Queensland Government

ADDENDUM

To:	Richard Bender - EDQ
From:	Ralph Williams / Shaun Leinster DesignFlow
Date:	27 May 2020
Subject:	Addendum to Carseldine Urban Village – Updated Flood Assessments to Support Stage 1 Development
Attachments	1. Updated flood impact map – 1% AEP (regional) 2. Flood level difference – 0.5% AEP with 20% blockage (regional) 3. Flood level difference – 1% AEP ARR1987 v ARR2019 (local)

1 INTRODUCTION

This addendum provides requested additional flood impact information to *Carseldine Urban Village – Updated Flood Assessments to Support Stage 1 Development (DesignFlow, 15 May 2020)*. Brief discussions are provided below for each:

Attachment 1: Updated flood impact map 1% AEP (regional)

This flood impact map illustrates the model flood impacts for the 1% AEP with the latest modelling arrangement. This includes:

- Removal of the flap valve on the 1200mm RCP culvert along the eastern outlet drain
- Inclusion of the pedestrian bridge crossing joining CUV with Aspley State High School

The flood impact map illustrates improved flood conditions along the rail corridor, Beams Road and areas north of Beams Rd. Flood impacts external to the site occur within Aspley State High School. These impacts have been previously discussed with the Department of Education and have been accepted (refer to letter from DoE to EDQ - 16 December 2019).

Attachment 2: Flood level difference - 0.5% with 20% blockage (regional)

This map illustrates the change in flood levels associated with a severe storm event (0.5% AEP) with a 20% blockage applied to the 1200mm RCP culvert along the eastern outlet drain. This map compares CUV ultimate development versus existing conditions. This analysis was undertaken to review the adequacy of 500mm freeboard applied to the flood barrier along the eastern boundary of the site. No overtopping of the flood barrier is expected under severe storm conditions with a 500mm freeboard applied. Refer to *Carseldine Urban Village – Updated Flood Assessments to Support Stage 1 Development (DesignFlow, 15 May 2020)*.

Attachment 3: Flood level difference 1% AEP ARR1987 v ARR2019

This map illustrates the difference in flood levels between using the ARR1987 approach versus using the design ARR2019 approach for ultimate CUV development conditions. Storm durations of 15, 25, 45, 60, 120 and 180 minutes were run for both analyses. Flood levels using the ARR1987 approach are typically 20-100mm higher than using the ARR2019 approach. Review of flood impacts using

ARR1987 approach for both the proposed and bases case was previously presented in *Carseldine Urban Village – Updated Flood Assessments to Support Stage 1 Development (May 15, 2020)* and demonstrated no impacts external to the site.

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DesignFlow

Attachments:

1. Updated flood impact map – 1% AEP (regional)
2. Flood level difference – 0.5% AEP with 20% blockage (regional)
3. Flood level difference – 1% AEP ARR 2019 v ARR1987

ATTACHMENT 1 – UPDATED FLOOD IMPACT MAP– 1% AEP (REGIONAL)

Hydrology & Water Management Consulting

DesignFlow

LEGEND

- Site
- Cadastral Data
- Future Bus Corridor
- 1D Pipes
- Bridge (2d_lfcsh)
- Design Contour
- Z-Point Modifier

Impact (m)

- Less than -0.2
- -0.1 to -0.2
- -0.05 to -0.1
- -0.02 to -0.05
- -0.01 to -0.02
- -0.01 to 0.01
- 0.01 to 0.02
- 0.02 to 0.05
- 0.05 to 0.1
- 0.1 to 0.2
- Greater than 0.2
- Was Wet - Now Dry
- Was Dry - Now Wet

N

80 0 80 160 m

Carseldine Urban Village

Peak Flood Level Impacts
Regional Catchment Analysis

CUV & Bridge Vs Existing Case
(TUFLOW Case P04c Vs B03a)

1%AEP Event

Client: Economic Development Queensland

ATTACHMENT 2 – FLOOD LEVEL DIFFERENCE 0.5% AEP WITH 20% BLOCKAGE (REGIONAL)

Hydrology & Water Management Consulting

DesignFlow

LEGEND

- Site
- Cadastral Data
- 1D Pipes
- Bridge (2d_lfcsh)
- Z-Point Modifier

Peak Flood Level Difference (m)

- Less than -0.5
- -0.4 to -0.5
- -0.3 to -0.4
- -0.2 to -0.3
- -0.1 to -0.2
- -0.1 to 0.1
- 0.1 to 0.2
- 0.2 to 0.3
- 0.3 to 0.4
- 0.4 to 0.5
- Greater than 0.5
- Was Wet - Now Dry
- Was Dry - Now Wet

N

40 0 40 80 m

Carseldine Urban Village

Peak Flood Level Difference:

Proposed Case Minus Base Case

(TUFLOW Case P04c_B1 - B03a)

0.5%AEP

Client: Economic Development Queensland

ATTACHMENT 3 – FLOOD LEVEL DIFFRENCE - 1% AEP ARR1987 V ARR2019 (LOCAL)

Hydrology & Water Management Consulting

DesignFlow

LEGEND

- Site
- Cadastral Data
- Model Extent
- External Boundary
- Design Conts (0.25m)
- Developed Case Z-Point Modifiers
- 1D Pipes - Existing
- 1D Pipes - Proposed

Impact (m)

- Less than -0.2
- -0.1 to -0.2
- -0.05 to -0.1
- -0.02 to -0.05
- -0.01 to -0.02
- -0.01 to 0.01
- 0.01 to 0.02
- 0.02 to 0.05
- 0.05 to 0.1
- 0.1 to 0.2
- Greater than 0.2
- Was Wet - Now Dry
- Was Dry - Now Wet

N

40 0 40 80 m

Carseldine Urban Village

Change in Peak Flood Level Associatd with Applying ARR 87 Rainfall

(TUFLOW Case LP05b_87 Vs LP05b)

1%AEP Event

Client: Economic Development Queensland