.7	43.7	H-WI500	H-WI500	H-At Risk	43.37	43.73	43.78	H-WI500	H-At Risk	H-At Risk
15 Pine Street Balmoral	H	151	148	43.96	43.61	43.96	Site Inspection	43.4	43.9	44.1	H-Not at Risk	H-WI500	H-At Risk	43.38	43.74	43.80	H-Not at Risk	H-WI500	H-WI500
48 Shorwell Street Sandringham	H	169	166	0	36.92	37.07	Assumed	36.7	37.2	37.2	H-WI500	H-At Risk	H-At Risk	-	37.04	37.09	H-Not at Risk	H-At Risk	H-At Risk
39 Mewburn Avenue Balmoral	H	215	211	53.62	53.35	53.62	Morphum	53.5	53.6	53.6	H-WI500	H-WI500	H-At Risk	53.55	53.64	53.68	H-WI500	H-At Risk	H-At Risk
22 Jason Avenue Sandringham	H	177	174	0	43.49	43.64	Assumed	-	43.7	43.7	H-Not at Risk	H-At Risk	H-At Risk	-	43.72	43.76	H-Not at Risk	H-At Risk	H-At Risk
42 Mewburn Avenue Balmoral	H	188	185	53.89	53.85	53.89	Morphum	54.1	54.1	54.1	H-At Risk	H-At Risk	H-At Risk	54.09	54.11	54.11	H-At Risk	H-At Risk	H-At Risk
24 Jason Avenue Sandringham	H	129	127	0	43.55	43.7	Assumed	43.4	43.7	43.7	H-WI500	H-WI500	H-At Risk	43.40	43.72	43.76	H-WI500	H-At Risk	H-At Risk
41A Mewburn Avenue Balmoral	H	148	146	53.58	53.26	53.58	Morphum	53.5	53.6	53.6	H-WI500	H-At Risk	H-At Risk	53.55	53.61	53.64	H-At Risk	H-At Risk	H-At Risk
41 Mewburn Avenue Balmoral	H	74	73	53.37	53.26	53.37	Morphum	53.5	53.6	53.6	H-At Risk	H-At Risk	H-At Risk	53.54	53.63	53.66	H-At Risk	H-At Risk	H-At Risk
38 Shorwell Street Sandringham	H	115	113	38.34	37.73	38.34	SKM	38.3	38.5	38.5	H-WI500	H-At Risk	H-At Risk	-	38.53	38.57	H-Not at Risk	H-At Risk	H-At Risk
22 Kingsway Avenue Sandringham	H	132	130	38.31	38.03	38.31	SKM	38.3	38.5	38.5	H-WI500	H-At Risk	H-At Risk	-	38.50	38.54	H-Not at Risk	H-At Risk	H-At Risk
24 Kingsway Avenue Sandringham	H	398	391	0	38.26	38.41	Assumed	38.3	38.5	38.5	H-WI500	H-At Risk	H-At Risk	38.22	38.45	38.48	H-WI500	H-At Risk	H-At Risk
41 Kingsway Avenue Sandringham	H	445	437	0	38.11	38.26	Assumed	37.9	38.2	38.3	H-WI500	H-WI500	H-At Risk	37.76	38.28	38.34	H-Not at Risk	H-At Risk	H-At Risk
250 Meola Road Pt Chevalier	H	186	183	13.19	15.38	13.19	SKM	-	13.1	13.2	H-Not at Risk	H-WI500	H-At Risk	-	12.84	12.86	H-Not at Risk	H-WI500	H-WI500
103 Kiwi Road Pt Chevalier	H	224	220	14.87	14.9	14.87	SKM	14.8	14.9	14.9	H-WI500	H-At Risk	H-At Risk	14.86	14.90	14.91	H-At Risk	H-At Risk	H-At Risk
75 Premier Avenue Pt Chevalier	H	101	99	9.28	9.59	9.28	Site Inspection	-	9.3	9.3	H-Not at Risk	H-WI500	H-At Risk	9.15	8.86	8.86	H-WI500	H-WI500	H-WI500
69b Huia Road Pt Chevalier	H	159	156	16.19	17.27	16.19	SKM	17.6	17.6	17.6	H-At Risk	H-At Risk	H-At Risk	16.51	16.53	16.54	H-At Risk	H-At Risk	H-At Risk
53 Kiwi Road Pt Chevalier	H	158	155	0	13.62	13.77	Assumed	13.3	14.2	14.2	H-WI500	H-At Risk	H-At Risk	14.33	14.35	14.36	H-At Risk	H-At Risk	H-At Risk
127 Pt Chevalier Road Pt Chevalier	H	117	115	0	21.89	22.04	Assumed	21.5	21.8	22.2	H-Not at Risk	H-WI500	H-At Risk	21.46	21.49	21.50	H-Not at Risk	H-Not at Risk	H-Not at Risk
127/2 Pt Chevalier Road Pt Chevalier	H	111	109	0	23.03	23.18	Assumed	-	23.2	23.3	H-Not at Risk	H-At Risk	H-At Risk	23.01	22.85	22.53	H-WI500	H-WI500	H-Not at Risk
19 Premier Avenue Pt Chevalier	H	75	73	0	9.64	9.79	Assumed	9.8	9.8	9.8	H-WI500	H-At Risk	H-At Risk	9.55	9.59	9.61	H-WI500	H-WI500	H-WI500
78/2 Malvern Road Mt Albert	H	136	124	22.54	22.81	22.54	Morphum	22.8	23	23.1	H-At Risk	H-At Risk	H-At Risk	22.78	23.10	23.17	H-At Risk	H-At Risk	H-At Risk
2A Marlborough Street Kingsland	H	97	95	50.52	50.9	50.52	Morphum	51.1	51.3	51.3	H-At Risk	H-At Risk	H-At Risk	50.68	50.74	50.76	H-At Risk	H-At Risk	H-At Risk
2 Marlborough Street Kingsland	H	140	127	51.36	51.45	51.36	Morphum	-	51.1	51.6	H-Not at Risk	H-WI500	H-At Risk	-	-	-	H-Not at Risk	H-Not at Risk	H-Not at Risk
10 Onslow Road Mt Eden	H	117	115	51.55	51.33	51.55	Morphum	51.7	51.7	51.8	H-At Risk	H-At Risk	H-At Risk	51.71	51.76	51.77	H-At Risk	H-At Risk	H-At Risk
4/2 Brewster Avenue St Lukes	H	143	141	20.9	20.6	20.9	SKM	20.6	20.9	21	H-WI500	H-At Risk	H-At Risk	20.50	21.04	21.19	H-WI500	H-At Risk	H-At Risk
3 Rossmay Terrace Kingsland	H	147	144	33.97	33.63	33.97	SKM	33.9	34.1	34.1	H-WI500	H-At Risk	H-At Risk	34.15	34.36	34.45	H-At Risk	H-At Risk	H-At Risk
8 Brewster Avenue St Lukes	H	136	133	20.64	20.15	20.64	SKM	20.6	20.9	21	H-WI500	H-At Risk	H-At Risk	20.50	21.04	21.19	H-WI500	H-At Risk	H-At Risk
10 Brewster Avenue St Lukes	H	210	207	20.56	20.36	20.56	SKM	20.6	20.9	21	H-WI500	H-At Risk	H-At Risk	20.50	21.04	21.19	H-WI500	H-At Risk	H-At Risk
12 Brewster Avenue St Lukes	H	141	138	20.44	20.3	20.44	SKM	20.6	20.9	21	H-At Risk	H-At Risk	H-At Risk	20.50	21.04	21.19	H-At Risk	H-At Risk	H-At Risk
10 Verona Avenue Mt Albert	H	214	210	15.32	17.11	15.32	SKM	16	16.1	16.1	H-At Risk	H-At Risk	H-At Risk	16.01	16.09	16.12	H-At Risk	H-At Risk	H-At Risk
14 Brewster Avenue St Lukes	H	189	185	20.48	20.2	20.48	SKM	20.6	20.9	21	H-At Risk	H-At Risk	H-At Risk	20.50	21.04	21.19	H-At Risk	H-At Risk	H-At Risk
16 Walters Road Kingsland	H	181	178	0	43.76	43.91	Assumed	43.1	44.2	44.2	H-Not at Risk	H-At Risk	H-At Risk	43.83	42.89	42.91	H-WI500	H-Not at Risk	H-Not at Risk
6 Rossmay Terrace Kingsland	H	171	168	33.76	33.6	33.76	SKM	33.9	34.1	34.1	H-At Risk	H-At Risk	H-At Risk	34.15	34.36	34.45	H-At Risk	H-At Risk	H-At Risk
16b Brewster Avenue St Lukes	H	146	144	20.61	20.61	20.61	SKM	20.6	20.9	21	H-WI500	H-At Risk	H-At Risk	20.50	21.04	21.19	H-WI500	H-At Risk	H-At Risk
5 Brewster Avenue St Lukes	H	143	140	20.8	20.75	20.8	Site Inspection	20.6	20.9	21	H-WI500	H-At Risk	H-At Risk	20.50	21.04	21.19	H-WI500	H-At Risk	H-At Risk
18 Brewster Avenue St Lukes	H	93	92	20.85	20.53	20.85	SKM	20.6	20.9	21	H-WI500	H-At Risk	H-At Risk	20.50	21.04	21.19	H-WI500	H-At Risk	H-At Risk
20 Brewster Avenue St Lukes	H	141	128	20.81	20.6	20.81	Morphum	20.6	20.9	21	H-WI500	H-At Risk	H-At Risk	20.50	21.04	21.19	H-WI500	H-At Risk	H-At Risk
4 Parkhill Road St Lukes	H	137	135	26.28	26.95	26.28	SKM	26.8	27.1	27.1	H-At Risk	H-At Risk	H-At Risk	26.71	27.05	27.15	H-At Risk	H-At Risk	H-At Risk
13 Brewster Avenue St Lukes	H	147	144	20.98	20.64	20.98	Morphum	20.6	20.9	21	H-WI500	H-WI500	H-At Risk	20.50	21.04	21.19	H-WI500	H-At Risk	H-At Risk
24 Kowhai Street Kingsland	H	155	152	0	41.82	41.97	Assumed	40.3	42.5	42.5	H-Not at Risk	H-At Risk	H-At Risk	40.26	41.70	41.71	H-Not at Risk	H-WI500	H-WI500
2 Parkhill Road St Lukes	H	169	166	26.72	26.42	26.72	SKM	26.8	27.1	27.1	H-At Risk	H-At Risk	H-At Risk	26.71	27.05	27.15	H-At Risk	H-At Risk	H-At Risk
9 Carrick Place Mt Eden	H	352	346	55.01	56.33	55.01	Site Inspection	55.1	55.1	55.2	H-At Risk	H-At Risk	H-At Risk	52.79	54.46	54.56	H-Not at Risk	H-Not at Risk	H-WI500
3 Parkhill Road St Lukes	H	162	159	26.96	26.78	26.96	Site Inspection	26.8	27.1	27.1	H-WI500	H-At Risk	H-At Risk	26.71	27.05	27.15	H-WI500	H-At Risk	H-At Risk
24 Horoeka Avenue Mt Eden	H	138	135	0	68.24	68.39	Assumed	68.4	68.5	68.5	H-WI500	H-At Risk	H-At Risk	68.00	68.12	68.15	H-WI500	H-WI500	H-WI500
1 Malvern Road Mt Albert	H	147	144	26.92	26.98	26.92	Site Inspection	27.1	27.2	27.2	H-At Risk	H-At Risk	H-At Risk	27.16	27.18	27.18	H-At Risk	H-At Risk	H-At Risk
37 Margaret Avenue Mt Albert	H	160	157	0	19.74	19.89	Assumed	19.8	19.9	19.9	H-WI500	H-WI500	H-At Risk	18.71	18.64	18.65	H-Not at Risk	H-Not at Risk	H-Not at Risk
26 Horoeka Avenue Mt Eden	H	185	181	0	66.9	67.05	Assumed	66.8	67.2	67.2	H-WI500	H-At Risk	H-At Risk	66.24	66.44	66.46	H-Not at Risk	H-Not at Risk	H-Not at Risk
102A Asquith Avenue Mt Albert	H	90	88	19.68	19.23	19.68	Morphum	19.7	19.7	19.7	H-At Risk	H-At Risk	H-At Risk	-	19.69	19.70	H-Not at Risk	H-At Risk	H-At Risk
35 Margaret Avenue Mt Albert	H	187	184	19.73	19.86	19.73	SKM	18.8	19.8	19.8	H-Not at Risk	H-At Risk	H-At Risk	19.09	19.50	19.51	H-Not at Risk	H-WI500	H-WI500
102 Asquith Avenue Mt Albert	H	128	125	19.73	19.12	19.73	Morphum	19.7	19.7	19.7	H-WI500	H-At Risk	H-At Risk	-	19.69	19.70	H-Not at Risk	H-At Risk	H-At Risk
10 Leamington Road Mt Eden	H	106	104	0	57.66	57.81	Assumed	57.8	58	58	H-At Risk	H-At Risk	H-At Risk	57.49	57.83	57.85	H-WI500	H-At Risk	H-At Risk
18 Raleigh Street Mt Eden	H	151	148	37.35	37.03	37.35	SKM	36.1	37.3	37.8	H-Not at Risk	H-WI500	H-At Risk	36.20	37.50	37.98	H-Not at Risk	H-At Risk	H-At Risk
25 Horoeka Avenue Mt Eden	H	198	181	0	63.51	63.66	Assumed	63.8	63.9	64	H-At Risk	H-At Risk	H-At Risk	61.83	62.12	62.14	H-Not at Risk	H-Not at Risk	H-Not at Risk
18 Bellevue Road Mt Eden	H	229	224	78.19	78.24	78.19	Site Inspection	78.4	78.4	78.5	H-At Risk	H-At Risk	H-At Risk	77.86	77.90	77.91	H-WI500	H-WI500	H-WI500
12 Raleigh Street Mt Eden	H	189	186	0	38.03	38.18	Assumed	38.2	38.2	38.2	H-WI500	H-At Risk	H-At Risk	-	37.50	37.98	H-Not at Risk	H-Not at Risk	H-WI500
36/7 Margaret Avenue Mt Albert	H	235	231	19.93	20.23	19.93	SKM	20.2	20.3	20.3	H-At Risk	H-At Risk	H-At Risk	20.25	20.36	20.39	H-At Risk	H-At Risk	H-At Risk
14 Bellevue Road Mt Eden	H	253	249	0	82.36	82.51	Assumed	81.5	82.7	82.7	H-Not at Risk	H-At Risk	H-At Risk	80.61	80.97	80.98	H-Not at Risk	H-Not at Risk	H-Not at Risk
16 Raleigh Street Mt Eden	H	133	131	36.39	36.49	36.39	SKM	36.1	37.3	37.8	H-WI500	H-At Risk	H-At Risk	36.20	37.50	37.98	H-WI500	H-At Risk	H-At Risk
27 Horoeka Avenue Mt Eden	H	125	123	0	63.52	63.67	Assumed	62.9	63.8	63.8	H-Not at Risk	H-At Risk	H-At Risk	62.26	63.88	63.90	H-Not at Risk	H-At Risk	H-At Risk
36/1 Margaret Avenue Mt Albert	H	239	235	20	20.07	20	SKM	20.2	20.3	20.3	H-At Risk	H-At Risk	H-At Risk	20.25	20.35	20.38	H-At Risk	H-At Risk	H-At Risk

Address	Floor Type	Floor Area (m2)	Adjusted Floor Area (m2)	Survey Level (RL m)	Ground EL (m) Max_GRID	Floor Level (RL)	Floor Level Source	2011 FHM with Climate Change						2014 FHM Results with Climate Change					
								10-Year Flood Elevation	50-Year Flood Elevation	100-Year Flood Elevation	10-Year Flood	50-Year Flood	100-Year Flood	10-Year Flood Elevation	50-Year Flood Elevation	100-Year Flood Elevation	10-Year Flood	50-Year Flood	100-Year Flood
29 Horoeka Avenue Mt Eden	H	427	419	0	63.69	63.84	Assumed	63.9	63.9	63.9	H-At Risk	H-At Risk	H-At Risk	-	63.10	62.85	H-Not at Risk	H-Not at Risk	H-Not at Risk
8 Bellevue Road Mt Eden	H	332	326	90.03	91.1	90.03	Site Inspection	90.7	90.7	91.1	H-At Risk	H-At Risk	H-At Risk	89.04	89.78	89.79	H-Not at Risk	H-WI500	H-WI500
36/7 Margaret Avenue Mt Albert	H	73	72	19.93	19.83	19.93	SKM	20.2	20.3	20.4	H-At Risk	H-At Risk	H-At Risk	20.25	20.36	20.39	H-At Risk	H-At Risk	H-At Risk
14 Cricket Avenue Kingsland	H	155	153	0	37.39	37.54	Assumed	-	37.3	37.8	H-Not at Risk	H-WI500	H-At Risk	-	37.50	37.98	H-Not at Risk	H-At Risk	H-At Risk
103 Valley Road Mt Eden	H	222	218	0	53.47	53.62	Assumed	52.9	53.9	53.9	H-Not at Risk	H-At Risk	H-At Risk	52.75	52.81	52.84	H-Not at Risk	H-Not at Risk	H-Not at Risk
105 Valley Road Mt Eden	H	152	138	0	52.69	52.84	Assumed	52.9	52.9	52.9	H-At Risk	H-At Risk	H-At Risk	52.61	52.72	52.75	H-WI500	H-WI500	H-WI500
27/1 Bellwood Avenue Mt Eden	H	151	148	36.66	36.52	36.66	SKM	36.1	37.3	37.8	H-Not at Risk	H-At Risk	H-At Risk	36.21	37.50	37.98	H-WI500	H-At Risk	H-At Risk
699 New North Road St Lukes	H	78	76	0	28.88	29.03	Assumed	28.9	29	29.1	H-WI500	H-WI500	H-At Risk	28.87	29.10	29.17	H-WI500	H-At Risk	H-At Risk
32 Bellwood Avenue Mt Eden	H	188	171	37.56	37.88	37.56	SKM	-	37.3	37.8	H-Not at Risk	H-WI500	H-At Risk	-	37.50	37.98	H-Not at Risk	H-WI500	H-At Risk
10 Royal Terrace Kingsland	H	103	102	0	38.64	38.79	Assumed	38.8	38.8	38.8	H-WI500	H-WI500	H-At Risk	-	37.83	37.84	H-Not at Risk	H-Not at Risk	H-Not at Risk
21 Jesmond Terrace St Lukes	H	164	162	22.16	23.22	22.16	SKM	22.6	23.6	24	H-At Risk	H-At Risk	H-At Risk	21.39	23.97	24.53	H-Not at Risk	H-At Risk	H-At Risk
33 Cromwell Street Mt Eden	H	70	68	43.97	45.3	43.97	Site Inspection	44.4	45.2	45.7	H-At Risk	H-At Risk	H-At Risk	43.59	44.90	45.73	H-WI500	H-At Risk	H-At Risk
30A Cromwell Street Mt Eden	H	120	118	0	46.99	47.14	Assumed	46.9	48.4	48.4	H-WI500	H-At Risk	H-At Risk	46.53	47.98	48.03	H-Not at Risk	H-At Risk	H-At Risk
21 Jesmond Terrace St Lukes	H	155	152	22.2	25.43	22.2	SKM	-	23.6	24	H-Not at Risk	H-At Risk	H-At Risk	21.39	23.97	24.53	H-Not at Risk	H-At Risk	H-At Risk
17 Tongariro Street Mt Eden	H	150	147	39.95	39.74	39.95	Morphum	39.8	40	40	H-WI500	H-At Risk	H-At Risk	39.45	39.67	39.77	H-WI500	H-WI500	H-WI500
25 Jesmond Terrace St Lukes	H	208	204	23.25	22.86	23.25	SKM	22.6	23.6	24	H-Not at Risk	H-At Risk	H-At Risk	21.39	23.97	24.53	H-Not at Risk	H-At Risk	H-At Risk
49 Marlborough Street Mt Eden	H	132	129	38.01	39.78	38.01	Site Inspection	37.8	38.2	38.2	H-WI500	H-At Risk	H-At Risk	38.07	38.05	42.23	H-At Risk	H-At Risk	H-At Risk
49 Marlborough Street Mt Eden	H	134	132	41.73	42.11	41.73	Site Inspection	38.6	39.8	42.2	H-Not at Risk	H-Not at Risk	H-At Risk	38.07	38.05	42.23	H-Not at Risk	H-Not at Risk	H-At Risk
1 Avenham Walk Mt Eden	H	153	139	56.89	57.89	56.89	Site Inspection	58.3	58.3	58.3	H-At Risk	H-At Risk	H-At Risk	57.15	57.65	57.66	H-At Risk	H-At Risk	H-At Risk
16 Tongariro Street Mt Eden	H	100	99	39.96	39.77	39.96	Morphum	39.8	40.1	40.1	H-WI500	H-At Risk	H-At Risk	39.86	40.07	40.17	H-WI500	H-At Risk	H-At Risk
6 Avenham Walk Mt Eden	H	89	88	0	54.15	54.30	Assumed	54.30	54.3	54.4	H-WI500	H-At Risk	H-At Risk	54.30	54.37	54.38	H-At Risk	H-At Risk	H-At Risk
11 Kenyon Avenue Mt Eden	H	161	146	53.69	53.59	53.69	Site Inspection	53.1	53.7	53.8	H-Not at Risk	H-At Risk	H-At Risk	53.17	53.31	53.32	H-Not at Risk	H-WI500	H-WI500
65 Asquith Avenue Mt Albert	H	249	245	23.58	22.95	23.58	Morphum	22.6	23.6	24	H-Not at Risk	H-At Risk	H-At Risk	-	23.97	24.53	H-Not at Risk	H-At Risk	H-At Risk
4 Woodford Road Mt Eden	H	234	230	63.3	65.67	63.3	SKM	64.8	64.8	64.8	H-At Risk	H-At Risk	H-At Risk	64.02	64.08	64.10	H-At Risk	H-At Risk	H-At Risk
6 Woodford Road Mt Eden	H	263	258	0	66.31	66.46	Assumed	66.5	66.5	66.5	H-At Risk	H-At Risk	H-At Risk	66.13	66.16	66.18	H-WI500	H-WI500	H-WI500
55 Marlborough Street Mt Eden	H	154	140	0	44.61	44.76	Assumed	-	44.8	44.8	H-Not at Risk	H-At Risk	H-At Risk	-	44.45	44.46	H-Not at Risk	H-WI500	H-WI500
14/1 Kenyon Avenue Mt Eden	H	297	292	54.24	54.59	54.24	SKM	54.3	54.3	54.4	H-At Risk	H-At Risk	H-At Risk	54.30	54.36	54.38	H-At Risk	H-At Risk	H-At Risk
34 Leslie Avenue Sandringham	H	121	110	34.05	34.78	34.05	Morphum	34.6	34.8	34.8	H-At Risk	H-At Risk	H-At Risk	34.51	34.76	34.81	H-At Risk	H-At Risk	H-At Risk
36 Cromwell Street Mt Eden	H	136	124	47.86	47.77	47.86	Site Inspection	47.7	47.8	47.9	H-WI500	H-WI500	H-At Risk	47.10	47.86	47.91	H-Not at Risk	H-At Risk	H-At Risk
17 Taupata Street Mt Eden	H	123	112	40.54	40.22	40.54	Morphum	39.7	40.6	40.7	H-Not at Risk	H-At Risk	H-At Risk	39.36	40.22	40.30	H-Not at Risk	H-WI500	H-WI500
38 Cromwell Street Mt Eden	H	173	157	0	47.71	47.86	Assumed	47.7	47.8	47.9	H-WI500	H-WI500	H-At Risk	-	47.86	47.91	H-Not at Risk	H-At Risk	H-At Risk
9 Taupata Street Mt Eden	H	106	96	0	41.78	41.93	Assumed	-	42	42	H-Not at Risk	H-At Risk	H-At Risk	-	41.75	41.80	H-Not at Risk	H-WI500	H-WI500
19 Wairere Avenue Mt Albert	H	141	139	23.16	22.95	23.16	Morphum	22.6	23.6	24	H-Not at Risk	H-At Risk	H-At Risk	-	23.97	24.53	H-Not at Risk	H-At Risk	H-At Risk
7 Pentland Avenue Mt Eden	H	154	140	68.1	67.97	68.1	Site Inspection	68.2	68.2	68.4	H-At Risk	H-At Risk	H-At Risk	66.87	66.94	66.96	H-Not at Risk	H-Not at Risk	H-Not at Risk
6 Pentland Avenue Mt Eden	H	183	180	0	70.24	70.39	Assumed	-	70.6	70.6	H-Not at Risk	H-At Risk	H-At Risk	-	69.33	69.33	H-Not at Risk	H-Not at Risk	H-Not at Risk
16 Leslie Avenue Sandringham	H	140	138	34.02	34.32	34.02	SKM	34.8	35	35.1	H-At Risk	H-At Risk	H-At Risk	34.62	34.99	35.08	H-At Risk	H-At Risk	H-At Risk

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