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CONSULTING CIVIL & STRUCTURAL ENGINEERS

Flood Risk Management Study

For

Proposed Re-Zoning

At

**88-96 New Illawarra Road,
& 307-311A Bexley Road**

Bexley North NSW 2207

Prepared by

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Report Reference

1805-R2

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1. Introduction

It is proposed to apply for a rezoning to allow for future redevelopment of the properties located at 88-96 New Illawarra Road and 307-311A Bexley Road. Bexley North.

The subject properties are impacted by a 900mm diameter pipeline within a stormwater drainage easement. The existing stormwater drainage system crosses the site diagonally and it will be necessary to relocate the drainage line and easement to allow for the future development. The pipeline follows the line of a depression that extends through the site up to Barnsbury Grove. The trapped low point in Barnsbury Grove directs upstream overland flows that cannot enter the piped drainage system into the depression and ultimately through the development site.

A *Stormwater Drainage Assessment Report* No.1805-R1 (the Flood Study) dated 5 April 2017 was prepared by John Romanous and Associates to assess the flood characteristics for the 100 years ARI (Average Recurrence Interval). This report examined the overland flow path and determined the depth of flow, hazard level and ensured that no adverse impacts will occur as a result of the redevelopment.

The proposed flood levels in the 100 year ARI event are shown in Appendix A and the proposed flood extents in the 100 year ARI event are shown in Appendix B. The Probable maximum Flood (PMF) levels prepared for this report are shown in Appendix C.

2. Council Response to the Flood Study

After assessment of the flood study Council's Strategic Floodplain Engineer responded via email on 14 May 2018 seeking:

- a) Augmentation of the Council pipe capacity and realigning it.
- b) An update to the flood study based on augmenting and realigning the pipeline
- c) *A flood risk management study. You will be required to follow the floodplain manual which requires flood risk analysis, emergency response and evacuation plan up to PMF level, cumulative impact of development and address the LEP and DCP flood controls etc. (please refer to Appendix G of Floodplain Development Manual).*

This report seeks to address the requirements of item c) a Flood Risk Management Study.

The Council LEP requirements for flood planning are at Appendix D.

The Council DCP requirements for flood risk management are at Appendix E.

3. Council LEP Requirements

Section 6.6 (3) Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that the development:

- (a) “is compatible with the flood hazard of the land “**

The *Stormwater Drainage Assessment Report* identified that the existing site is currently affected by the overland flows from Barnsbury Grove. The table on page 2 of the report is reproduced below.

Section Name	100yrs ARI Water Surface Profile									
	Pre-Development					Post Development				
	Surface Level	Water Level	Depth	Velocity (m/s)	Velocity X Depth	Surface Level	Water Level	Depth (m)	Velocity (m/s)	Velocity X Depth
S11	28.40	28.68	0.28	1.38	0.39	28.40	28.68	0.28	1.38	0.39
S10	28.10	28.33	0.23	2.76	0.63	28.10	28.33	0.23	2.76	0.63
S9	25.90	26.25	0.35	2.55	0.89	25.90	26.25	0.35	2.55	0.89
S8	23.50	23.83	0.33	3.15	1.04	23.50	23.83	0.33	3.15	1.04
S7	22.31	22.77	0.46	1.69	0.78	22.30	22.64	0.34	1.37	0.47
S6	21.00	21.36	0.36	2.10	0.76	21.20	21.33	0.13	1.71	0.22
S5	20.10	20.50	0.40	1.56	0.62	20.10	20.34	0.24	1.22	0.29
S4	19.15	19.46	0.31	1.41	0.44	19.15	19.45	0.30	1.31	0.39
S3	18.25	18.71	0.46	0.78	0.36	18.25	18.71	0.46	0.78	0.36
S2	18.15	18.52	0.37	1.51	0.56	18.15	18.52	0.37	1.51	0.56
S1	17.80	18.02	0.22	1.67	0.37	17.80	18.02	0.22	1.67	0.37

This table highlights that the depth of the 100 year flow within the site has been reduced to about 0.3 m or less and provisional hazard of 0.4 or less. These flood and hazard characteristics resulting from the infrequent flooding are compatible for the use of the site where alternate safe access is available. In addition based on the proposed upgrade of the Council drainage system to the 20 year ARI standard as requested by Council this will substantially reduce the flow below the current reduced impacts and reduce the frequency of overflows to an average of once in 20 years. This low level of risk indicates that the development is compatible with the flood hazard of the land.

(b) is not likely to significantly adversely affect flood behaviour resulting in detrimental increases in the potential flood affectation of other development or properties, and

In the table above from the *Stormwater Drainage Assessment Report* the depth of the 100 year flow is compared from pre-development to post development flow at the same cross-section locations. The report highlights that the depth of flow at the critical sections of the development S4 to S7 is actually reduced as a result of the development. This will further reduce with pipe augmentation and reduced overland flows. Consequently there is a decrease in flood affectation and certainly NO detrimental increase in the potential flood affectation and item (b) is satisfied.

(c) incorporates appropriate measures to manage risk to life from flood, and

The various measures proposed to manage the risk to life are outlined below. A number of these were already highlighted in the *Stormwater Drainage Assessment Report* at section 7 "Conclusion".

- i) The habitable buildings finished ground floor levels must be set a minimum of 500mm above the water surface levels at the 100Yrs. ARI. This provides for the minimum required freeboard. Note that as the water level varies across the site the minimum floor level will also vary. The critical level is the 100 year water immediately upstream of each building.

- ii) The buildings will be designed to allow the free flow of floodwaters under and not restrict the flow.
- iii) No obstructions will be permitted across the flow path that will divert or raise the flood level. Any fencing will be flow through style either as vertical open bar pool fence style or as horizontal louvers.
- iv) To minimise the risk to residents trying to access or drive out of the basement garage during a flood event two protections are proposed.
 (1) No openings into the basement will be permitted below 500 mm above the critical 1 in 100 year flood level along the major flowpath. This includes any vehicle or pedestrian entries, or any windows or openings for light and ventilation
 (2) Provide a crest in the driveway to protect the basement garage from any local flows in New Illawarra Road.
- v) Set all water sensitive instruments such as air conditioning units, gas meters and hot water heaters, etc..., are to be located outside the flow path and above the estimated water level at the 100 years ARI. All electrical power outlets and the meter box are to be at a minimum of 0.5 m above the 100 year flood level. This protects the residents from the potential risks that inundation of these systems may bring but ensures services are maintained throughout the flood.
- vi) Appendix C details the PMF flood levels. Even though the PMF flows are typically four times the 100 year flows the flood level increase is typically 0.3 m or less. This PMF increase still sits within the 0.5 m freeboard so flood safety within the building itself is relatively risk free. In the event of a major failure within the drainage system such as pipe blockage there is additional freeboard available or in a worst case scenario as the proposed development has multiple levels then vertical evacuation is always available.
- vii) Pedestrian access is proposed via New Illawarra Road which completely avoids the high risk flood area that fronts Bexley Road.
- viii) An individual Flood Risk Management Plan will be prepared for each building to promote flood awareness and flood preparedness. This will outline the flood risks, flood preparation, emergencies, no flood warnings being available, evacuation routes or shelter in place and returning after the flood. A sample is provided in Appendix F. This would be better refined once the actual building details are finalised. A copy of the plan would be placed on any noticeboard and in each unit.
- ix) Lastly a requirement for structural certification of the building to ensure that the building can withstand the impacts of the flood up to the PMF and is safe to remain in where shelter-in-place is an option. As the building is multi storied this certification should be readily obtainable.

Consequently (c) has been satisfied.

(d) is not likely to significantly adversely affect the environment or cause avoidable erosion, siltation, destruction of riparian vegetation or a reduction in the stability of river banks or watercourses, and

The development is proposed within a highly urbanised environment. Much of the site is an existing service station with no vegetation cover. New landscaping of this area will improve the environment. Landscaping will be required as part of the development that will stabilise the landscape and avoid erosion. The catchment is highly developed and siltation is not a significant factor. Any silt that may be generated through the catchment would generally be conveyed by the pipe system and not settle on site. There is no riparian vegetation, it is not a river and the watercourse has been piped and significantly modified.

Consequently (d) has been satisfied.

(e) is not likely to result in unsustainable social and economic costs to the community as a consequence of flooding.

As noted above the lowest habitable floor levels garage are all set above the PMF level and the basement garages are all flood proofed above the PMF level. Consequently the cost to the community are low. As the development will proceed with this flood knowledge in place the area within the flood path can be designed to be stable and limit any damage to flooding. The current service station presents a significant potential social and economic cost to the community if any petrol bowsers were damaged during a flood and this allowed the escape of petroleum products to the environment and the associated clean up costs.

The proposed development is a significant improvement to the existing development and (e) is satisfied.

4. Council DCP Requirements

Under Part 4 of the DCP under **General Principles for Development - Section 4.1 Site Planning** the Controls for **Flood Risk Management** are highlighted below.

3. Development must comply with Council's – Flood Management Policy which provides guidelines of controlling developments in different flood risk areas. It should be read in conjunction with the NSW Government's 'Floodplain Development Manual 2005'

The email from Council's Strategic Floodplain Engineer on 14 May also advocated reference to the *Floodplain Development Manual (FDM) 2005* particularly Appendix G. When considering Appendix G of the FDM it highlights the Existing Risk, the Future Risk and the Continuing Risk.

The consideration of G4.1 Existing Risk and works that could be undertaken to protect the existing houses and service station are not relevant for this proposal, though it acknowledged that the existing service station is severely flood affected and may present an environmental risk to the community during a flood.

Under G4.2 Future Risk it states that "Property modification measures, such as land use and development controls, are an effective means of ensuring that future development is compatible with flood risk." The proposed development will apply development controls to set flood planning levels with 0.5 m freeboard above the 100 year ARI. The proposed rezoning will allow redevelopment to proceed in an orderly manner removing a very high risk to occupants of the service station and houses that

accessed only Bexley Road which may have been trapped by floodwaters with limited escape routes in addition to removing the risk of release of contaminants from the service station to the environment during a flood.

Under G4.3 Continuing Risk addresses floods greater than the 100 year design flood. As indicated previously the PMF is only about 0.3 m above the 100 year flood levels and can be incorporated into the 0.5 m freeboard. In addition vertical evacuation is possible due to the multiple levels of the development.

Section G5.2 Hydraulic and Hazard Categorisation refers to Appendix L of the FDM to assess the hazard at the site particularly in the 100 year event.

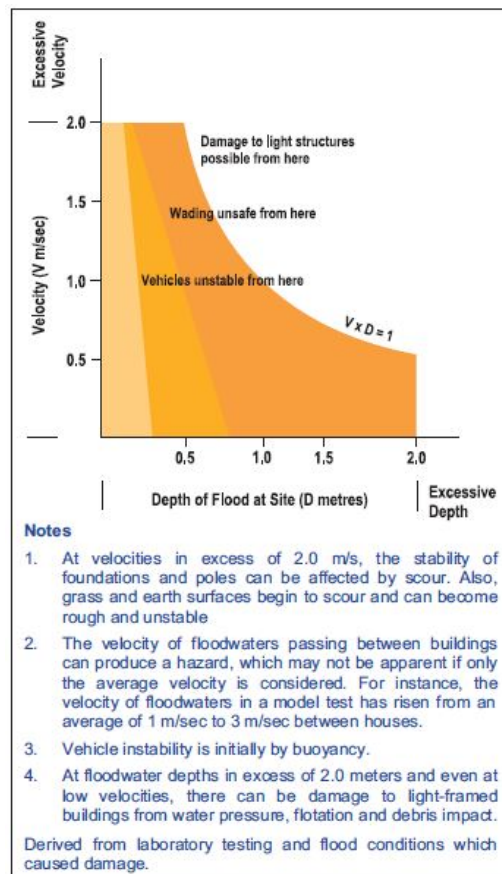


FIGURE L1 - Velocity & Depth Relationships

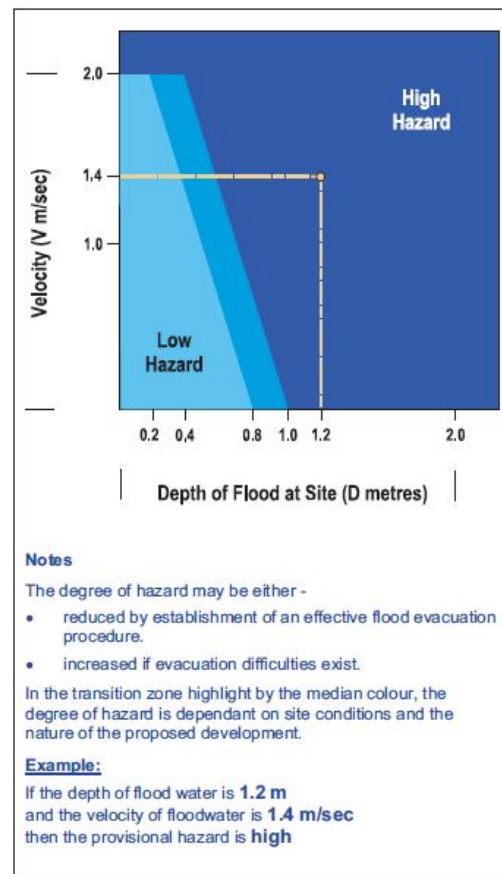


FIGURE L2 - Provisional Hydraulic Hazard

The provisional hazard detailed above will vary over the site from sections 4 to 7 in the flood model. The higher hazard section is section 4 which equates to River Station 72. In the current flood model (without the upgraded pipe lines) the flow depth is 0.3 m and velocity 1.31 m/s. When these values are entered into the diagrams above at Figure L.1 this sets the site in the middle band where vehicles are unstable but evacuation on foot is possible. At Figure L.2 the site is in the lighter blue Low Hazard Area. However these are provisional hazard and the mitigating factor here is evacuation routes. As both vehicular access and pedestrian access in a flood will be via New Illawarra Road then no person or vehicle is exposed to these risk factors and the true hazard is very low.

Section G6.1 Impacts of New Development on Flooding of the FDM are addressed by the new development being designed not to block flowpaths, improving and not reducing flood storage and the use of on-site detention to offset any increase in impervious area.

Section G9.1 Cumulative Impacts in the FDM. Cumulative impacts are where development increase flood levels at one location which is added to by development next door and another close by etc... when considered together these small individual flood rises can result in significant impact overall. As detailed above the new development proposed will lower flood levels and consequently there is no cumulative adverse impact.

Section G9.8 Climate Change. The site is above the localised affects of any sea level rise. Any potential increase in rainfall intensity can be accommodated in the 0.5 m freeboard. As noted previously the consideration of the PMF with flows four times the 100 year ARI only results in a typical 0.3 m increase. Consequently the development is considered robust enough to address any climate change concerns.

4. The filling of land up to the 1:100 Average Recurrence Interval (ARI) flood level (or flood storage area if determined) is not permitted, unless specifically directed by Council in very special and limited locations. Filling of land above the 1:100 ARI up to the Probable Maximum Flood (PMF) (or in flood fringe) is discouraged however it will be considered providing it does not adversely impact upon flood behaviour.

No filling is proposed within the 100 year flood extents. This is an improvement over the existing site where the existing buildings reduce the level of floodplain storage. Openings are proposed under the buildings so as not to restrict flows or remove storage. The volume occupied by the building may be considered to loose floodplain storage for events greater than the 100 year up to the PMF however the small rise is PMF flood levels suggests that this volume would be small and offset by the floodplain storage made available by removal of the existing buildings in the floodplain.

5. Development should not adversely increase the potential flood affectation on other development or properties, either individually or in combination with the cumulative impact of similar developments likely to occur within the same catchment.

By reference to the table from page 2 of the *Stormwater Drainage Assessment Report* the new development proposed will lower not raise flood levels. There is no adverse impact on flooding to adjoining development. As cumulative impacts are where development increase flood levels at one location which is added to by another development and when considered together these small individual flood rises can result in significant impact overall. As there is no increase in flood levels there is no adverse cumulative impact.

6. The impact of flooding and flood liability is to be managed, to ensure the development does not divert the flood waters, nor interfere with flood water storage or the natural functions of waterways. It must not adversely impact upon flood behaviour.

By reference to the table from page 2 of the *Stormwater Drainage Assessment Report* the new development proposed will lower not raise flood levels. There is no

adverse impact on flooding to adjoining development through rising flood levels, nor is any water diverted onto a neighbouring property. The development has been carefully designed to prevent loss of floodplain storage or the natural function of the waterway. i.e. the flowpath is not blocked or redirected. Consequently there is no adverse impact on flood behaviour.

7. A flood refuge may be required to provide an area for occupants to escape to for developments where occupants require a higher standard of care. Flood refuges may also be required where there is a large difference between the PMF and the 1 in 100 year flood level that may place occupants at severe risk if they remain within the building during large flood events.

The minimum habitable floor level is set 0.5 m above the 100 year flood level and about 0.2 m above the PMF. Consequently the whole building could be considered a flood refuge. However should some rare event occur such as pit or pipe blockage that results in significant increases in flow there is opportunity for residents to go up the stairs to a higher level until the flood passes.

5. Conclusion

The requirements of Council's LEP and DCP have been thoroughly evaluated together with a review of the requirements of Appendix G of the *Floodplain Development Manual (FDM) 2005*.

The requirements of Section 3 (c) above to incorporate measures to protect residents should be incorporated into any future building design.

By reviewing the material above it is clear that the building layout for the proposed rezoning has been thoughtfully and carefully considered. The safety of the residents has been of paramount importance and will be incorporated into the ultimate design. No access across the major flowpath is proposed. There is no adverse impact to the neighbours or to the community due to flooding. In fact the removal of the service station from the flowpath could be considered to result in significant improvements to the community by eliminating the potential for spills or discharge of contaminants to the environment during a flood.

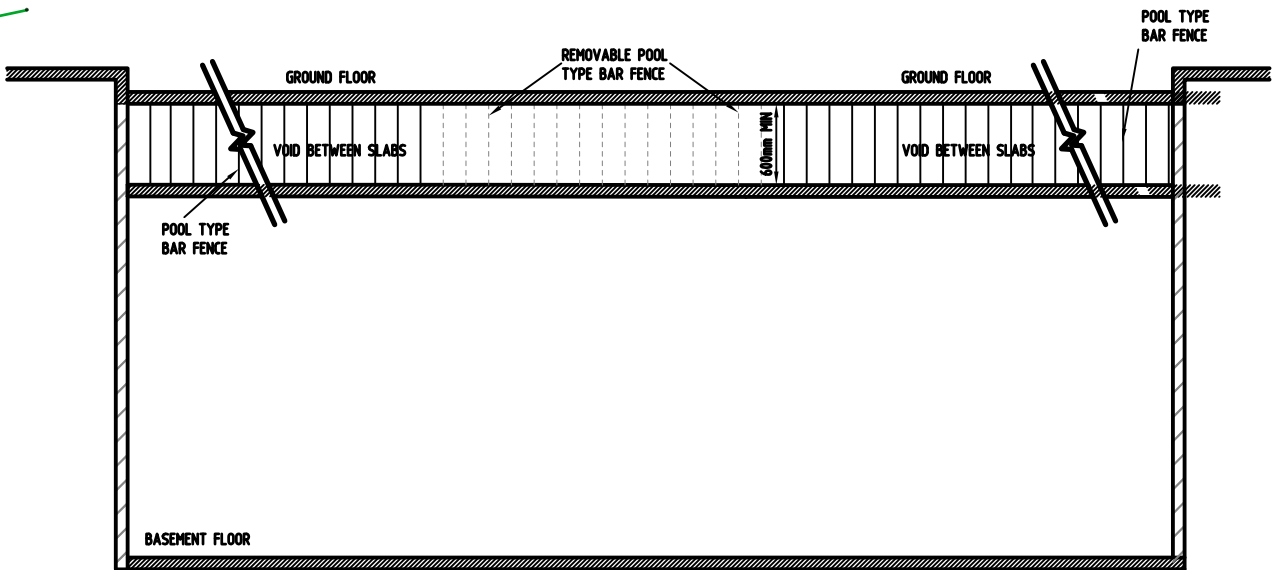
The potential upgrade of the drainage system to a higher standard as part of the development will result in additional improvements as the overland flows will be reduced over that section of the upgrade.

Consequently the rezoning of the lots for the proposed development should be supported as an improvement to the community and reduction of flood impacts not only within the site but also over the adjoining properties.

Appendix A: 100 YEAR ARI POST DEVELOPED FLOOD LEVELS

HEC-RAS Plan: Plan 05 River: Bexley Reach: 1 Profile: 100yr ARI

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
1	233.0	100yr ARI	4.80	28.40	28.68	28.68	28.77	0.018390	1.38	3.73	21.84	0.95
1	227.0	100yr ARI	4.80	28.10	28.33	28.41	28.57	0.064682	2.76	2.42	18.12	1.82
1	199	100yr ARI	4.80	25.90	26.25	26.34	26.54	0.081392	2.55	2.13	12.15	1.49
1	171.0	100yr ARI	4.80	23.50	23.83	23.98	24.34	0.228253	3.15	1.53	7.84	2.28
1	144.0	100yr ARI	4.80	22.30	22.64	22.64	22.74	0.027060	1.37	3.52	19.85	1.00
1	118.0	100yr ARI	4.80	21.20	21.33	21.37	21.48	0.109322	1.71	2.85	22.56	1.51
1	99.0	100yr ARI	4.80	20.10	20.34	20.33	20.42	0.033758	1.22	3.99	21.96	0.89
1	72	100yr ARI	4.80	19.15	19.45	19.45	19.52	0.032713	1.31	4.18	27.07	0.89
1	50.0	100yr ARI	4.80	18.25	18.71	18.56	18.74	0.001984	0.78	7.17	21.50	0.40
1	26.0	100yr ARI	5.50	18.15	18.52	18.52	18.64	0.010542	1.51	3.64	16.20	1.02
1	0.0	100yr ARI	5.50	17.80	18.02	18.06	18.16	0.041823	1.67	3.30	28.58	1.53



SECTION 1 N.T.S.



LEGEND

*

 DENOTES PROPOSED LEVEL

×

 DENOTES EXISTING LEVEL

WSL

 DENOTES WATER SURFACE LEVEL

AREA FLOOD INUNDATED AT 100 YRS ARI

APPENDIX B
100 YEAR ARI POST DEVELOPED FLOOD EXTENTS

Appendix C:PROBABLE MAXIMUM FLOOD POST DEVELOPED FLOOD LEVELS

HEC-RAS Plan: Plan 16 River: Bexley Reach: 1 Profile: 100yr ARI

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
1	233.0	100yr ARI	22.50	28.40	28.98	28.98	29.22	0.014907	2.24	10.71	23.00	1.00
1	227.0	100yr ARI	22.50	28.10	28.58	28.71	29.05	0.043121	3.65	7.53	21.00	1.68
1	199	100yr ARI	22.50	25.90	26.49	26.71	27.26	0.099488	4.20	6.14	20.62	1.82
1	171.0	100yr ARI	22.50	23.50	24.18	24.57	25.19	0.147965	4.46	5.09	11.59	2.09
1	144.0	100yr ARI	22.50	22.30	22.87	22.98	23.22	0.036832	2.70	9.17	29.57	1.33
1	118.0	100yr ARI	22.50	21.20	21.57	21.67	21.93	0.069806	2.72	8.62	25.93	1.43
1	99.0	100yr ARI	22.50	20.10	20.59	20.64	20.87	0.043667	2.41	9.78	25.33	1.16
1	72	100yr ARI	22.50	19.15	19.68	19.71	19.92	0.035164	2.20	10.79	28.00	1.04
1	50.0	100yr ARI	22.50	18.25	19.18	18.90	19.28	0.002636	1.51	17.66	23.01	0.52
1	26.0	100yr ARI	26.40	18.15	18.95	18.95	19.18	0.005683	2.24	14.47	36.96	0.89
1	0.0	100yr ARI	26.40	17.80	18.16	18.33	18.79	0.072011	3.61	7.81	38.40	2.28

APPENDIX D COUNCIL LEP FLOOD REQUIREMENTS

Rockdale LEP 2011

6.6 Flood planning

(1) The objectives of this clause are as follows:

- (a) to minimise the flood risk to life and property associated with the use of land,
- (b) to allow development on land that is compatible with the land's flood hazard, taking into account projected changes as a result of climate change,
- (c) to avoid significant adverse impacts on flood behaviour and the environment.

(2) This clause applies to:

- (a) land that is shown as "Flood planning area" on the Flood Planning Map, and
- (b) other land at or below the flood planning level.

(3) Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that the development:

- (a) is compatible with the flood hazard of the land, and
- (b) is not likely to significantly adversely affect flood behaviour resulting in detrimental increases in the potential flood affectation of other development or properties, and
- (c) incorporates appropriate measures to manage risk to life from flood, and
- (d) is not likely to significantly adversely affect the environment or cause avoidable erosion, siltation, destruction of riparian vegetation or a reduction in the stability of river banks or watercourses, and
- (e) is not likely to result in unsustainable social and economic costs to the community as a consequence of flooding.

(4) A word or expression used in this clause has the same meaning as it has in the *Floodplain Development Manual* (ISBN 0 7347 5476 0), published in 2005 by the NSW Government, unless it is otherwise defined in this clause.

(5) In this clause:

flood planning level means the level of a 1:100 ARI (average recurrent interval) flood event plus 0.5 metre freeboard.

Flood Planning Map means the Rockdale Local Environmental Plan 2011 Flood Planning Map.

APPENDIX E COUNCIL DCP FLOOD REQUIREMENTS

DCP Part 4 General Principles for Development 4.1 Site Planning

Objectives

- A. To ensure development has minimal impacts on the natural water cycle and the environment, including natural water systems, water quality and surface/ground water flow regimes
- B. To ensure development has minimal impacts on Council's existing drainage network
- C. To minimise run-off volumes and discharge rates from new developments to reduce stormwater drainage flows and flood risk in urban area
- D. To ensure the safety of people in flood risk areas and limit the potential damage to property and infrastructure
- E. To manage continuing flood risk and cumulative impacts of developments

Controls

Flood Risk Management

- 3. Development must comply with Council's – Flood Management Policy which provides guidelines of controlling developments in different flood risk areas. It should be read in conjunction with the NSW Government's 'Floodplain Development Manual 2005'.
- 4. The filling of land up to the 1:100 Average Recurrence Interval (ARI) flood level (or flood storage area if determined) is not permitted, unless specifically directed by Council in very special and limited locations. Filling of land above the 1:100 ARI up to the Probable Maximum Flood (PMF) (or in flood fringe) is discouraged however it will be considered providing it does not adversely impact upon flood behaviour.
- 5. Development should not adversely increase the potential flood affectation on other development or properties, either individually or in combination with the cumulative impact of similar developments likely to occur within the same catchment.
- 6. The impact of flooding and flood liability is to be managed, to ensure the development does not divert the flood waters, nor interfere with flood water storage or the natural functions of waterways. It must not adversely impact upon flood behaviour.
- 7. A flood refuge may be required to provide an area for occupants to escape to for developments where occupants require a higher standard of care. Flood refuges may also be required where there is a large difference between the PMF and the 1 in 100 year flood level that may place occupants at severe risk if they remain within the building during large flood events

APPENDIX F

EXAMPLE OF A POSSIBLE FLOOD RISK MANAGEMENT PLAN

SAMPLE FLOOD RISK MANAGEMENT PLAN FOR 307BEXLEY ROAD BEXLEY NORTH NORTHERN BUILDING

Background

Council has advised that this property is identified by the Wolli Creek Drainage and Overland Flow Analysis as an area subject to flooding in a 1% AEP (1 in 100 year ARI) storm event. Council has no information on Tsunamis in the Rockdale area. Relevant levels are:

1% AEP Flood Level = 20.34 m Australian Height Datum (AHD)
Habitable First Floor Level Minimum = 20.84 m AHD
Basement Level = 18.00 m AHD (but floodproofed to 20.84 m AHD)
Low Point near Bexley Road = 20.10 m AHD
Probable maximum Flood Level = 20.59 m AHD

The above levels give an indication of how the various floods will impact this property. These flood flows are traveling from the low point in Barnsbury Grove down through the park and private properties where it enters onto Bexley Road at this site, across to Sarsfield Circuit and then onto the Bardwell Creek. These are flows cannot be contained within the existing pipe network.

Procedure

1. Overland Flooding in this area are considered as “flash floods” and no warning system is available. Storms leading to major flooding can be as short as a ½ hour long or last up to a few hours. Once the storm passes floodwaters usually disappear rapidly.
2. During floods many local and major streets and roads will be cut by floodwaters. Traveling through floodwaters on foot, or in a vehicle can be very dangerous as the water may be polluted, obstructions can be hidden under the floodwaters, or you could be swept away. It is recommended that you stay within the building as much as practical. If you need to leave the building by car, do so early in the storm event travel south along New Illawarra Road and then east along Edward Street to Kingsgrove. At no time travel north along Bexley Road across the rail bridge due to severe flood risks.
3. Develop your own family or business flood plan and be prepared if flooding should occur at different times of the day. Talk to the Council to determine the safer travel routes that are less likely to be cut by floodwaters.
4. If you are within the building remain where you are as a flood is unlikely to reach this level.
5. If you need to leave by foot exit via New Illawarra Road.
6. In the event that floodwaters may enter the building move to the first floor level or above and wait for the storm to end and the flood waters to recede. Do not evacuate the building unless instructed to do so by the SES or the Police. Remember floodwaters are much deeper and flow much faster outside the building than anything inside.
7. In the case of a medical emergency during a flood event ring 000 as normal, but explain about the flooding.
8. Any electrical items that have been inundated with floodwater should be checked by an electrician before using.
9. A laminated copy of this flood plan should be permanently attached (glued) to an inside cupboard door in the laundry and to the noticeboards.
10. This Flood Warning Notice should be reviewed in 2023 and every 5 years after that. This is to account for changes in flood levels identified in future studies, particularly with the potential effects of Climate Change with sea level rise and increased rainfall intensities. Check with Council for the latest information.