

Appendix A

# Proposed Traffic Management Staging Plans

Water levels are monitored in the piezometers listed in Table A-1 (a total of 110 piezometers) at the locations shown in the Plans following. The completion depths are given in Table A-1. Shallow (screen completion in or just above peat) and deep piezometer (screen completion in sand below peat or silt) pairs are installed at wetlands following the general design shown in Appendix C.

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**Table A-1 Monitoring Bores/ Piezometers**

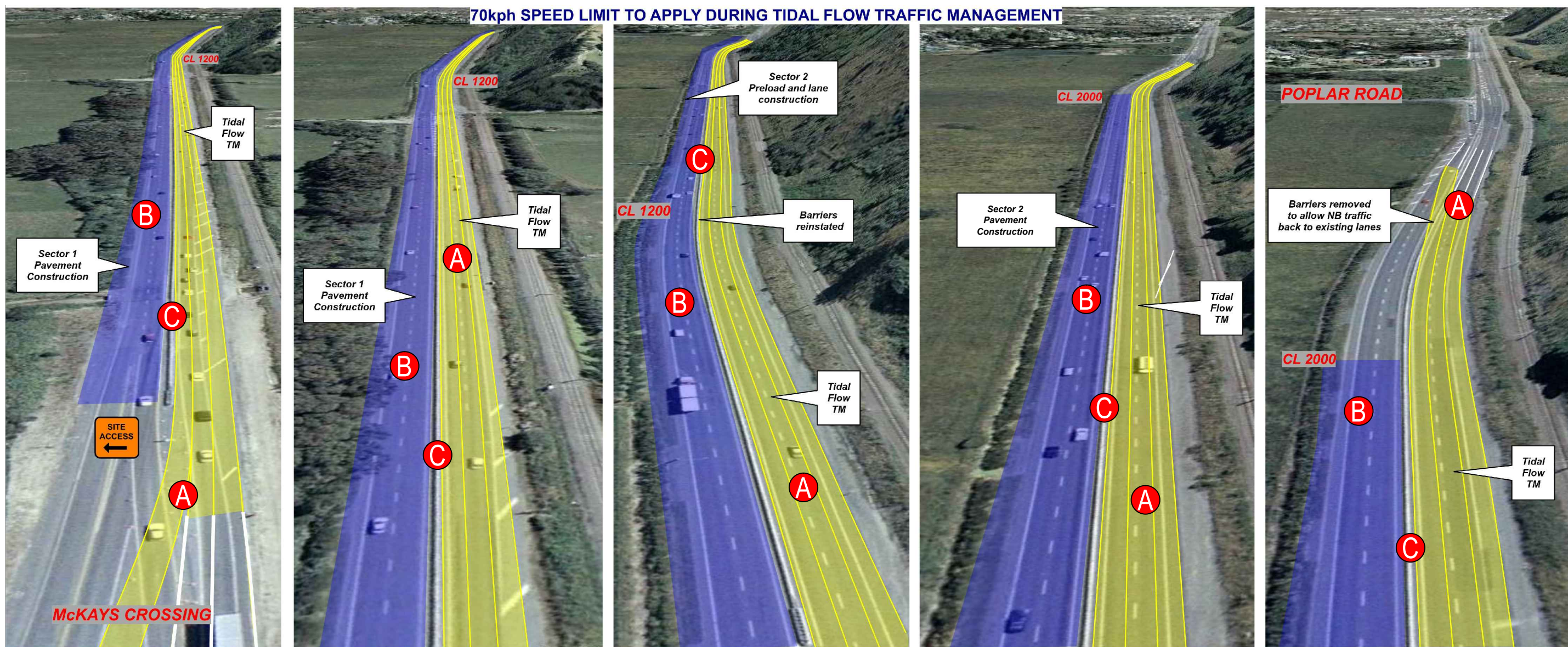
Piezo ID	Surface Elevation (mRL)	Screen Depth (mBGL)		Screen Elevation (mRL)		Screened Material
		Top	Bottom	Top	Bottom	
2011/BH206 NE	6.10	5.50	9.00	0.60	-2.90	GRAVEL
2011/BH206 SW	6.10	1.00	2.50	5.10	3.60	PEAT
2011/BH204 E	5.80	6.00	9.00	-0.20	-3.20	GRAVEL
2011/BH204 W	5.80	1.00	2.50	4.80	3.30	PEAT
2010/BH05	7.80	3.70	11.70	4.10	-3.90	GRAVEL/SAND
2012/CPT14 E	6.10	5.00	6.00	1.10	0.10	GRAVEL
2012/CPT14 W	6.10	3.00	3.50	3.10	2.60	PEAT
2011/BH205	8.50	2.40	5.40	6.10	3.10	PEAT
2010/BH04	8.20	6.00	15.00	2.20	-6.80	GRAVEL/SAND
2012/BH02 GW E	7.03	5.00	6.00	2.03	1.03	SAND
2012/BH02 GW W	7.03	0.40	0.80	6.63	6.23	ORGANIC SILT
2012/BH01 GW E	7.13	1.50	2.50	5.63	4.63	PEAT
2012/BH01 GW W	7.13	4.50	5.50	2.63	1.63	SAND
2011/BH302 N	6.30	1.00	2.80	5.30	3.50	PEAT
2011/BH302 S	6.30	4.00	7.70	2.30	-1.40	SAND
2011/BH301 E	8.40	2.50	3.50	5.90	4.90	PEAT
2011/BH301 W	8.40	5.00	8.00	3.40	0.40	SAND/GRAVEL
2011/ HA WM02	7.20	0.20	2.10	7.00	5.10	PEAT
2007/BH-A	21.80	26.00	29.00	-4.20	-7.20	SAND
2012/BH03 E	7.20	2.00	5.00	5.20	2.20	PEAT
2012/BH03 W	7.20	7.00	10.00	0.20	-2.80	SAND
2012/BH03 GW	4.50	4.00	5.00	0.50	-0.50	SAND
2012/BH04 GW	3.92	4.00	5.00	-0.08	-1.08	SAND
2011/BH213 N	4.80	9.00	10.00	-4.20	-5.20	GRAVEL
2011/BH213 S	4.80	5.00	6.00	-0.20	-1.20	SAND
2011/BH303 N	3.90	7.00	10.00	-3.10	-6.10	SAND
2011/BH303 S	3.90	2.00	5.00	1.90	-1.10	SAND
2011/HA WM10	4.00	0.30	0.60	3.70	3.40	PEAT

Piezo ID	Surface Elevation (mRL)	Screen Depth (mBGL)		Screen Elevation (mRL)		Screened Material
		Top	Bottom	Top	Bottom	
2011/HA WM09	4.00	0.30	0.60	3.70	3.40	PEAT
2012/BH24 GW	4.54	4.00	5.00	0.54	-0.46	SAND
2012/BH06 GW	5.68	5.00	8.00	0.68	-2.32	SAND
2011/HA WM08	4.00	0.20	0.50	3.80	3.50	PEAT
2012/BH05 GW	5.64	5.00	6.00	0.64	-0.36	SAND
2007/BH-C	4.80	12.00	15.00	-7.20	-10.20	SAND
2007/BH-B	5.10	10.00	13.00	-4.90	-7.90	GRAVEL
2012/BH07 GW ( N )	8.43	7.00	8.00	1.43	0.43	SAND
2012/BH07 GW ( S )	8.43	2.00	3.00	6.43	5.43	SAND
2007/BH-U	6.10	7.00	10.00	-0.90	-3.90	SAND
2007/BH-E	11.10	7.00	10.00	4.10	1.10	SAND/SILT
2012/BH21 GW	7.95	5.00	6.00	2.95	1.95	SAND
2007/BH-D	3.30	7.00	10.00	-3.70	-6.70	SAND
2007/BH-T	8.00	7.00	10.00	1.00	-2.00	SAND
2012/BH09 GW	8.24	4.00	6.00	4.24	2.24	SAND
2007/BH-J	6.30	4.00	7.00	2.30	-0.70	SAND
2012/HA25	7.00	0.81	0.91	6.19	6.09	SAND
2007/BH-I	9.70	6.00	9.00	3.70	0.70	SAND/GRAVEL
2011/BH214	7.10	9.50	10.50	-2.40	-3.40	SAND
2007/BH-K	6.20	7.00	10.00	-0.80	-3.80	SAND
2007/BH-L	3.70	10.00	13.00	-6.30	-9.30	SAND
2011/HA WM04	2.60	1.00	1.25	1.60	1.35	SAND
2008/BH202	13.50	9.50	12.50	4.00	1.00	SAND
2007/BH-M	3.60	1.50	4.50	2.10	-0.90	GRAVEL
2012/BH14 GW	3.49	5.00	6.00	-1.51	-2.51	SAND/GRAVEL
2011/BH216	10.30	15.50	17.50	-5.20	-7.20	GRAVEL
2012/BH11 GW	13.93	8.30	11.30	5.63	2.63	SAND
2007/BH-V	7.30	6.00	9.00	1.30	-1.70	SAND
2012/BH10 GW	8.48	3.50	6.00	4.98	2.48	SAND
2011/BH307 N	8.40	1.00	2.00	7.40	6.40	FILL

Piezo ID	Surface Elevation (mRL)	Screen Depth (mBGL)		Screen Elevation (mRL)		Screened Material
		Top	Bottom	Top	Bottom	
2011/BH307 S	8.40	7.50	10.50	0.90	-2.10	SAND
2011/BH306 N	8.25	0.70	2.20	7.55	6.05	PEAT
2011/BH306 S	8.25	7.00	10.50	1.25	-2.25	SAND
2011/BH305 N	9.30	2.50	4.00	6.80	5.30	SAND
2011/BH305 S	9.30	7.50	10.50	1.80	-1.20	SAND
2012/BH20 N	3.60	1.80	2.30	1.80	1.30	ALLUVIUM (SILT)
2012/BH20 S	3.60	7.00	10.00	-3.40	-6.40	SAND
2007/BH-N(A)	3.40	6.00	9.00	-2.60	-5.60	SAND
2007/BH-N	10.00	5.00	8.00	5.00	2.00	SAND
2008/BH204	13.00	18.80	21.80	-5.80	-8.80	SAND
2007/BH-O	2.90	10.00	13.00	-7.10	-10.10	SAND
2011/HA WM05	2.90	0.60	0.90	2.30	2.00	SAND
2011/BH215	3.80	9.00	10.00	-5.20	-6.20	SAND
2012/BH15 GW ( N )	3.40	5.00	6.00	-1.60	-2.60	GRAVEL
2012/BH15 GW ( S )	3.40	1.50	2.00	1.90	1.40	ALLUVIUM (SAND)
2008/BH205	3.30	6.40	9.40	-3.10	-6.10	SAND
2007/BH-R	4.10	7.00	10.00	-2.90	-5.90	SAND
2012/BH25 GW ( E )	3.62	4.00	5.00	-0.38	-1.38	SAND
2012/BH25 GW ( W )	3.62	1.00	2.00	2.62	1.62	SAND
2012/BH16 GW ( E )	3.45	5.00	6.00	-1.55	-2.55	GRAVEL
2012/BH16 GW ( W )	3.45	1.50	2.50	1.95	0.95	SILT
2012/BH22 GW ( E )	3.95	3.50	4.50	0.45	-0.55	ALLUVIUM
2012/BH22 GW ( W )	3.95	7.00	8.00	-3.05	-4.05	GRAVEL
2010/BH07	3.60	3.00	15.00	0.60	-11.40	GRAVEL/SAND
2012/BH26	2.60	3.00	4.50	-0.40	-1.90	GRAVEL
2011/BH207 E	5.10	5.00	8.00	0.10	-2.90	GRAVEL
2011/BH207 W	5.10	20.00	23.00	-14.90	-17.90	GRAVEL/SAND
2007/BH-S	4.60	7.00	10.00	-2.40	-5.40	SAND
2007/BH-Q	25.70	27.00	30.00	-1.30	-4.30	SAND
2012/BH17 GW	15.80	9.00	12.00	6.80	3.80	SAND

Piezo ID	Surface Elevation (mRL)	Screen Depth (mBGL)		Screen Elevation (mRL)		Screened Material
		Top	Bottom	Top	Bottom	
2011/BH208	21.70	19.00	21.00	2.70	0.70	SAND
2012/BH18 GW	10.66	7.00	8.00	3.66	2.66	SAND
2011/BH209	12.50	17.00	20.00	-4.50	-7.50	SAND
2010/BH12	8.60	2.00	15.00	6.60	-6.40	SAND
2011/BH211	7.50	15.00	18.00	-7.50	-10.50	SAND
2011/BH211A	9.20	14.00	20.00	-4.80	-10.80	SAND
2012/BH 20 GW	6.86	4.00	5.00	2.86	1.86	SAND
2012/BH23 GW	5.66	4.00	5.00	1.66	0.66	SAND
2011/BH210	8.60	17.00	20.00	-8.40	-11.40	SAND
2012/BH28	18.10	16.00	22.00	2.10	-3.90	SAND
2010/BH13 N	7.20	0.40	1.40	6.80	5.80	ORGANICS
2010/BH13 S	7.20	3.50	14.50	3.70	-7.30	SAND
2012/BH19 GW	6.23	4.00	6.00	2.23	0.23	SAND
2011/BH309 N	8.40	0.50	3.50	7.90	4.90	PEAT
2011/BH309 S	8.40	9.00	12.00	-0.60	-3.60	SAND
2011/BH308 N	8.00	0.40	2.40	7.60	5.60	PEAT
2011/BH308 S	8.00	8.00	10.00	0.00	-2.00	SAND
2012/BH37 E	9.00	0.90	1.10	8.10	7.90	PEAT
2012/BH37 W	9.00	6.00	7.50	3.00	1.50	GRAVEL
2011/BH310 E	8.80	0.50	3.50	8.30	5.30	PEAT
2011/BH310 W	8.80	7.10	10.10	1.70	-1.30	SAND/GRAVEL
2010/BH16	11.30	6.00	15.00	5.30	-3.70	SAND





- A** Temporary tie-ins at each end of the site funnel all traffic onto the existing southbound lanes and shoulder. Traffic will run in a tidal flow system with 2 southbound lanes during the morning peak and 2 northbound lanes during the evening peak.
- B** The existing northbound carriageway will be ripped out and rebuilt.
- C** The existing concrete median barrier will be removed and replaced with a wire rope barrier system

Details:

- TL-3 barriers will be used to separate the live lanes from the work area.
- Traffic lanes through the tidal flow system will be separated by safe hit posts.
- Cone tapers will be used to switch the flow direction in the centre lane.
- Site access from Poplar Ave and the Mackays Crossing northbound on ramp.

**FOR TOC**  
**NOT FOR CONSTRUCTION**

No.	Revision	By	Chk.	Chk.V.	Appd.	Date
A	TRAFFIC STAGING FOR TOC PHASE	BB				16-05-13
0	TRAFFIC STAGING FOR CONSENTING	NRN				15-03-12

Original Scale (A1)	Design	Drawn	BB	16-05-13	Approved For Construction*
Reduced Scale (A3)	Design Verifier	Dwg Check			Date

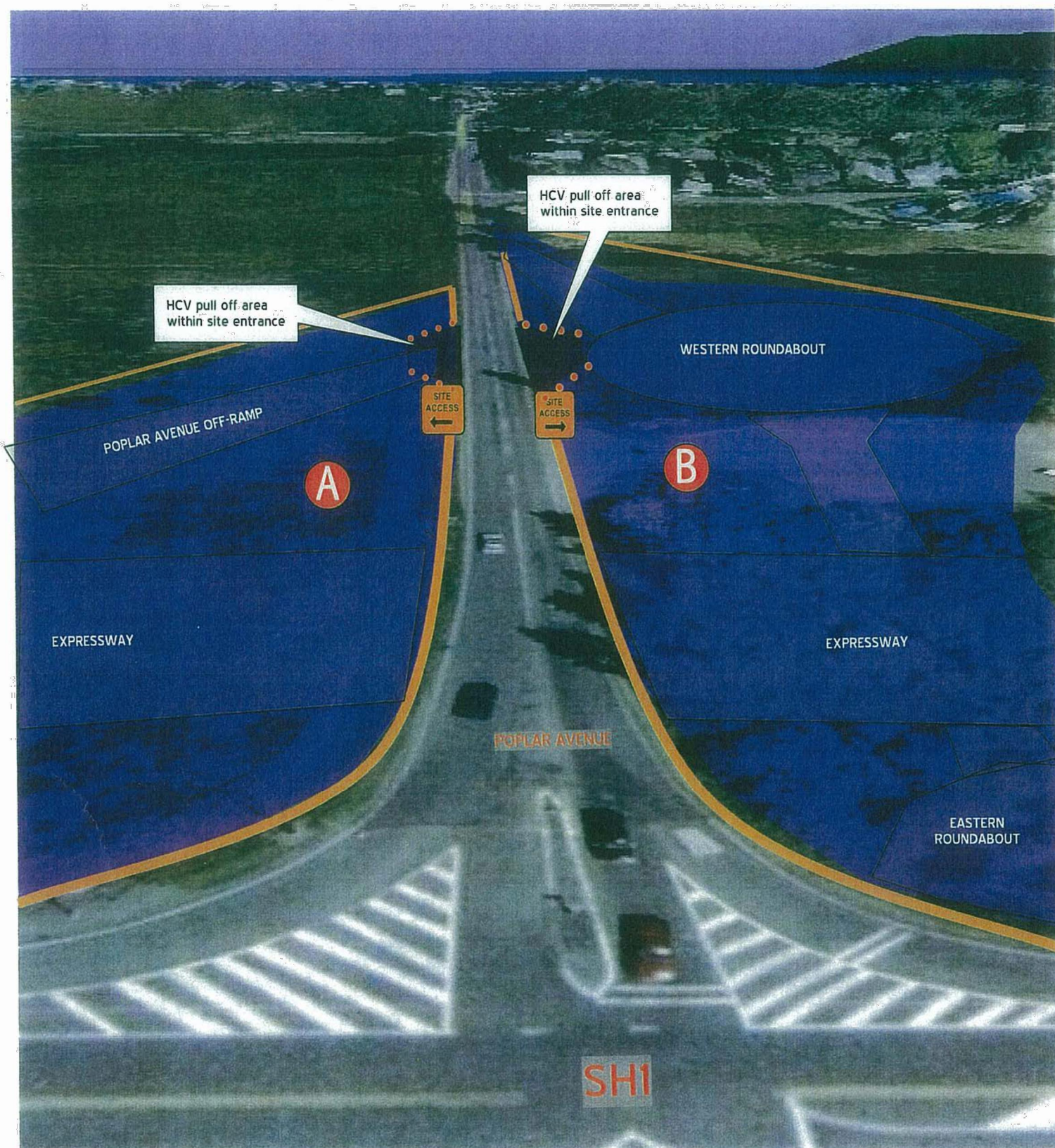
\* Refer to Revision 1 for Original Signature

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY  
RP 1012/0.00 TO 1023/5.00

Title: RAUMATI STRAIGHT TIDAL FLOW FOR PAVEMENT RIP & REMAKE

Drawing No:	CV-CM-301	Rev:	0
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**NOTES:**

- A** - Expressway construction area - end of Raumati Straight
  - Poplar Avenue Off-Ramp and south embankment initial activity preload application
  - Access to expressway through to McKays Crossing
- B** - Expressway and double roundabout construction area
  - Poplar Avenue Bridge north abutment / embankment
  - Access to expressway through to Raumati Road

**DETAILS:**

- Install TL3 barriers and screens along the side of Poplar Avenue and SH1
- Construct access points off Poplar Avenue to north & south construction areas with room for a truck and trailer to clear Poplar Avenue without stopping
- Restrict speed passing access points from 80kph to 60kph
- All TM on SH1 and Poplar Road to CoPTM Level 2 requirements

**FOR TOC**  
**NOT FOR CONSTRUCTION**

No.	Revision	By	Chk	Chk.V	Appd	Date
A	TRAFFIC STAGING FOR TOC PHASE	BB				16-05-13
0	TRAFFIC STAGING FOR CONSENTING	NRN				15-03-12

Original Scale (A1)	Design Drawn	BB	16-05-13	Approved For Construction*
Reduced Scale (A3)	Design Verifier			Date
	Dwg Check			
* Refer to Revision 1 for Original Signature				

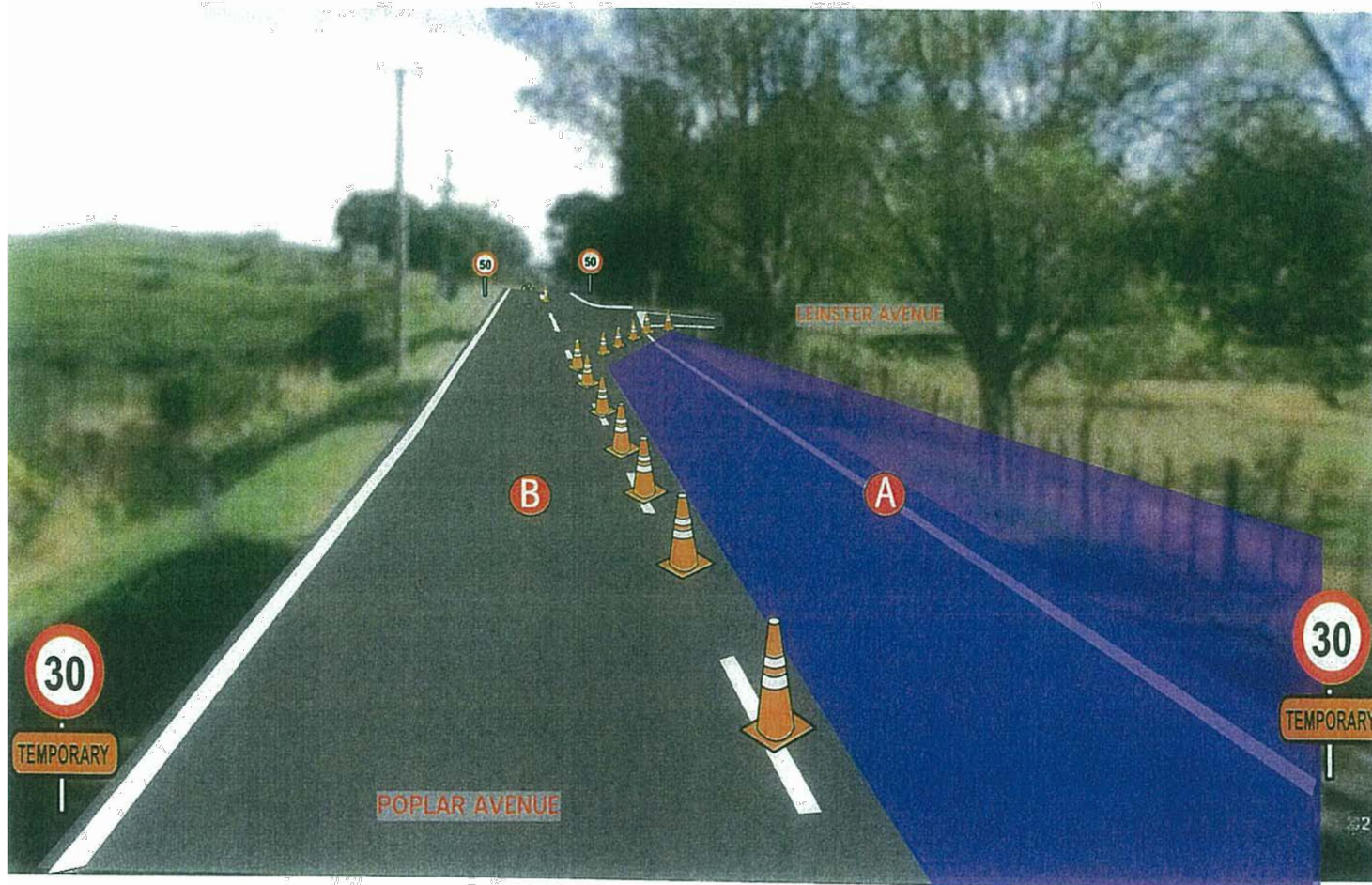
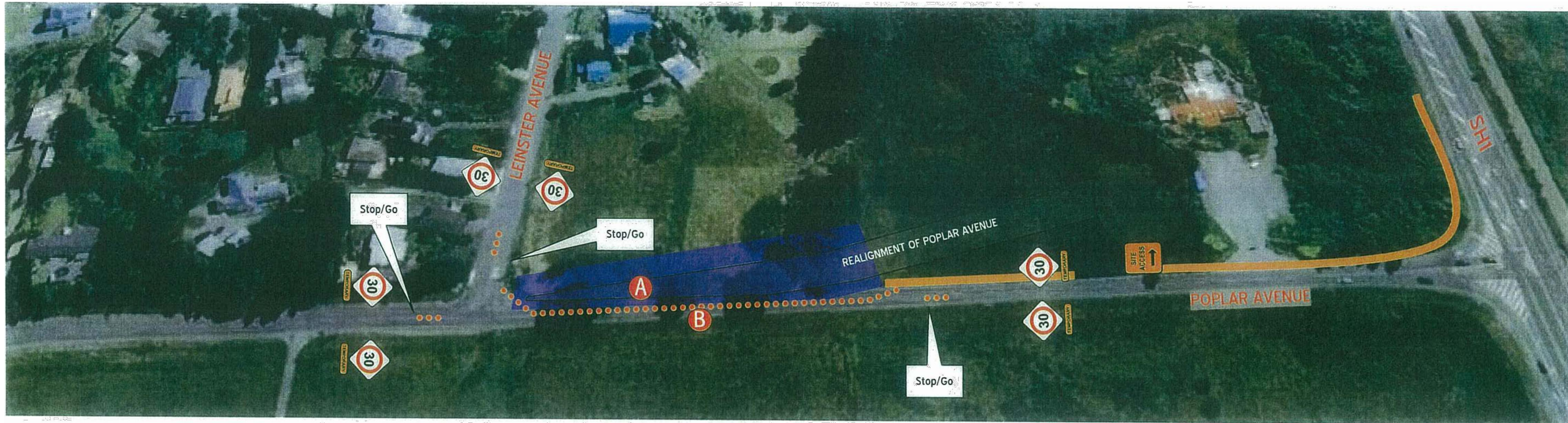
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Mackays to Peka Peka

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY  
RP 1012/0.00 TO 1023/5.00

Title: POPLAR AVE SITE ACCESS AND GROUND IMPROVEMENTS

Drawing No:	CV-CM-302	Rev:	0
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**NOTES:**

- A** - Area of Poplar Avenue under short term single lane closure during tie-in construction (Off Peak and daylight hours only)
- B** - Traffic operating under contra flow with STOP GO traffic controllers operating from Leinster Avenue through to the Site Access on Poplar Avenue

**DETAILS:**

- Site established after am peak and removed before pm peak
- STOP GO control on Poplar Avenue and Leinster Avenue
- Access to work site via northern site access on Poplar Avenue
- Restrict speed during lane closure to 30kph
- Closed lane cleared and opened for normal traffic use with speed restriction if required because of surface condition
- TM and signage on Poplar Avenue and Leinster Avenue to CoPTTM Level 2 requirements
- Note that Leinster Avenue is closed to SH1 when this activity occurs

**FOR TOC**  
**NOT FOR CONSTRUCTION**

No.	Revision	By	Chk	Chk.V	Appd	Date
A	TRAFFIC STAGING FOR TOC PHASE					16-05-13
0	TRAFFIC STAGING FOR CONSENTING					15-03-12

Original Scale (A1)	Design Drawn	BB	16-05-13	Approved For Construction*
Reduced Scale (A3)	Design Verifier			Date
	Design Check			

\* Refer to Revision 1 for Original Signature

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY  
RP 1012/0.00 TO 1023/5.00

Title: POPLAR AVE SITE ACCESS AND GROUND IMPROVEMENTS

Drawing No:	CV-CM-303	Rev:	0
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