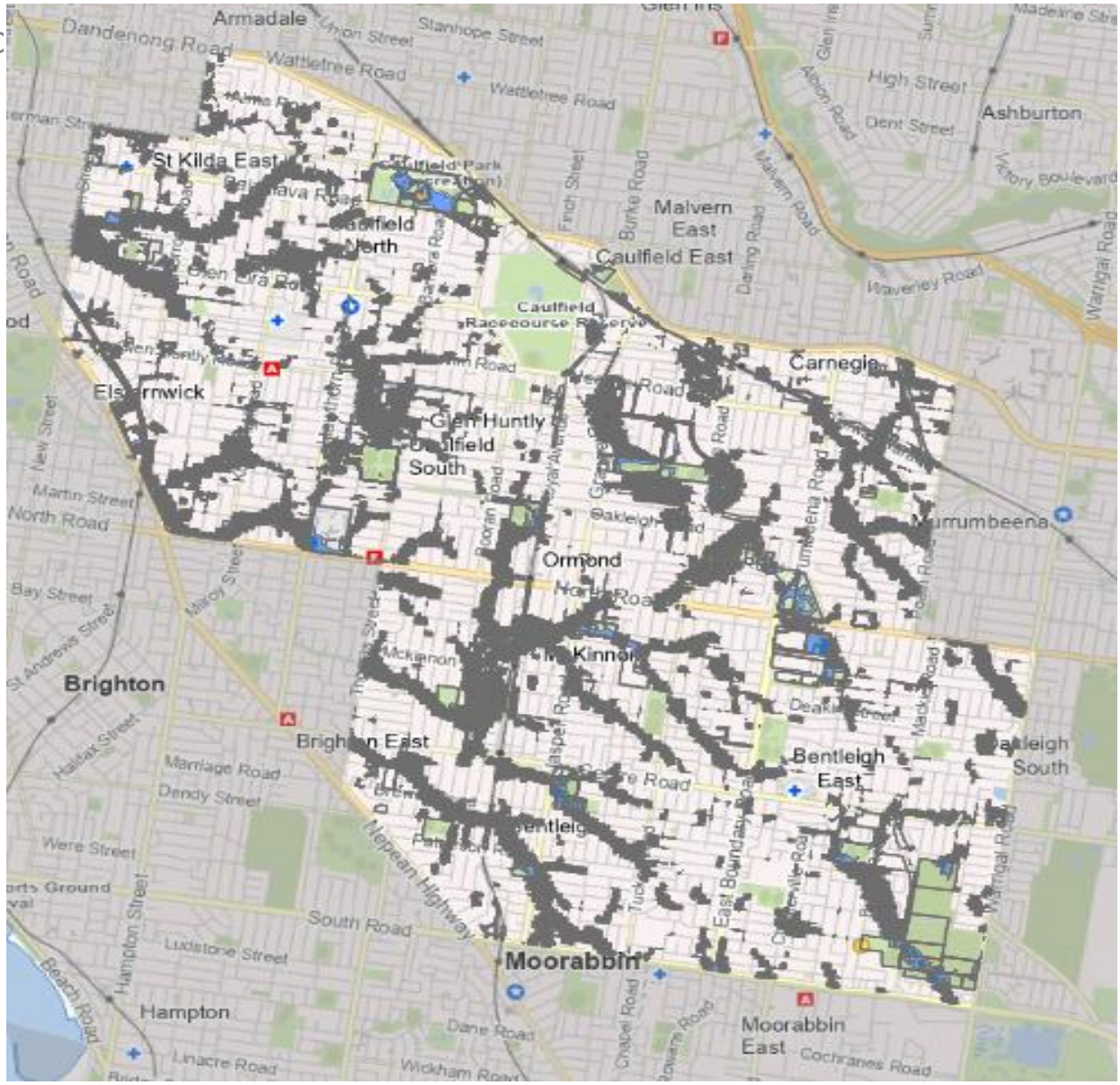

Updated Stormwater Flood Maps in City of Glen Eira

Submissions Outcomes Report

Greater Melbourne Flood Information Program

June 2026

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Glossary

AEP (Annual Exceedance Probability)	The likelihood of a flood or storm event occurring in any given year. A 1% AEP event has a 1 in 100 chance of occurring in a year.
AHD (Australian Height Datum)	The national reference level for measuring ground and flood heights.
ARR Guidelines (Australian Rainfall and Runoff Guidelines)	Australia's national standard for flood modelling and hazard assessment.
Council	Glen Eira City Council
LiDAR (Light Detection and Ranging)	High resolution elevation data used to map ground levels across the catchment.
Melbourne Water	The regional floodplain manager responsible for maintaining flood information and managing regional drainage systems.
Overland flow	Water that travels across the ground surface when underground drainage systems reach capacity.
Private drainage assets	Drains, pits, and pipes located on private land. These are not included in flood models because they are not comprehensively mapped and do not provide capacity in a 1% AEP event.
Public drainage assets	Council or Melbourne Water pipes, pits, culverts, and other stormwater infrastructure included in the model.
Flood overlay	Flood overlays identify areas prone to flooding when the capacity of the drainage system is exceeded. This overlay requires a planning permit for buildings and works.
Stormwater flood mapping	Maps showing where stormwater may travel or accumulate during major rainfall events, based on hydraulic modelling.

Executive summary

This report summarises outcomes from the public submissions process undertaken as part of consultation by Melbourne Water on updated stormwater flood map in the City of Glen Eira.

Melbourne Water, with support from local councils, is delivering the Greater Melbourne Flood Information Program, which will update flood modelling and mapping across the entire Port Phillip and Westernport region. This helps us better understand the risk of current and future flooding so we can build a safe and resilient city for today, tomorrow and for generations to come.

Delivering updated flood information involves complex technical work, and working closely with communities to explain these changes, increasing awareness of flood risks, and supporting them in preparing for potential floods. Flood models don't create flood risk – they help us to better understand the emerging risks that Melbourne now faces.

In October 2025, Melbourne Water released updated stormwater flood maps in City of Glen Eira and invited community members to review and provide feedback via an online submissions form. The submission process was designed to provide the public with an opportunity to input information that may assist with refinement of the maps, prior to them being finalised.

Melbourne Water received 134 submissions during this public consultation period in the City of Glen Eira. Submitters shared personal experiences, technical insights, queries regarding the modelling process, and suggestions about how flood information is presented.

Each submission was assessed and responses provided to each submitter. As a result of the submissions process, 4 changes were made to the stormwater flood map. These adjustments address localised differences in the City of Glen Eira flood maps and ensure they reflect current conditions.

In other cases, independent experts reviewed the technical submissions and, where required, undertook on-ground investigations. These assessments confirmed strong alignment between on-ground conditions and the modelling inputs, and no changes to the maps were required.

Feedback during the public consultation period also showed that community members are seeking clear, accurate information about flood risk, drainage responsibilities, and how flood mapping may relate to insurance and property values. While many submissions disputed the flood extents presented on the updated maps, we also received submissions from members of the public who confirmed the maps aligned with their lived experience and to report a positive experience with the consultation process.

Melbourne Water will continue to strengthen our approaches to providing such information and thank submitters for their interest and input.

Melbourne Water is grateful to all those who provided feedback and insights, which have helped validate and refine this flood information for the City of Glen Eira and to improve the way such information is presented and explained. Now that consultation and technical reviews are complete, the City of Glen Eira flood map will be finalised and published online later this year (2026). Finalisation of these new maps will inform a separate future planning scheme amendment consultation process that will enable safer planning decisions and long term risk reduction across the region.

Introduction

Background

Melbourne Water is the regional floodplain manager for the Port Phillip and Westernport catchment area, which includes the Glen Eira municipality. Our role includes maintaining up to date flood information, managing regional drainage systems, and supporting Council and emergency services to plan for and respond to flooding.

As part of our ongoing support and management processes, we are delivering the Greater Melbourne Flood Information Program which aims to provide up-to-date flood information using consistent modelling approaches, improved elevation data (such as LiDAR), and current climate change assumptions.

Public consultation

In October 2025, Melbourne Water released new stormwater flood maps for four Council areas – Glen Eira, Yarra, Darebin, and Merri-Bek. This public release of flood information was delivered in collaboration with our Council partners.

Delivering updated flood information involves complex technical work, and working closely with communities to explain these changes, helping them understand their flood risks, and to support them in preparing for potential floods.

The draft flood maps were published on our Let's Talk digital engagement platform, supported by a 12+ week communications and engagement program.

Letters were sent to over 123,000 properties in flood affected areas across Glen Eira, Yarra, Darebin, and Merri-Bek council areas.

Social media campaigns reached 2.85 million users, and we had over 148,000 visits to Let's Talk Flood Hubs.

We also offered in person sessions and an online webinar, supported by tailored communication materials, to raise awareness and encourage community participation

In releasing the four draft stormwater maps, residents, property owners, and local stakeholders were invited to review and provide feedback on the draft maps. Public submissions were invited to capture local knowledge. Specifically:

- real-life experiences of flooding
- knowledge of structural or landscape changes that may affect how water pools or flows

The submission process was designed to provide the public with an opportunity to review the draft maps and input information that may assist with refinement of the maps, prior to them being finalised.

Purpose

Between October 2025 and March 2026, submitters, property owners, and local stakeholders were invited to review and provide feedback on the draft Glen Eira stormwater flood maps. This report summarises outcomes from the public submissions process undertaken as part of consultation by Melbourne Water on these draft maps

This report:

- Summarises key feedback from the community on the draft flood maps
- Explains how submissions were reviewed and considered
- Outlines what changed and what didn't
- Describes what the updated maps mean for Council and the community

How the flood maps were developed

We commissioned an experienced flood modelling consultancy to create flood models for the Greater Melbourne Flood Information Program.

These flood maps were created using catchment-scale hydrologic and hydraulic modelling, a computer-based approach that examines how water flows across an entire area during heavy rainfall, rather than focusing only on individual properties.

The flood modelling program follows industry standards and guidelines. It is subject to independent peer review to ensure technical robustness.

This modelling:

- Represents how water is predicted to flow both over land and through Council and regional drainage systems
- Follows the Australian Rainfall and Runoff (ARR) Guidelines
- Uses the latest available ground level and elevation data (LiDAR)
- Incorporates current climate change assumptions and information.

The maps show flooding for a 1% Annual Exceedance Probability (AEP) event. This doesn’t mean a 1% AEP flood event will only happen once every 100 years; in fact, several floods of this kind can occur in a short period. This standard helps planners, engineers, insurers, emergency managers, and the community understand and compare flood risks. While uncommon, these events can generate significantly more runoff than typical rainfall and may exceed the capacity of drainage and stormwater systems, resulting in overland flow across roads, open space, and private property, including areas that do not usually flood.

Since the maps represent a major storm event, the extent of flood may appear larger than what some submitters have experienced or may differ slightly due to recent changes not captured in LiDAR data. These differences do not compromise the model's reliability in identifying risk areas during a 1% AEP event but emphasise the importance of community consultation to understand data variations.

While catchment scale modelling provides a consistent and robust understanding of flood behaviour across a broad area, some localised discrepancies or limitations are inherent in this approach. It is also possible that not all local conditions were identified through the submissions process.

These factors do not affect the overall suitability of the modelling for informing the proposed planning overlay. Any remaining site-specific matters can be appropriately considered, where relevant, through the planning permit assessment process.

The proposed planning overlay plays an important role in clearly identifying potential flood risk for existing and future property owners, enabling more informed decisions about land use and personal safety during major storm events. It also ensures that future development is designed to respond to flood risk and does not increase flood impacts elsewhere within the catchment. For more information on planning please visit planning.vic.gov.au

Consultation summary

Submissions and site visits

Submitters provided additional information to help validate the draft maps.

134
submissions

Were received over the consultation period

34
submissions

Included a total of 97 photos, technical drawings, or attachments, offering valuable insights into local conditions

31
submissions

Structural changes on or near properties, including new fences, landscaping works, property modifications, and larger developments influencing flow paths

12
submissions

Expressed acceptance of the draft flood extents, noting that the maps aligned with their lived experience

89
submissions

Disputed the accuracy of the extents, 69 suggesting the maps overestimated flooding and 20 suggesting they underestimated it

This supporting material helped guide site visits, confirm modelling results, and identify areas requiring investigation.

Site specific reviews

Some technical submissions required site visits with submitters to gather additional information to support assessment of their submission. These included:

- comparing model inputs with observed on-ground conditions
- reviewing survey data, photographs, and structural information
- inspecting recent developments or infrastructure changes such as new property fences.

Where evidence supported a change, the draft flood maps were refined. In many cases, on-ground observations aligned with the modelling, and no changes were required.

What we heard

Consultation provided valuable insights on the draft flood maps and identify areas requiring further review. Feedback showed that many in the community are seeking clear, accurate information about flood risk, drainage responsibilities, and how flood mapping may relate to insurance and property values.

Each submission was assessed and responses provided to each submitter.

Key themes

Map accuracy and lived experience

Many submitters compared the draft flood extents with their personal experience of flooding. Some confirmed that the maps aligned with what they had observed, while others felt the extent of flooding shown was either greater or less than expected.

This feedback provided important context and helped guide site inspections and targeted reviews of the draft flood maps, even where it did not directly result in changes to the maps.

Drainage and localised flooding

Several submissions raised concerns about blocked or undersized drains, local ponding, or flooding during smaller rainfall events.

These insights are important and help Council and Melbourne Water understand day-to-day drainage performance. However, they do not directly influence flood extents for a 1% AEP event, which represents a much larger storm that exceeds the capacity of underground drainage systems. Even when drains are working well, they are designed for everyday storms, not the very large and intense events used in flood mapping. In a 1% AEP event, the amount of rainfall is far greater than what underground pipes can

carry, so flooding occurs across broader areas regardless of local blockages or maintenance issues.

Much of Melbourne's regional drainage network was built between the 1920s and 1960s and continues to serve a growing city. Melbourne Water invests in maintaining these older assets and constructing new ones to keep pace with development and a changing climate. While upgrades can improve local drainage performance, no city can eliminate flooding entirely, extreme rainfall will always exceed the capacity of underground systems.

Recent site changes and structures

Some submitters identified recent changes that may affect overland flow, including:

- new fences and retaining walls
- landscaping or regrading
- property modifications or nearby developments
- road works or drainage upgrades.

Submissions were particularly valuable where they included supporting evidence such as photos, plans, or survey data. Where this information could be verified, it informed further technical review.

LiDAR and ground level queries

Several submitters questioned whether LiDAR data accurately reflected ground levels at their property or in nearby areas.

LiDAR is generally reliable at a catchment scale, although small discrepancies can occur. Where submitters provided survey data or other supporting evidence, this information was reviewed and if relevant, changes were made to the flood map.

Insurance and property value concerns

Some submissions raised concerns about how flood mapping may affect their insurance premiums or property values.

The purpose of the maps and the Greater Melbourne Flood Information Program is to improve transparency about flood risk and support informed planning decisions. While these concerns are understandable, we are not best placed to comment on property values or insurance premiums, as they are influenced by many factors. For more information, visit the Glen Eira Let's Talk Page.

Overall, the consultation confirmed that:

- the updated modelling is generally accurate and reflects local conditions
- a small number of areas required further investigation, often due to recent site or infrastructure changes
- LiDAR data is reliable overall, with only minor localised discrepancies
- site inspections provided valuable context to validate or refine the mapping.

Feedback on the draft flood maps

We reviewed all submissions and took into consideration mandatory technical requirements.

Each submission was categorised as either:

Technical submissions	Non-technical submissions
Containing verifiable information e.g. survey data, photos, engineering drawings, or evidence of structural changes	Raising questions or concerns without supporting evidence

Of the 134 submissions received:

39	Were classified as technical and had the potential to influence flood mapping changes
95	Were non-technical and generally consisted of comments, questions, or concerns without supporting evidence

Flood map refinements

After comprehensive technical reviews and site inspections, we updated the draft flood maps in specific areas. Consultation and community submissions that contributed to flood map changes included evidence-based documentation, such as:

- engineering-approved structural modifications (e.g., professionally designed flood walls)
- recent developments affecting overland flow paths
- inconsistencies identified between LiDAR data and surveyed ground elevations
- public drainage upgrades not yet represented in the model
- date-stamped photographs or videos illustrating flood behaviour inconsistent with model projections.

These adjustments address localised differences in the City of Glen Eira flood maps and ensure they reflect current conditions. The consultation showed that the modelling generally reflects on-ground conditions, with only a small number of changes required.

2	Flood map amendments/changes
2	Parcels removed from flood map

What this means for the Glen Eira community

For Glen Eira City Council

The updated flood maps will:

- support future planning and development assessment
- inform flood mitigation and drainage planning
- assist emergency management and response
- provide a consistent, reliable understanding of flood information.

For residents and property owners

The updated flood maps will:

- show how water may behave during a major storm
- help people better understand flood risk.

Next steps

Now that consultation and technical reviews are complete, the City of Glen Eira flood maps will be finalised and published online later this year (2026). Updated data will support Melbourne Water, Council and emergency services in planning and preparedness. The new flood information will be incorporated into Melbourne Water's statutory decision-making and information services, such as Flood Level Certificates.

Finalisation of these new maps will inform a separate future planning scheme amendment consultation process, that will enable safer planning decisions and long term risk reduction across the region.

In October 2025, the Victorian Government announced planning reforms introducing risk based planning and building controls for flood hazards, which will progressively be incorporated into local planning schemes. Once these controls are finalised – alongside updated guidelines covering planning processes, engagement expectations, and mapping standards – Melbourne Water can commence preparations for the Planning Scheme Amendment process.

We want to thank you for your feedback and insights, which have helped validate flood information for the City of Glen Eira.

Towards the end of this year, you will be able to view the final flood maps on the Melbourne Water website: Home | Melbourne Water

Appendices

Appendix A – Responses to common themes

(Please note: some submitters referred to one or many themes in their submissions).

A1. Map overestimation

Summary of concern: Submitters felt the draft flood maps showed more flooding than they had observed.

Response: The flood maps show a 1% AEP event, which is a major storm with a 1 in 100 chance of occurring in any year. These events are larger than typical rainfall and may not have been experienced in recent decades. Submissions without verifiable evidence (such as survey data, structural drawings, or date stamped photos) cannot influence the flood extents. However, all feedback was reviewed and helped guide site inspections and modelling checks.

A2. Blocked or undersized drains

Summary of concern: Submitters linked local flooding to maintenance issues or undersized pipes.

Response: The flood maps show how water moves across the entire catchment during a major storm. When rainfall exceeds the capacity of drainage systems, water flows over land. These overland flow paths are a key part of flood behaviour and can affect areas without formal drainage infrastructure.

A3. Site modifications or structures

Summary of concern: Submitters reported new fences, landscaping, retaining walls, or developments.

Response: Submissions included verifiable evidence and were assessed as technical. If evidence showed a permanent, engineered structure that could influence overland flow, the draft flood maps could be refined. Where structures are temporary, permeable, or not designed to block water, no changes were made.

A4. Mapping or LiDAR queries

Summary of concern: Submitters questioned ground levels, elevation data, or LiDAR accuracy.

Response: LiDAR is generally accurate at a catchment scale, but small discrepancies can occur. Submissions that included evidence suitable for technical review. Where verified differences were identified, the flood map was updated. In most cases, LiDAR was found to align closely with on ground conditions.

A5. Public infrastructure works

Summary of concern: Submitters identified recent drainage upgrades or Council works and questioned whether these were included as inputs into the flood model.

Response: These submissions were considered to be of a technical nature and required investigation, that did not lead to changes to the flood map.

A6. Flood hotspots

Summary of concern: Submitters identified locations where flooding occurs during smaller storms.

Response: These insights may assist Council with understanding local drainage performance in relation to smaller, more frequent flood events, but this does not change the 1% AEP flood extents. Only two submissions included evidence suitable for technical assessment.

A7. Road or verge flooding

Summary of concern: Some submitters reported frequent road or verge flooding during smaller rain events and expressed concern about how these observations were reflected in the flood mapping.

Response: Road flooding during smaller storms is common and does not necessarily indicate a 1% AEP flood risk. These submissions did not result in changes to the mapping as they were in relation to smaller, more frequent flood events.

A9. Insurance and property value concerns

Summary of concern: Submitters expressed concern over how the flood maps will impact property values and insurance premiums.

Response: These concerns are understandable, however we are not best placed to comment on property values or insurance premiums, as they are influenced by many factors. For more information, on how to be prepared visit the Glen Eira Let's Talk Page.

A10. Permeable structures (fencing)

Summary of concern: Submitters reported fencing and similar structures that should provide flood protection.

Response: Features such as fences, walls, or raised areas may provide some localised protection during minor flood events. However, during major flood events, such as the 1% AEP reflected in these maps, water can move around, beneath, or through non-engineered barriers causing damage to property, and or assets.

A11. Floor levels above mapped flood level

Summary of concern: Submitters questioned the flood risk presented in the maps when the floor level of their property is above the mapped flood level.

Response: Even if a building's floor level is above the mapped flood level, flooding can still affect other parts of the property, such as yards, driveways, and access. The maps show how water may move across the land during major flood events, not just whether water enters a building. The flood information will also inform any future planning or building applications at the property to minimise risk to people and dwellings.

A12. Assumptions and constraints used in the flood mapping

Summary of concern: Submitters raised questions around the development of the flood model

Response: Flood maps are developed using a consistent, catchment wide modelling approach based on the best available data and nationally recognised guidelines. To ensure results are comparable across large areas, standard assumptions are applied. The maps are designed to show how water is likely to move during major flood events rather than reflect detailed conditions at individual properties. Each flood model is also independently peer reviewed to ensure robustness.

A13. Disconnected flood extent

Summary of concern: Submitters raised questions about why some areas of the maps depict disconnected flood extents

Response: Flood modelling shows how water moves through the landscape during major rainfall events, including the full flow path before water spreads out or slows down. When preparing the draft flood maps, very shallow flooding (less than 50 mm deep) is filtered out so the maps focus on areas with deeper flood depths. This filtering can make some parts of the flood extent look disconnected, even though the underlying modelling shows a continuous flow path. These mapped areas still indicate places where flooding may occur during major events (1% AEP), and they remain important for understanding local flood behaviour.

A14. Different flood risk of neighbours

Summary of concern: Submitters questioned why their neighbours flood hazard rating or inclusion in the flood extents differed from their own.

Response: Flood risk can vary over short distances due to small differences in ground levels and how water moves through an area. The flood maps reflect these local variations, meaning neighbouring properties may experience different depths or flow paths during major flood events.

Appendix B – Responses to technical themes

B1. Map accuracy and request for change

Summary of concern: Submitters provided site-specific information (e.g. levels, photos, observations) seeking changes to mapped flood extents.

Response: All submissions were assessed using a consistent approach and the best available data. Changes were made only where the information demonstrated a clear and verifiable difference to the mapped flood behaviour. In most cases, the modelling accurately aligned with site conditions upon inspection and no change was required.

B2. Flooding caused by overland flow paths

Summary of concern: Submitters questioned why their property is affected by flooding where there are no visible drains or waterways.

Response: The flood maps show how water moves across the entire catchment during a major storm. When rainfall exceeds the capacity of drainage systems, water flows over land. These overland flow paths are a key part of flood behaviour and can affect areas without formal drainage infrastructure. Overland flow paths follow the natural topography, and water flows towards low lying areas across a catchment.

B3. Public infrastructure works

Summary of concern: Some submitters expected local drainage or works to prevent flooding.

Response: Flooding in these areas is often driven by high creek levels during major storms, which can push water back into nearby streets and properties. Because this type of flooding is shaped by the whole catchment, local drainage upgrades on their own can't fully prevent it. Our drains are designed for common storms, but extreme rainfall can exceed their capacity, and redesigning the entire network across Melbourne would be highly costly and disruptive.

Melbourne Water also works to keep household water bills affordable. Everyone contributes to the waterways and drainage charge, so major upgrades in one area would increase costs for all customers. We aim to invest fairly across the region while making steady improvements.

B4. Local drainage improvements and water management

Summary of concern: Submitters highlighted measures such as rainwater tanks, swales or local drainage upgrades and expected these to reduce flood risk.

Response: These measures can help manage water during smaller rainfall events. However, the flood maps represent a major storm (1% AEP), where drainage systems are exceeded. During these events, water continues to move through the area regardless of local measures.

B5. Property features such as fences, walls, and landscaping
Summary of concern: Some submitters expected fences, retaining walls or landscaping to block or redirect floodwater.

Response: While these features can affect water movement locally, they are generally not designed to stop floodwater in major events. Water can move around, through or over these barriers when flows are large and cause damage. For this reason, they do not typically change the mapped flood extent.

B6. Street flooding and property access

Summary of concern: Submitters queried how flooding on roads or in streets could lead to impacts on their property.

Response: In many locations, water builds up along roads and low points in the street network. As water levels rise, it can flow onto adjacent properties where ground levels are lower. This is a common way flooding happens — water on the road simply finds the lowest nearby ground and moves into properties.

B7. Partial flooding of properties

Summary of concern: Some submitters observed that only parts of their property flood and questioned the mapping.

Response: Flood behaviour can vary across a property depending on ground levels. It is common for water to collect in lower areas such as yards or driveways, while buildings or raised sections remain dry. The mapping reflects these variations across each site.

B8. Requests to remove properties from flood mapping
Summary of concern: Some submitters believed their property should not be included in the flood extent.

Response: Properties were only removed where evidence confirmed that floodwater remains confined to surrounding areas (such as roads) and does not reach the site. Where water continues to reach any part of the property, it remains included in the mapping even if the floor level of the dwelling is above the flood level.

B9. Local drainage issues outside mapped flooding
Summary of concern: Some submissions raised concerns about drainage problems or nuisance flooding where properties are not shown as flood affected.

Response: These issues are typically caused by local drainage conditions, such as blockages or minor ponding. While important, they do not represent flooding during a major storm event and therefore do not affect the flood maps. These matters are important and will inform future maintenance programs.

B10. Updates based on verified technical evidence

Summary of concern: Some submitters provided detailed technical information, such as survey data or evidence of engineered works.

Response: Where submissions included reliable and verifiable technical evidence showing a change to flood behaviour, the mapping was updated. These changes were made carefully to ensure they reflect local conditions while maintaining consistency across the broader model.

B11. Flood extent appearing larger than expected
Summary of concern: Some submitters felt the mapped flood extent was larger than what they have experienced.

Response: The maps represent a major storm event with a low probability of occurring in any given year (a 1% AEP flood event), as well as current modelling assumptions. As a result, flooding shown may be greater than past experiences but provides a consistent understanding of potential future risk.