



Technical and Approvals Consultancy
Services: Parkes to Narromine
Flood Study Report Volume 2

December 2018

3-0001-240-IHY-00-RP-0004



Appendix A

Existing Conditions Flood Maps

A01 - Existing Flood Depth 18% AEP

A02 – Existing Flood Depth 5% AEP

A03 – Existing Flood Depth 2% AEP

A04 – Existing Flood Depth 0.05% AEP

A05 – Existing Flood Velocity 18% AEP

A06 – Existing Flood Velocity 5% AEP

A07 – Existing Flood Velocity 2% AEP

A08 – Existing Flood Velocity 0.05% AEP

A09 – Existing Flood Duration 18% AEP

A10 – Existing Flood Duration 5% AEP

A11 – Existing Flood Duration 2% AEP

A12 – Existing Flood Duration 0.05% AEP





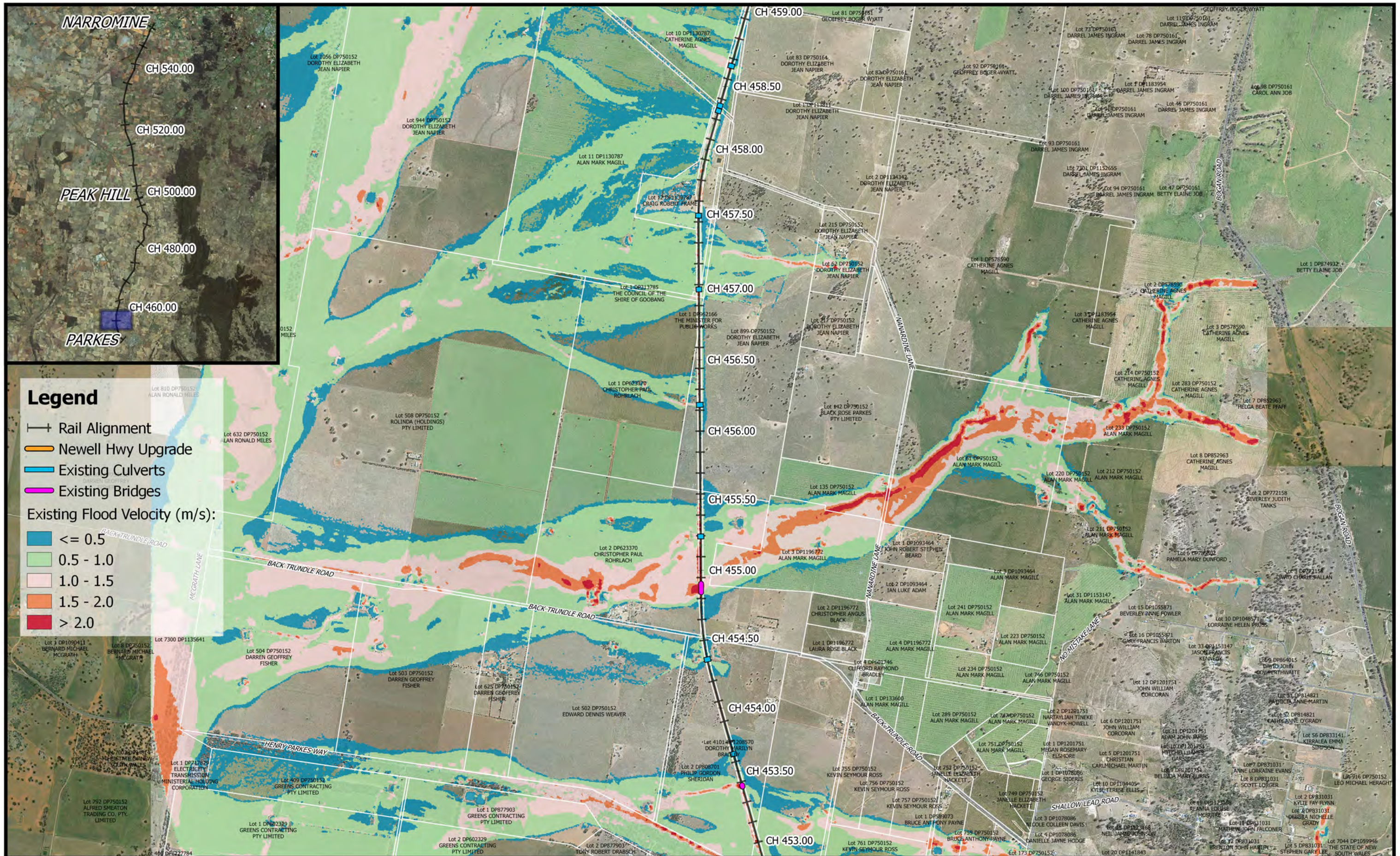
Legend

- Rail Alignment
- Newell Hwy Upgrade
- Existing Culverts
- Existing Bridges

Existing Flood Velocity (m/s):

- <= 0.5
- 0.5 - 1.0
- 1.0 - 1.5
- 1.5 - 2.0
- > 2.0

	<p>0 250 500 750 1000 m</p>	 	Date: 18/10/2018	<p style="text-align: right;">Parkes to Narromine</p> <p style="text-align: right;">DD100% - Cross Drainage Flood Impact Assessment Results</p> <p style="text-align: right;">Figure EX0.05V1</p> <p style="text-align: right;"><i>0.05% AEP Existing Flood Velocity - CH 450.00</i></p>	
	Coordinate system: GDA 1994 MGA Zone 55 Scale ratio correct when printed at A3		1:25,000		Rev: B
	Prepared By: YeohM				



Legend

- Rail Alignment
- Newell Hwy Upgrade
- Existing Culverts
- Existing Bridges

Existing Flood Velocity (m/s):

- ≤ 0.5
- 0.5 - 1.0
- 1.0 - 1.5
- 1.5 - 2.0
- > 2.0

	<p>1:25,000</p>		Date: 18/10/2018	<p>Parkes to Narromine DD100% - Cross Drainage Flood Impact Assessment Results</p> <p>Figure EX0.05V2 <i>0.05% AEP Existing Flood Velocity - CH 455.00</i></p>
	Coordinate system: GDA 1994 MGA Zone 55 Scale ratio correct when printed at A3		Rev: B	
	Prepared By: YeohM			



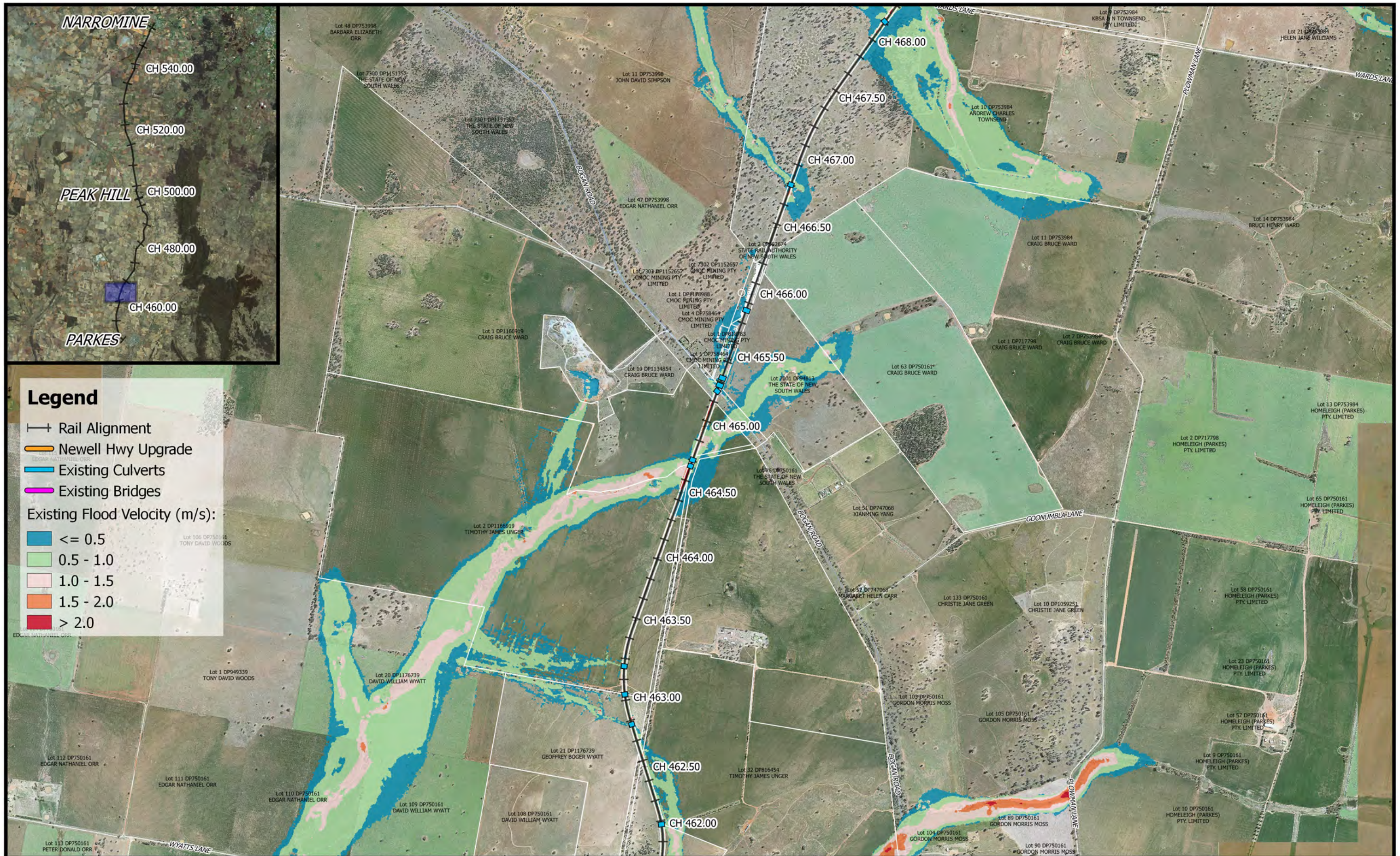
Legend

- Rail Alignment
- Newell Hwy Upgrade
- Existing Culverts
- Existing Bridges

Existing Flood Velocity (m/s):

- <= 0.5
- 0.5 - 1.0
- 1.0 - 1.5
- 1.5 - 2.0
- > 2.0

	<p>0 250 500 750 1000 m</p> <p>1:25,000</p> <p>Coordinate system: GDA 1994 MGA Zone 55 Scale ratio correct when printed at A3</p>		Date: 19/7/2018	<p>Parkes to Narromine DD100% - Cross Drainage Flood Impact Assessment Results</p> <p>Figure EX0.05V3 <i>0.05% AEP Existing Flood Velocity - CH 460.00</i></p>
	Rev: A			
	Prepared By: YeohM			



Legend

- Rail Alignment
- Newell Hwy Upgrade
- Existing Culverts
- Existing Bridges

Existing Flood Velocity (m/s):

- ≤ 0.5
- 0.5 - 1.0
- 1.0 - 1.5
- 1.5 - 2.0
- > 2.0

Date: 19/7/2018

Rev: A

Prepared By: YeohM

Parkes to Narromine
DD100% - Cross Drainage Flood Impact Assessment Results

Figure EX0.05V4
0.05% AEP Existing Flood Velocity - CH 465.00

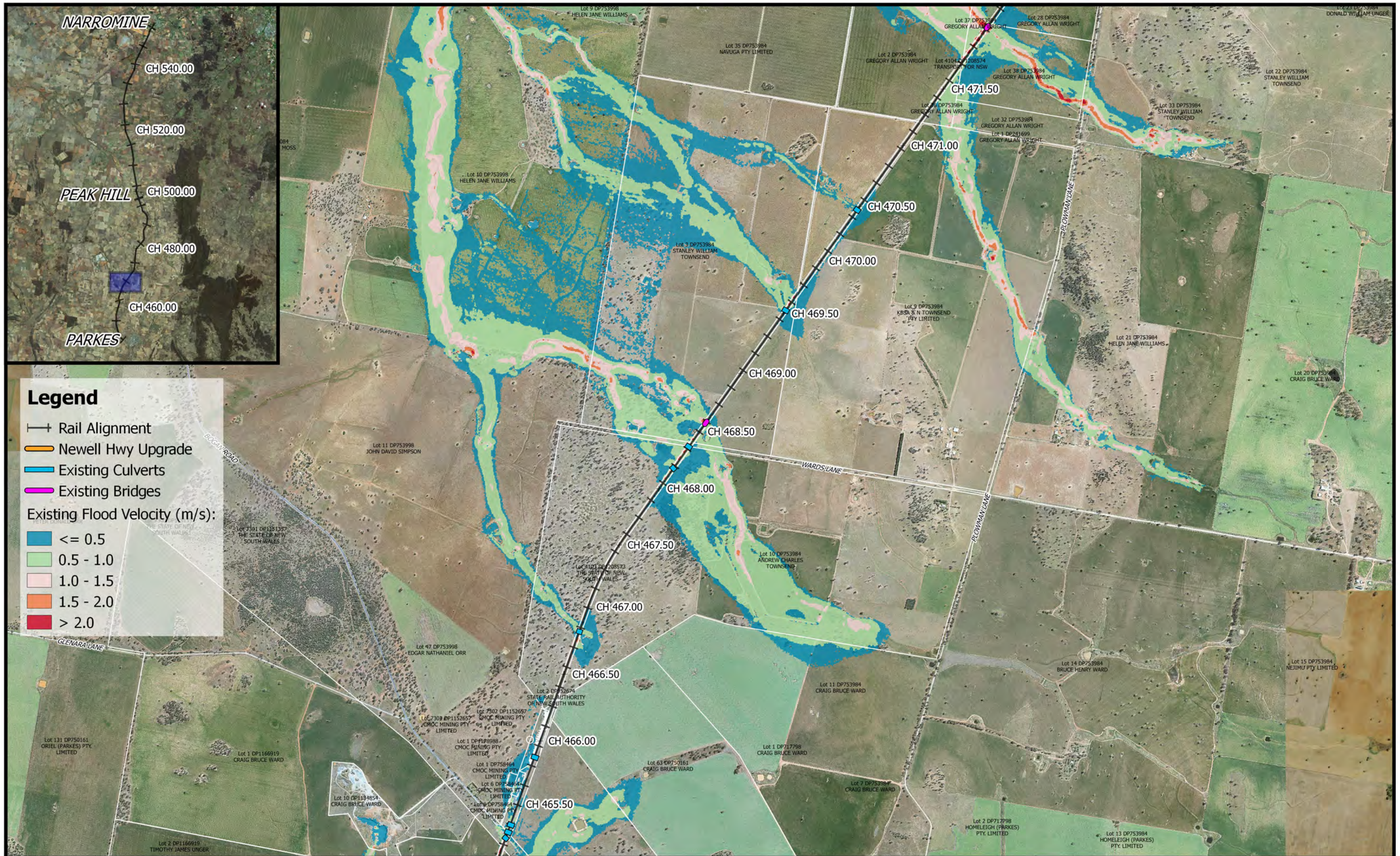


0 250 500 750 1000 m

1:25,000

Coordinate system: GDA 1994 MGA Zone 55
Scale ratio correct when printed at A3

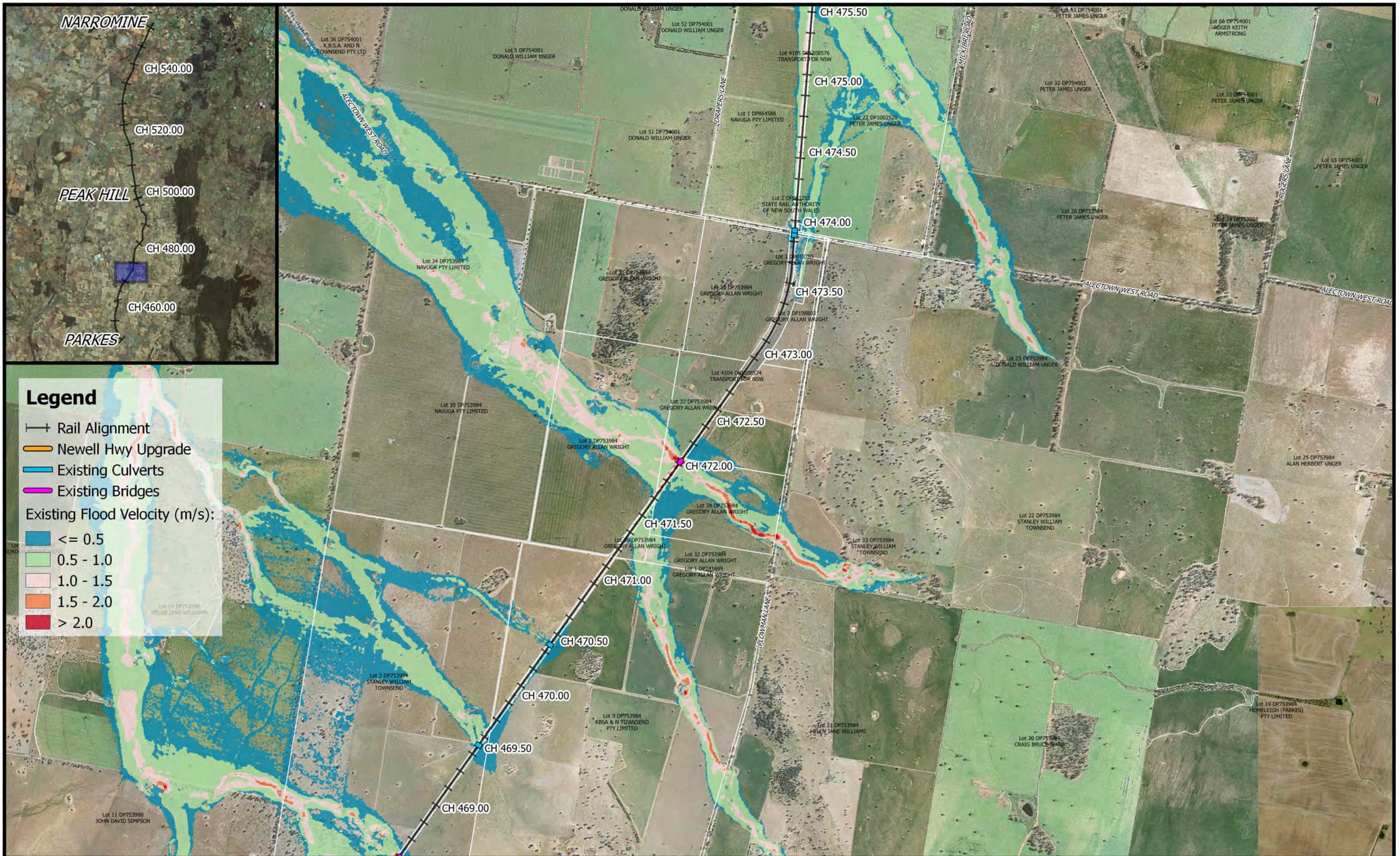




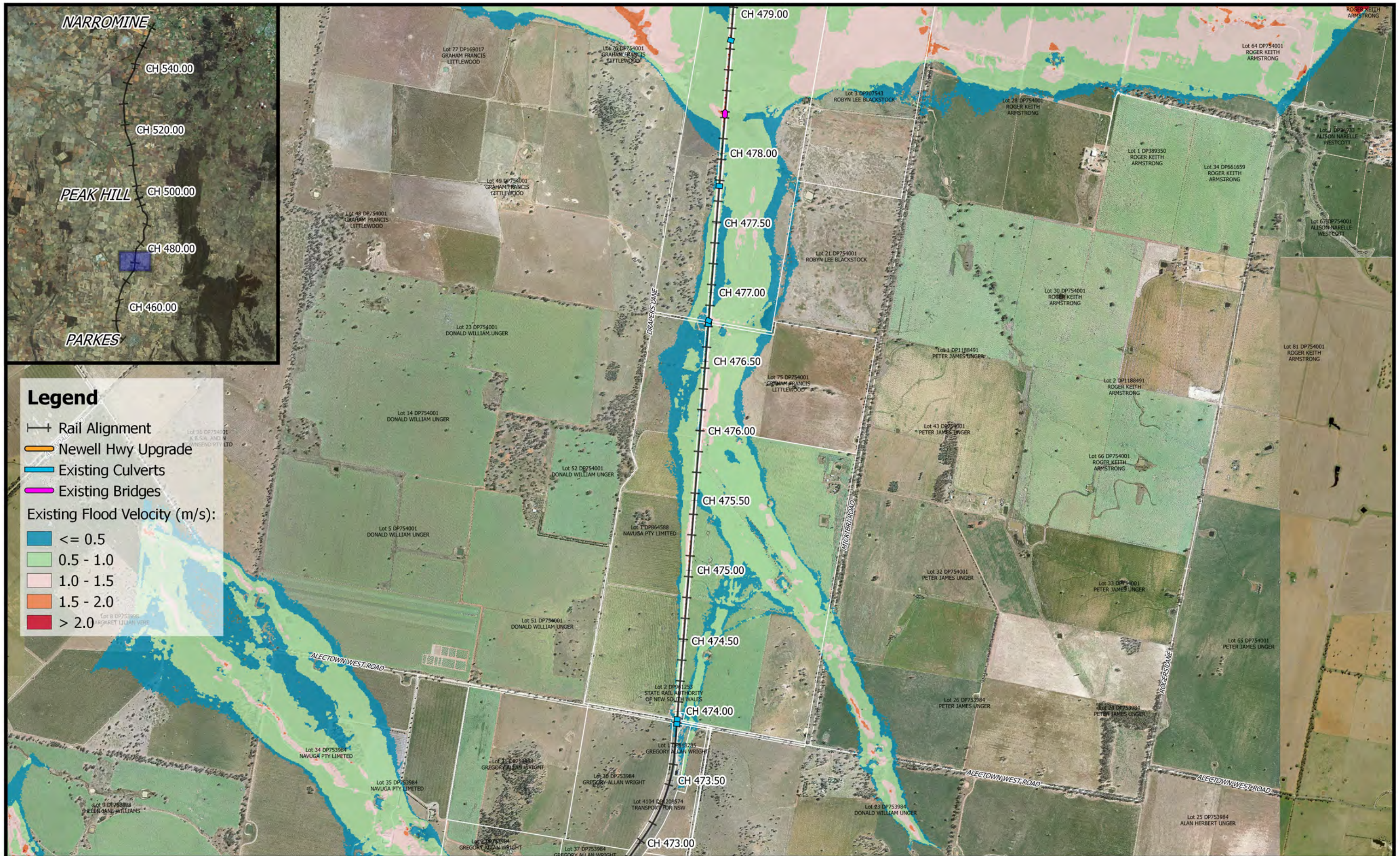
Legend

- Rail Alignment
 - Newell Hwy Upgrade
 - Existing Culverts
 - Existing Bridges
- Existing Flood Velocity (m/s):
- <= 0.5
 - 0.5 - 1.0
 - 1.0 - 1.5
 - 1.5 - 2.0
 - > 2.0

	<p>1:25,000</p>		Date: 19/7/2018	<p>Parkes to Narromine DD100% - Cross Drainage Flood Impact Assessment Results</p> <p>Figure EX0.05V5 <i>0.05% AEP Existing Flood Velocity - CH 470.00</i></p>
	Coordinate system: GDA 1994 MGA Zone 55 Scale ratio correct when printed at A3		Rev: A	
	Prepared By: YeohM			



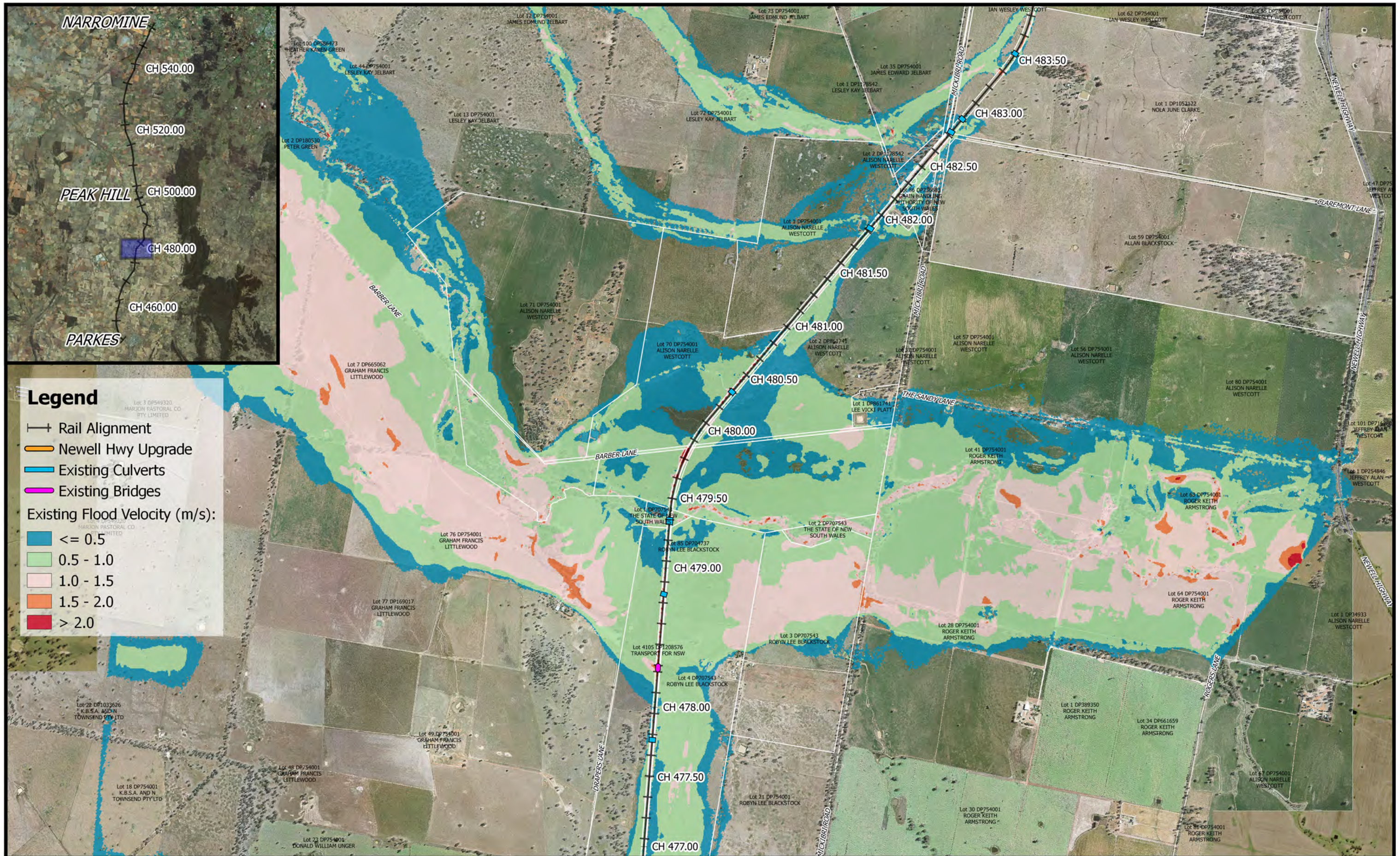
	<p>0 250 500 750 1000 m</p> <p>1:25,000</p> <p>Coordinate system: GDA 1994 MGA Zone 55 Scale ratio correct when printed at A3</p>		Date: 19/7/2018	<p>Parkes to Narromine DD100% - Cross Drainage Flood Impact Assessment Results</p> <p>Figure EX0.05V6 <i>0.05% AEP Existing Flood Velocity - CH 472.00</i></p>
			Rev: A	
			Prepared By: YeohM	



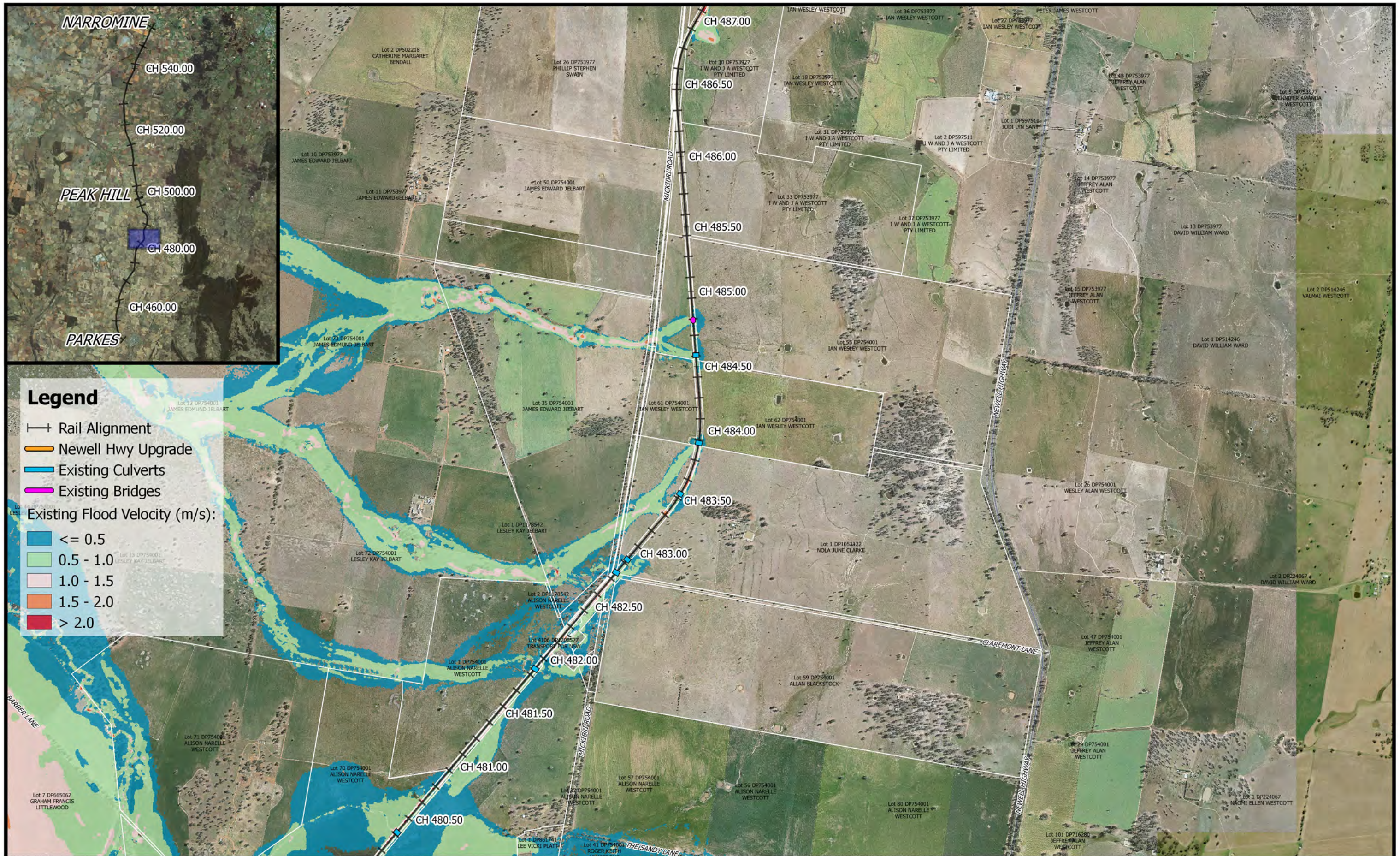
Legend

- +— Rail Alignment
- Newell Hwy Upgrade
- Existing Culverts
- Existing Bridges
- Existing Flood Velocity (m/s):
- <= 0.5
- 0.5 - 1.0
- 1.0 - 1.5
- 1.5 - 2.0
- > 2.0

	 1:25,000		Date: 19/7/2018 Rev: A Prepared By: YeohM	Parkes to Narromine DD100% - Cross Drainage Flood Impact Assessment Results Figure EX0.05V7 <i>0.05% AEP Existing Flood Velocity - CH 475.00</i>
	Coordinate system: GDA 1994 MGA Zone 55 Scale ratio correct when printed at A3			



			Date: 19/7/2018	Parkes to Narromine DD100% - Cross Drainage Flood Impact Assessment Results Figure EX0.05V8 <i>0.05% AEP Existing Flood Velocity - CH 480.00</i>
	1:25,000		Rev: A	
	Coordinate system: GDA 1994 MGA Zone 55 Scale ratio correct when printed at A3		Prepared By: YeohM	



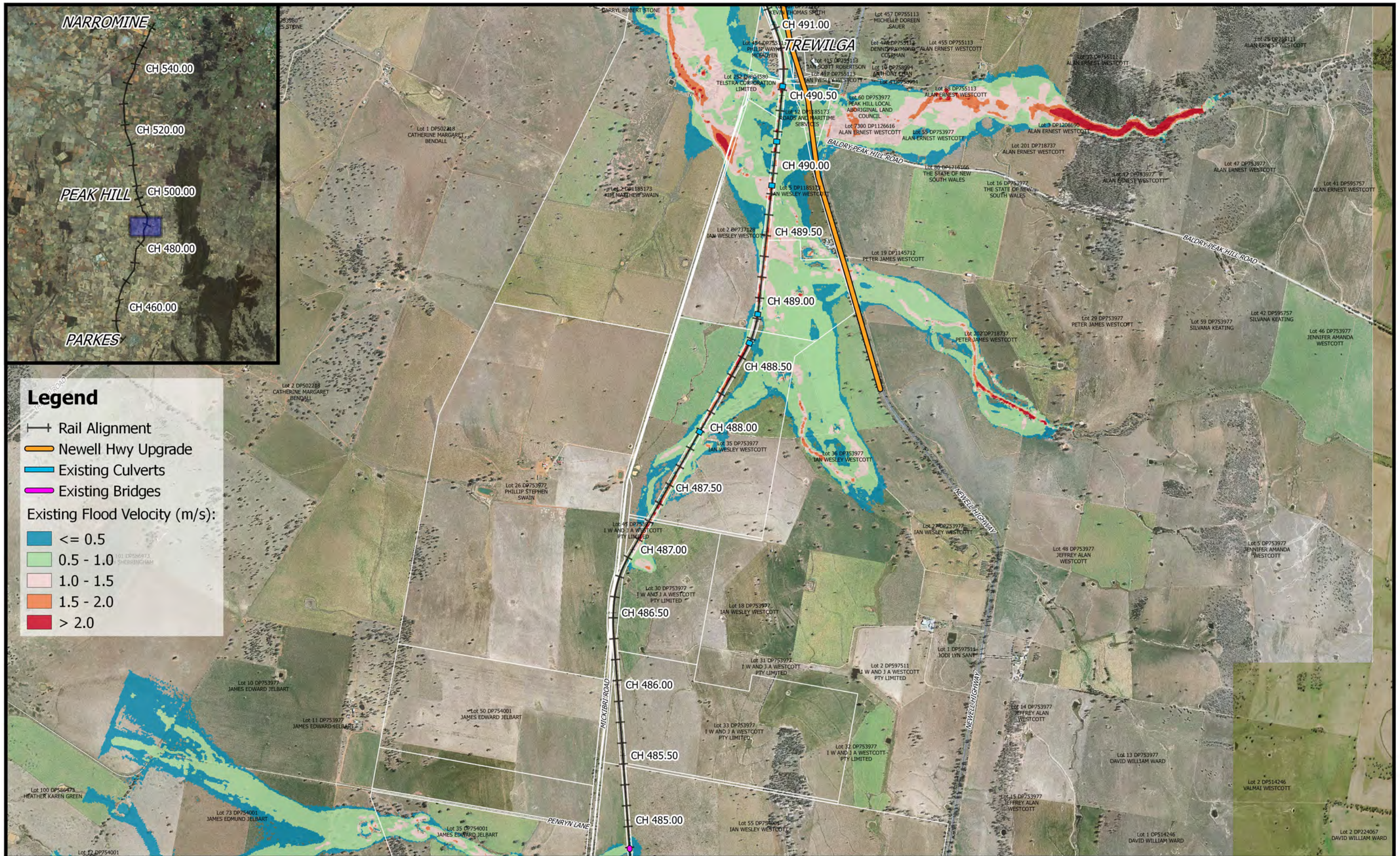
Legend

- +— Rail Alignment
- Newell Hwy Upgrade
- Existing Culverts
- Existing Bridges

Existing Flood Velocity (m/s):

- Blue: <= 0.5
- Light Green: 0.5 - 1.0
- Light Orange: 1.0 - 1.5
- Orange: 1.5 - 2.0
- Red: > 2.0

	<p>1:25,000</p>		Date: 19/7/2018	<p>Parkes to Narromine</p> <p>DD100% - Cross Drainage Flood Impact Assessment Results</p> <p>Figure EX0.05V9</p> <p><i>0.05% AEP Existing Flood Velocity - CH 485.00</i></p>
	Coordinate system: GDA 1994 MGA Zone 55 Scale ratio correct when printed at A3		Rev: A	
	Prepared By: YeohM			

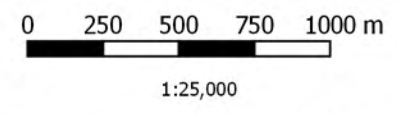


Legend

- +— Rail Alignment
- Newell Hwy Upgrade
- Existing Culverts
- Existing Bridges

Existing Flood Velocity (m/s):

- Blue: <= 0.5
- Light Green: 0.5 - 1.0
- Pink: 1.0 - 1.5
- Orange: 1.5 - 2.0
- Red: > 2.0



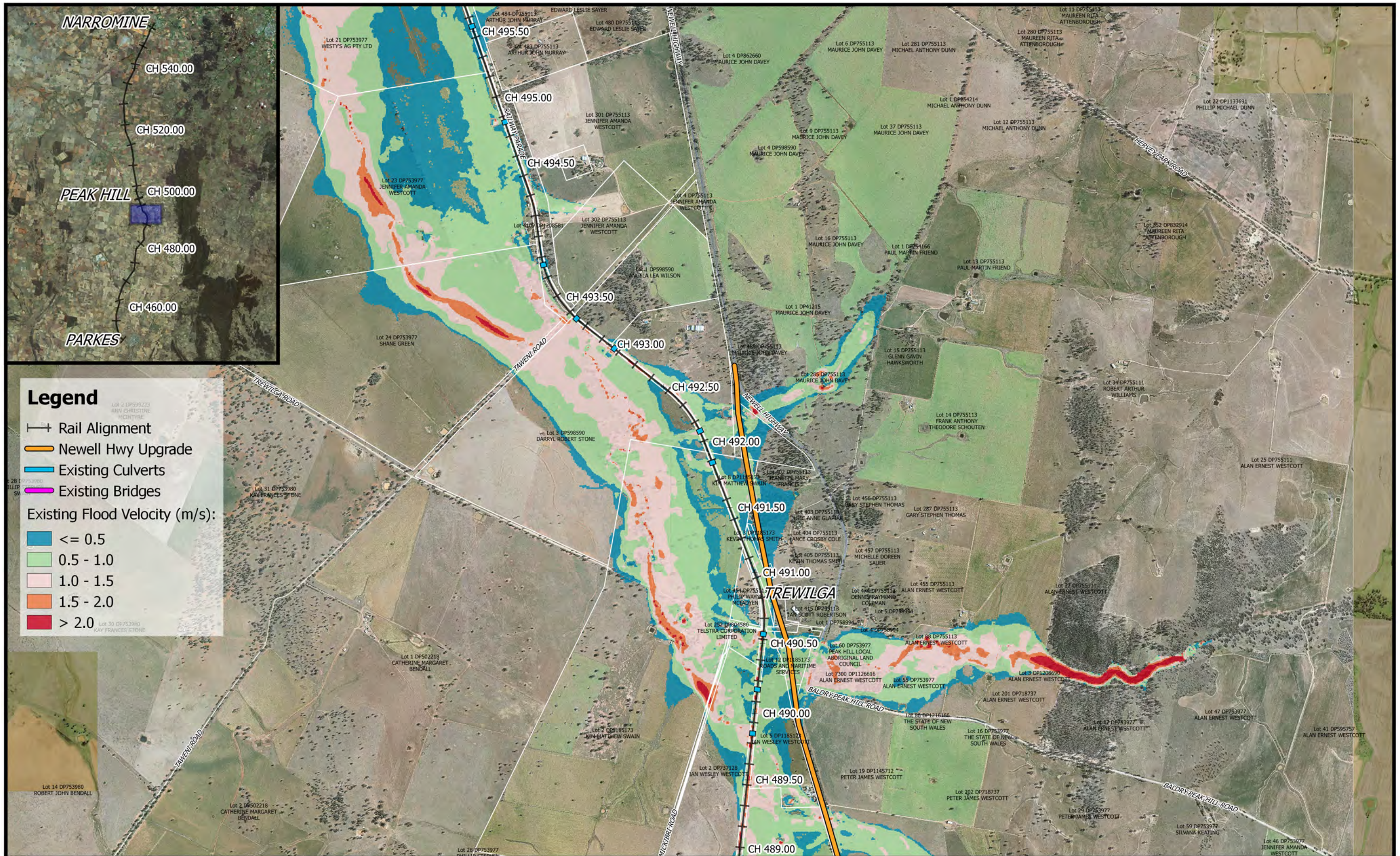
Coordinate system: GDA 1994 MGA Zone 55
Scale ratio correct when printed at A3



Date: 19/7/2018
Rev: A
Prepared By: YeohM

Parkes to Narromine
DD100% - Cross Drainage Flood Impact Assessment Results

Figure EX0.05V10
0.05% AEP Existing Flood Velocity - CH 490.00



Legend

- Rail Alignment
- Newell Hwy Upgrade
- Existing Culverts
- Existing Bridges

Existing Flood Velocity (m/s):

- ≤ 0.5
- 0.5 - 1.0
- 1.0 - 1.5
- 1.5 - 2.0
- > 2.0



0 250 500 750 1000 m

1:25,000

Coordinate system: GDA 1994 MGA Zone 55
Scale ratio correct when printed at A3



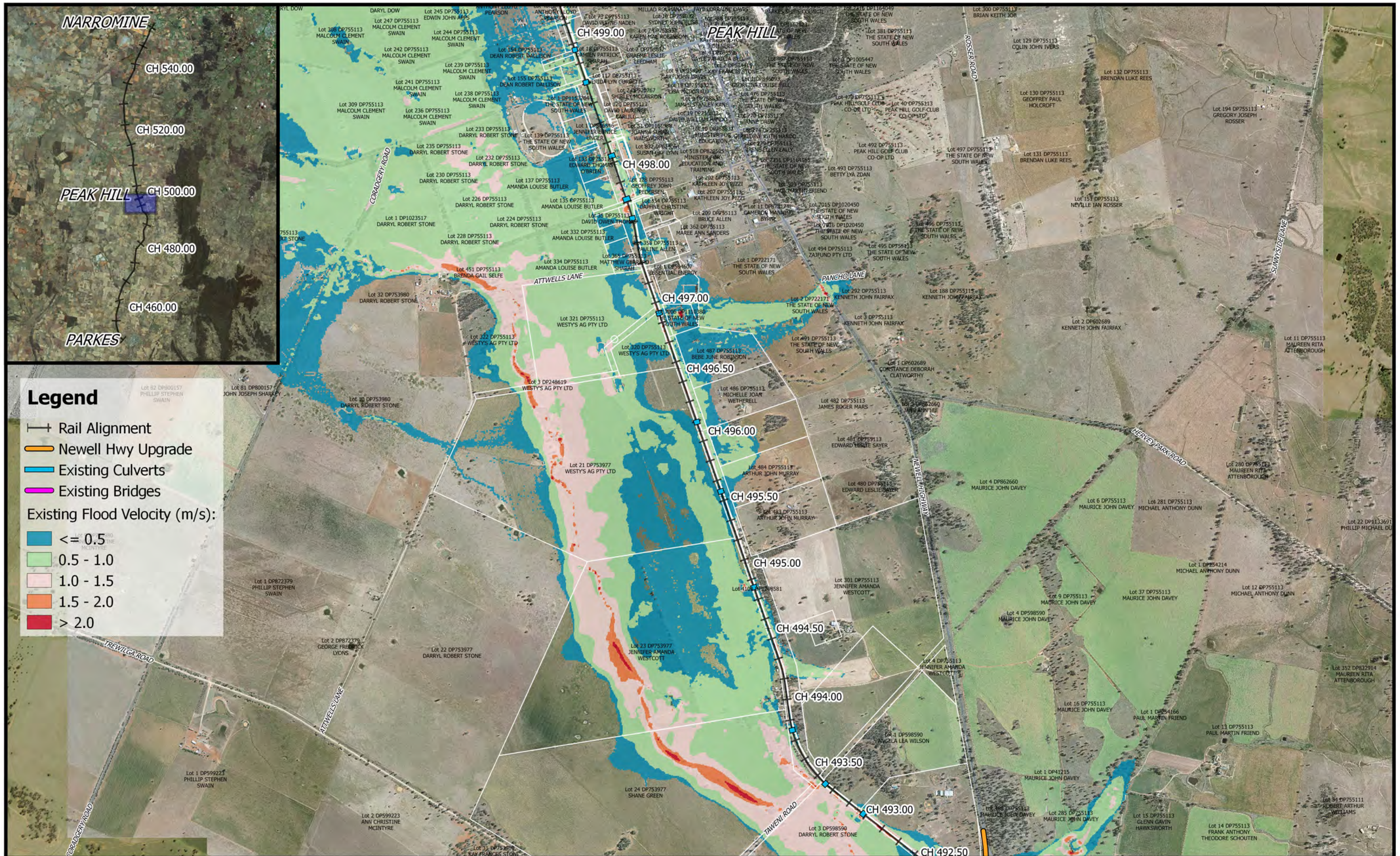
Date: 19/7/2018

Rev: A

Prepared By: YeohM

Parkes to Narromine
DD100% - Cross Drainage Flood Impact Assessment Results

Figure EX0.05V11
0.05% AEP Existing Flood Velocity - CH 492.00



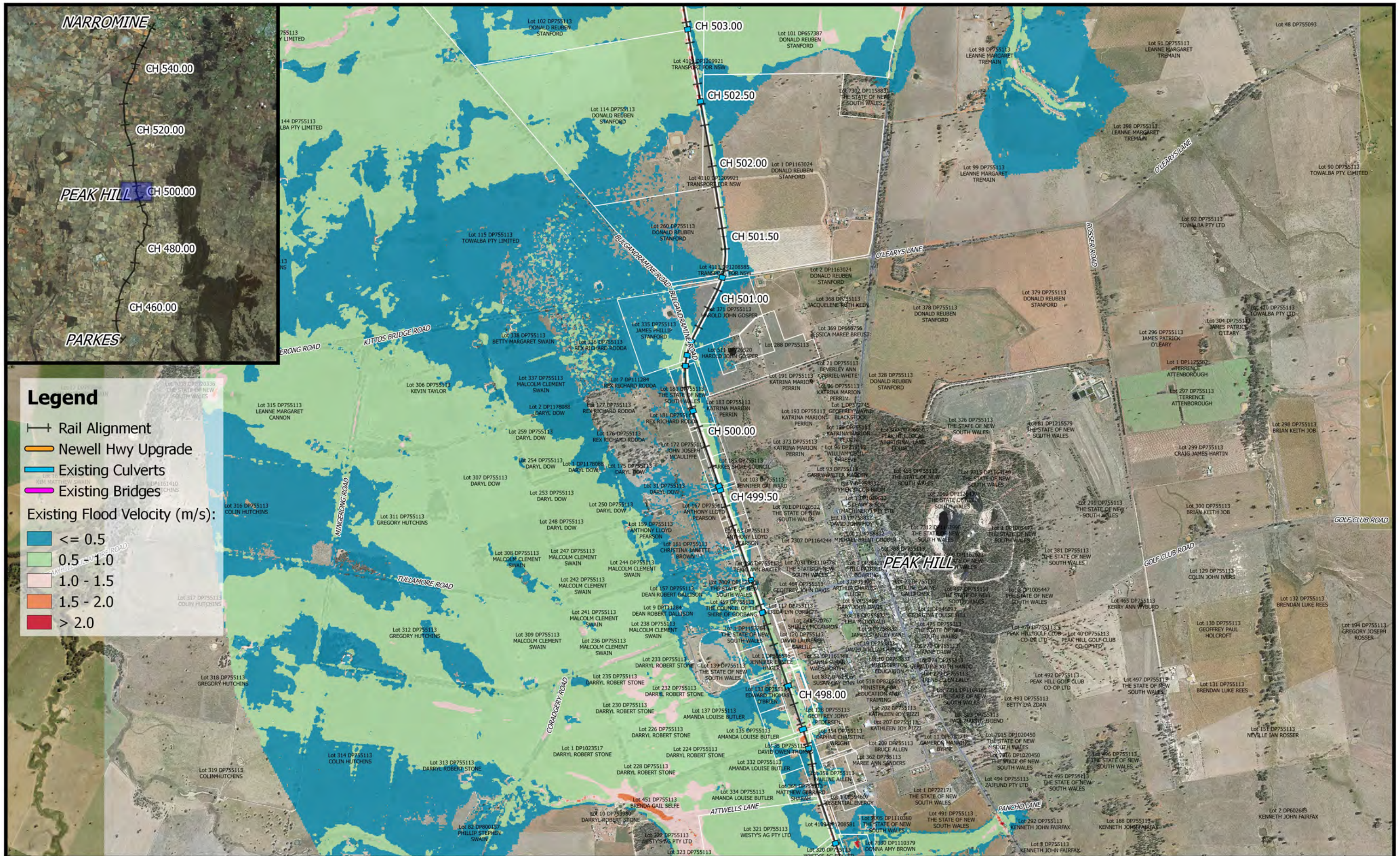
Legend

- Rail Alignment
- Newell Hwy Upgrade
- Existing Culverts
- Existing Bridges

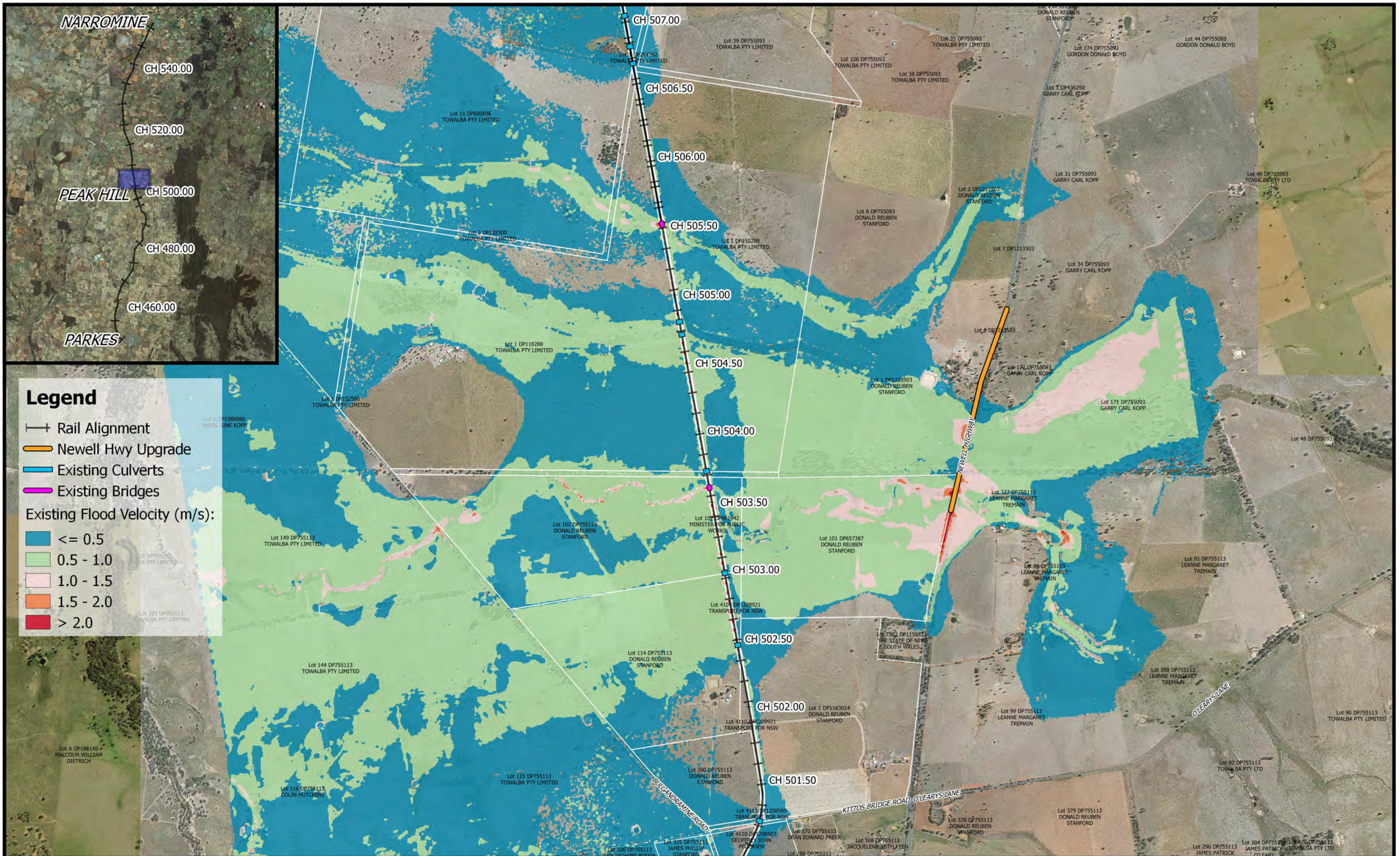
Existing Flood Velocity (m/s):

- ≤ 0.5
- 0.5 - 1.0
- 1.0 - 1.5
- 1.5 - 2.0
- > 2.0

	<p>1:25,000</p>		Date: 19/7/2018	<p>Parkes to Narromine DD100% - Cross Drainage Flood Impact Assessment Results</p> <p>Figure EX0.05V12 <i>0.05% AEP Existing Flood Velocity - CH 495.00</i></p>	
	<p>Coordinate system: GDA 1994 MGA Zone 55 Scale ratio correct when printed at A3</p>		Rev: A		
	<p>Prepared By: YeohM</p>				



	<p>1:25,000</p> <p>Coordinate system: GDA 1994 MGA Zone 55 Scale ratio correct when printed at A3</p>		Date: 19/7/2018	<p>Parkes to Narromine DD100% - Cross Drainage Flood Impact Assessment Results</p> <p>Figure EX0.05V13 0.05% AEP Existing Flood Velocity - CH 500.00</p>
	Rev: A			
	Prepared By: YeohM			



Legend

- Rail Alignment
- Newell Hwy Upgrade
- Existing Culverts
- Existing Bridges
- Existing Flood Velocity (m/s):
 - <= 0.5
 - 0.5 - 1.0
 - 1.0 - 1.5
 - 1.5 - 2.0
 - > 2.0

Date: 19/7/2018

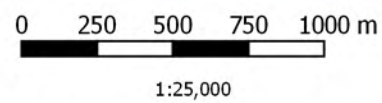
Rev: A

Prepared By: YeohM

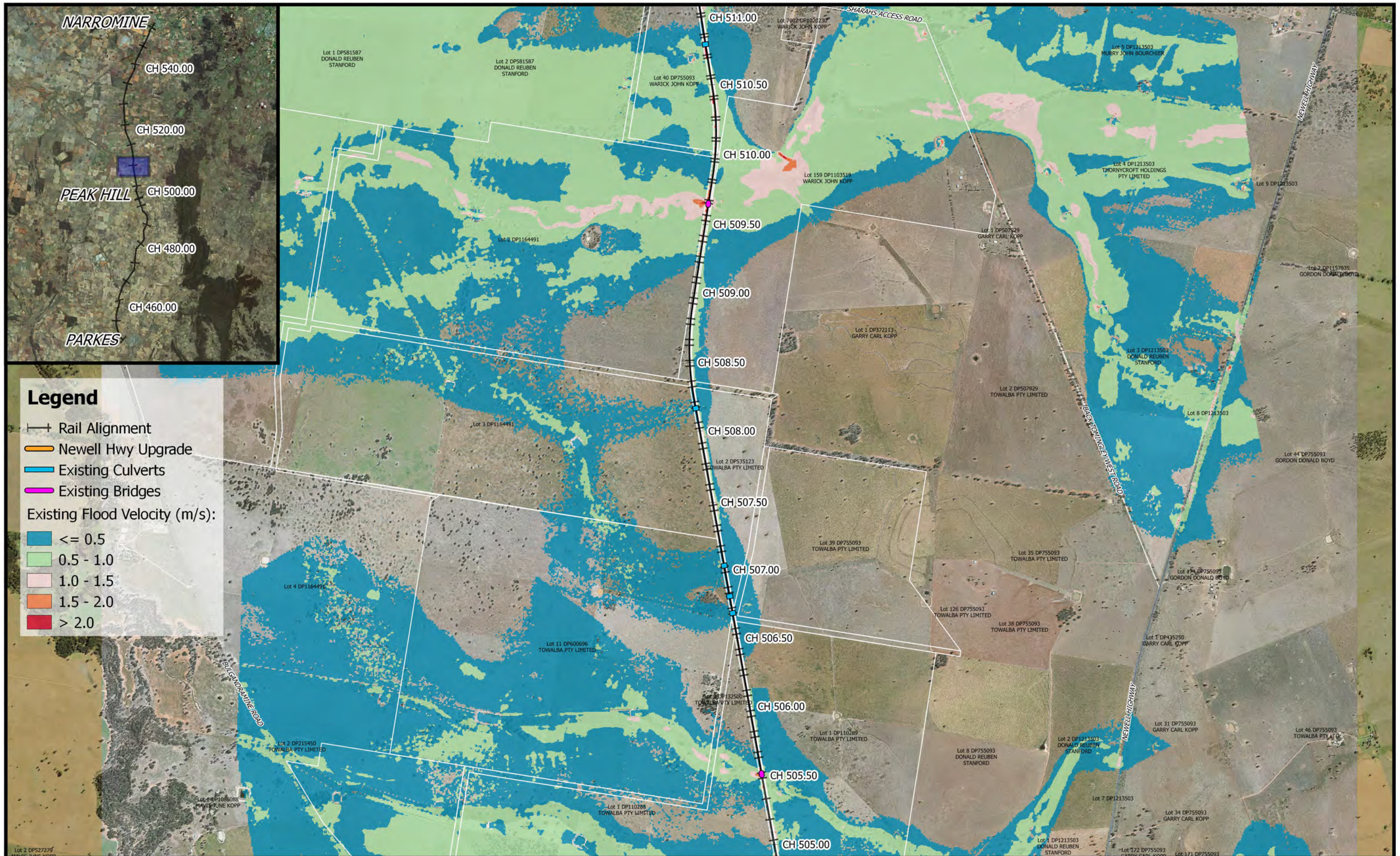


Parkes to Narromine
DD100% - Cross Drainage Flood Impact Assessment Results

Figure EX0.05V14
0.05% AEP Existing Flood Velocity - CH 505.00



Coordinate system: GDA 1994 MGA Zone 55
Scale ratio correct when printed at A3



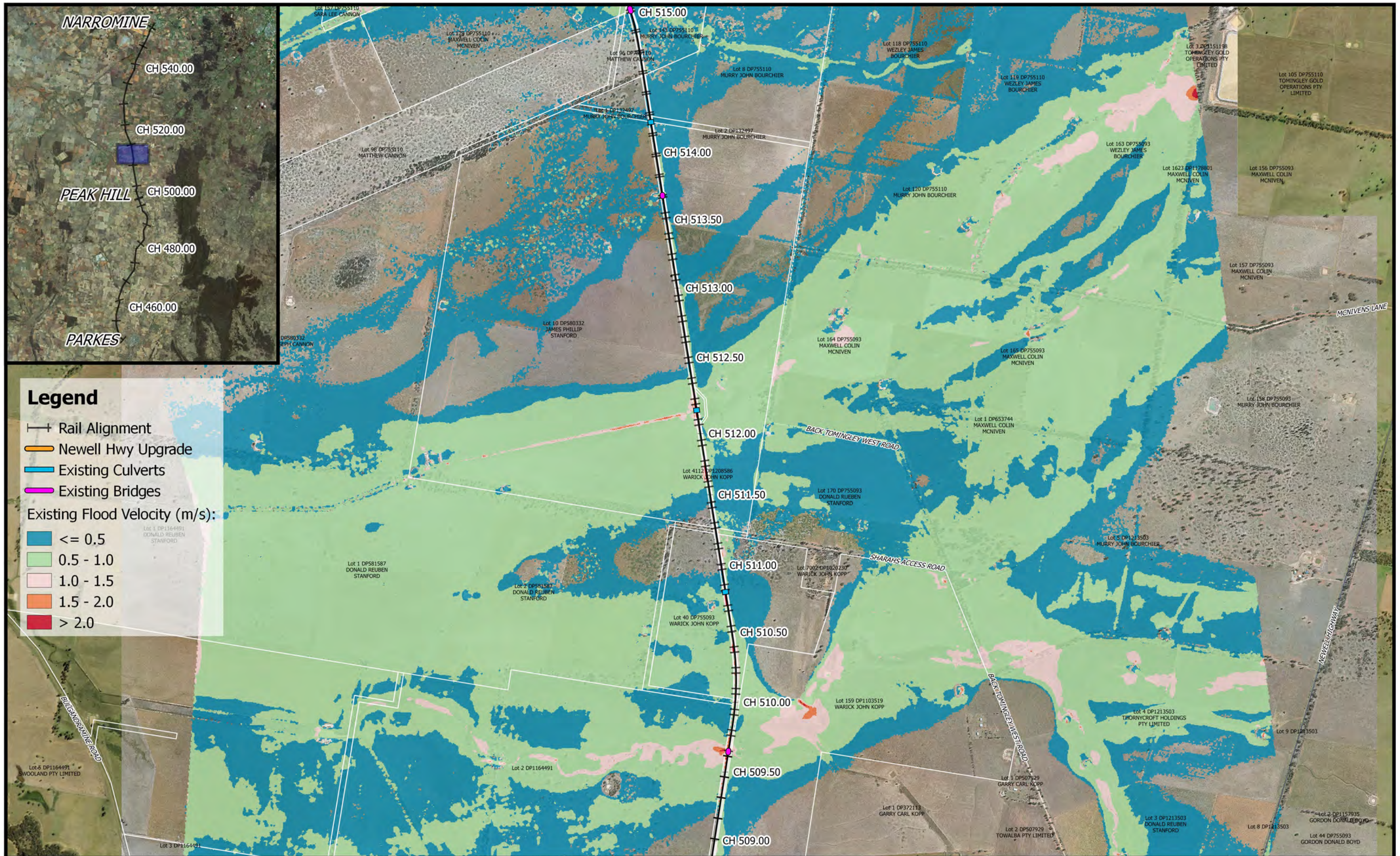
Legend

- Rail Alignment
- Newell Hwy Upgrade
- Existing Culverts
- Existing Bridges

Existing Flood Velocity (m/s):

- ≤ 0.5
- 0.5 - 1.0
- 1.0 - 1.5
- 1.5 - 2.0
- > 2.0

	<p>1:25,000</p>		Date: 19/7/2018	<p>Parkes to Narromine DD100% - Cross Drainage Flood Impact Assessment Results</p> <p>Figure EX0.05V15 <i>0.05% AEP Existing Flood Velocity - CH 510.00</i></p>
	Coordinate system: GDA 1994 MGA Zone 55 Scale ratio correct when printed at A3		Rev: A	
	Prepared By: YeohM			



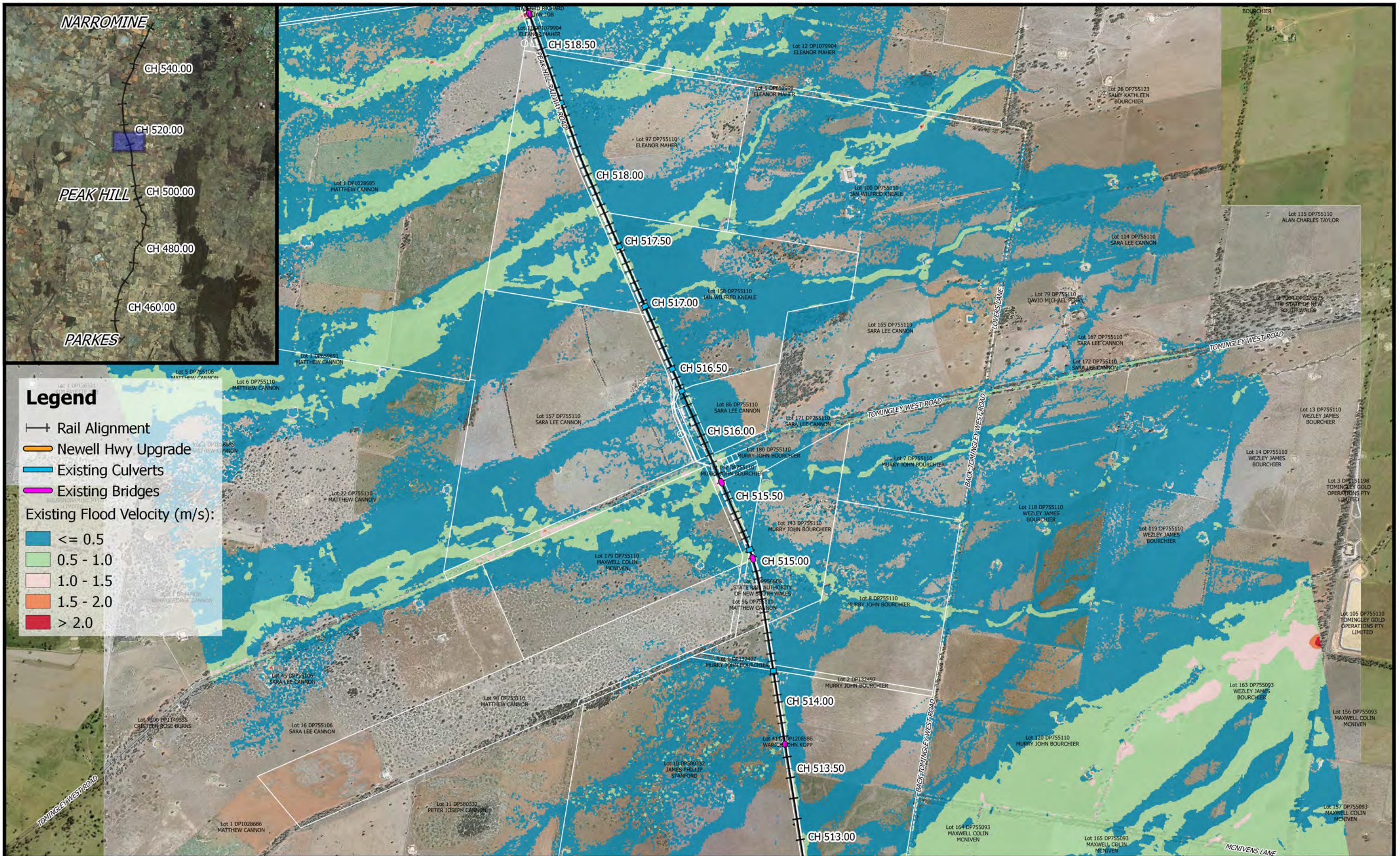
Legend

- Rail Alignment
- Newell Hwy Upgrade
- Existing Culverts
- Existing Bridges

Existing Flood Velocity (m/s):

- <= 0,5
- 0,5 - 1,0
- 1,0 - 1,5
- 1,5 - 2,0
- > 2,0

	<p>0 250 500 750 1000 m</p> <p>1:25,000</p> <p>Coordinate system: GDA 1994 MGA Zone 55 Scale ratio correct when printed at A3</p>	<p>M M MOTT MACDONALD</p>	Date: 19/7/2018	<p>Parkes to Narromine DD100% - Cross Drainage Flood Impact Assessment Results</p> <p>Figure EX0.05V16 <i>0.05% AEP Existing Flood Velocity - CH 512.00</i></p>
	Rev: A			
	Prepared By: YeohM			



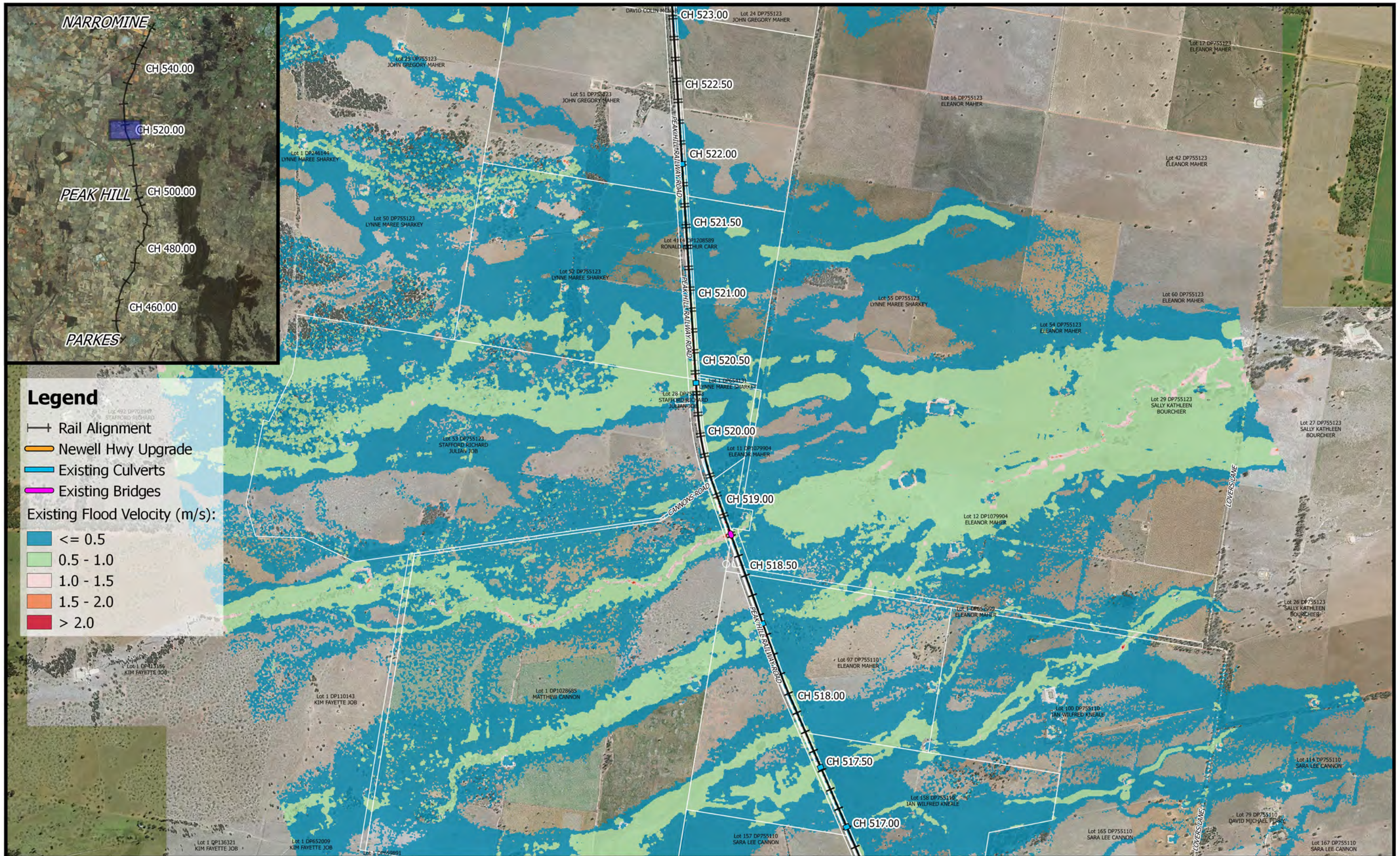
Legend

- Rail Alignment
- Newell Hwy Upgrade
- Existing Culverts
- Existing Bridges

Existing Flood Velocity (m/s):

- ≤ 0.5
- 0.5 - 1.0
- 1.0 - 1.5
- 1.5 - 2.0
- > 2.0

	<p>0 250 500 750 1000 m</p> <p>1:25,000</p>		Date: 19/7/2018	<p>Parkes to Narromine</p> <p>DD100% - Cross Drainage Flood Impact Assessment Results</p> <p>Figure EX0.05V17</p> <p><i>0.05% AEP Existing Flood Velocity - CH 515.00</i></p>
	Coordinate system: GDA 1994 MGA Zone 55 Scale ratio correct when printed at A3		Rev: A	
	Prepared By: YeohM			



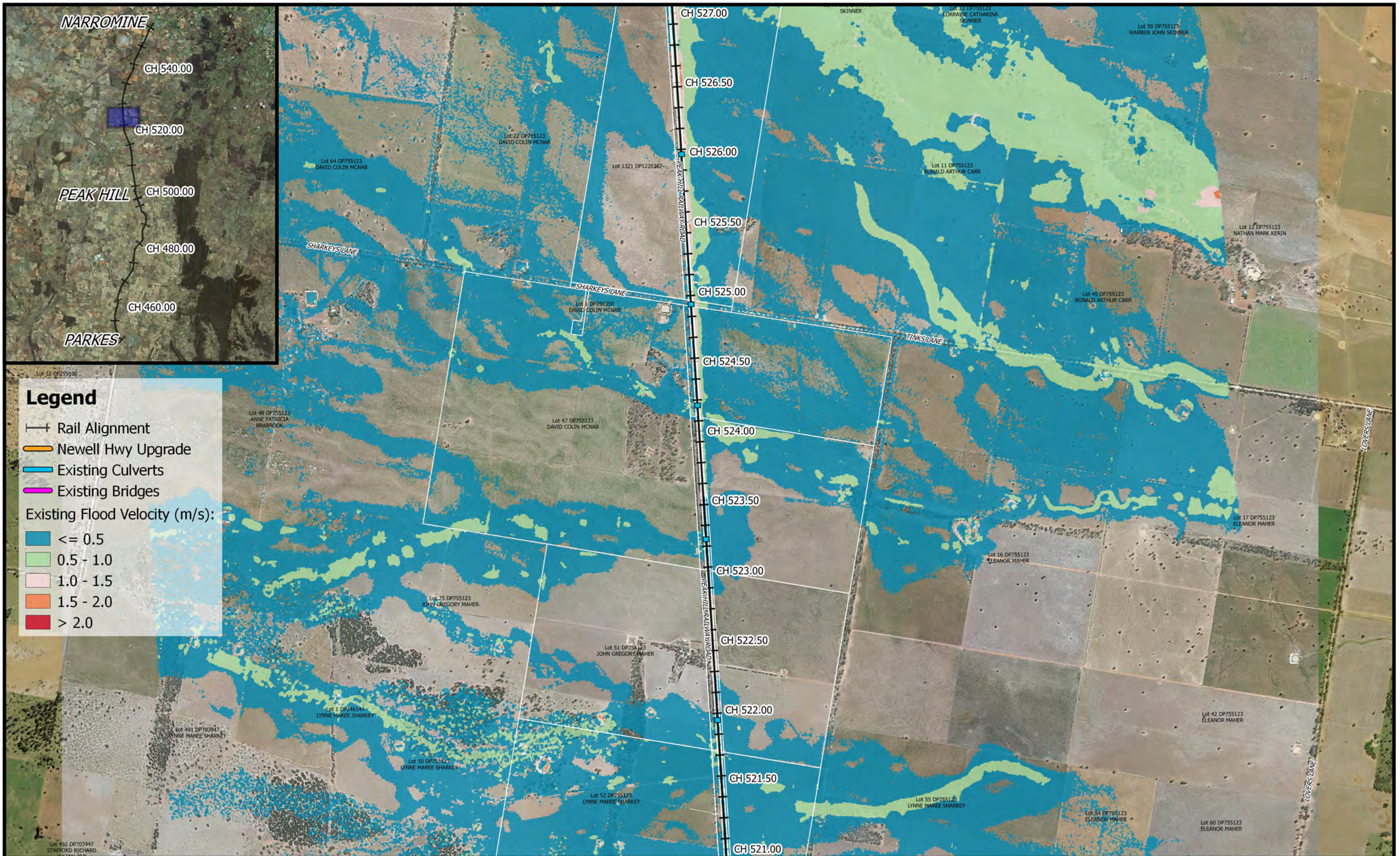
Legend

- Rail Alignment
- Newell Hwy Upgrade
- Existing Culverts
- Existing Bridges

Existing Flood Velocity (m/s):

- ≤ 0.5
- 0.5 - 1.0
- 1.0 - 1.5
- 1.5 - 2.0
- > 2.0

	<p>1:25,000</p>		Date: 19/7/2018	<p>Parkes to Narromine DD100% - Cross Drainage Flood Impact Assessment Results</p> <p>Figure EX0.05V18 <i>0.05% AEP Existing Flood Velocity - CH 520.00</i></p>
	Coordinate system: GDA 1994 MGA Zone 55 Scale ratio correct when printed at A3		Rev: A	
	Prepared By: YeohM			



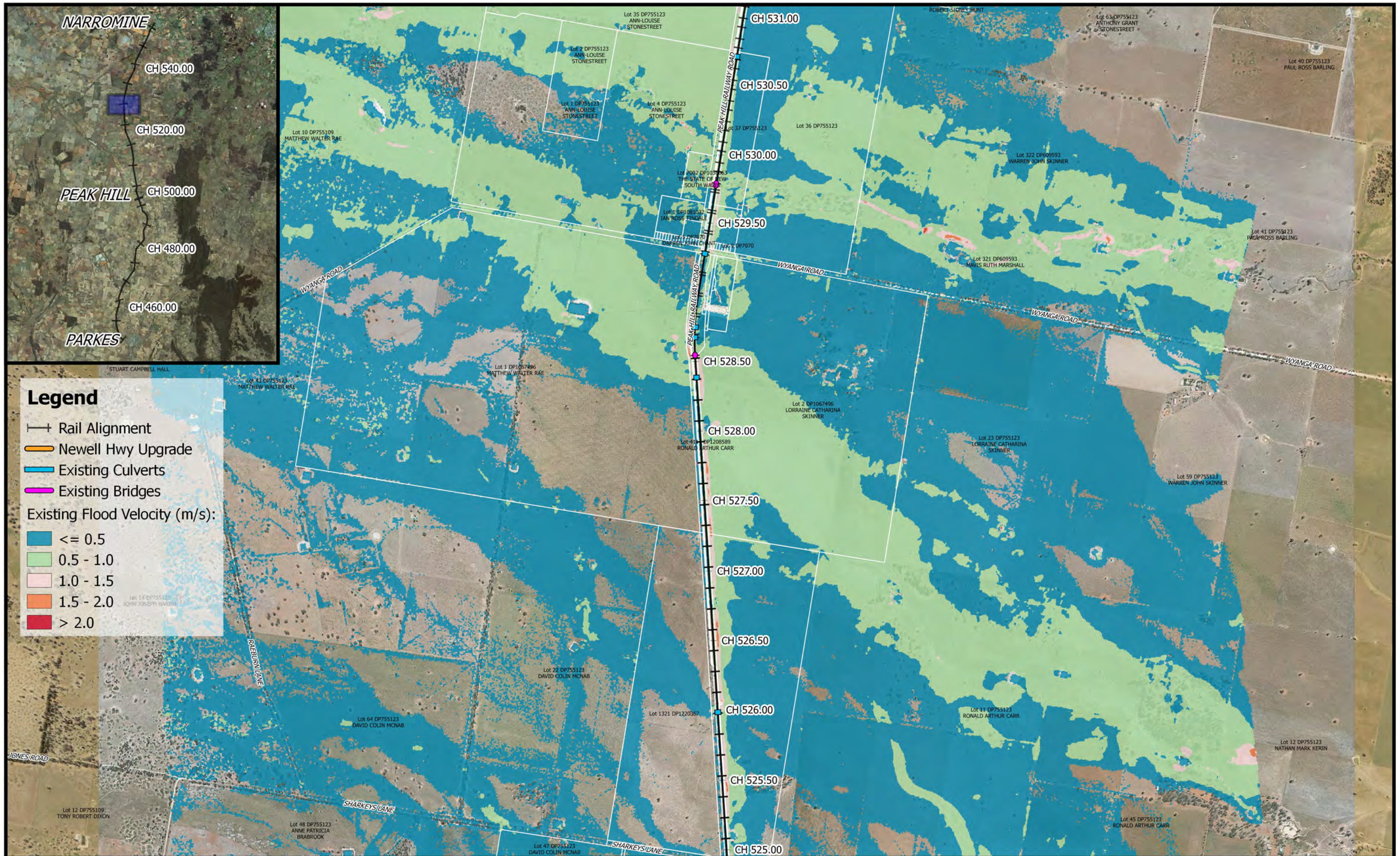
Legend

- Rail Alignment
- Newell Hwy Upgrade
- Existing Culverts
- Existing Bridges

Existing Flood Velocity (m/s):

- ≤ 0.5
- 0.5 - 1.0
- 1.0 - 1.5
- 1.5 - 2.0
- > 2.0

	<p>0 250 500 750 1000 m</p> <p>1:25,000</p> <p>Coordinate system: GDA 1994 MGA Zone 55 Scale ratio correct when printed at A3</p>	<p>M M MOTT MACDONALD</p>	Date: 19/7/2018	<p>Parkes to Narromine DD100% - Cross Drainage Flood Impact Assessment Results</p> <p>Figure EX0.05V19 <i>0.05% AEP Existing Flood Velocity - CH 525.00</i></p>
	Rev: A			
	Prepared By: YeohM			



Legend

- +— Rail Alignment
- Newell Hwy Upgrade
- Existing Culverts
- Existing Bridges

Existing Flood Velocity (m/s):

- Blue: <= 0.5
- Light Green: 0.5 - 1.0
- Pink: 1.0 - 1.5
- Orange: 1.5 - 2.0
- Red: > 2.0



0 250 500 750 1000 m

1:25,000

Coordinate system: GDA 1994 MGA Zone 55
Scale ratio correct when printed at A3



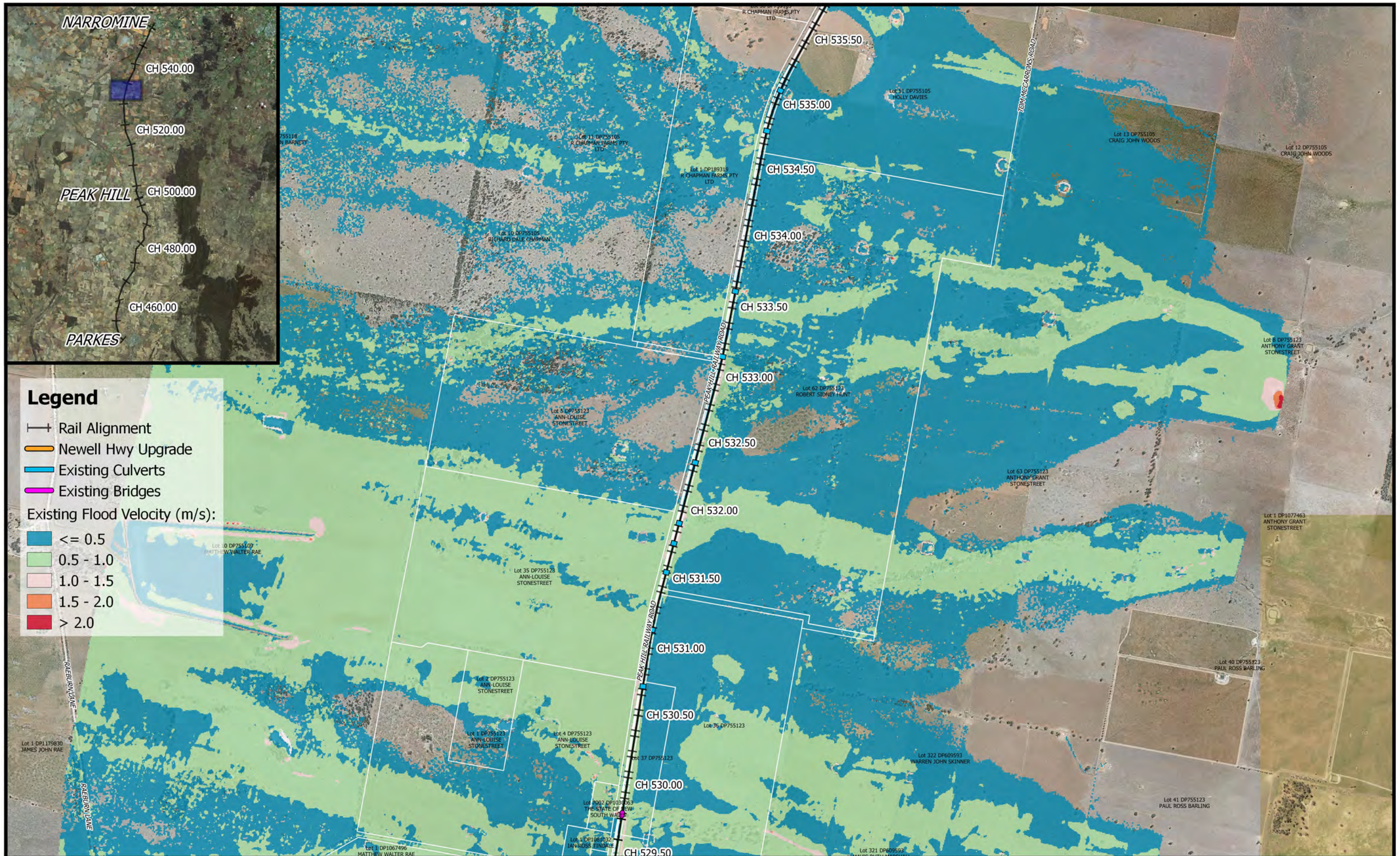
Date: 19/7/2018

Rev: A

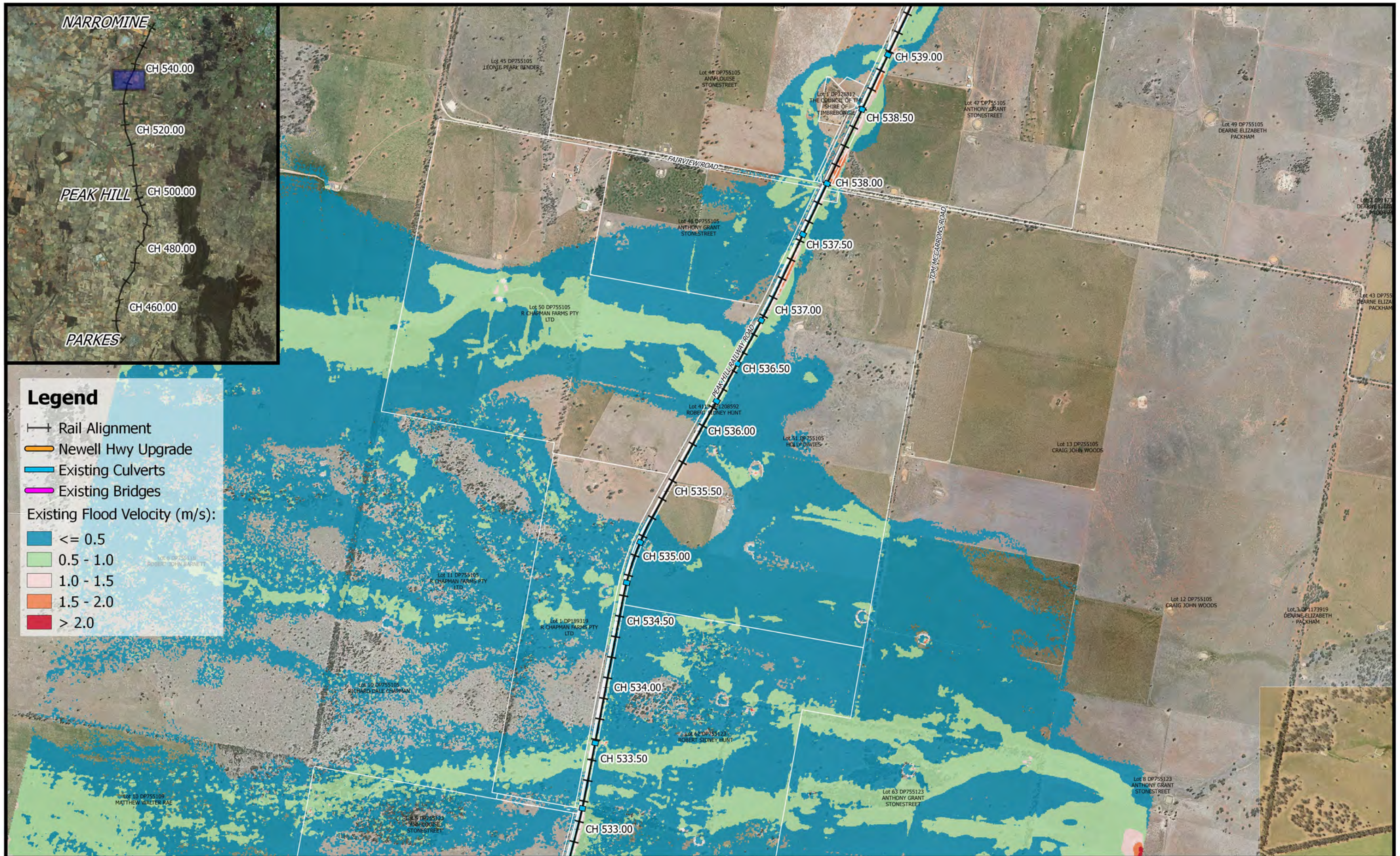
Prepared By: YeohM

Parkes to Narromine
DD100% - Cross Drainage Flood Impact Assessment Results

Figure EX0.05V20
0.05% AEP Existing Flood Velocity - CH 530.00



	0 250 500 750 1000 m 1:25,000		Date: 19/7/2018	Parkes to Narromine DD100% - Cross Drainage Flood Impact Assessment Results Figure EX0.05V21 <i>0.05% AEP Existing Flood Velocity - CH 533.00</i>
	Coordinate system: GDA 1994 MGA Zone 55 Scale ratio correct when printed at A3		Rev: A	
	Prepared By: YeohM			



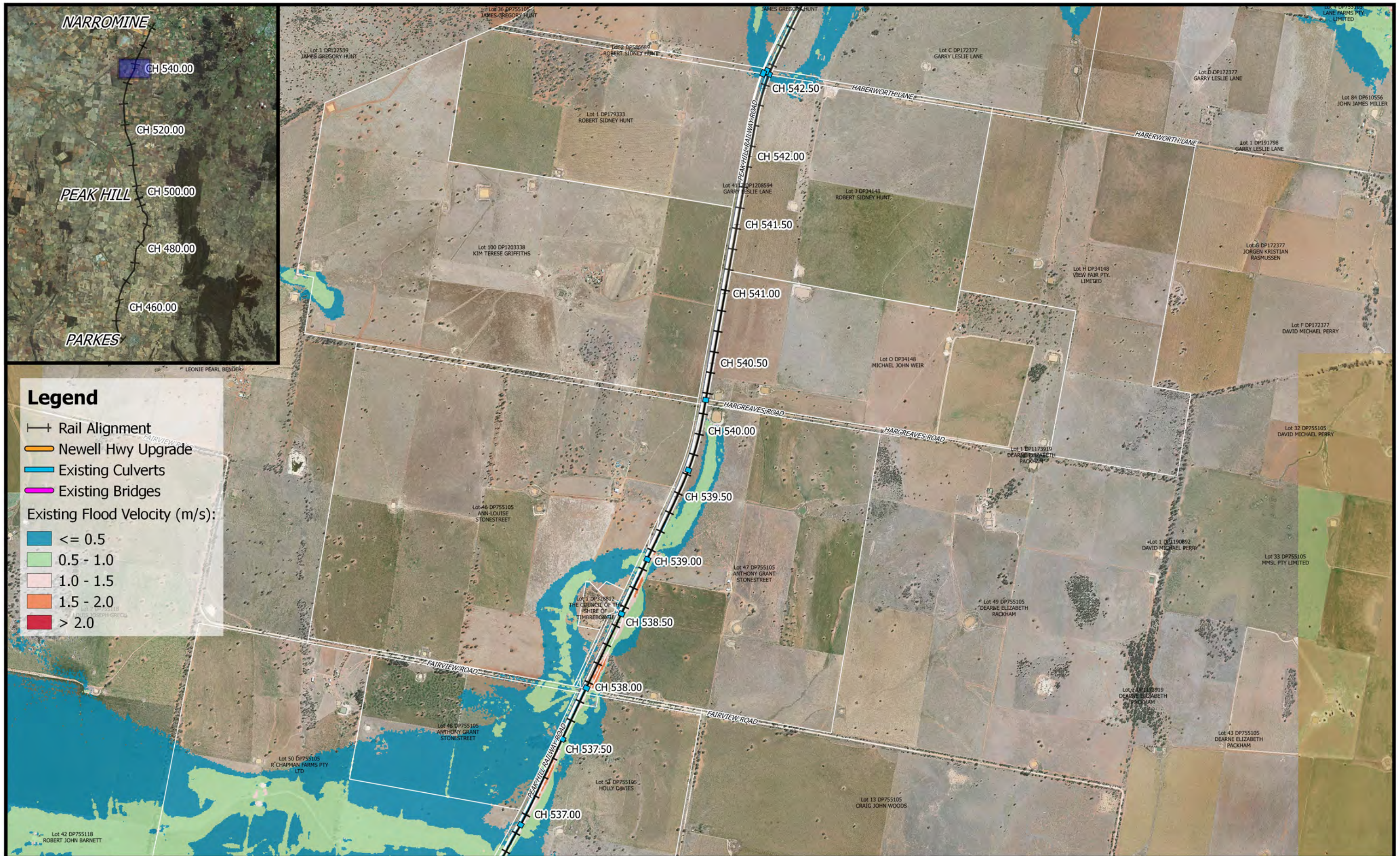
Legend

- +— Rail Alignment
- Newell Hwy Upgrade
- Existing Culverts
- Existing Bridges

Existing Flood Velocity (m/s):

- Blue: <= 0.5
- Light Green: 0.5 - 1.0
- Light Orange: 1.0 - 1.5
- Orange: 1.5 - 2.0
- Red: > 2.0

	<p>0 250 500 750 1000 m</p> <p>1:25,000</p> <p>Coordinate system: GDA 1994 MGA Zone 55 Scale ratio correct when printed at A3</p>		Date: 19/7/2018	<p>Parkes to Narromine DD100% - Cross Drainage Flood Impact Assessment Results</p> <p>Figure EX0.05V22 <i>0.05% AEP Existing Flood Velocity - CH 535.00</i></p>
	Rev: A			
	Prepared By: YeohM			

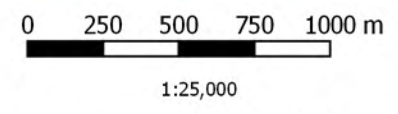


Legend

- Rail Alignment
- Newell Hwy Upgrade
- Existing Culverts
- Existing Bridges

Existing Flood Velocity (m/s):

- <= 0.5
- 0.5 - 1.0
- 1.0 - 1.5
- 1.5 - 2.0
- > 2.0



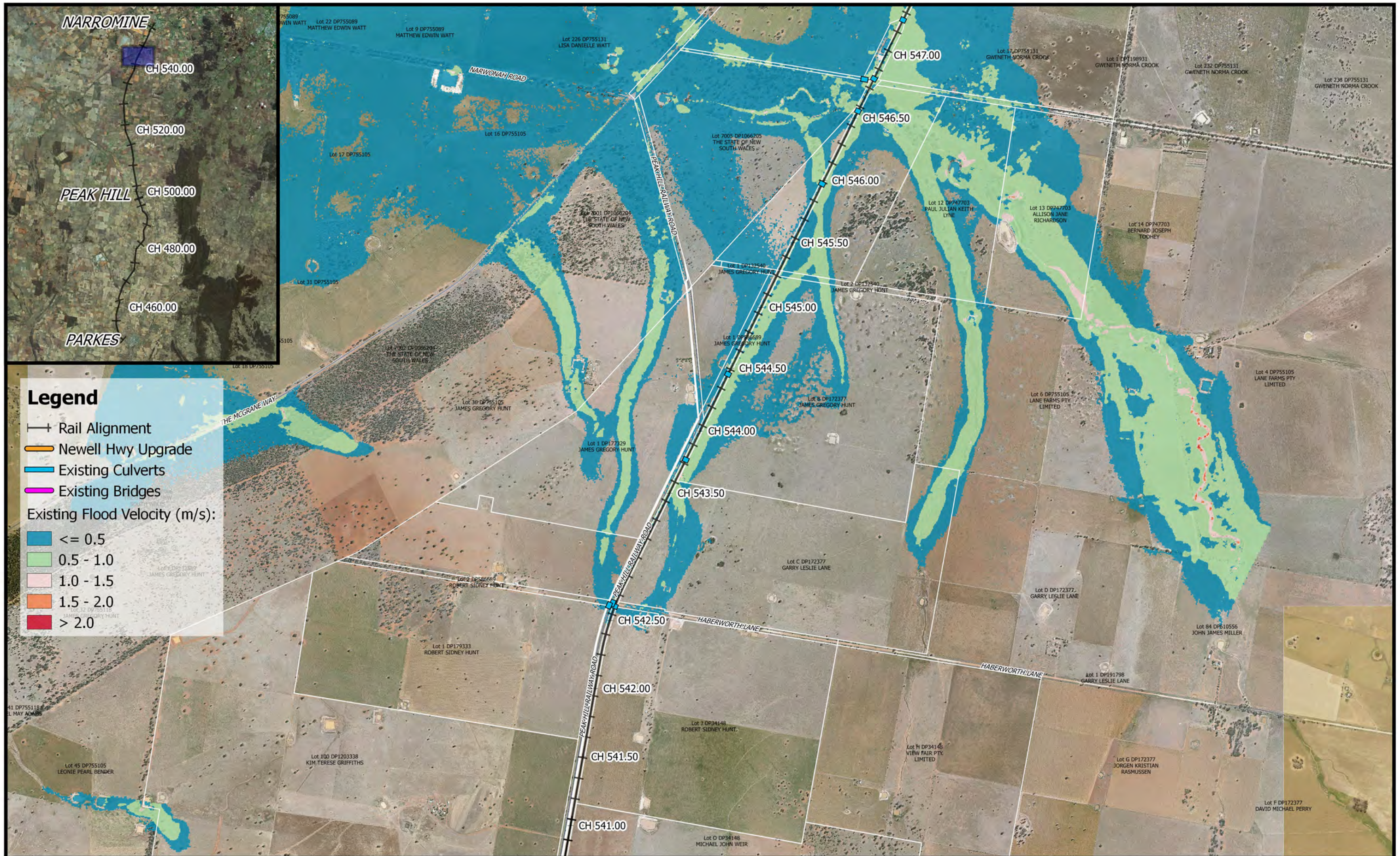
Coordinate system: GDA 1994 MGA Zone 55
Scale ratio correct when printed at A3



Date: 19/7/2018
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Prepared By: YeohM

Parkes to Narromine
DD100% - Cross Drainage Flood Impact Assessment Results

Figure EX0.05V23
0.05% AEP Existing Flood Velocity - CH 540.00



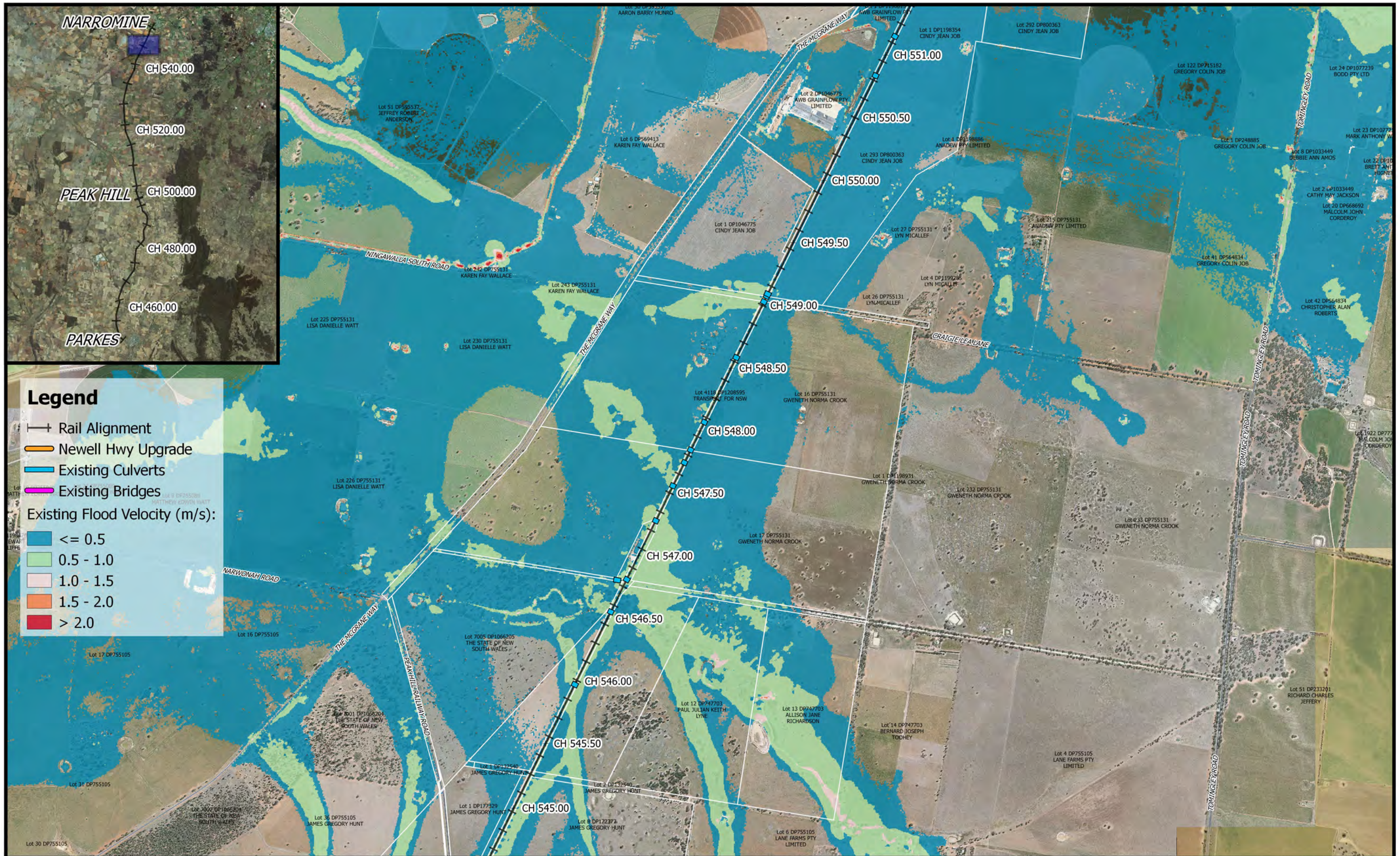
Legend

- +— Rail Alignment
- Newell Hwy Upgrade
- Existing Culverts
- Existing Bridges

Existing Flood Velocity (m/s):

- ≤ 0.5
- 0.5 - 1.0
- 1.0 - 1.5
- 1.5 - 2.0
- > 2.0

	<p>1:25,000</p>		Date: 19/7/2018	<p>Parkes to Narromine DD100% - Cross Drainage Flood Impact Assessment Results</p> <p>Figure EX0.05V24 <i>0.05% AEP Existing Flood Velocity - CH 545.00</i></p>
	Coordinate system: GDA 1994 MGA Zone 55 Scale ratio correct when printed at A3		Rev: A	
	Prepared By: YeohM			



Legend

- Rail Alignment
- Newell Hwy Upgrade
- Existing Culverts
- Existing Bridges

Existing Flood Velocity (m/s):

- ≤ 0.5
- 0.5 - 1.0
- 1.0 - 1.5
- 1.5 - 2.0
- > 2.0

	<p>1:25,000</p>		Date: 19/7/2018	<p>Parkes to Narromine DD100% - Cross Drainage Flood Impact Assessment Results</p> <p>Figure EX0.05V25 <i>0.05% AEP Existing Flood Velocity - CH 550.00</i></p>
	Coordinate system: GDA 1994 MGA Zone 55 Scale ratio correct when printed at A3		Rev: A	
	Prepared By: YeohM			