Fishermans Bend Draft Planning Scheme Amendment GC81
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Presentation to Planning Review Panel: 21 May 2018
Background: Melbourne Water and Fishermans Bend
About Melbourne Water

Statutory authority - *Water Act*

Strategic vision: *Enhancing life and liveability*

Our commitments:

• Healthy People
• Healthy Places
• Healthy Environment

We provide water supply, sewerage, healthy waterways, integrated drainage and flood management services

Flood management authority for Port Phillip and Western Port – *Water Act*
Melbourne Water and Fishermans Bend

Support the draft vision for Fishermans Bend and enabling a water sensitive city.

The current drainage proposal for Fishermans Bend incorporates many aspects of a water sensitive city –

• Rainwater tanks
• Building and planning controls
• New and upgraded infrastructure.

Embrace the opportunity to further improve the flood strategy for Fishermans Bend with stakeholders.

Vision

The Fishermans Bend Vision was released in September 2016, informed by public consultation.

“A thriving place that is a leading example for environmental sustainability, liveability, connectivity, diversity and innovation.”
Floor levels and flooding in developed areas
Powers, Processes and Guidance

- **Water Act**
  - Flood Plain Management

- **Declarations**
  - Flood levels, areas, building lines

- **Melbourne Water Guidelines**
  - Core requirements

- **DELWP Guidelines**
  - Levee Management

- **Planning & Environment**
  - Planning schemes

- **Planning Schemes**
  - UFZ, FO, LSIO, SBO

- **Building Act**
  - Preventing flooding of buildings

- **Building Regulations**
  - Freeboard above flood levels

- **Planning Practice Notes**
  - Planning schemes and permits

- **VBA Practice Note**
  - Flood hazard areas

- **Australian Building Codes Board Standard**
  - Construction of Buildings in Flood Hazard Areas

Relevant flood management guidance (1/2)
Floor levels & flooding in developed areas (Summary)

- Melbourne Water has the statutory function to set flood levels (*Water Act*)
- The planning process must map and manage the flooding risk (*Planning & Environment Act*)
- Minimum freeboard of 300mm above flood level (*Building Regulations*) unless varied by Melbourne Water (typically 600mm for residential and office)
- Plan for possible sea level rise of 0.8m by year 2100 and storm surges (*VPPs Clause 13.01*)
- Planning overlays should be used to map flood extent regardless of flood mitigation infrastructure (*Planning Practice Note 11*)
- A levee reduces risk but does not eliminate it (*DELWP Levee Guidelines*)
- Melbourne Water will take flood mitigation infrastructure (eg pumps and levees) into account when assessing Access Safety (*Melbourne Water, Guidelines for Development in Flood Prone Areas*)
- Melbourne Water takes a risk-based approach to setting floor levels with residential and office levels requiring the most protection and some flexibility for commercial lobbies and retail tenancies (*Melbourne Water, Planning for Sea Level Rise Guidelines*)
- Requirements for enclosed non-habitable spaces below the flood level (*Australian Buildings Code Board Standard for Construction of Buildings in Flood Hazard Areas*).
General response to submissions made by others on flooding and drainage

- Setting of floor levels as part of integrated flood management
- Importance of rainwater tanks for flood mitigation
- Flags potential of further updates to LSIO and SBO in MPS and PPPS once flood investigations are completed.

Submission B & Supplementary

Submission B (Doc 94 [126] – [133])

- Need to ensure activated frontages
- Sufficient flexibility in current controls
- Policy on water sensitive community

Supplementary (Doc 151 [76] – [79])

- Ramboll evidence laudable
- Requires detailed modelling & costing
- Cloudburst streets may allow for lowered floor levels

These submissions are supported by Melbourne Water
Submissions in Doc 109a [251], [278]

- Elevated ground floor levels are a last resort
- Essential flood management conditions (inc rainwater tanks) are mandatory
- Cloudburst streets to be integrated into the Framework Plan
- Concerns about built form

‘Elevated ground floor levels are a last resort’ has been taken to mean:

- Ground level uses that are compatible with flooding, plus
- Some flexibility with commercial lobbies and retail occupancies

Further work is needed to set floor levels and compatible uses below 2.4m AHD and to assess the feasibility of cloudburst streets.

Elevated ground floor levels are appropriate for residential and office space.

The above submissions are broadly supported by Melbourne Water
Submissions in Doc 120 [255]

- LSIO should be appropriately applied across Lorimer
- Precinct based solutions (e.g., levee bank) should be implemented
- Framework should make greater reference of the flooding work that has been completed
- Other submissions consistent with Port Phillip

The above submissions are broadly supported by Melbourne Water

The City of Melbourne submissions that:

- The plans in the Framework could be updated to show potential blue lanes and green spaces
- Replace objective 5.1.6 of the Framework with a strategy that prioritises precinct based solutions

Are premature and not supported by Melbourne Water.

(Doc 120 [255] (d), (e))
Flooding at Fishermans Bend & the proposed management approach
Fishermans Bend Flooding
-now to 2100
Current local catchment flooding. 100 year event flood level 1.66 m AHD in Gladstone and Buckhurst Streets
Current 100 year event sea level 1.6 m AHD with allowance for some wave action (1.4 m AHD damped)
2100 100 year sea level 2.4 m AHD with some wave action (2.25 m AHD damped)
Flood level corner of Montague and Gladstone is about 2.1 m AHD

100 year ARI 2100 Tidal Cycle-developed without mitigation but including rainwater tanks
Flood level corner of Montague and Gladstone is about 1.9 m AHD

100 year ARI 2100 Tidal Cycle developed with levee and rainwater tanks
Flood level corner of Montague and Gladstone is about 1.3 m AHD

100 year ARI 2100 Tidal Cycle developed with levee, pipes, pumps and rainwater tanks
Flood level corner of Montague and Gladstone is about 1.6 m AHD

100 year ARI 2100 tidal Cycle developed with levee, rainwater tanks and Ramboll distributed storage.
- Gladstone Street is one of the lowest lying areas in the precinct
- It can drain under gravity at present but will need pumps in the future
- Excavation in this area in line with the Ramboll proposal would lower the flood storage and increase the need for pumping
- Lowering floor levels closer to street level would increase the risk and rely on pumps not failing
Shamrock Street from road high point looking towards Flockhart Street. Path approximately at flood level with apartments 600 mm higher.
Path along Shamrock from Flockhart Street. Path provides safe access to apartments on right, and links to high point in road to provide access to hotel/apartments on left.
Tooradin Shops set 600 mm above 100 year ARI sea level
Raised section between 80 and 90 Lorimer Street. Level needs to be raised at high point in future.
Jeff’s Shed, looking towards Polly Woodside. Floor at 4.0 m AHD, base of steps about 2.8 m AHD.
River barrier-Southbank in front of Crown. Promenade 2.28, floor 2.48 m AHD.
River barrier with level at top of grass 2.22 m AHD. This will need to be raised in future.
Summary of Melbourne Water position
The current rainwater tanks provide important flood mitigation

Precinct based solutions including the levee, pumps and pipe upgrades also provide important flood mitigation

Further updates to the LSIO and/or SBO may be needed at the conclusion of the flood investigations

Residential and office floor levels at least 3 m AHD

Floor level concessions for some commercial lobby and retail spaces are likely possible to 2.4 m AHD

Floor level concessions for compatible uses may be possible lower than 2.4 m AHD

Further work is needed to model and cost innovative, integrated water management and water sensitive city solutions. There is sufficient flexibility within the controls to enable innovation.
## Suggested next steps

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| 30 May 2018| • Taskforce workshop with City of Melbourne, City of Port Phillip, Office of the Victorian Government Architect, Victorian Building Authority and Melbourne Water, facilitated by CRC for Water Sensitive Cities  
• Undertake further detailed modelling and costing of a wide range of innovative solutions.  
• Develop a integrated water management plan consistent with Policy on Water Sensitive Community (Document 66d, LPP-3, pp 56-57).  
• Undertake community consultation. |
| June 2019  | • Once agreed by all parties, document examples in a Guideline document for use by developers, Councils and Melbourne Water, consistent with the integrated water management plan. |
| Dec 2019   | • Finalise a business case (including identification of timing) for construction of precinct infrastructure (including accountabilities), consistent with integrated water management plan. |
General background on floor levels and flooding in developed areas
Some Melbourne Water functions (s 202(2))

(a) to find out how far floodwaters are likely to extend and how far they are likely to rise;

(b) to declare flood levels and flood fringe levels;

(d) to develop and implement plans and to take any action necessary to minimise flooding and flood damage;

(f) to provide advice about flooding and controls on development to local councils, the Secretary to the Department and the community.

Melbourne Water roles:

- Flood modelling and mapping
- Flood management infrastructure
- Flood controls in planning schemes
- Site-specific flood controls, including minimum floor levels
- Flood information on property statements
- Guidelines for development in flood-prone areas
Planning schemes (P&E Act s 6 (2))

(e) Regulate or prohibit any use or development in hazardous areas or in areas which are likely to become hazardous areas.

State Planning Policy Framework (VPP 13.01, 02)

Life, property and community infrastructure is protected from flood and tidal hazards, including storm surge. Decision Guidelines (VPP Cl 65)

Responsible authority to consider degree of flood hazard.

Zones and Overlays

Urban Floodway Zone, Floodway Overlay, Land Subject to Inundation, Special Building Overlay

Planning Practice Note 12 (Schemes)

Guidance on the use of zones and overlays.

Results in:

• Planning must consider flooding up to the 1:100 including climate change
• Plan for possible sea level rise of 0.8m by 2100
• It is policy that planning must consider flood risk and planning maps show flooded areas up to the 1:100.
• It is appropriate to use Special Building Overlays in the redevelopment of existing urban areas where there will be pressure to develop within overland flowpath areas.
Regulation powers (Sch 1)

(10) Prevention of flooding of buildings and designation of areas liable to flooding.

Building Interim Regulations 2017 (s 802)

(7) Council must specify a floor level at least 300 mm above the flood level set by Melbourne Water.

Victorian Building Authority Practice Note January 2016

The minimum floor level to be set using a freeboard above the declared flood level.

Australian Buildings Code Board Standard for Construction of Buildings in Flood Hazard Areas

Sets requirements for enclosures below defined flood level.

Results in:

- Building regulations require floor levels to be set including freeboard above the flood level advised by Melbourne Water.
- Finished floor level of habitable rooms must be above the flood hazard level (defined flood level plus freeboard).
- Requirements for non-habitable enclosures below the defined flood level.
Planning and Environment (in practice)

Practice Note 11 (Permits)

Appropriate to use SBO in redevelopment of flood prone areas.


Practice Note 53 (Coastal hazards)

Summarises planning requirements for coastal areas. Requires consultation with Melbourne Water.

Local Floodplain Development Plan

The Victorian Planning Provisions enable Council to develop a set of requirements and guidelines for development in a particular flood-prone area, in consultation with Melbourne Water.

Results in:

- Planning overlays should be used to designate flood prone land
- Planning adopts the Melbourne Water Guidelines for Developing Flood Prone Areas
- Requires consultation with Melbourne Water regarding tidal flood management.
- Councils could develop Local Floodplain Development Plans to be more explicit about flood development controls.
Developed in response to the Parliament of Victoria Environment and Natural Resources Committee (ENRC) Inquiry into Flood Mitigation Infrastructure in Victoria.

Some essential principles:

- A levee reduces risk but does not eliminate it
- Protects property
- Requires appropriate management
- The levee needs to be referenced in Municipal Flood Emergency Plan
- The higher the risk the higher the degree of sophistication in flood management
- It is advisable to use more than one flood mitigation measure at all locations.

Results in:

- The flood management infrastructure should be seen as protecting property and access (and so enabling development)
Guidelines for development in flood prone areas

Principle is to minimise risk to people and property.

Core requirements:
1. Flood flow
2. Flood storage
3. Freeboard
4. Site Safety
5. Access Safety

The Guidelines acknowledge that access safety can not always be met when redeveloping existing areas and require that all other requirements must be met in these circumstances.

Results in:
- Impacts on Flood Flow, Flood Storage, Freeboard, and Site Safety all to be managed consistent with Guidelines
- Benefits of flood mitigation infrastructure are to enable Access Safety
- Floor levels to be set a freeboard distance (min 300 mm) above the design flood levels set by Melbourne Water
Planning for sea level rise guidelines

Translate the planning benchmarks for sea level rise established for Victoria to different development types in Port Phillip and Westernport.

Adopts year 2100 standard for multistorey developments and urban renewals.

Melbourne Water has adopted 1.6m AHD as the current flood level for Port Phillip Bay.

Predicted flood level for year 2100 is 2.4m AHD.

Freeboards of 0.6m results in building levels of at least 3m AHD (allows some concessions).

Basements underground car parks require a continuous apex of at least 3m AHD. Also allows self closing in gates.

Results in:

- Residential and office space building levels of 3m AHD
- Lifts and services (such as fuse boxes and air conditioning) at least 3m AHD
- Commercial lobbies and retail occupancies may be reduced below 3m AHD due to local constraints.