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FINAL REPORT

**TREPANIER LANDSCAPE
UNIT WATER MANAGEMENT
PLAN**

VOLUME 2: APPENDICES

Prepared for:

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Appendix A

TERMS OF REFERENCE FOR THE TREPANIER ADVISORY WORKING GROUP

**Trepanier Landscape Unit
Water Management Plan 2003 • 2004**

RDCO, LWBC Inc., MSRM, MWLAP Partnership Project
and Summit Environmental Consultants Ltd.

Advisory Working Group—Terms of Reference

May 8, 2003

These Terms of Reference will guide the activities of the Trepanier Water Management Advisory Working Group (TAWG).

Purpose and Goals

1. To provide advice to the project Steering Committee in the preparation of the Water Management Strategy for the Trepanier Landscape Unit (TLU)
2. To communicate the interests of the water management agencies and water users represented by TAWG members
3. To review and comment on draft materials prepared as part of the project
4. To share information on water management with the agencies and groups sponsoring TAWG members
5. To advocate good water management in the TLU.

Membership

The following organizations have been approached and requested to participate in the TAWG.

- *Lakeview and Westbank Irrigation Districts*
- *District of Peachland*
- *Westbank First Nation*
- *Okanagan Nation Alliance*
- *Ministry of Agriculture, Food and Fisheries (or their suggested agricultural community representative)*
- *Ministry of Forests (including the Range and Small Business programs)*
- *Aggregate Producers Association of British Columbia*
- *Noranda Mines*
- *Gorman Brothers*
- *Riverside Forest Products*
- *Fisheries and Oceans Canada*
- *Ministry of Water, Land and Air Protection (fisheries)*
- *Interior Health Authority*

The project Steering Committee will also serve as members of the TAWG. The Steering Committee is comprised of representatives of the Ministry of Sustainable Resource Management, Central Okanagan Regional District, Land and Water British Columbia, and the Ministry of Water, Air and Land Protection. The Steering Committee is charged with decision-making associated with the Trepanier Water Management Project, and with administrative responsibilities for the study.

Commitment

TAWG members will:

1. Accurately represent the views and perspectives of their sponsoring organizations
2. Respect the views of others on the TAWG
3. Recognize that the study will investigate the balance between individual interests, community interests, resource capacity, and environmental protection
4. Maintain the confidentiality of information or discussions identified by the TAWG as inappropriate for public release
4. To make best efforts to attend TAWG meetings and discuss issues associated with water management in the TLU and other topics on meeting agendas
5. To provide comments on draft materials in a timely manner

Appendix B

SUMMARY OF LICENSED WATER USERS IN THE TLU

SUMMARY OF LICENSED WATER USERS IN THE TREPANIER LANDSCAPE UNIT

Notes:
 Licence information is organized by watershed. Within each watershed the information is organized by point-of-diversion in approximately downstream order.
 Refer to Map 1 for locations of point-of-diversions.

POINT OF DIVERSION	LICENCE No.	STREAM	PURPOSE	LICENSEE	REPORTED QUANTITY	REPORTED UNITS	ANNUAL VOLUME (m ³)
AREA 1: LAMBLY CREEK WATERSHED							
PD50405	C104097	Sandberg Ditch	Storage - Non Power	WESTBANK IRRIGATION DISTRICT 3717 ELLIOTT RD WESTBANK BC V4T2H7	500	ac-ft	616,744
PD50405	C104097	Sandberg Ditch	Waterworks - Local Authority	WESTBANK IRRIGATION DISTRICT 3717 ELLIOTT RD WESTBANK BC V4T2H7	136,736,000	Imp gal/yr	617,068
PD50406	C067990	Whiterocks Cr	Storage - Non Power	WESTBANK IRRIGATION DISTRICT 3717 ELLIOTT RD WESTBANK BC V4T2H7	2,000	ac-ft	2,466,978
PD50406	C067990	Whiterocks Cr	Waterworks - Local Authority	WESTBANK IRRIGATION DISTRICT 3717 ELLIOTT RD WESTBANK BC V4T2H7	542,844,000	Imp gal/yr	2,468,272
PD50407	C067990	N Lambly Cr	Storage	WESTBANK IRRIGATION DISTRICT 3717 ELLIOTT RD WESTBANK BC V4T2H7	(multiple PODs, see PD50406 (C067990))		
PD50407	C067990	N Lambly Cr	Waterworks - Local Authority	WESTBANK IRRIGATION DISTRICT 3717 ELLIOTT RD WESTBANK BC V4T2H7	(multiple PODs, see PD50406 (C067990))		
PD50407	C017064	Esperon Cr	Storage - Non Power	T L SOLMER ORCHARDS LTD 3835 REEKIE RD KELOWNA BC V1W4G8	100	ac-ft	123,348
PD50407	C033095	Esperon Cr	Storage - Non Power	LAKEVIEW IRRIGATION DISTRICT 2570 BARTLEY RD KELOWNA BC V1Z2M8	200	ac-ft	246,697
PD50407	C039007	N Terrace Cr	Storage - Non Power	LAKEVIEW IRRIGATION DISTRICT 2570 BARTLEY RD KELOWNA BC V1Z2M8	2,000	ac-ft	2,466,978
PD50407	C039007	Dunwaters Cr	Storage - Non Power	LAKEVIEW IRRIGATION DISTRICT 2570 BARTLEY RD KELOWNA BC V1Z2M8	(multiple PODs, see PD50406 (C039007))		
PD50407	C039007	Chnsbe Cr	Storage - Non Power	LAKEVIEW IRRIGATION DISTRICT 2570 BARTLEY RD KELOWNA BC V1Z2M8	(multiple PODs, see PD50406 (C039007))		
PD66367	C105255	Terrace Cr	Storage - Non Power	LAKEVIEW IRRIGATION DISTRICT 2570 BARTLEY RD KELOWNA BC V1Z2M8	1,800	ac-ft	1,873,582
PD58215	C084219	Shaw Spring #1	Domestic	MCFADDEN FRANK 17890 21 AVE SURREY BC V4P3B4	500	Imp gal/day	830
PD58220	C056384	Herod Br	Storage - Non Power	MCFADDEN FRANK 17890 21 AVE SURREY BC V4P3B4	30	ac-ft	37,004
PD58220	C056383	Herod Br	Irrigation	MCFADDEN FRANK 17890 21 AVE SURREY BC V4P3B4	30	ac-ft	37,004
PD58222	C056384	Lambro Br	Storage - Non Power	MCFADDEN FRANK 17890 21 AVE SURREY BC V4P3B4	(multiple PODs, see PD58220 (C056384))		
PD58222	C056383	Lambro Br	Irrigation	MCFADDEN FRANK 17890 21 AVE SURREY BC V4P3B4	(multiple PODs, see PD58220 (C056383))		
PD58212	C040155	Kalijo Br	Cooling	RIVERSIDE FOREST PRODUCTS LTD 820 GUY ST KELOWNA BC V1Y7R5	5,000	Imp gal/day	8,286
PD58212	C040155	Kalijo Br	Domestic	RIVERSIDE FOREST PRODUCTS LTD 820 GUY ST KELOWNA BC V1Y7R5	500	Imp gal/day	830
PD58212	C040155	Kalijo Br	Stockwatering	FORESTS MINISTRY OF 515 COLUMBIA ST KAMLOOPS BC V2B3G6	500	Imp gal/day	830
PD59105	C034763, C050779	Lambly Cr	Storage - Non Power	LAKEVIEW IRRIGATION DISTRICT 2570 BARTLEY RD KELOWNA BC V1Z2M8	4,000	ac-ft	4,933,956
PD59105	C111185	Lambly Cr	Irrigation	KAPP CAREY & MAIMP gal/day/Al 679 PETERSON RD KELOWNA BC V1Z3T8	3	ac-ft	4,156
PD59105	C111185	Lambly Cr	Irrigation	MEZO ALEXANDER 713 PETERSON RD KELOWNA BC V1Z2P6	7	ac-ft	8,178
PD59105	C112014	Lambly Cr	Irrigation	LAROSE GERARD & CLAIRE 716 PETERSON RD KELOWNA BC V1Y2P6	1	ac-ft	771
PD59105	C112015	Lambly Cr	Irrigation	SHAW DAVID 738 PETERSON RD KELOWNA BC V1Y8R2	2	ac-ft	2,312
PD59105	C034762, C039006, C050778, C105255	Lambly Cr	Waterworks - Local Authority	LAKEVIEW IRRIGATION DISTRICT 2570 BARTLEY RD KELOWNA BC V1Z2M8	1,153,170,000	Imp gal/yr	5,242,422
PD59107	C045630	Lambly Cr	Domestic	FERGUSON THOMAS G & CINDY M 844 BEAR CREEK RD N KELOWNA BC V1Z3T6	1,000	Imp gal/day	1,559
PD59104	C113519	Cedar Cr	Irrigation	CHADWICK BARRY & JANICE 525 BEAR CREEK RD KELOWNA BC V1Z3T6	6	ac-ft	7,400
PD59104	C115894	Cedar Cr	Irrigation	SHARKEY JOHN A & DIANNE A 524 NORTH BEAR CREEK RD KELOWNA BC V1X3T6	2	ac-ft	2,466
PD59104	C115895	Cedar Cr	Irrigation	MCCABE MICHAEL & PAULINE 611 BEAR CREEK RD KELOWNA BC V1Z3T6	2	ac-ft	2,466
PD59105	C113978	Lambly Cr	Domestic	WALDEBRUH COUNTRY MANOR LTD 3RD FLR 1865 ELLIS ST KELOWNA BC V1Y2B3	500	Imp gal/day	830
PD59105	C113978	Lambly Cr	Domestic	CHADWICK BARRY & JANICE 525 BEAR CREEK RD KELOWNA BC V1Z3T6	500	Imp gal/day	830
PD59222	C017063	Lambly Cr	Irrigation	T L SOLMER ORCHARDS LTD 3835 REEKIE RD KELOWNA BC V1W4G8	75	ac-ft	92,511
PD59222	F010097	Lambly Cr	Irrigation	T L SOLMER ORCHARDS LTD 3835 REEKIE RD KELOWNA BC V1W4G8	82	ac-ft	101,146
PD66731	C107528	Peach Sp	Domestic	VOGRNETZ KARL P & PAMELA L RR 7 COMP C-2 SITE 12 495 BEAR CREEK RD KELOWNA BC V1Y8B2	500	Imp gal/day	830
PD66731	C108114	Peach Sp	Domestic	CHADWICK BARRY & JANICE 525 BEAR CREEK RD KELOWNA BC V1Z3T6	500	Imp gal/day	830
PD59220	C084805	Blue Grouse Cr	Domestic	FRUSON KARLA L 385 WESTSIDE RD N KELOWNA BC V1Z3S7	1,500	Imp gal/day	2,468
PD59205	C058073	Blue Grouse Cr	Stockwatering	FORESTS MINISTRY OF 515 COLUMBIA ST KAMLOOPS BC V2B3G6	500	Imp gal/day	830
PD76614	C115879	Lambly Cr	Dust Control	KELOWNA DIRT BIKE CLUB 102 SUMMERHILL PL KELOWNA BC V1V1T7	5	ac-ft	5,540
AREA 2: McDOUGALL CREEK WATERSHED							
PD59095	C018813	23 Acre Marsh	Storage	ENSGIN RUSSELL H & DOREEN 2210 BARTLEY ROAD KELOWNA B C V1Z2M7	130	ac-ft	160,353
PD59095	C018812	23 Acre Marsh	Irrigation	ENSGIN RUSSELL H & DOREEN 2210 BARTLEY ROAD KELOWNA B C V1Z2M7	43	ac-ft	52,423
PD59098	C050836	Allan Creek	Storage	YEULETT GEORGE V & RUTH C 2120 SHANNON LAKE RD WESTBANK BC V4T1V5	15	ac-ft	19,502
PD59098	C085590	Allan Creek	Storage	WESTSIDE COUNTRY ESTATES LTD C/O SHANNON LAKE GOLF COURSE 2848 SHANNON LAKE ROAD WESTBANK BC V4T1V6	10	ac-ft	11,841
PD59097	C084199	Hidden Creek	Storage	ENSGIN RUSSELL H & DOREEN 2210 BARTLEY ROAD KELOWNA B C V1Z2M7	34	ac-ft	41,638
PD59099	C085595	Hayman Creek	Storage	WESTSIDE COUNTRY ESTATES LTD C/O SHANNON LAKE GOLF COURSE 2848 SHANNON LAKE	21	ac-ft	25,856
PD59099	C085596	Hayman Creek	Storage	WESTSIDE COUNTRY ESTATES LTD C/O SHANNON LAKE GOLF COURSE 2848 SHANNON LAKE	18	ac-ft	19,735
PD59099	C110338	Hayman Creek	Storage	CENTRAL OKANAGAN REGIONAL DISTRICT OF 1450 KLO RD KELOWNA BC V1W3Z4	11	ac-ft	13,815
PD59099	C110339	Hayman Creek	Storage	PAYNTERS ORCHARD MEADOWS LTD 107-2565 MAIN ST WESTBANK BC V4T2B4	6	ac-ft	7,277
PD59099	C110339	Hayman Creek	Irrigation	PAYNTERS ORCHARD MEADOWS LTD 107-2565 MAIN ST WESTBANK BC V4T2B4	5	ac-ft	7,277
PD59099	F050835	Hayman Creek	Storage	YEULETT GEORGE V & RUTH C 2120 SHANNON LAKE RD WESTBANK BC V4T1V5	33	ac-ft	40,088
PD59089	F016654	McDougall Creek	Domestic	RAYSON ERIC & MAVIS J 4373 GORDON DR KELOWNA BC V1W1S7	250	Imp gal/day	415
PD59089	F016654	McDougall Creek	Irrigation	RAYSON ERIC & MAVIS J 4373 GORDON DR KELOWNA BC V1W1S7	8	ac-ft	9,887
PD59089	F051185	McDougall Creek	Domestic	KNIGHT PETER 1905 BARTLEY RD KELOWNA BC V1Z2M6	500	Imp gal/day	830
PD59089	F051186	McDougall Creek	Domestic	KNIGHT PETER 1905 BARTLEY RD KELOWNA BC V1Z2M6	500	Imp gal/day	830
PD59089	F051186	McDougall Creek	Irrigation	KNIGHT PETER 1905 BARTLEY RD KELOWNA BC V1Z2M6	6	ac-ft	8,821
PD59089	F051187	McDougall Creek	Domestic	CAUSTON MARILYN 1910 BARTLEY ROAD KELOWNA B C V1Z2M7	500	Imp gal/day	830
PD59089	F051188	McDougall Creek	Domestic	CAUSTON MARILYN 1910 BARTLEY ROAD KELOWNA B C V1Z2M7	500	Imp gal/day	830
PD59089	F051188	McDougall Creek	Domestic	SCHLOSSER JEROLD W & KATHLEEN G 1901 BARTLEY RD KELOWNA BC V1Z2M6	500	Imp gal/day	830
PD59089	F051190	McDougall Creek	Domestic	SCHLOSSER JEROLD W & KATHLEEN G 1901 BARTLEY RD KELOWNA BC V1Z2M6	500	Imp gal/day	830
PD59089	F051193	McDougall Creek	Domestic	SOMER WILLEM FREDERIK H & MIKE 1815 BARTLEY ROAD KELOWNA B C V1Z2M6	500	Imp gal/day	830
PD59089	F051193	McDougall Creek	Irrigation	SOMER WILLEM FREDERIK H & MIKE 1815 BARTLEY ROAD KELOWNA B C V1Z2M6	4	ac-ft	4,833
PD59090	F070824	McDougall Creek	Domestic	LOBB JOSEPH B & ROSEMARIE 1896 BARTLEY RD KELOWNA BC V1Z2M7	500	Imp gal/day	830
PD59080	F070825	McDougall Creek	Domestic	LOBB JOSEPH B & ROSEMARIE 1896 BARTLEY RD KELOWNA BC V1Z2M7	500	Imp gal/day	830
PD59002	C057711	McDougall Creek	Irrigation	SHANNON WOODS DEVELOPMENT LTD 260 2300 CARRINGTON RD WESTBANK BC V4T2N6	175	ac-ft	215,860
PD59002	C057843	McDougall Creek	Storage	WESTSIDE COUNTRY ESTATES LTD C/O SHANNON LAKE GOLF COURSE 2848 SHANNON LAKE	100	ac-ft	123,345
PD59002	C068564	McDougall Creek	Watering	WESTSIDE COUNTRY ESTATES LTD C/O SHANNON LAKE GOLF COURSE 2848 SHANNON LAKE	24	ac-ft	30,146
PD59002	C089595	McDougall Creek	Watering	WESTSIDE COUNTRY ESTATES LTD C/O SHANNON LAKE GOLF COURSE 2848 SHANNON LAKE	18	ac-ft	21,709
PD59002	C070141	McDougall Creek	Watering	WESTSIDE COUNTRY ESTATES LTD C/O SHANNON LAKE GOLF COURSE 2848 SHANNON LAKE	100	ac-ft	123,346
PD59002	C110337	McDougall Creek	Irrigation	CENTRAL OKANAGAN REGIONAL DISTRICT OF 1450 KLO RD KELOWNA BC V1W3Z4	11	ac-ft	13,815
PD59002	F070388	McDougall Creek	Irrigation	YEULETT GEORGE V & RUTH C 2120 SHANNON LAKE RD WESTBANK BC V4T1V5	38	ac-ft	47,118
PD59003	C042526	McDougall Creek	Storage	LONGLEY ROBERT & ISOBEL K 2010 BARTLEY RD KELOWNA BC V1Z2M7	20	ac-ft	24,669
PD59003	C042525	McDougall Creek	Irrigation	LONGLEY ROBERT & ISOBEL K 2010 BARTLEY RD KELOWNA BC V1Z2M7	20	ac-ft	24,669
PD59003	F045522	McDougall Creek	Irrigation	LONGLEY ROBERT & ISOBEL K 2010 BARTLEY RD KELOWNA BC V1Z2M7	23	ac-ft	27,753
PD59003	F045522	McDougall Creek	Domestic	LONGLEY ROBERT & ISOBEL K 2010 BARTLEY RD KELOWNA BC V1Z2M7	500	Imp gal/day	830
PD59004	C084188	McDougall Creek	Irrigation	ENSGIN RUSSELL H & DOREEN 2210 BARTLEY ROAD KELOWNA B C V1Z2M7	34	ac-ft	41,938
PD59003	C084385	McDougall Creek	Irrigation	ENSGIN RUSSELL H & DOREEN 2210 BARTLEY ROAD KELOWNA B C V1Z2M7	28	ac-ft	30,837
PD59003	F021619	McDougall Creek	Irrigation	ENSGIN RUSSELL H & DOREEN 2210 BARTLEY ROAD KELOWNA B C V1Z2M7	5	ac-ft	72,775
PD59009	C080470	Payson Spring	Irrigation	YEULETT GEORGE V & RUTH C 2120 SHANNON LAKE RD WESTBANK BC V4T1V5	500	Imp gal/day	830
PD59009	F060474	Payson Spring	Domestic	YEULETT GEORGE V & RUTH C 2120 SHANNON LAKE RD WESTBANK BC V4T1V5	5	ac-ft	5,167
PD59009	F060474	Payson Spring	Stockwatering	YEULETT GEORGE V & RUTH C 2120 SHANNON LAKE RD WESTBANK BC V4T1V5	3,000	Imp gal/day	4,878
PD59007	C081265	Dobbin Spring	Waterworks (Other)	ENSGIN RUSSELL H & DOREEN 2210 BARTLEY ROAD KELOWNA B C V1Z2M7	5	ac-ft	5,859
PD59033	F054363	McDougall Creek	Irrigation	ENSGIN RUSSELL H & DOREEN 2210 BARTLEY ROAD KELOWNA B C V1Z2M7	13	ac-ft	15,419
PD59000	C082199	Marshall Brook	Irrigation	BERSCHEID WILLIAM B 2781 DAIMLER RD KELOWNA BC V1Z3H6	500	Imp gal/day	830
PD59000	C082199	Marshall Brook	Stockwatering	BERSCHEID WILLIAM B 2781 DAIMLER RD KELOWNA BC V1Z3H6	25	ac-ft	30,637
PD59000	C082201	Marshall Brook	Irrigation	BERSCHEID WILLIAM B 2781 DAIMLER RD KELOWNA BC V1Z3H6	500	Imp gal/day	830
PD59005	F008234	McDougall Creek	Domestic	WESTBANK FIRST NATION 301 515 S HIGHWAY 97 KELOWNA BC V1Z3J2	200	Imp gal/day	303,138
PD59034	F008758	McDougall Creek	Domestic	WESTBANK FIRST NATION 301 515 S HIGHWAY 97 KELOWNA BC V1Z3J2	2,500	Imp gal/day	4,148
PD59035	F009758	McDougall Creek	Domestic	WESTBANK FIRST NATION 301 515 S HIGHWAY 97 KELOWNA BC V1Z3J2	248	ac-ft	307,138
PD59035	F009758	McDougall Creek	Irrigation	WESTBANK FIRST NATION 301 515 S HIGHWAY 97 KELOWNA BC V1Z3J2	(multiple PODs, see PD59034 (F008758))		
PD59036	F009758	McDougall Creek	Domestic	WESTBANK FIRST NATION 301 515 S HIGHWAY 97 KELOWNA BC V1Z3J2	(multiple PODs, see PD59034 (F008758))		
PD59036	F009758	McDougall Creek	Irrigation	WESTBANK FIRST NATION 301 515 S HIGHWAY 97 KELOWNA BC V1Z3J2	(multiple PODs, see PD59034 (F008758))		
PD59036	F009758	McDougall Creek	Domestic	WESTBANK FIRST NATION 301 515 S HIGHWAY 97 KELOWNA BC V1Z3J2	(multiple PODs, see PD59034 (F008758))		
PD59036	F009758	McDougall Creek	Irrigation	WESTBANK FIRST NATION 301 515 S HIGHWAY 97 KELOWNA BC V1Z3J2	(multiple PODs, see PD59034 (F008758))		
PD59036	F009758	McDougall Creek	Domestic	WESTBANK FIRST NATION 301 515 S HIGHWAY 97 KELOWNA BC V1Z3J2	(multiple PODs, see PD59034 (F008758))		
PD59036	F009758	McDougall Creek	Irrigation	WESTBANK FIRST NATION 301 515 S HIGHWAY 97 KELOWNA BC V1Z3J2	(multiple PODs, see PD59034 (F008758))		
PD59036	F009758	McDougall Creek	Domestic	WESTBANK FIRST NATION 301 515 S HIGHWAY 97 KELOWNA BC V1Z3J2	(multiple PODs, see PD59034 (F008758))		
PD59036	F009758	McDougall Creek	Irrigation	WESTBANK FIRST NATION 301 515 S HIGHWAY 97 KELOWNA BC V1Z3J2	(multiple PODs, see PD59034 (F008758))		
PD59036	F009758	McDougall Creek	Domestic	WESTBANK FIRST NATION 301 515 S HIGHWAY 97 KELOWNA BC V1Z3J2	(multiple PODs, see PD59034 (F008758))		
PD59036	F009758	McDougall Creek	Irrigation	WESTBANK FIRST NATION 301 515 S HIGHWAY 97 KELOWNA BC V1Z3J2	(multiple PODs, see PD59034 (F008758))		
PD59036	F009758	McDougall Creek	Domestic	WESTBANK FIRST NATION 301 515 S HIGHWAY 97 KELOWNA BC V1Z3J2	(multiple PODs, see PD59034 (F008758))		
PD59036	F009758	McDougall Creek	Irrigation	WESTBANK FIRST NATION 301 515 S HIGHWAY 97 KELOWNA BC V1Z3J2	(multiple PODs, see PD59034 (F008758))		
PD59036	F009758	McDougall Creek	Domestic	WESTBANK FIRST NATION 301 515 S HIGHWAY 97 KELOWNA BC V1Z3J2	(multiple PODs, see PD59034 (F008758))		
PD59036	F009758	McDougall Creek	Irrigation	WESTBANK FIRST NATION 301 515 S HIGHWAY 97 KELOWNA BC V1Z3J2	(multiple PODs, see PD59034 (F008758))		
PD59036	F009758	McDougall Creek	Domestic	WESTBANK FIRST NATION 301 515 S HIGHWAY 97 KELOWNA BC V1Z3J2	(multiple PODs, see PD59034 (F008758))		
PD59036	F009758	McDougall Creek	Irrigation	WESTBANK FIRST NATION 301 515 S HIGHWAY 97 KELOWNA BC V1Z3J2	(multiple PODs, see PD59034 (F008758))</		

SUMMARY OF LICENSED WATER USERS IN THE TREPANIER LANDSCAPE UNIT

Notes:
 Licence information is organized by watershed. Within each watershed the information is organized by point-of-diversion in approximately downstream order.
 Refer to Map 1 for locations of point-of-diversions

POINT OF DIVERSION	LICENCE No.	STREAM	PURPOSE	LICENSEE	REPORTED QUANTITY	REPORTED UNITS	ANNUAL VOLUME (m ³)
PD59122	C033404	North Powers Creek	Waterworks Local Aut	WESTBANK IRRIGATION DISTRICT 3717 ELLIOTT RD WESTBANK BC V4T2H7	(multiple PODs, see PD59121 (C033404))		
PD59122	C033406	North Powers Creek	Storage	WESTBANK IRRIGATION DISTRICT 3717 ELLIOTT RD WESTBANK BC V4T2H7	(multiple PODs, see PD59121 (C033406))		
PD59122	C048771	North Powers Creek	Storage	WESTBANK IRRIGATION DISTRICT 3717 ELLIOTT RD WESTBANK BC V4T2H7	(multiple PODs, see PD59121 (C048771))		
PD59122	C067991	North Powers Creek	Storage	WESTBANK IRRIGATION DISTRICT 3717 ELLIOTT RD WESTBANK BC V4T2H7	(multiple PODs, see PD59121 (C067991))		
PD59122	C067991	North Powers Creek	Waterworks Local Aut	WESTBANK IRRIGATION DISTRICT 3717 ELLIOTT RD WESTBANK BC V4T2H7	(multiple PODs, see PD59121 (C067991))		
PD59112	C067991	North Powers Creek		WESTBANK IRRIGATION DISTRICT 3717 ELLIOTT RD WESTBANK BC V4T2H7	(multiple PODs, see PD59121 (C067991))		
PD59112	C033404	Paddle Creek	Irrigation Local Aut	WESTBANK IRRIGATION DISTRICT 3717 ELLIOTT RD WESTBANK BC V4T2H7	(multiple PODs, see PD59131 (C033404))		
PD59112	C033404	Paddle Creek	Waterworks Local Aut	WESTBANK IRRIGATION DISTRICT 3717 ELLIOTT RD WESTBANK BC V4T2H7	(multiple PODs, see PD59131 (C033404))		
PD59112	C033406	Paddle Creek	Storage	WESTBANK IRRIGATION DISTRICT 3717 ELLIOTT RD WESTBANK BC V4T2H7	(multiple PODs, see PD59121 (C033406))		
PD59112	C049771	Paddle Creek	Storage	WESTBANK IRRIGATION DISTRICT 3717 ELLIOTT RD WESTBANK BC V4T2H7	(multiple PODs, see PD59121 (C049771))		
PD59112	C067991	Paddle Creek	Storage	WESTBANK IRRIGATION DISTRICT 3717 ELLIOTT RD WESTBANK BC V4T2H7	(multiple PODs, see PD59121 (C067991))		
PD59112	C067991	Paddle Creek	Waterworks Local Aut	WESTBANK IRRIGATION DISTRICT 3717 ELLIOTT RD WESTBANK BC V4T2H7	(multiple PODs, see PD59121 (C067991))		
PD58824	C003778	Powers Creek	Irrigation Local Aut	WESTBANK IRRIGATION DISTRICT 3717 ELLIOTT RD WESTBANK BC V4T2H7	500	ac-ft	816,750
PD58824	C003778	Powers Creek	Waterworks Local Aut	WESTBANK IRRIGATION DISTRICT 3717 ELLIOTT RD WESTBANK BC V4T2H7	365,000	imp gal/yr	35,080
PD58824	F015806	Powers Creek	Irrigation Local Aut	WESTBANK IRRIGATION DISTRICT 3717 ELLIOTT RD WESTBANK BC V4T2H7	33	ac-ft	40,387
PD58824	F015807	Powers Creek	Irrigation Local Aut	WESTBANK IRRIGATION DISTRICT 3717 ELLIOTT RD WESTBANK BC V4T2H7	29	ac-ft	35,080
PD58824	F015808	Powers Creek	Irrigation Local Aut	WESTBANK IRRIGATION DISTRICT 3717 ELLIOTT RD WESTBANK BC V4T2H7	27	ac-ft	32,959
PD58822	G044044	Iona Brook	Domestic	LEWIS THOMAS W 2750 SMITH CREEK RD WESTBANK BC V4T1Y3	1,000	imp gal/day	1,658
PD58822	G044044	Iona Brook	Domestic	LEWIS THOMAS W 2750 SMITH CREEK RD WESTBANK BC V4T1Y3	20	ac-ft	24,670
PD58820	C066141	Bird Spring	Domestic	BIRD DEREK 3401 PRESTON RD WESTBANK BC V4T1V9	800	imp gal/day	828
PD58820	C066141	Bird Spring	Domestic	LARSON ALLAN 3349 MCKELLAR RD WESTBANK BC V4T1W1	500	imp gal/day	828
PD58825	C015442	Powers Creek	Irrigation Local Aut	WESTBANK IRRIGATION DISTRICT 3717 ELLIOTT RD WESTBANK BC V4T2H7	381	ac-ft	470,272
PD58825	C015443	Powers Creek	Irrigation Local Aut	WESTBANK IRRIGATION DISTRICT 3717 ELLIOTT RD WESTBANK BC V4T2H7	729	ac-ft	898,913
PD58825	C015444	Powers Creek	Irrigation Local Aut	WESTBANK IRRIGATION DISTRICT 3717 ELLIOTT RD WESTBANK BC V4T2H7	388	ac-ft	477,861
PD58825	F011738	Powers Creek	Irrigation Local Aut	WESTBANK IRRIGATION DISTRICT 3717 ELLIOTT RD WESTBANK BC V4T2H7	46	ac-ft	56,516
PD58825	F011740	Powers Creek	Irrigation Local Aut	WESTBANK IRRIGATION DISTRICT 3717 ELLIOTT RD WESTBANK BC V4T2H7	57	ac-ft	70,051
PD58825	F011741	Powers Creek	Irrigation Local Aut	WESTBANK IRRIGATION DISTRICT 3717 ELLIOTT RD WESTBANK BC V4T2H7	28	ac-ft	33,921
PD58825	F011742	Powers Creek	Irrigation Local Aut	WESTBANK IRRIGATION DISTRICT 3717 ELLIOTT RD WESTBANK BC V4T2H7	15	ac-ft	18,184
PD58825	F011743	Powers Creek	Irrigation Local Aut	WESTBANK IRRIGATION DISTRICT 3717 ELLIOTT RD WESTBANK BC V4T2H7	42	ac-ft	51,807
PD58825	F011744	Powers Creek	Irrigation Local Aut	WESTBANK IRRIGATION DISTRICT 3717 ELLIOTT RD WESTBANK BC V4T2H7	10	ac-ft	11,718
PD58825	F011746	Powers Creek	Irrigation Local Aut	WESTBANK IRRIGATION DISTRICT 3717 ELLIOTT RD WESTBANK BC V4T2H7	13	ac-ft	15,416
PD58823	G027989	Allen Spring	Stockwatering	FORESTS MINISTRY OF 515 COLUMBIA ST KAMLOOPS BC V2B3G8	1,000	imp gal/day	1,658
PD58779	C068424	Mossy Spring	Irrigation	KNELLER CHARLES W & ROBERT V 3802 GLENROSA RD WESTBANK BC V4T1V9	5	ac-ft	6,168
PD58779	C068425	Mossy Spring	Irrigation	HARRIS BARBARA A & JOHN C 475 ABEL ST KELOWNA BC V1Z2Z6	5	ac-ft	6,168
PD58826	C014418	Powers Creek	Irrigation Local Aut	WESTBANK IRRIGATION DISTRICT 3717 ELLIOTT RD WESTBANK BC V4T2H7	88	ac-ft	107,831
PD58812	C046181	Glenrosa Lake	Ponds	FICKE FRANK R & GERTRUDE B 3450 GATES RD WESTBANK BC V4T1A2	12	ac-ft	14,802
PD58813	C046181	Glenrosa Lake	Ponds	FICKE FRANK R & GERTRUDE B 3450 GATES RD WESTBANK BC V4T1A2	(multiple PODs, see PD58812 (C046181))		
PD76230	T116435	Trepazier Creek	Irrigation	SCHMITT GERHARD & DORIS 3649 GLENROSA RD WESTBANK BC V0H2A0	1	ac-ft	1,234
PD58817	F005197	Strang Spring	Domestic	FICKE FRANK R & GERTRUDE B 3450 GATES RD WESTBANK BC V4T1A2	500	imp gal/day	829
PD58817	F005197	Strang Spring	Domestic	FICKE FRANK R & GERTRUDE B 3450 GATES RD WESTBANK BC V4T1A2	500	imp gal/day	829
PD58817	F005197	Strang Spring	Domestic	FICKE FRANK R & GERTRUDE B 3450 GATES RD WESTBANK BC V4T1A2	1	ac-ft	1,234
PD58817	F005197	Strang Spring	Domestic	FICKE FRANK R & GERTRUDE B 3450 GATES RD WESTBANK BC V4T1A2	1,000	imp gal/day	1,658
PD58817	F112859	Strang Spring	Domestic	FICKE FRANK R & GERTRUDE B 3450 GATES RD WESTBANK BC V4T1A2	1,500	imp gal/day	2,487
PD58810	C057844	George Spring	Domestic	WLANDER GEORGE & KAREN 7145 148 ST SURREY BC V3S3E5	500	imp gal/day	829
PD58819	F019711	Webber Spring	Domestic	STEWART WILLIAM A C & ALDYTHE U 3306 GLENCOE RD WESTBANK BC V4T1M1	500	imp gal/day	829
PD58815	F039514	Webber Spring	Domestic	SWANSON LILIAN A SITE 84 COMP 4 RR 2 SUMMERLAND BC V0H1Z0	250	imp gal/day	415
PD58816	F015682	Moore Spring	Domestic	ROMANCHUK PETER & INA M 505 ALLARD ST QUESNEL BC V2J3K7	1,000	imp gal/day	1,658
PD58791	F018640	James Spring	Domestic	TRANSPORTATION MINISTRY OF PARLIAMENT BUILDINGS VICTORIA BC V8V1X4	500	imp gal/day	829
PD58906	C014701	Stevens Brook	Domestic	CHATTEN WILLIAM C & DIEDRE S 2605 HEBERT ROAD WESTBANK BC V4T2J6	1,500	imp gal/day	2,487
PD58829	C033387	Powers Creek	Irrigation	VICTOR PROJECTS LTD 102-266 LAWRENCE AVE KELOWNA BC V1Y6L3	3	ac-ft	4,293
PD58829	C033388	Powers Creek	Domestic	SCOTTISH COVE HOLDINGS LTD 102-266 LAWRENCE AVE KELOWNA BC V1Y6L3	500	imp gal/day	829
PD58829	C033388	Powers Creek	Irrigation	SCOTTISH COVE HOLDINGS LTD 102-266 LAWRENCE AVE KELOWNA BC V1Y6L3	140	ac-ft	173,183
PD58829	C112169	Powers Creek	Irrigation	CENTRAL OKANAGAN REGIONAL DISTRICT OF 1450 KLO RD KELOWNA BC V1W3Z4	26	ac-ft	32,184
PD58829	F021027	Powers Creek	Irrigation	BYLANDS NURSERIES LTD 1600 BYLAND RD KELOWNA BC V1Z1H6	4	ac-ft	5,181
PD58830	C043507	Powers Creek	Irrigation	BYLANDS NURSERIES LTD 1600 BYLAND RD KELOWNA BC V1Z1H6	45	ac-ft	56,208
PD64066	C064293	Powers Creek	Conserv- Use Of Water	FISHERIES BRANCH 3547 SKAHA LAKE RD PENTICTON BC V2A7K2	3	cfs	2,876,027
AREA 4: TREPANIER CREEK WATERSHED							
PD54826	C112733	Allen Creek	Land Improve	NORANDA MINING AND EXPLORATION INC 718 22-2475 DOBBIN RD WESTBANK BC V4T2E9			
PD54825	C112733	MacDonald Creek	Land Improve	NORANDA MINING AND EXPLORATION INC 718 22-2475 DOBBIN RD WESTBANK BC V4T2E9			
PD58604	C107825	MacDonald Creek	Irrigation Local Aut	PEACHLAND MUNICIPALITY OF 5808 BEACH AVE PEACHLAND BC V0H1X7	500	ac-ft	616,750
PD74567	C112733	MacDonald Creek		NORANDA MINING AND EXPLORATION INC 718 22-2475 DOBBIN RD WESTBANK BC V4T2E9			
PD58593	C103311	Lacoma Creek	Storage	SINCLAIR BERNADETTE L 4550 TREPANIER RD PEACHLAND BC V0H1X3	30	ac-ft	37,005
PD58593	C105414	Lacoma Creek	Storage	THIESMANN HELMUT & GAIL 4850 TREPANIER RD PEACHLAND BC V0H1X3	30	ac-ft	37,005
PD58593	C105415	Lacoma Creek	Storage	HOOPER LLOYD EDWARD 4880 TREPANIER RD PEACHLAND BC V0H1X3	9	ac-ft	11,162
PD58593	C106008	Lacoma Creek	Storage	FIRST ESTATE HOLDINGS LTD 10820 WALTERS RD S84 C11 RR 4 SUMMERLAND BC V0H1Z0	1	ac-ft	1,234
PD58593	C106110	Lacoma Creek	Storage	FIRST ESTATE HOLDINGS LTD 10820 WALTERS RD S84 C11 RR 4 SUMMERLAND BC V0H1Z0	38	ac-ft	48,107
PD58593	C106117	Lacoma Creek	Storage	FIRST ESTATE HOLDINGS LTD 10820 WALTERS RD S84 C11 RR 4 SUMMERLAND BC V0H1Z0	12	ac-ft	14,802
PD58593	C106676	Lacoma Creek	Storage	SMITH KIM P & THERESA F 4840 TREPANIER BENCH RD RR 2 SITE 27 COMP 4 PEACHLAN	20	ac-ft	24,670
PD58593	C106677	Lacoma Creek	Storage	PETERSON KEVIN C & CAROLE A 4810 TREPANIER BENCH RD RR 2 PEACHLAND BC V0H1X2	10	ac-ft	12,335
PD58768	C048445	Silver Lake	Domestic	D'AMICO FRANCESCO & ROSANNA 1435 RENFREW RD KELOWNA BC V1X5W9	500	imp gal/day	829
PD58768	C058522	Silver Lake	Domestic	MILLER ELAINE 3218 SYLVIA PL PORT COQUITLAM BC V3E2R5	500	imp gal/day	829
PD58770	C049770	Silver Lake	Camps	SILVER LAKE FOREST EDUCATION SOCIETY PO BOX 20623 TCM KELOWNA BC V1Y9H2	3,000	imp gal/day	4,974
PD58771	C057848	Silver Lake	Storage	PEACHLAND MUNICIPALITY OF 5808 BEACH AVE PEACHLAND BC V0H1X7	90	ac-ft	98,880
PD58771	C057855	Silver Lake	Storage	PEACHLAND MUNICIPALITY OF 5808 BEACH AVE PEACHLAND BC V0H1X7	8	ac-ft	11,102
PD58771	C057857	Silver Lake	Storage	PEACHLAND MUNICIPALITY OF 5808 BEACH AVE PEACHLAND BC V0H1X7	5	ac-ft	6,185
PD58771	C057858	Silver Lake	Storage	PEACHLAND MUNICIPALITY OF 5808 BEACH AVE PEACHLAND BC V0H1X7	15	ac-ft	18,503
PD58771	C057870	Silver Lake	Storage	PEACHLAND MUNICIPALITY OF 5808 BEACH AVE PEACHLAND BC V0H1X7	32	ac-ft	38,472
PD58771	C082125	Silver Lake	Storage	PEACHLAND MUNICIPALITY OF 5808 BEACH AVE PEACHLAND BC V0H1X7	207	ac-ft	255,335
PD58771	C082127	Silver Lake	Storage	PEACHLAND MUNICIPALITY OF 5808 BEACH AVE PEACHLAND BC V0H1X7	8	ac-ft	11,102
PD58771	C082130	Silver Lake	Storage	PEACHLAND MUNICIPALITY OF 5808 BEACH AVE PEACHLAND BC V0H1X7	100	ac-ft	123,350
PD58765	F007169	Venner Creek	Domestic	OSTRANDER JOHN & MARGUERITE 4 LACEY GREEN KIRKLAND PQ H8H3H2	500	imp gal/day	829
PD58765	F007169	Venner Creek	Irrigation	OSTRANDER JOHN & MARGUERITE 4 LACEY GREEN KIRKLAND PQ H8H3H2	18	ac-ft	21,586
PD58768	F007169	Venner Creek	Domestic	OSTRANDER JOHN & MARGUERITE 4 LACEY GREEN KIRKLAND PQ H8H3H2	(multiple PODs, see PD58765 (F007169))		
PD58768	F007169	Venner Creek	Irrigation	OSTRANDER JOHN & MARGUERITE 4 LACEY GREEN KIRKLAND PQ H8H3H2	(multiple PODs, see PD58765 (F007169))		
PD58767	F007169	Venner Creek	Domestic	OSTRANDER JOHN & MARGUERITE 4 LACEY GREEN KIRKLAND PQ H8H3H2	(multiple PODs, see PD58765 (F007169))		
PD58767	F007169	Venner Creek	Irrigation	OSTRANDER JOHN & MARGUERITE 4 LACEY GREEN KIRKLAND PQ H8H3H2	(multiple PODs, see PD58765 (F007169))		
PD58726	C057884	Trepazier Creek	Irrigation Local Aut	PEACHLAND MUNICIPALITY OF 5808 BEACH AVE PEACHLAND BC V0H1X7	14	ac-ft	17,269
PD58726	C057856	Trepazier Creek	Irrigation Local Aut	PEACHLAND MUNICIPALITY OF 5808 BEACH AVE PEACHLAND BC V0H1X7	7	ac-ft	8,635
PD58726	C057858	Trepazier Creek	Domestic	PEACHLAND MUNICIPALITY OF 5808 BEACH AVE PEACHLAND BC V0H1X7	500	imp gal/day	829
PD58726	C057858	Trepazier Creek	Irrigation Local Aut	PEACHLAND MUNICIPALITY OF 5808 BEACH AVE PEACHLAND BC V0H1X7	122	ac-ft	150,487
PD58726	C057859	Trepazier Creek	Irrigation Local Aut	PEACHLAND MUNICIPALITY OF 5808 BEACH AVE PEACHLAND BC V0H1X7	8	ac-ft	8,608
PD58726	C057860	Trepazier Creek	Irrigation Local Aut	PEACHLAND MUNICIPALITY OF 5808 BEACH AVE PEACHLAND BC V0H1X7	8	ac-ft	7,401
PD58726	C057881	Trepazier Creek	Irrigation Local Aut	PEACHLAND MUNICIPALITY OF 5808 BEACH AVE PEACHLAND BC V0H1X7	9	ac-ft	11,102
PD58726	C057882	Trepazier Creek	Irrigation Local Aut	PEACHLAND MUNICIPALITY OF 5808 BEACH AVE PEACHLAND BC V0H1X7	14	ac-ft	17,269
PD58726	C057883	Trepazier Creek	Irrigation Local Aut	PEACHLAND MUNICIPALITY OF 5808 BEACH AVE PEACHLAND BC V0H1X7	3	ac-ft	3,701
PD58726	C057884	Trepazier Creek	Irrigation Local Aut	PEACHLAND MUNICIPALITY OF 5808 BEACH AVE PEACHLAND BC V0H1X7	12	ac-ft	14,802
PD58726	C057885	Trepazier Creek	Irrigation Local Aut	PEACHLAND MUNICIPALITY OF 5808 BEACH AVE PEACHLAND BC V0H1X7	4	ac-ft	4,934
PD58726	C057888	Trepazier Creek	Irrigation Local Aut	PEACHLAND MUNICIPALITY OF 5808 BEACH AVE PEACHLAND BC V0H1X7	3	ac-ft	3,701
PD58726	C057887	Trepazier Creek	Irrigation Local Aut	PEACHLAND MUNICIPALITY OF 5808 BEACH AVE PEACHLAND BC V0H1X7	15	ac-ft	18,503
PD58726	C057889	Trepazier Creek	Irrigation Local Aut	PEACHLAND MUNICIPALITY OF 5808 BEACH AVE PEACHLAND BC V0H1X7	32	ac-ft	39,472
PD58726	C057871	Trepazier Creek	Irrigation Local Aut	PEACHLAND MUNICIPALITY OF 5808 BEACH AVE PEACHLAND BC V0H1X7	7	ac-ft	8,635
PD58726	C020626	Trepazier Creek	Waterworks Local Aut	PEACHLAND MUNICIPALITY OF 5808 BEACH AVE PEACHLAND BC V0H1X7	378,497,000	imp gal/yr	1,723,958
PD58726	C057847	Trepazier Creek		PEACHLAND MUNICIPALITY OF 5808 BEACH AVE PEACHLAND BC V0H1X7			
PD58726	C059246	Trepazier Creek	Domestic	PEACHLAND MUNICIPALITY OF 5808 BEACH AVE PEACHLAND BC V0H1X7	500	imp gal/day	829
PD58726	C062124	Trepazier Creek	Irrigation Local Aut	PEACHLAND MUNICIPALITY OF 5808 BEACH AVE PEACHLAND BC V0H1X7	207	ac-ft	255,335
PD58726	C062126	Trepazier Creek	Irrigation Local Aut	PEACHLAND MUNICIPALITY OF 5808 BEACH AVE PEACHLAND BC V0H1X7	14	ac-ft	17,269
PD58726	C062128	Trepazier Creek	Irrigation Local Aut	PEACHLAND MUNICIPALITY OF 5808 BEACH AVE PEACHLAND BC V0H1X7	39	ac-ft	48,107
PD58726	C062129	Trepazier Creek		PEACHLAND MUNICIPALITY OF 5808 BEACH AVE PEACHLAND BC V0H1X7			
PD58726	C062891	Trepazier Creek	Irrigation Local Aut	PEACHLAND MUNICIPALITY OF 5808 BEACH AVE PEACHLAND BC V0H1X7	37	ac-ft	45,640
PD58726	C063738	Trepazier Creek	Irrigation Local Aut	PEACHLAND MUNICIPALITY OF 5808 BEACH AVE PEACHLAND BC V0H1X7	3	ac-ft	3,701
PD58726	C065						

SUMMARY OF LICENSED WATER USERS IN THE TREPANIER LANDSCAPE UNIT

Notes:
 Licence information is organized by watershed. Within each watershed the information is organized by point-of-diversion in approximately downstream order.
 Refer to Map 1 for locations of point-of-diversions.

POINT OF DIVERSION	LICENCE No.	STREAM	PURPOSE	LICENSEE	REPORTED QUANTITY	REPORTED UNITS	ANNUAL VOLUME (m ³)
PD58739	C066188	Trepazier Creek	Domestic	SINCLAIR BERNADETTE L 4550 TREPANIER RD PEACHLAND BC V0H1X3	500	Imp gal/day	820
PD58739	C104243	Trepazier Creek	Irrigation	SINCLAIR BERNADETTE L 4550 TREPANIER RD PEACHLAND BC V0H1X3	(multiple PODs, see PD58737 (C104243))		
PD58117	F040527	Stizmark Creek	Domestic	CRYSTAL MOUNTAIN RESORTS LTD WESTBANK POSTAL OUTLET BOX 2044 WESTBANK BC V4	2,000	Imp gal/day	3,316
PD58803	C107651	Jack Creek	Irrigation	MILLER ALLAN & BEV 4340 MAXWELL RD PEACHLAND BC V0H1X3	18	ac-ft	23,437
PD58803	C107662	Jack Creek	Irrigation	GUTHRIE JERRY W & KIM A 4363 MAXWELL RD PEACHLAND BC V0H1X3	3	ac-ft	3,701
PD58803	C051681	Jack Creek	Irrigation	SCHERER ROBERT & BERNICE 437 CULLEW RD PEACHLAND BC V1W4L2	14	ac-ft	17,269
PD58803	C088951	Jack Creek	Irrigation	GEYER WILLIAM H & MARIANNE 4375 MAXWELL RD PEACHLAND BC V0H1X3	15	ac-ft	18,503
PD58803	C088952	Jack Creek	Domestic	HUTCHINGS ANDREW 4200 SPIERS RD KELOWNA BC V1W4B5	500	Imp gal/day	820
PD58803	C115266	Jack Creek	Irrigation	Lac-RRENIERE ANDREW R & KAREN R 4388 MAXWELL RD PEACHLAND BC V0H1X3	6	ac-ft	7,401
PD58715	C115266	Jack Creek	Irrigation	Lac-RRENIERE ANDREW R & KAREN R 4388 MAXWELL RD PEACHLAND BC V0H1X3	(multiple PODs, see PD58803 (C115266))		
PD58715	C115266	Jack Creek	Stockwatering	HALL MARNIE M 4392 MAXWELL RD PEACHLAND BC V0H1X3	500	Imp gal/day	820
PD58715	C051681	Jack Creek	Irrigation	SCHERER ROBERT & BERNICE 437 CULLEW RD PEACHLAND BC V1W4L2	(multiple PODs, see PD58803 (C051681))		
PD58715	C115258	Jack Creek	Domestic	HALL MARNIE M 4392 MAXWELL RD PEACHLAND BC V0H1X3	500	Imp gal/day	820
PD58716	C049298	Jack Creek	Domestic	HARRISON LYLE J & INGELISE R 4475 MAXWELL RD PEACHLAND BC V0H1X3	500	Imp gal/day	820
PD68247	C106762	Jack Creek	Irrigation	DACRE BRUCE L & JULIE E 4433 MAXWELL RD PEACHLAND BC V0H1X3	11	ac-ft	13,589
PD68247	C106763	Jack Creek	Irrigation	HARRISON LYLE J & INGELISE R 4475 MAXWELL RD PEACHLAND BC V0H1X3	14	ac-ft	17,269
PD68247	C106764	Jack Creek	Irrigation	ROTHFUSZ AVOLA M & MARIUS R 4635 PONDEROSA DR PEACHLAND BC V0H1X5	29	ac-ft	35,772
PD58718	C070137	Jack Creek	Watering	PATERSON KIM H 2505 O'REILLY ROAD KELOWNA BC V1W2V7	1	ac-ft	626
PD64066	C070138	Trepazier Creek	Domestic	ANDREWS KAREN M 4580 TREPANIER RD PEACHLAND BC V0H1X3	500	Imp gal/day	820
PD58707	C066404	Jaycos Spring	Domestic	PATERSON KIM H 2505 O'REILLY ROAD KELOWNA BC V1W2V7	500	Imp gal/day	820
PD58740	C064109	Trepazier Creek	Domestic	MANKY HENRY & EDNA SITE 27B COMP 17 RR 2 PEACHLAND BC V0H1X3	500	Imp gal/day	820
PD58740	C064111	Trepazier Creek	Domestic	COLDHAM WILLIAM A & RUTH J RR 2 COMP 4 SITE 21 PEACHLAND BC V0H1X0	500	Imp gal/day	820
PD58740	C064112	Trepazier Creek	Domestic	TAYLOR GRANT A & KAREN L RR 3 COMP 8 SITE 48 SUMMERLAND BC V0H1Z0	500	Imp gal/day	820
PD58706	C064901	Coldos Spring	Watering	SOUDER RODNEY J & ELIZABETH D SITE 27 COMP 12 RR 1 PEACHLAND BC V0H1X0	1	ac-ft	1,234
PD58708	C070487	Trepazier Creek	Domestic	SMITH KIM P & THERESA F 4840 TREPANIER BENCH RD RR 2 SITE 27 COMP 4 PEACHLAN	1,500	Imp gal/day	2,487
PD58708	C070488	Trepazier Creek	Domestic	PETERSON KEVIN C & CAROLE A RR 2 SITE 27 COMP 48 PEACHLAND BC V0H1X0	500	Imp gal/day	820
PD58708	C103284	Trepazier Creek	Domestic	FIRST ESTATE HOLDINGS LTD 10820 WALTERS RD S84 C11 RR 4 SUMMERLAND BC V0H1Z0	500	Imp gal/day	820
PD58708	C103289	Trepazier Creek	Domestic	THESMANN HELMUT & GAIL 4850 TREPANIER RD PEACHLAND BC V0H1X3	500	Imp gal/day	820
PD58708	C103937	Trepazier Creek	Irrigation	DIETRICH WALTER 745 WAYNE RD KELOWNA BC V1X4L9	18	ac-ft	9,868
PD58708	C104950	Trepazier Creek	Domestic	CENTRAL OKANAGAN REGIONAL DISTRICT OF 1450 KLO RD KELOWNA BC V1W3Z4	6,000	Imp gal/day	13,264
PD58708	C105072	Trepazier Creek	Irrigation	SMITH KIM P & THERESA F 4840 TREPANIER BENCH RD RR 2 SITE 27 COMP 4 PEACHLAN	6	ac-ft	9,868
PD58708	C105073	Trepazier Creek	Domestic	MUIR COLIN E & VALERIE A 4850 TREPANIER RD RR 2 COMP 48 SITE 27 PEACHLAND BC	6	ac-ft	9,868
PD58708	C105074	Trepazier Creek	Domestic	MUIR COLIN E & VALERIE A 4850 TREPANIER RD RR 2 COMP 48 SITE 27 PEACHLAND BC	500	Imp gal/day	820
PD58708	C105412	Trepazier Creek	Domestic	FIRST ESTATE HOLDINGS LTD 10820 WALTERS RD S84 C11 RR 4 SUMMERLAND BC V0H1Z0	500	Imp gal/day	820
PD58708	C105413	Trepazier Creek	Irrigation	THESMANN HELMUT & GAIL 4850 TREPANIER RD PEACHLAND BC V0H1X3	30	ac-ft	37,005
PD58708	C105414	Trepazier Creek	Irrigation	HOOPER LLOYD EDWARD 4880 TREPANIER RD PEACHLAND BC V0H1X3	9	ac-ft	11,102
PD58708	C105416	Trepazier Creek	Domestic	FIPKE ANNA E 4850 MACKINNON RD RR#2 PEACHLAND BC V0H1X2	1,000	Imp gal/day	1,658
PD58708	C105417	Trepazier Creek	Domestic	FIPKE ANNA E 4850 MACKINNON RD RR#2 PEACHLAND BC V0H1X2	250	Imp gal/day	415
PD58708	C105417	Trepazier Creek	Irrigation	FIPKE ANNA E 4850 MACKINNON RD RR#2 PEACHLAND BC V0H1X2	24	ac-ft	41,039
PD58708	C105417	Trepazier Creek	Stockwatering	FIPKE ANNA E 4850 MACKINNON RD RR#2 PEACHLAND BC V0H1X2	250	Imp gal/day	415
PD58708	C105418	Trepazier Creek	Irrigation	C F MINERAL RESEARCH LTD 1677 POWICK RD KELOWNA BC V1X4L1	3	ac-ft	3,701
PD58708	C105420	Trepazier Creek	Domestic	C F MINERAL RESEARCH LTD 1677 POWICK RD KELOWNA BC V1X4L1	500	Imp gal/day	820
PD58708	C105421	Trepazier Creek	Domestic	KLEIN JESSICA S 4855 MACKINNON RD PEACHLAND BC V0H1X2	46	ac-ft	56,741
PD58708	C105421	Trepazier Creek	Domestic	KLEIN JESSICA S 4855 MACKINNON RD PEACHLAND BC V0H1X2	1,000	Imp gal/day	1,658
PD58708	C106007	Trepazier Creek	Processing	C F MINERAL RESEARCH LTD 1677 POWICK RD KELOWNA BC V1X4L1	500	Imp gal/day	820
PD58708	C106109	Trepazier Creek	Irrigation	FIRST ESTATE HOLDINGS LTD 10820 WALTERS RD S84 C11 RR 4 SUMMERLAND BC V0H1Z0	39	ac-ft	48,107
PD58708	C106116	Trepazier Creek	Irrigation	FIRST ESTATE HOLDINGS LTD 10820 WALTERS RD S84 C11 RR 4 SUMMERLAND BC V0H1Z0	12	ac-ft	14,802
PD58708	C106148	Trepazier Creek	Domestic	HOOPER LLOYD EDWARD 4880 TREPANIER RD PEACHLAND BC V0H1X3	500	Imp gal/day	820
PD58708	C106474	Trepazier Creek	Irrigation	SMITH KIM P & THERESA F 4840 TREPANIER BENCH RD RR 2 SITE 27 COMP 4 PEACHLAN	20	ac-ft	24,670
PD58708	C106675	Trepazier Creek	Irrigation	PETERSON KEVIN C & CAROLE A RR 2 SITE 27 COMP 46 PEACHLAND BC V0H1X0	10	ac-ft	12,335
PD58708	C106684	Trepazier Creek	Domestic	MCKAGUE DONNA A 4985 TREPANIER CREEK RD PEACHLAND BC V0H1X2	500	Imp gal/day	820
PD58708	C106684	Trepazier Creek	Irrigation	MCKAGUE DONNA A 4985 TREPANIER CREEK RD PEACHLAND BC V0H1X2	14	ac-ft	17,268
PD58708	C053283	Trepazier Creek	Domestic	TRANSPORTATION & HIGHWAYS MINISTRY OF 523 COLUMBIA ST KAMLOOPS BC V2C2T9	1,000	Imp gal/day	1,658
PD58710	C055765	Trepazier Creek	Domestic	TRANSPORTATION & HIGHWAYS MINISTRY OF 523 COLUMBIA ST KAMLOOPS BC V2C2T9	500	Imp gal/day	820
PD58710	C055765	Trepazier Creek	Domestic	TRANSPORTATION & HIGHWAYS MINISTRY OF 523 COLUMBIA ST KAMLOOPS BC V2C2T9	900	Imp gal/day	820
PD58711	C041498	Trepazier Creek	Domestic	BARNES KEITH E & MARGARET S 998 BLUEBIRD PL DUALICUM BEACH BC V9K1M7	500	Imp gal/day	820
PD58700	C055905	Huston Spring	Waterworks Local Aut	PEACHLAND MUNICIPALITY OF 5806 BEACH AVE PEACHLAND BC V0H1X7	2,190,000	Imp gal/yr	9,948
PD58700	C055906	Huston Spring	Irrigation Local Aut	PEACHLAND MUNICIPALITY OF 5806 BEACH AVE PEACHLAND BC V0H1X7	5	ac-ft	6,166
PD58700	C055907	Huston Spring	Waterworks Local Aut	PEACHLAND MUNICIPALITY OF 5806 BEACH AVE PEACHLAND BC V0H1X7	7,300,000	Imp gal/yr	33,190
PD58804	C086422	Hitchner Creek	Irrigation	KNELLER CHARLES W & ROBERT V 3902 GLENROSA RD WESTBANK BC V4T1V6	10	ac-ft	12,335
PD58804	C086423	Hitchner Creek	Irrigation	HARRIS BARBARA A & JOHN C 475 ABEL ST KELOWNA BC V1Z2Z5	10	ac-ft	12,335
PD58804	C108272	Hitchner Creek	Irrigation	FRIESEN KAREN L 3724 GLENROSA ROAD WESTBANK BC V4T1V9	14	ac-ft	17,269
PD58804	C108273	Hitchner Creek	Irrigation	WSE SHARON L 3770 GLENROSA RD WESTBANK BC V0H2A0	8	ac-ft	9,868
PD58804	C086420	Hitchner Creek	Stockwatering	KNELLER CHARLES W & ROBERT V 3902 GLENROSA RD WESTBANK BC V4T1V6	500	Imp gal/day	820
PD58804	F108202	Hitchner Creek	Stockwatering	FRIESEN KAREN L 3724 GLENROSA ROAD WESTBANK BC V4T1V6	500	Imp gal/day	820
PD58778	F053811	Hitchner Creek	Irrigation	FICKE FRANK R & GERTRUDE B 3450 GATES RD WESTBANK BC V4T1A2	46	ac-ft	56,208
PD58778	F053811	Hitchner Creek	Storage	FICKE FRANK R & GERTRUDE B 3450 GATES RD WESTBANK BC V4T1A2	46	ac-ft	56,208
PD58821	C068140	Last Spring	Domestic	BIRD DEREK 3401 PRESTON RD WESTBANK BC V4T1V8	500	Imp gal/day	820
PD58821	C068141	Last Spring	Domestic	LARSON ALLAN 3348 MCKELLAR RD WESTBANK BC V4T1W1	500	Imp gal/day	820
PD58775	C068421	Lynn Spring	Domestic	HARRIS BARBARA A & JOHN C 475 ABEL ST KELOWNA BC V1Z2Z5	500	Imp gal/day	820
PD58775	F055763	Lynn Spring	Domestic	POWELL ROBERT G 3323 PRESTON RD WESTBANK BC V4T1V9	500	Imp gal/day	820
PD58775	F055763	Lynn Spring	Irrigation	POWELL ROBERT G 3323 PRESTON RD WESTBANK BC V4T1V9	1	ac-ft	1,234
PD58775	F107910	Lynn Spring	Domestic	WSE SHARON L 3770 GLENROSA RD WESTBANK BC V0H2A0	500	Imp gal/day	820
PD58775	F107955	Lynn Spring	Domestic	SCHMITT GERHARD & DORIS 3649 GLENROSA RD WESTBANK BC V0H2A0	500	Imp gal/day	820
PD58798	C038194	Norman Spring	Domestic	LEWIS IONA M 3916 ANGUS DR WESTBANK BC V4T2J8	500	Imp gal/day	820
PD58814	F068486	Law Creek	Irrigation	LEWIS IONA M 3916 ANGUS DR WESTBANK BC V4T2J8	15	ac-ft	18,503
PD58811	C034320	Gneve Spring	Domestic	PENDOZI MACHINE SHOP LTD 3008 PANDOSY ST KELOWNA BC V1Y1W2	500	Imp gal/day	820
PD58811	Z117385	Gneve Spring	Domestic	GILBERT GAETAN J & PATTEAUDE CAROL A 3520 PRESTON RD WESTBANK BC V4T1V8	500	Imp gal/day	820
PD58802	C080381	Cave Spring	Domestic	WHALEN KEVIN H 3419 PRESTON RD WESTBANK BC V4T1V9	1,000	Imp gal/day	1,658
PD58802	C080381	Cave Spring	Irrigation	WHALEN KEVIN H 3419 PRESTON RD WESTBANK BC V4T1V9	9	ac-ft	11,102
PD58780	C093528	Preston Spring	Domestic	PERRY JACQUELINE S 3337 PRESTON RD WESTBANK BC V4T1V9	500	Imp gal/day	820
PD58801	C086421	Shelter Spring	Domestic	HARRIS BARBARA A & JOHN C 475 ABEL ST KELOWNA BC V1Z2Z5	500	Imp gal/day	820
PD58801	F055763	Shelter Spring	Domestic	POWELL ROBERT G 3323 PRESTON RD WESTBANK BC V4T1V9	500	Imp gal/day	820
PD58801	F055763	Shelter Spring	Irrigation	POWELL ROBERT G 3323 PRESTON RD WESTBANK BC V4T1V9	1	ac-ft	1,234
PD58801	F107910	Shelter Spring	Domestic	WSE SHARON L 3770 GLENROSA RD WESTBANK BC V0H2A0	500	Imp gal/day	820
PD58801	F107955	Shelter Spring	Domestic	SCHMITT GERHARD & DORIS 3649 GLENROSA RD WESTBANK BC V0H2A0	500	Imp gal/day	820
PD58702	C086522	Law Creek	Domestic	KLEIN JESSICA S 4855 MACKINNON RD PEACHLAND BC V0H1X2	500	Imp gal/day	820
PD58702	C086522	Law Creek	Irrigation	KLEIN JESSICA S 4855 MACKINNON RD PEACHLAND BC V0H1X2	46	ac-ft	56,741
PD58702	C086522	Law Creek	Storage	KLEIN JESSICA S 4855 MACKINNON RD PEACHLAND BC V0H1X2	4	ac-ft	4,934
PD58684	F043801	Trepazier Creek	Irrigation	CLEMENTS JAMES H & FLORENCE P 3447 CLEMENTS CRES PEACHLAND BC V0H1X5	32	ac-ft	38,472
AREA 6: PEACHLAND CREEK WATERSHED							
PD58589	C107625	Peachland Creek	Irrigation	PEACHLAND MUNICIPALITY OF 5806 BEACH AVE PEACHLAND BC V0H1X7	3,300	ac-ft	4,070,550
PD58751	C107625	Peachland Creek	Storage	PEACHLAND MUNICIPALITY OF 5806 BEACH AVE PEACHLAND BC V0H1X7	895,366,221	Imp gal/yr	4,087,274
PD58751	C107625	Peachland Creek	Waterworks Local Aut	PEACHLAND MUNICIPALITY OF 5806 BEACH AVE PEACHLAND BC V0H1X7	3	ac-ft	2,679,027
PD58751	C064115	Peachland Creek	Conserv - Use Of Water	FISHERIES BRANCH 3547 SKAHA LAKE RD PENTICTON BC V2A7K2	2,500	ac-ft	3,083,500
PD58749	C109287	Peachland Lake	Storage	FISHERIES BRANCH 3547 SKAHA LAKE RD PENTICTON BC V2A7K2	1,000	ac-ft	1,233,500
PD58747	C112136	Peachland Lake	Storage	PEACHLAND MUNICIPALITY OF 5806 BEACH AVE PEACHLAND BC V0H1X7	200	ac-ft	246,700
PD58405	C106286	Mile Creek	Storage	PEACHLAND MUNICIPALITY OF 5806 BEACH AVE PEACHLAND BC V0H1X7	80	ac-ft	98,880
PD58545	C057847	Mile Creek	Irrigation Local Aut	PEACHLAND MUNICIPALITY OF 5806 BEACH AVE PEACHLAND BC V0H1X7	(multiple PODs, see PD58595 (C057847) - Silver Lake in Area 4)		
PD58545	C057847	Mile Creek	Storage	PEACHLAND MUNICIPALITY OF 5806 BEACH AVE PEACHLAND BC V0H1X7	100	ac-ft	123,350
PD58545	C052129	Mile Creek	Irrigation Local Aut	PEACHLAND MUNICIPALITY OF 5806 BEACH AVE PEACHLAND BC V0H1X7	(multiple PODs, see PD58595 (C052129) - Silver Lake in Area 4)		
PD58545	C052129	Mile Creek	Storage	PEACHLAND MUNICIPALITY OF 5806 BEACH AVE PEACHLAND BC V0H1X7	100	ac-ft	123,350
PD58758	C107624	Glen Lake	Storage	PEACHLAND MUNICIPALITY OF 5806 BEACH AVE PEACHLAND BC V0H1X7	250	ac-ft	309,375
PD58758	C048290	Bolingbroke Creek	Domestic	GALPIN ALBERT M 5920 HIGHWAY 87 S PEACHLAND BC V0H1X7	1,000	Imp gal/day	1,658
PD58754	C048446	Bolivar Creek	Domestic	GALPIN ALBERT M 5920 HIGHWAY 87 S PEACHLAND BC V0H1X7	1,000	Imp gal/day	1,658
PD58844	C023356	Spring Creek	Stockwatering	FOREST DISTRICT - PENTICTON 102 INDUSTRIAL PL PENTICTON BC V2A7C8	500	Imp gal/day	820
PD58845	F016734	Spring Creek	Domestic	SUNDOWN HOLDINGS LTD C/O ROBERT JONPHE BOX 1834 STATION A KELOWNA BC V1Y8N3	300	Imp gal/day	497
PD58648	C110325	Peachland Creek	Domestic	TELCOR INVESTMENTS LTD 951 ANDERS RD KELOWNA BC V1Z1K4	500	Imp gal/day	820
PD58648	C110325	Peachland Creek	Irrigation	TELCOR INVESTMENTS LTD 951 ANDERS RD KELOWNA BC V1Z1K4	28	ac-ft	34,538
PD58648	C110326	Peachland Creek	Irrigation	TELCOR INVESTMENTS LTD 951 ANDERS RD KELOWNA BC V1Z1K4	170	ac-ft	209,695

SUMMARY OF LICENSED WATER USERS IN THE TREPANIER LANDSCAPE UNIT

Notes:
 Licence information is organized by watershed. Within each watershed the information is organized by point-of-diversion in approximately downstream order.
 Refer to Map 1 for locations of point-of-diversions.

POINT OF DIVERSION	LICENCE No.	STREAM	PURPOSE	LICENSEE	REPORTED QUANTITY	REPORTED UNITS	ANNUAL VOLUME (m ³)
PD59151	C040093	Lulwap Creek	Domestic	CARR WILLIAM (IN TRUST) C/O BARBEAU & COMPANY 1450-700 W GEORGIA ST PO BOX 1	500	Imp gal/day	829
PD59151	C040094	Lulwap Creek	Domestic	JONES ROBERT K BOX 862 STATION A KELOWNA BC V1Y7P5	500	Imp gal/day	829
PD59151	C040095	Lulwap Creek	Domestic	FOWNES DAVID & ANNE E 3550 WEST 40TH AVE VANCOUVER BC V6N3B8	500	Imp gal/day	829
PD59151	C040096	Lulwap Creek	Domestic	SHEPARD ANTHONY R 1450-700 WEST GEORGIA ST VANCOUVER BC V7Y1A1	500	Imp gal/day	829
PD59151	C040097	Lulwap Creek	Domestic	MACK NORBERT & BRENDA 638 WESTSIDE RD S KELOWNA BC V1Z3S2	500	Imp gal/day	829
PD59151	C052748	Lulwap Creek	Domestic	WEISS DALE & CINDY 657 WESTSIDE RD S KELOWNA BC V1Z3S2	500	Imp gal/day	829
PD59153	C064182	Lulwap Creek	Watering	CENTRAL OKANAGAN REGIONAL DISTRICT OF 1450 KLO RD KELOWNA BC V1W3Z4	3	ac-ft	3,701
PD59101	C040788	Peterson Brook	Domestic	PETTERSON JOHN F & IRENE B 879 PETTERSON RD KELOWNA BC V1Z3T5	500	Imp gal/day	829
PD59101	C040789	Peterson Brook	Domestic	PETTERSON JOHN & IRENE 879 PETTERSON RD KELOWNA BC V1Z3T6	2,500	Imp gal/day	4,145
PD59096	C034782	Rose Valley Lake	Irrigation Local Aut	LAKEVIEW IRRIGATION DISTRICT 2570 BARTLEY RD KELOWNA BC V1Z2M8	3,600	ac-ft	4,440,600
PD59086	C034782	Rose Valley Lake	Waterworks Local Aut	LAKEVIEW IRRIGATION DISTRICT 2570 BARTLEY RD KELOWNA BC V1Z2M8	25,550,000	Imp gal/yr	116,060
PD59086	C039006	Rose Valley Lake	Waterworks Local Aut	LAKEVIEW IRRIGATION DISTRICT 2570 BARTLEY RD KELOWNA BC V1Z2M8	328,500,000	Imp gal/yr	1,492,205
PD59086	C050778	Rose Valley Lake	Waterworks Local Aut	LAKEVIEW IRRIGATION DISTRICT 2570 BARTLEY RD KELOWNA BC V1Z2M8			
PD59086	C105255	Rose Valley Lake	Waterworks Local Aut	LAKEVIEW IRRIGATION DISTRICT 2570 BARTLEY RD KELOWNA BC V1Z2M8			
PD59058	C062900	Keefe Pond	Ponds	NORMAND ALBERT 2311 WESTLAKE ROAD KELOWNA B C V1Z3C3	5	ac-ft	6,158
PD72675	C111905	Keefe Creek	Irrigation	54249 BC LTD 260 - 2300 CARRINGTON RD WESTBANK BC V4T2B8	20	ac-ft	24,670
PD72674	C111904	Keefe Creek	Irrigation	WESTSIDE HEIGHTS PROPERTIES LTD 273 BURNE AVENUE KELOWNA B C V1Y5N9	3	ac-ft	3,064
PD72674	C111904	Keefe Creek	Domestic	WESTSIDE HEIGHTS PROPERTIES LTD 273 BURNE AVENUE KELOWNA B C V1Y5N9	500	Imp gal/day	829
PD59077	F016299	Keefe Creek	Irrigation	WESTBANK FIRST NATION 515 HWY 87 S KELOWNA BC V1Z3J2	100	ac-ft	123,350
PD59078	F016299	Keefe Creek	Irrigation	WESTBANK FIRST NATION 515 HWY 87 S KELOWNA BC V1Z3J2	(multiple PODs, see PD59077 (F016299))		
PD59078	F016299	Keefe Creek	Irrigation	WESTBANK FIRST NATION 515 HWY 87 S KELOWNA BC V1Z3J2	(multiple PODs, see PD59077 (F016299))		
PD59080	F016299	Keefe Creek	Irrigation	WESTBANK FIRST NATION 515 HWY 87 S KELOWNA BC V1Z3J2	(multiple PODs, see PD59077 (F016299))		
PD590405	C108182	Bowen Creek	Conserv.-Stored Wate	KELLER PAUL 1049 KELLY DR KELOWNA BC V1Z3T1	0	ac-ft	370
PD59037	C035824	Bouchene Brook	Domestic	VICTOR PROJECTS LTD 102-266 LAWRENCE AVE KELOWNA BC V1Y6L3	500	Imp gal/day	829
PD59040	C064275	Sunnyside Brook	Domestic	STEWART BENJAMIN R 3348 BOUCHERIE RD KELOWNA BC V1Z3P5	1,500	Imp gal/day	2,487
AREA 8: WESTBANK NORTH							
PD58993	C022205	Johnson Spring	Domestic	PAYNTER EDWIN G A SITE 7 COMP 25 RR 1 PRITCHARD DR WESTBANK BC V0H2A0	1,000	Imp gal/day	1,658
PD58993	C022205	Johnson Spring	Irrigation	PAYNTER EDWIN G A SITE 7 COMP 25 RR 1 PRITCHARD DR WESTBANK BC V0H2A0	5	ac-ft	6,158
PD58993	C041485	Johnson Spring	Domestic	CATANA DEVELOPMENTS LTD 260 - 2300 CARRINGTON RD WESTBANK BC V4T2B8	500	Imp gal/day	829
PD58993	C103279	Johnson Spring	Domestic	CATANA DEVELOPMENTS LTD 260 - 2300 CARRINGTON RD WESTBANK BC V4T2B8	2,000	Imp gal/day	3,316
PD58988	C048714	Lorne Spring	Domestic	HOYER ANDRE C & WINIFRED H 20-3370 CASORSO RD KELOWNA BC V1W3J2	500	Imp gal/day	829
PD58988	F038661	Lorne Spring	Domestic	HOYER ANDRE C & WINIFRED H 20-3370 CASORSO RD KELOWNA BC V1W3J2	1,000	Imp gal/day	1,658
PD58988	F038661	Lorne Spring	Irrigation	HOYER ANDRE C & WINIFRED H 20-3370 CASORSO RD KELOWNA BC V1W3J2	13	ac-ft	16,036
PD58986	C014083	Shannon Brook	Domestic	PAUNOVIC DOBRIVOJE 2735 SHANNON LAKE RD WESTBANK BC V4T1V5	500	Imp gal/day	829
PD58986	C014083	Shannon Brook	Irrigation	PAUNOVIC DOBRIVOJE 2735 SHANNON LAKE RD WESTBANK BC V4T1V5	10	ac-ft	12,335
PD58987	F070133	Shannon Brook	Watering	WESTSIDE COUNTRY ESTATES LTD C/O SHANNON LAKE GOLF COURSE 2649 SHANNON LAKE	8	ac-ft	11,102
PD58980	C016217	Shannon Lake	Irrigation	PAUNOVIC DOBRIVOJE 2735 SHANNON LAKE RD WESTBANK BC V4T1V5	10	ac-ft	12,335
PD58980	C066584	Shannon Lake	Watering	WESTSIDE COUNTRY ESTATES LTD C/O SHANNON LAKE GOLF COURSE 2649 SHANNON LAKE			
PD58980	C066584	Shannon Lake	Watering	WESTSIDE COUNTRY ESTATES LTD C/O SHANNON LAKE GOLF COURSE 2649 SHANNON LAKE			
PD58979	C070141	Shannon Lake	Watering	WESTSIDE COUNTRY ESTATES LTD C/O SHANNON LAKE GOLF COURSE 2649 SHANNON LAKE			
PD58978	F070134	Shannon Lake	Watering	WESTSIDE COUNTRY ESTATES LTD C/O SHANNON LAKE GOLF COURSE 2649 SHANNON LAKE	25	ac-ft	30,838
PD58991	C045944	Clarence Brook	Irrigation	HOYER ANDRE C & WINIFRED H 20-3370 CASORSO RD KELOWNA BC V1W3J2	30	ac-ft	37,005
PD58991	C045945	Clarence Brook	Storage	HOYER ANDRE C & WINIFRED H 20-3370 CASORSO RD KELOWNA BC V1W3J2	3	ac-ft	3,701
PD58989	F010684	Clarence Spring	Irrigation	HOYER ANDRE C & WINIFRED H 20-3370 CASORSO RD KELOWNA BC V1W3J2	5	ac-ft	6,158
PD589205	F015013	Smith Creek	Irrigation	ASTRO PROPERTIES LTD BOX 339 KELOWNA B C V1Y7N8	33	ac-ft	40,708
PD58925	C034702	Smith Creek	Domestic	HOYER ANDRE C & WINIFRED H 20-3370 CASORSO RD KELOWNA BC V1W3J2	500	Imp gal/day	829
PD58925	C034702	Smith Creek	Irrigation	HOYER ANDRE C & WINIFRED H 20-3370 CASORSO RD KELOWNA BC V1W3J2	460	ac-ft	567,410
PD58937	C012473	Tomat Creek	Domestic	WESTBANK FIRST NATION 301 515 S HIGHWAY 87 KELOWNA BC V1Z3J2	1,000	Imp gal/day	1,658
PD58900	F009407	Dundas Brook	Irrigation	WESTBANK FIRST NATION 301 515 S HIGHWAY 87 KELOWNA BC V1Z3J2	50	ac-ft	61,675
PD58954	F009407	Dundas Brook	Irrigation	WESTBANK FIRST NATION 301 515 S HIGHWAY 87 KELOWNA BC V1Z3J2	25	ac-ft	30,838
PD58944	F012058	Westbank Creek	Irrigation	WESTBANK FIRST NATION 301 515 S HIGHWAY 87 KELOWNA BC V1Z3J2	(multiple PODs, see PD58900 (F009407))		
PD58955	F110100	Smith Creek	Watering	WESTBANK FIRST NATION 301 515 S HIGHWAY 87 KELOWNA BC V1Z3J2	98	ac-ft	120,683
PD58955	F110100	Smith Creek	Irrigation	WESTBANK FIRST NATION 301 515 S HIGHWAY 87 KELOWNA BC V1Z3J2	100	ac-ft	123,350
PD58903	C070248	Majoros Spring	Irrigation	MAJOROS ZOLTAN & GASPAR 3645 CARRINGTON RD WESTBANK BC V4T2E6	16	ac-ft	19,736
AREA 9: PEACHLAND NORTH							
PD58795	C061508	Perrin Spring	Waterworks (Other)	ABBOTT DAVID ET AL 14096 77A AVE SURREY BC V3W2X3	4,000	Imp gal/day	6,632
PD58795	C064297	Kennel	Waterworks (Other)	HEWITT FLORA 3040 SECLUSION BAY RD WESTBANK BC V4T1W6	500	Imp gal/day	829
PD58795	C064298	Perrin Spring	Domestic	HEWITT FLORA 3040 SECLUSION BAY RD WESTBANK BC V4T1W6	500	Imp gal/day	829
PD58795	F052540	Perrin Spring	Enterprise	SECLUSION BAY RESORT (1988) LTD 3050 SECLUSION BAY RD WESTBANK BC V4T1W6	5,500	Imp gal/day	6,119
PD58795	F052889	Perrin Spring	Domestic	LAND & WATER BC 3RD FLR 145 3RD AVE KAMLOOPS BC V2C3M1	500	Imp gal/day	829
PD58795	C041917	Steele Spring	Watering	LEE STEPHEN S & BELVA J 11155 MONROE DR DELTA BC V4G7T2	8	ac-ft	9,989
PD58787	C041917	Steele Spring	Watering	LEE STEPHEN S & BELVA J 11155 MONROE DR DELTA BC V4G7T2	(multiple PODs, see PD58796 (C041917))		
PD58794	F021067	Tom Spring	Domestic	DROUGHT KATE N 1415 LINDLEY RD KELOWNA BC V1Z3M5	500	Imp gal/day	829
PD58785	C112009	Marchand Slough	Irrigation	MARCHAND JOSEPH G 3770 TURNBULL RD WESTBANK BC V4T1W2	5	ac-ft	6,158
PD58786	C087505	Peregrine Spring	Irrigation	WRIGHT ARTHUR D 3250 HWY 87 SOUTH WESTBANK BC V4T1W4	8	ac-ft	9,989
PD58787	C038649	Drought Creek	Domestic	WRIGHT ARTHUR D 3250 HWY 87 SOUTH WESTBANK BC V4T1W4	750	Imp gal/day	1,244
PD58788	F005348	Drought Creek	Domestic	RYDER PATRICIA 3460 DROUGHT RD PEACHLAND BC V0H1X1	1,500	Imp gal/day	2,487
PD58788	F005348	Drought Creek	Irrigation	RYDER PATRICIA 3460 DROUGHT RD PEACHLAND BC V0H1X1	5	ac-ft	6,158
PD58760	F005348	Drought Creek	Domestic	RYDER PATRICIA 3460 DROUGHT RD PEACHLAND BC V0H1X1	(multiple PODs, see PD58788 (F005348))		
PD58688	C042390	Drought Spring	Domestic	FRIESEN FREDERICK H & MARY H PO BOX 1239 PEACHLAND BC V0H1X0	500	Imp gal/day	829
PD58688	C042390	Drought Spring	Irrigation	FRIESEN FREDERICK H & MARY H PO BOX 1239 PEACHLAND BC V0H1X0	2	ac-ft	2,487
PD58687	C031853	Hickstone Spring	Domestic	COTTER MARY 7186 FARNHAM RD MEMPHIS NY 13112 USA	750	Imp gal/day	1,244
PD58704	C046383	Niskal Pond	Domestic	TRANSPORTATION & HIGHWAYS MINISTRY OF 523 COLUMBIA ST KAMLOOPS BC V2C2T8	1,000	Imp gal/day	1,658
AREA 10: PEACHLAND SOUTH							
PD58652	C111891	Camp Hewitt Spring	Land Improve	DAWSON & TATE ENTERPRISES LTD BOX 1336 PEACHLAND BC V0H1X0	3	cfs	2,679,027
PD58655	F012087	Ada Creek	Irrigation	LUHTALA E MADELEINE BOX 145 PEACHLAND BC V0H1X0	2	ac-ft	2,487
PD58656	C058913	Ada Creek	Irrigation	CAC-NFREY GILBERT & LINDA J 5648 BEACH AVE PEACHLAND BC V0H1X6	1	ac-ft	1,234
PD58682	F012076	Nelevans Spring	Domestic	CHUDYK THEODOR & ANNE PO BOX 352 PEACHLAND BC V0H1X0	1,000	Imp gal/day	1,658
PD58683	F068865	Town Spring	Domestic	LOAN DESMOND M & MARGARET C 5976 PRINCESS ST PEACHLAND BC V0H1X7	500	Imp gal/day	829
PD58683	F068865	Town Spring	Irrigation	LOAN DESMOND M & MARGARET C 5976 PRINCESS ST PEACHLAND BC V0H1X7	2	ac-ft	2,487
PD58683	F068865	Town Spring	Irrigation	LOAN DESMOND M & MARGARET C 5976 PRINCESS ST PEACHLAND BC V0H1X7	4	ac-ft	4,934
PD58684	F010484	Williams Spring	Irrigation	LOAN DESMOND M & MARGARET C 5976 PRINCESS ST PEACHLAND BC V0H1X7	5	ac-ft	6,168
PD58684	F089996	Williams Spring	Irrigation	LOAN DESMOND M & MARGARET C 5976 PRINCESS ST PEACHLAND BC V0H1X7	(multiple PODs, see PD58683 (F068865))		
PD58685	C103538	Pope Spring	Domestic	BECKER STANLEY L 4635 PRINCETON AVE PEACHLAND BC V0H1X7	500	Imp gal/day	829
PD58684	C086250	McCall Lakes	Conserv.-Stored Wate	DUCKS UNLIMITED (CANADA) 854A LAVAL CRESS KAMLOOPS BC V2C5P5	75	ac-ft	92,513
PD58650	C082222	McCall Creek	Domestic	HENNING KENNETH M 8000 SANDERSON AVE PEACHLAND BC V0H1X8	500	Imp gal/day	829
PD58650	C082222	McCall Creek	Irrigation	HENNING KENNETH M 8000 SANDERSON AVE PEACHLAND BC V0H1X8	80	ac-ft	111,015
PD58650	C082222	McCall Creek	Stockwatering	HENNING KENNETH M 8000 SANDERSON AVE PEACHLAND BC V0H1X8	500	Imp gal/day	829
PD58676	C029015	John Spring	Domestic	DHONT BETTY & JOHANNES C M RR 1 R41 BOWEN ISLAND BC V0N1G0	500	Imp gal/day	829
PD58677	C043508	John Brook	Domestic	DHONT BETTY & JOHANNES C M RR 1 R41 BOWEN ISLAND BC V0N1G0	500	Imp gal/day	829
PD58677	C059477	John Brook	Domestic	DHONT BETTY & JOHANNES C M RR 1 R41 BOWEN ISLAND BC V0N1G0	2,000	Imp gal/day	3,316
PD58678	C059245	Fulks Spring	Domestic	DHONT BETTY & JOHANNES C M RR 1 R41 BOWEN ISLAND BC V0N1G0	500	Imp gal/day	829
PD58678	C113114	Fulks Spring	Domestic	OVERHOF DIETER & NETTY SITE 7 COMP 17 RR 1 VICTORIA ST PEACHLAND BC V0H1X0	500	Imp gal/day	829
PD58673	C029913	Cousins Spring No. 2	Domestic	KOLAR ELIZA 8002 TURNER AVE RR1 SITE7E COMP 7 PEACHLAND BC V0H1X0	500	Imp gal/day	829
PD58668	F010250	Winger Spring	Domestic	SIM BETTY A 8109 LIPSETT AVE PEACHLAND BC V0H1X7	500	Imp gal/day	829
PD58668	F010250	Winger Spring	Irrigation	SIM BETTY A 8109 LIPSETT AVE PEACHLAND BC V0H1X7	4	ac-ft	4,934
PD58668	F015566	Winger Spring	Domestic	LEPORE ANNA 6816 KITCHENER ST BURNABY BC V5B2J6	500	Imp gal/day	829
PD58670	F010250	Powell Spring	Domestic	SIM BETTY A 8109 LIPSETT AVE PEACHLAND BC V0H1X7	(multiple PODs, see PD58668 (F010250))		
PD58670	F010250	Powell Spring	Irrigation	SIM BETTY A 8109 LIPSETT AVE PEACHLAND BC V0H1X7	(multiple PODs, see PD58668 (F010250))		
PD58670	F015566	Powell Spring	Domestic	LEPORE ANNA 6816 KITCHENER ST BURNABY BC V5B2J6	(multiple PODs, see PD58668 (F015566))		
PD58690	C114882	Harrington Spring	Domestic	577314 BC LTD 5878 VICTORIA ST PEACHLAND BC V0H1X0	1,000	Imp gal/day	1,658
PD58680	C114883	Harrington Spring	Domestic	577314 BC LTD 5878 VICTORIA ST PEACHLAND BC V0H1X0	500	Imp gal/day	829
PD58680	C114884	Harrington Spring	Domestic	577314 BC LTD 5878 VICTORIA ST PEACHLAND BC V0H1X0	500	Imp gal/day	829
PD58637	F040250	Alkens Brook	Domestic	HORNE DAVID G & SONJA M 8298 SANDERSON AVE PEACHLAND BC V0H1X8	250	Imp gal/day	415
PD54768	C057112	Femhough Brook	Domestic	PICHER DENIS H & JOCELYNE A 8444 HIGHWAY 87 S PEACHLAND BC V0H1X7	500	Imp gal/day	829
PD54768	C058657	Femhough Spring	Domestic	PUSHEE GORDON E 7340 NO 4 RD RICHMOND BC V6Y2T3	500	Imp gal/day	829
PD54772	F005762	Callender Spring	Domestic	RENFREW MARION S RR 1 13C 13C RENFREW RD PEACHLAND BC V0H1X0	500	Imp gal/day	829
PD54773	F013950	Callender Spring No 2	Domestic	WATTS JOHN S 8488 RENFREW RD SITE 138 COMP 26 RR 1 PEACHLAND BC V0H1X0	500	Imp gal/day	829
OKANAGAN LAKE							
PD62390	C070422	Okanagan Lake	Domestic	HALL EDWARD J 102 1482 SPRINGFIELD RD KELOWNA BC V1Y5V3	500	Imp gal/day	829
PD66404	C105284	Okanagan Lake	Domestic	HALL EDWARD J 102 1482 SPRINGFIELD RD KELOWNA BC V1Y5V3	500	Imp gal/day	829
PD58433	C033989	Okanagan Lake	Waterworks Local Aut	FINTRY UTILITIES LTD C/O PIERRE MUEHLBERGER SITE 14 BOX 14 RR 7 VERNON BC V1T2Z1	16,250,000	Imp gal/yr	

SUMMARY OF LICENSED WATER USERS IN THE TREPANIER LANDSCAPE UNIT

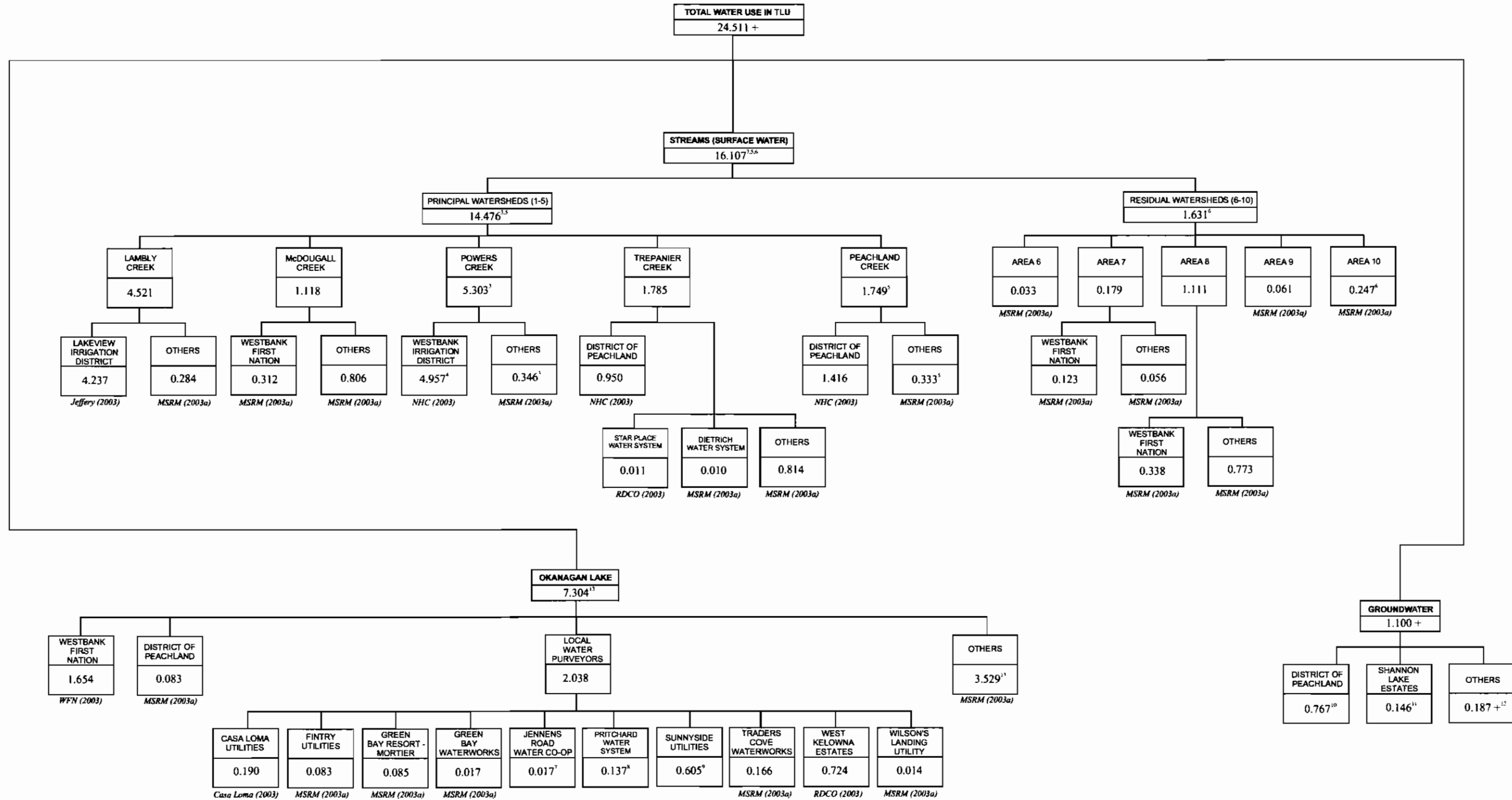
Notes:
 Licence information is organized by watershed. Within each watershed the information is organized by point-of-diversion in approximately downstream order.
 Refer to Map 1 for locations of point-of-diversions.

POINT OF DIVERSION	LICENCE No.	STREAM	PURPOSE	LICENSEE	REPORTED QUANTITY	REPORTED UNITS	ANNUAL VOLUME (m ³)
PD71318	C110088	Okanagan Lake	Domestic	HUDSON RONALD K & MARIE 17011-1152 SUNSET DR KELOWNA BC V1Y9R7	500	Imp gal/day	829
PD70908	C106693	Okanagan Lake	Watering	CENTRAL OKANAGAN REGIONAL DISTRICT OF 1450 KLO RD KELOWNA BC V1W3Z4	5	ac-ft	8,188
PD58143	C034809	Okanagan Lake	Waterworks Local Aut	TRADERS COVE WATERWORKS DISTRICT C/O SANDI DLOFFS 39 TRADERS COVE RD KELOWNA BC V1Z354	36,500,000	Imp gal/yr	165,601
PD59189	C057515	Okanagan Lake	Enterprise	PARKS BRANCH 1210 MCGILL RD KAMLOOPS BC V2C8N6	8,125	Imp gal/day	13,471
PD59155	C113499	Okanagan Lake	Domestic	SIMPSON TODD W & EFFROSSINI 631 WESTSIDE RD KELOWNA BC V1Y8B2	500	Imp gal/day	829
PD59162	C066318	Okanagan Lake	Domestic	CARR WILLIAM (IN TRUST) C/O BARBEAU & COMPANY 1450-700 W GEORGIA ST PO BOX 10018 PACIFIC CTR VANCOUVER BC V7Y1A1	500	Imp gal/day	829
PD64445	C103344	Okanagan Lake	Domestic	TANNER GARETT & MARINE 691 A WESTSIDE RD S KELOWNA BC V1Z362	500	Imp gal/day	829
PD61588	C103302	Okanagan Lake	Waterworks Local Aut	OWNERS STRATA PLAN KAS 868 C/O GLORIA SLOAN 22-901 WESTSIDE RD S KELOWNA BC V1X3W8	4,927,500	Imp gal/yr	22,383
PD59180	C057118	Okanagan Lake	Domestic	HERRIDGE PETER J 975 WESTSIDE RD KELOWNA BC V1Z361	500	Imp gal/day	829
PD59162	C056382	Okanagan Lake	Domestic	BOTTRILL CAMERON G & KATHERINE L 885 WESTSIDE RD S KELOWNA BC V1Z351	500	Imp gal/day	829
PD59183	C034509	Okanagan Lake	Domestic	HENDERSON BRIAN & LORRAINE 1041 WESTSIDE RD S KELOWNA BC V1Z351	500	Imp gal/day	829
PD65667	C104613	Okanagan Lake	Domestic	LENNOX DUNCAN C & BETTE R 8051 SOUTH MOLINE WAY ENGLEWOOD COLORADO USA 80111	500	Imp gal/day	829
PD67260	C105095	Okanagan Lake	Domestic	BALSKIE OLIVER & CHRISTINE 1067 WESTSIDE RD S KELOWNA BC V1Z351	500	Imp gal/day	829
PD59189	C036278	Okanagan Lake	Domestic	KIRK LENORA R 1105 WESTSIDE RD KELOWNA BC V1Y8B2	500	Imp gal/day	829
PD71313	C110136	Okanagan Lake	Domestic	SIMPSON JOHN W & BARBARA 1085 WESTSIDE RD KELOWNA BC V1Y8B2	500	Imp gal/day	829
PD59191	F111158	Okanagan Lake	Domestic	ROBERT NEAL & ANDREA JUDY MOHR 1104 ANGELO DR BEVERLY HILLS CA 90201 USA	500	Imp gal/day	829
PD59192	C051650	Okanagan Lake	Domestic	DAVIDSON JOHN & DORIS 1179 WESTSIDE RD KELOWNA BC V1Z2P2	1,500	Imp gal/day	2,487
PD59194	C051650	Okanagan Lake	Irrigation	DAVIDSON JOHN & DORIS 1179 WESTSIDE RD KELOWNA BC V1Z2P2	10	ac-ft	12,335
PD59195	C051650	Okanagan Lake	Domestic	DAVIDSON JOHN & DORIS 1179 WESTSIDE RD KELOWNA BC V1Z2P2	1,500	Imp gal/day	2,487
PD59196	C051650	Okanagan Lake	Domestic	DAVIDSON JOHN & DORIS 1179 WESTSIDE RD KELOWNA BC V1Z2P2	1,500	Imp gal/day	2,487
PD59085	C060927	Okanagan Lake	Domestic	DRUGHT KATE N 1415 LINDLEY RD KELOWNA BC V1Z3M5	1,000	Imp gal/day	1,658
PD59084	C038192	Okanagan Lake	Waterworks Local Aut	CENTRAL OKANAGAN REGIONAL DISTRICT OF WEST KELOWNA ESTATES SYST 1450 KLO ROAD KELOWNA BC V1W3Z4	14,052,500	Imp gal/yr	63,833
PD59083	C027692	Okanagan Lake	Irrigation	WESTBANK FIRST NATION 515 HWY 87 S KELOWNA BC V1Z3J2	150	ac-ft	185,026
PD59082	C046848	Okanagan Lake	Waterworks Local Aut	WESTBANK FIRST NATION 515 HWY 87 S KELOWNA BC V1Z3J2	19,710,000	Imp gal/yr	66,532
PD59081	C044150	Okanagan Lake	Enterprise	DERRICKSON RONALD M 2260C LOUIE DR WESTBANK BC V4T1Y2	2,800	Imp gal/day	4,145
PD59060	C019106	Okanagan Lake	Irrigation	BLACKMUN JAMES E C/O CIBC TRUST CORP 1050 400 BURRARD ST VANCOUVER BC V6C3A6	24	ac-ft	29,804
PD59061	C111246	Okanagan Lake	Irrigation	ZORALEK HEINZ W & ELITE A 2411 CAMPBELL RD KELOWNA BC V1Z1S9	20	ac-ft	24,670
PD59063	C029887	Okanagan Lake	Waterworks Local Aut	CASA LOMA WATER UTILITIES LTD 2095 KLO RD KELOWNA BC V1Y2H9	11,497,500	Imp gal/yr	52,227
PD59043	C033621	Okanagan Lake	Irrigation	MANNHARDT REINER 1010 SUNNYSIDE RD KELOWNA BC V1Z2N8	100	ac-ft	123,350
PD59045	C033620	Okanagan Lake	Irrigation Local Aut	SUNNYSIDE UTILITIES LTD 3303 BOUCHERIE RD KELOWNA BC V1Z2H3	100	ac-ft	123,350
PD59054	C029304	Okanagan Lake	Irrigation Local Aut	SUNNYSIDE UTILITIES LTD 3303 BOUCHERIE RD KELOWNA BC V1Z2H3	160	ac-ft	197,360
PD59056	C116481	Okanagan Lake	Irrigation Local Aut	SUNNYSIDE UTILITIES LTD 3303 BOUCHERIE RD KELOWNA BC V1Z2H3	120	ac-ft	148,020
PD59052	C030811	Okanagan Lake	Irrigation Local Aut	MORTIER RAYMOND C & EILEEN N C/O GREENBAY RESORT 1375 GREENBAY RD WESTBANK BC V0H2A0	15	ac-ft	18,503
PD59049	C025972	Okanagan Lake	Waterworks (Other)	GREEN BAY WUC C/O GRAHAM BROTHERTON 1347 GREEN BAY RD WESTBANK BC V4T2B8	10,000	Imp gal/day	16,580
PD59050	C028823	Okanagan Lake	Waterworks Local Aut	MORTIER RAYMOND C & EILEEN N C/O GREENBAY RESORT 1375 GREENBAY RD WESTBANK BC V0H2A0	6,835,000	Imp gal/yr	31,502
PD65426	C113888	Okanagan Lake	Land Improve	GREEN BAY PROPERTY OWNERS' ASSOC 1434 GREEN BAY ROAD WESTBANK BC V4T2B8	4	ac-ft	3,572,036
PD59048	C030811	Okanagan Lake	Irrigation Local Aut	MORTIER RAYMOND C & EILEEN N C/O GREENBAY RESORT 1375 GREENBAY RD WESTBANK BC V0H2A0	15	ac-ft	18,503
PD59047	F020679	Okanagan Lake	Irrigation	GREEN BAY BAPTIST CAMP 1448 GREEN BAY RD WESTBANK BC V4T2B8	29	ac-ft	35,772
PD59047	C104302	Okanagan Lake	Irrigation	WIG HOLDINGS 1457 GREEN BAY RD WESTBANK BC V4T2B8	25	ac-ft	30,838
PD58980	C104301	Okanagan Lake	Irrigation	VAN ROECKEL LEROY & PAT 3745 WEST BAY DR WESTBANK BC V4T2B8	44	ac-ft	54,274
PD66073	C103965	Okanagan Lake	Domestic	VAN ROECKEL LEROY & PAT 3745 WEST BAY DR WESTBANK BC V4T2B8	500	Imp gal/day	829
PD58985	F013035	Okanagan Lake	Irrigation	FRANK ARNOLD & DORIS C/O BOUCHERIE BEACH RESOR 3750 WESTBAY RD WESTBANK BC V4T2B8	26	ac-ft	32,671
PD58987	F013034	Okanagan Lake	Irrigation	BENNETT WILLIAM R 201 1888 COOPER RD KELOWNA BC V1Y8K5	30	ac-ft	37,005
PD58989	C113828	Okanagan Lake	Irrigation	GIDDA BROS ORCHARDS LTD 3175 SMITH CREEK RD WESTBANK BC V4T1M7	70	ac-ft	86,345
PD58990	C065631	Okanagan Lake	Waterworks Local Aut	SHANBOULARD WATER UTILITY LTD C/O CENTRAL OKANAGAN REG DIST 1450 KLO RD KELOWNA BC V1W3Z4	22,812,500	Imp gal/yr	103,625
PD58901	C059301	Okanagan Lake	Irrigation	SHANBOULARD ORCHARDS LTD 3869 PRITCHARD DR WESTBANK BC V4T1X2	120	ac-ft	122,117
PD58881	C027414	Okanagan Lake	Irrigation	WESTBANK FIRST NATION 301 515 S HIGHWAY 87 KELOWNA BC V1Z3J2	89	ac-ft	148,020
PD58882	C063214	Okanagan Lake	Irrigation	MARCEAU ALBERT P 3820 WETTON RD WESTBANK BC V4T2C1	28	ac-ft	34,538
PD58885	F038626	Okanagan Lake	Irrigation	MAJOROS ZOLTAN & GASPARD 3545 CARRINGTON RD WESTBANK BC V4T2E6	38	ac-ft	46,873
PD70911	C106995	Okanagan Lake	Public Facilities	CENTRAL OKANAGAN REGIONAL DISTRICT OF 1450 KLO RD KELOWNA BC V1W3Z4	500	Imp gal/day	829
PD58902	F014802	Okanagan Lake	Irrigation	NAKA BROTHERS CO WESTBANK BC V0H2A0	38	ac-ft	46,873
PD58883	C110445	Okanagan Lake	Irrigation	MCINTOSH KENNETH A & BETTY A 1858 D/O BOUCHERIE ROAD WESTBANK BC V4T2C8	5	ac-ft	7,401
PD58887	C015023	Okanagan Lake	Irrigation	WESTBANK FIRST NATION 391 515 S HIGHWAY 87 KELOWNA BC V1Z3J2	80	ac-ft	98,860
PD58890	C030270	Okanagan Lake	Irrigation	DAY ANN-MARIE A 1866 JENNENS RD WESTBANK BC V4T2C8	1	ac-ft	1,234
PD58889	C057849	Okanagan Lake	Irrigation	BYLANDS NURSERIES LTD 1600 BYLAND RD KELOWNA BC V1Z1H8	86	ac-ft	106,081
PD69387	C109214	Okanagan Lake	Watering	CENTRAL OKANAGAN REGIONAL DISTRICT OF 1450 KLO RD KELOWNA BC V1W3Z4	1	ac-ft	1,234
PD58933	F018735	Okanagan Lake	Cooling	WESTBANK PACKERS LTD 3656 BROWN RD WESTBANK BC V4T2G4	20,000	Imp gal/day	33,160
PD58938	C062810	Okanagan Lake	Domestic	HRABCHAK ADAM 4141 GELLATLEY RD WESTBANK BC V4T2K2	500	Imp gal/day	829
PD58945	C040157	Okanagan Lake	Domestic	READING INVESTMENTS INC C/O 3871 ANGUS DR WESTBANK BC V4T2K1	500	Imp gal/day	829
PD58947	C037589	Okanagan Lake	Domestic	PASSANT WILLIAM T & JOYCE 4183 GELLATLEY RD WESTBANK BC V4T2K2	500	Imp gal/day	829
PD71525	C110422	Okanagan Lake	Enterprise	LAKEHORE VILLA LTD 4205 GELLATLY RD WESTBANK BC V4T2K2	6,400	Imp gal/day	10,811
PD58848	C062162	Okanagan Lake	Domestic	DOBBS BETTY A L 4215 GELLATLY ROAD WESTBANK BC V4T2K3	1,000	Imp gal/day	1,658
PD71582	C110422	Okanagan Lake	Enterprise	LAKEHORE VILLA LTD 4205 GELLATLY RD WESTBANK BC V4T2K2	6,400	Imp gal/day	10,811
PD58851	C112170	Okanagan Lake	Domestic	CENTRAL OKANAGAN REGIONAL DISTRICT OF 1450 KLO RD KELOWNA BC V1W3Z4	500	Imp gal/day	829
PD58854	C062178	Okanagan Lake	Domestic	GRATTON ANNE P 2383 GEORGE COURT SITE 8 COMP 19 RR 3 WESTBANK BC V0H2A0	500	Imp gal/day	829
PD58884	C059210	Okanagan Lake	Irrigation	BYLANDS NURSERIES LTD 1800 BYLAND RD KELOWNA BC V1Z1H8	117	ac-ft	144,320
PD58855	F021025	Okanagan Lake	Irrigation	MCCRICK MARGARET I MRS 6661 CHURCHILL ST VANCOUVER BC V6P5B2	1	ac-ft	1,234
PD58857	C036276	Okanagan Lake	Irrigation	MAYR MARINA H 1130 AYSHIRE DR BURNABY BC V5A4N1	1	ac-ft	1,234
PD58856	C033674	Okanagan Lake	Irrigation	ADAMS GREGORY D & KIMBERLEY R 2431 WITHWORTH RD WESTBANK BC V4T2K4	3	ac-ft	3,701
PD58863	F051842	Okanagan Lake	Irrigation	CLARKSON HAZEN W 2523 WHITWORTH RD WESTBANK BC V4T2K5	1	ac-ft	1,234
PD58862	C039938	Okanagan Lake	Irrigation	FALVO CAROL J & RALPH J 5835 87A ST EDMONTON AB T8E5J1	1	ac-ft	1,234
PD58868	C051679	Okanagan Lake	Irrigation	TURNER WILLIAM J & HELEN 2888 SECLUSION BAY RD WESTBANK BC V4T1W5	80	ac-ft	74,010
PD58798	C044153	Okanagan Lake	Watering	SECLUSION BAY RESORT (1988) LTD 3056 SECLUSION BAY RD WESTBANK BC V4T1W5	13	ac-ft	16,036
PD58832	C060928	Okanagan Lake	Domestic	KOHLENZ JOSEPH & ANNE E 3030 SECLUSION BAY RD WESTBANK BC V4T1W5	1,000	Imp gal/day	1,658
PD58867	C057306	Okanagan Lake	Domestic	RYDER PATRICIA 3460 DROUGHT RD PEACHLAND BC V0H1X1	500	Imp gal/day	829
PD58861	C056855	Okanagan Lake	Domestic	FRIESEN FREDERICK H & MARY H PO BOX 1238 PEACHLAND BC V0H1X0	1,000	Imp gal/day	1,658
PD70580	C109330	Okanagan Lake	Domestic	FRAIBERG PETER & MARLA 7307 11 ST SW CALGARY AB T2V1N3	500	Imp gal/day	829
PD58893	C057712	Okanagan Lake	Domestic	HERZOG KARIN 3594 HWY 97 N PO BOX 1116 PEACHLAND BC V0H1X0	500	Imp gal/day	829
PD58894	C070217	Okanagan Lake	Domestic	WALDO GEORGE E & ANN 3598 HIGHWAY 97 N PEACHLAND BC V0H1X1	500	Imp gal/day	829
PD58895	F051319	Okanagan Lake	Domestic	CUNNINGHAM JOHN & STANYA 5112 151ST ST NW EDMONTON AB T6H4Z5	500	Imp gal/day	829
PD58869	C068158	Okanagan Lake	Waterworks (Other)	TRANSPORTATION & HIGHWAYS MINISTRY OF 523 COLUMBIA ST KAMLOOPS BC V2C2T8	1,077,000	Imp gal/day	1,785,872
PD58866	F018659	Okanagan Lake	Irrigation	MOBERG VERNON & DOROTHY 204 - 4340 PEACHLAND BC V0H1X8	17	ac-ft	20,870
PD58859	C020100	Okanagan Lake	Waterworks Local Aut	PEACHLAND MUNICIPALITY OF 5806 BEACH AVE PEACHLAND BC V0H1X7	18,250,000	Imp gal/yr	82,900
PD58901	F018584	Okanagan Lake	Domestic	MCLAUGHLIN HELEN M #120 HWY 87 S PEACHLAND BC V0H1X7	1,000	Imp gal/day	1,658
PD54763	C036487	Okanagan Lake	Domestic	NIAGARA HOLDINGS LTD 243 5701 17 AVE SE CALGARY AB T2ARW3	1,000	Imp gal/day	1,658
PD54761	C023727	Okanagan Lake	Waterworks (Other)	PARKS BRANCH 1210 MCGILL RD KAMLOOPS BC V2C8N6	8,000	Imp gal/day	9,944
PD73794	C113272	Okanagan Lake	Camps	SOUTH OKANAGAN GIRL GUIDES SOCIETY 903 VERNON AVE PENTICTON BC V2A1P7	1,000	Imp gal/day	1,658
PD72842	C111781	Okanagan Lake	Domestic	HARDY WILLIAM J 2195 CAMPBELL ROAD KELOWNA BC V1Z1S8	500	Imp gal/day	829
PD73220	C112400	Okanagan Lake	Domestic	KLASSEN JOY R & ELAINE E 675 WESTSIDE RD S KELOWNA BC V1Z362	500	Imp gal/day	829
PD73189	C112375	Okanagan Lake	Domestic	437332 BC LTD 7430 TRONSON RD VERNON BC V1H1C3	500	Imp gal/day	829
PD74036	C113597	Okanagan Lake	Domestic	JONES VALERIE E 2183 CAMPBELL RD KELOWNA BC V1Z1S9	500	Imp gal/day	829
PD74043	C113612	Okanagan Lake	Domestic	SCHROCK WERNER & TRAUDE 11122 SOUTHRIDGE CRT DELTA BC V4E2P2	500	Imp gal/day	829
PD74837	C114581	Okanagan Lake	Domestic	MALONEY CONSTRUCTION LTD 4088 WESTSIDE RD N KELOWNA BC V1Z3W8	500	Imp gal/day	829
PD73276	C112485	Okanagan Lake	Domestic	MARVIN GARY 538 WESTSIDE RD S KELOWNA BC V1Z3S2	500	Imp gal/day	829
PD73280	C112468	Okanagan Lake	Domestic	KANDOLA RESHAM SINGH 1175 - 2ND AVE PRINCE GEORGE BC V2J3B1	500	Imp gal/day	829
PD75219	C119222	Okanagan Lake	Domestic	COUSINS DAVID D 1470 MISSION RIDGE RD KELOWNA BC V1Y8R3	500	Imp gal/day	829
PD75281	C112487	Okanagan Lake	Domestic	BEAUBIER DAVID W 500 - 321A 21ST ST SASKATOON SK S7K9C1	500	Imp gal/day	829
PD76921	C117351	Okanagan Lake	Dust Control	KELOWNA DIRT BIKE CLUB 3 1698 CARY RD KELOWNA BC V1X2B8	10	ac-ft	12,335
PD76867	C117369	Okanagan Lake	Domestic	MCCLEAN EDWARD & ELIZABETH C/O CEDARCREFT CUSTOM HOMES LTD 3115 DOUCETTE DR WESTBANK BC V4T1M6	500	Imp gal/day	829
PD75975	C116074	Okanagan Lake	Enterprise	SECLUSION BAY RESORT (1988) LTD 3056 SECLUSION BAY RD WESTBANK BC V4T1W5	5,200	Imp gal/day	6,522
PD77324	C117679	Okanagan Lake	Domestic	KING JOHN C A PO BOX 3508 SPRUCE GROVE AB T7X3A7	500	Imp gal/day	829
PD67882	C106735	Okanagan Lake	Domestic	437332 BC LTD 7430 TRONSON RD VERNON BC V1H1C3	500	Imp gal/day	829
PD67881	C106734	Okanagan Lake	Domestic	437332 BC LTD 7430 TRONSON RD VERNON BC V1H1C3	500	Imp gal/day	829
PD72607	C111882	Okanagan Lake	Domestic	LOWE GRAHAM APT 31 4401 N WESTSIDE RD KELOWNA BC V1Z3P8	500	Imp gal/day	829
PD65605	C104534	Okanagan Lake	Domestic	GUNDERSON STANLEY G BOX 22025 CAPRI CENTRE KELOWNA BC V1Y9N9	500	Imp gal/day	829
PD68793	C108456	Okanagan Lake	Domestic	437332 BC LTD 7430 TRONSON RD VERNON BC V1H1C3	500	Imp gal/day	829
PD68842	C066148	Okanagan Lake	Domestic	HORSFALL CLIFFORD & DEBBIE BOX 70 REVELSTOKE BC V0E2S0	2,000	Imp gal/day	3,316
PD73416	C112830	Okanagan Lake	Domestic				

Appendix C

**ESTIMATED TOTAL ANNUAL
OFFSTREAM WATER USE BY SOURCE
AND PURVEYOR IN THE TREPANIER
LANDSCAPE UNIT**

ESTIMATED TOTAL ANNUAL OFFSTREAM WATER USE BY SOURCE AND PURVEYOR IN THE TREPANIER LANDSCAPE UNIT^{1,2}



Notes

1. Estimates of total annual water use are in million cubic metres.
2. Data sources are in italics.
3. Does not include licences for "conservation", which total 2.679 million cubic metres per year for Powers Creek (MSRM, 2003a).
4. The Westbank Irrigation District has licences to divert up to 3.085 million cubic metres per year from the Lambly Creek watershed to the Powers Creek watershed (MSRM, 2003a).
5. Does not include licences for "conservation", which total 9.823 million cubic metres per year for Peachland Creek (MSRM, 2003a).
6. Does not include one licence for "land improvement" at Camp Hewitt Spring, which totals 2.679 million cubic metres per year (MSRM, 2003a). The water under this licence is diverted to a pond for "beautification" purposes and is returned to the stream (Bender, pers. comm., 2004).
7. A minimum of 20 residential lots are serviced (Knight and Piesold, 1981). Assumes 3 persons per lot and an average annual per capita daily water use of 789 L/day.
8. System services entire Pritchard Area and includes the Shanbooldard system (Harley, pers. comm., 2003). A total of 138 lots and one 125 unit campground are serviced (RDCO, 2003). For residential lots, assume 3 persons per lot and an average annual per capita daily water use of 789 L/day. Based on the average of 2001 and 2002 meter readings, the campground uses an average of 8,060 cubic metres of water per year.
9. Sunnyside Utilities services a population of approximately 2,100 (Jamieson, pers. comm., 2003). Assumes an average annual per capita daily water use of 789 L/day.
10. District of Peachland's Water System #2 is fed by wells with a total capacity of 24.32 L/s (Urban Systems, 2001).
11. A minimum of 169 residential lots are serviced (Knight and Piesold, 1981). Assumes 3 persons per lot and an average annual per capita daily water use of 789 L/day.
12. A total of 217 wells are located in the TLU (MWLAP, 2003). Assumes 3 persons per well and an average annual per capita daily water use of 789 L/day.
13. Does not include one licence for "land improvement" held by the Green Bay Property Owners Association, which totals 3.572 million cubic metres per year (MSRM, 2003a). The water under this licence is pumped to a canal for "beautification" purposes and is returned to Okanagan Lake (Bender, pers. comm., 2004).

Appendix D

LIST OF MATERIAL REVIEWED DURING LAND USE ANALYSIS

Appendix D: Material Reviewed During the Land Use Analysis

Information

- The Growth Management Strategy for the Regional District of Central Okanagan, Schedule "A" to Bylaw No. 851, Department of Regional and Community Planning, Adopted June 26, 2000
- Orthophotography of TLU, summer 2001
- RDCO Digital zoning map for all zoned areas (does not include municipalities)
- Digital build-out map for future development
- TRIM base mapping
- Digital 5-year forest development plans
- Crown - private ownership boundary
- Mineral tenures
- BCALC tenures
- MOF grazing and range leases
- MWALP water licenses and points of diversion
- MWALP water well locations
- Groundwater aquifers
- Irrigation Districts, serviced areas
- Community watershed boundaries
- Jurisdictional boundaries
- Parks and protected areas
- Study watershed boundaries
- Forest cover maps
- ALR maps
- OSLRMP management zones etc
- OSLRMP mule deer RMZ
- OSLRMP Moose RMZ
- OSLRMP Recreation RMZ
- OSLRMP Sheep RMZ
- OSLRMP Tourism RMZ
- OSLRMP Visual RMZ
- OSLRMP Crown Interface RMZ
- OSLRMP NDT4 RMZ
- OSLRMP Community Watershed RMZ
- 2002 Final Forest Development Plan
- Indian Reserves
- Lake management zones
- Lake classifications
- RDCO tourism facilities
- RDCO tourism polygon features
- RDCO tourism line features
- RDCO tourism point features
- RDCO tourism use areas (no attributes)
- Westside Master Drainage Plan
- Population and Employment projections, Westside Traffic Zone Map
- RDCO Wastewater sewer service area boundary
- Permit for Noranda Mines to discharge treated effluent to McDonald Creek (6 million cmy, average 3.1 cmy)
- Development Costs Charges Bylaw study, 2002 Urban Systems. Contains associated water use estimates for charges
- RDCO Westside Regional Wastewater Treatment Plant Stage 2 Upgrades. Prepared by Design Consulting Service, March 2003

Appendix E

EVALUATION OF AVAILABLE LAND USE DATA

- Calculating Imperviousness for Watersheds and Catchment Areas in the CRD using GIS. Prepared by Shane Ruljancich, April 2001.
- OSLRMP Socio-economic and Environmental Profile Draft. Prepared by J. Paul and Associates et al. April 1998.
- OSLRMP Multiple Accounts Analysis Final. Base Case with LRMP Analysis. Prepared November 2000.
- OSLRMP Approved Plan
- Public Opinion and Attitude Survey. Canada-British Columbia Okanagan Basin Implementation Agreement. Prepared by J.B. Collins, August 1981.
- Results of Survey/Interview of Key Members of the District of Peachland (regarding development of Peachland OCP)
- Position Statement of the Water Supply Association of British Columbia regarding the proposed sale of Crown leases on drinking water reservoirs. June 12, 2002
- The Effects of Recreation of Drinking Water Quality in the Lambly, Kclopwna, and Mission Creek watershed. Kelowna, British Columbia 2000. Prepared by B. Phippen, BWP Consulting, May 2001.
- Draft Guidelines for Water Use Plans. Province of British Columbia, December 1997.
- Central Okanagan Year 2003 Population
- Summary Statistics for District #23: RDCO (births, deaths, natural increase, net migration, growth rate, population, density, median age, gender ratio, household projections, 1985 – 2030
- RDCO Population and Employment projections - 2018 Final Report. Urban Systems, 1999.
- City of Kelowna website - Environmental Indicators Report - Drinking Water
- District of Peachland Healthy Communities Initiative Report. Prepared by UrbanSystems, 1993.
- Map showing Water Improvement and Irrigation Districts in RDCO
- Westside Regional Sanitary Sewer System
- District of Peachland Zoning Bylaw map, 1996.
- Westside Official Community Plan, 1999 - includes future land use map
- Lakeview Official Community Plan, includes map of future land use
- Westbank Official Community Plan, includes land use map
- RDCO Subdivision and Development Servicing Bylaw, 1996.
- Foreshore Plan, RDCO, June 1990. Prepared by Rolf Windels.
- RDCO Regional Growth Strategy Water Resources Discussion Paper - Planning for the Future
- District of Peachland Official Community Plan, includes map of land use
- RDCO Growth Management Strategy Aggregate Supply and Demand Study, (EBA, 2000), includes maps of aggregate potential and locations of quarries, pits, etc.
- RDCO Zoning Bylaw #871 (and associated digital map)

Table E1. Data Required for Urban Land Use

Digital land use maps				
Data	Required	Actual	Surrogate	Comment
Detached housing	current and future areas with associated density	None	Community build-out map	The community build-out map provides current (2001) and projected (2020) number of households, but does not provide breakdown by housing type
Attached housing – medium density (townhouses)				
Attached housing – high density (apartment buildings)				
Commercial and industrial by activity (lumber mills, food processing and packing, shopping malls, etc)	current and future areas with associated density	None	Population and Employment Projections - 2018	RDCO Population and Employment Projections - 2018. Does not cover Peachland
Agricultural (by crop and irrigation method)	current and future areas with associated crop type and irrigation method	Map received from Ag. Canada		

Table E2. Data Required for Development Form

Development Form Statistics				
Data	Required	Actual	Surrogate	Comment
Impervious surface estimate (by development type, includes parks and undeveloped)	current and future land use by development type	RDCO DDC report impervious factors, no land use mapping by housing type	Community build-out map, RDCO Population and Employment Projections - 2018	Possible to use community build-out map and make some assumptions regarding mix of development types. and adjust using the Employment projections data

Table E3. Data Required for Resource Land Use

Digital resource use maps				
Data	Required	Actual	Surrogate	Comment
Forestry	current forested areas and long term forest plans	FC1 coverage, IWAP reports, 2002 Final Forest Development Plan	None available	FC1 age classes could be used to infer where future logging is most likely; however data preparation time is not in the scope of this project. IWAPs give indication of current condition ie ECA, road density etc. but no future beyond 5 year plans. 2002 Final Future Development Plan shows recent past and future logging, although orthophotographs indicate some older blocks not on DP.
Mining	current and future mining activities	Current mineral tenures. RDCO Aggregate Supply and Demand Study	none required	Mineral tenure maps show possible mineral exploration, not actual or future. Investigating the details of each mineral tenure in the TLU is not in project scope. RDCO Aggregate Study shows eurrent gravel pits and areas of potential for future development, hard copy maps only.
Recreation	Current and future recreation	RDCO rec and tourism study showing current use areas and facilities, some attributes missing	OSLRMP RMZ indicates possible areas of future recreation	OSLRMP is strategic policy and does not indicate actual future use
Tourism	Current and future tourism	RDCO rec and tourism study showing current use areas and facilities, some attributes missing	OSLRMP RMZ shows possible areas of future tourism	OSLRMP is strategic policy and does not indicate actual future use
Range	Current and future range tenures	current range tenures, don't have AUMs	current range tenures, don't have AUMs	

Table E4. Required Data for Water Consumption

Water use statistics				
Data	Required	Actual	Surrogate	Comment
Detached housing	Average consumption per unit or per hectare	None	General consumption for residential users, not specific to housing type other than house and apartment/mobile home. Good data from Lakeview and Westbank Irrigation Districts	Useful data on current consumption
Attached housing – medium density				
Attached housing - high density				
Commercial and industrial activities				
Agriculture (by crop and irrigation method)	Average consumption by crop and irrigation method	Map and data received from Ag. Canada	Estimates from Lakeview and Westbank Irrigation Districts	
Resource uses – forestry, mining, tourism and recreation, range	Average consumption	None	None	Descriptive analysis only

Appendix F

RDCO POPULATION AND DWELLING ESTIMATES

Appendix F. RDCO population and dwelling estimates

Community	Name	Population (2001)	Dwellings (2001)	Population (2020)	Dwellings (2020)	Amended Population (2020)	Amended Dwellings (2020)	Forecast
A	Westside Road	1,336	889	3,695	2,459	2,516	1674.00	residential & resort enclave LUC's
B	Crystal Mtn & Brenda Mine	205	84	200	84	1,629	684.00	no change - rural residential, unless Crystal Mountain development occurs
C	Westlake Rd & West Kelowna Estates	3,033	1,100	4,687	1,700	3,860	1400.00	residential, rural & industrial enclaves
D	Westbank IR10	856	345	5,951	2,150	3,404	1247.50	town centre mixed
E	Shannon Lake	2,660	985	5,090	1,885	5,090	1885.00	low density residential & rural enclaves
F	Lakeview	6,948	2,643	8,262	3,143	8,262	3143.00	residential & agriculture mix
G	Smith Creek	1,334	466	4,197	1,466	4,197	1466.00	low density residential & rural enclaves
H	Upper Glenrosa	977	341	5,270	1,841	3,123	1091.05	low density residential & rural enclaves
I	Westbank IR9	5,022	2,291	9,777	4,096	9,777	4096.00	residential & highway commercial
J	Lower Glenrosa	4,976	1,637	4,976	1,637	4,976	1637.00	no change - low density residential
K	Westbank North	2,025	814	3,020	1,214	3,020	1214.00	residential, town centre & agricultural
L	Trepanier	109	38	100	38	100	38.00	no change - rural residential
M	Goats Peak & Gellatly	2,202	1,098	5,210	2,598	3,706	1848.00	town centre mixed, residential, agriculture
N	Peachland	4,654	2,073	7,900	3,324	6,277	2698.50	mixed town center

Source: RDCO (2003b)

Appendix G

SUMMARY OF WELL DATA FOR TREPANIER LANDSCAPE UNIT

Appendix G. Summary of well data for Trepanier Landscape Unit.

Land District	Well Tag Number	District Lot	BCGS Mapsheet	Street Name	Site Area	Reported Yield (gpm)
40	<u>118</u>	434	082E083131	BOUCHERIE RD	WESTBANK	95
40	<u>158</u>	3190	082E082233	LAST MTN RD	WESTBANK	4
40	<u>184</u>	2602	082E082424	2030 SHANNON LK RD	WESTBANK	7
40	<u>185</u>	5060	082E082242	CARRALL RD	WESTBANK	4
40	<u>243</u>	3484	082E082232	WESTBANK	WESTBANK	4
40	<u>248</u>	487	082E082222	WESTBANK	WESTBANK	30
40	<u>283</u>		082E083341	WESTSIDE	WESTSIDE	9
40	<u>5150</u>	806	082E082243	WESTBANK	WESTBANK	0
40	<u>5201</u>	434	082E083131	KELOWNA	KELOWNA	0
40	<u>5204</u>	434	082E083131	1470 WATER ST KELOWNA	KELOWNA	0
40	<u>16259</u>	1256	082E082232	WESTBANK	WESTBANK	0
40	<u>17248</u>	3189	082E082232	WESTBANK	WESTBANK	0
40	<u>17478</u>		082E082222	GELLATLY ROAD RR 1 WESTBANK	WESTBANK	0
40	<u>17489</u>		082E082222	GELLTLY ROAD WESTBANK	WESTBANK	0
40	<u>19178</u>		082E083131	WESTBANK	WESTBANK	0
40	<u>19180</u>		082E083341			0
40	<u>19210</u>		082E083343			0
40	<u>19211</u>		082E083343			0
40	<u>20378</u>	507	082E083311	WESTBANK	WESTBANK	0
40	<u>20737</u>		082E083314	RR 1 WESTBANK	WESTBANK	50
40	<u>20765</u>	505	082E083314	WESTBANK	WESTBANK	15
40	<u>21408</u>		082E083313	WESTBANK	WESTBANK	20
40	<u>25834</u>	220	082E072342	PEACHLAND	PEACHLAND	0
40	<u>25923</u>	3188	082E082241	BOX 219 WESTBANK	WESTBANK	2
40	<u>28055</u>		082E083311	RR 6 KELOWNA	KELOWNA	150
40	<u>29381</u>	2599	082E082422		WESTBANK	300
40	<u>30116</u>	686	082E093121	HALL RD	KELOWNA	0
40	<u>30341</u>		082E093142	820 GUY RD	KELOWNA	0
40	<u>31015</u>	2601	082E082422		WESTBANK	0
40	<u>31267</u>	2602	082E083313	SHANNON LAKE RD.	WESTBANK	2
40	<u>31361</u>		082E083311	WESTBANK	WESTBANK	80
40	<u>31815</u>	1174	082E072344	COLDHAM RD PEACHLAND	PEACHLAND	15
40	<u>32416</u>	1174	082E072344	321 ROBIN WAY KELOWNA	KELOWNA	40
40	<u>32592</u>	434	082E083131	RR 1 BUICHERIE RD		40
40	<u>32840</u>	3483	082E082233	1016 RAYMER AVE KELOWNA	KELOWNA	5
40	<u>33214</u>		082E083311	210 3304 32 AVE VERNON	VERNON	144
40	<u>33321</u>	2602	082E083313	1562 LAMBERT AVE KELOWNA	KELOWNA	75
40	<u>33613</u>	2926	082E093144	WESTSIDE RD	KELOWNA	2
40	<u>34106</u>	2186	082E093433	WEST SIDE ROAD	KELOWNA	7
40	<u>34222</u>	539	082E093142	WESTSIDE RD	WESTBANK	1
40	<u>34490</u>	2601	082E082422	LAKE RD	SHANNON LAKE	2
40	<u>34499</u>	2044	082E083133	BOX 10 JENNENS RD WESTBANK	WESTBANK	0
40	<u>34500</u>	2044	082E083133	RR 1 WESTBANK	WESTBANK	0
40	<u>34576</u>	5070	082E082242	GOLDEN ACRES LTD WESTBANK	WESTBANK	32
40	<u>35103</u>	3187	082E082223	WESTBANK	WESTBANK	5
40	<u>35162</u>	3483	082E082231	RR 2 PRESTON RD WESTBANK	WESTBANK	0
40	<u>35665</u>	3483	082E082233	4TH AVE & SMID RD WESTBANK	WESTBANK	4
40	<u>36134</u>	2926	082E093144	WESTSIDE RD	WESTBANK	8

Land District	Well Tag Number	District Lot	BCGS Mapsheet	Street Name	Site Area	Reported Yield (gpm)
40	36223	5071	082E082224	1037 CALMELS CRES KELOWNA	KELOWNA	100
40	37259	2600	082E082422	SHANNON LK RD WESTBANK	WESTBANK	6
40	37516	2683	082E083313	907 ETHEL ST KELOWNA	KELOWNA	50
40	39502	5072	082E082242	WEST SIDE WESTBANK	WESTBANK	20
40	41320		082E082244		WESTBANK	0
40	41812		082E083133	WESTBANK	WESTBANK	0
40	43712	2599	082E082422		WESTBANK	30
40	44731	3190	082E082233			8
40	44802	2926	082E093144	BEAR LAKE OFF WESTSIDE ROAD	KELOWNA	40
40	45982	3484	082E082231	TURNBULL RD.	WESTBANK	0
40	46018	3483	082E082231	NEW EDEN FARM WESTBANK	WESTBANK	1
40	46036	3190	082E082233		WESTBANK	1
40	46047	3483	082E082231	BOX 504 WESTBANK	WESTBANK	30
40	46060	3483	082E082233	RR 2 MARRIOTH RD HEFFLEY CREEK	HEFFLEY CREEK	0
40	47407	3189	082E082232	WESTBANK	WESTBANK	9
40	47434	3483	082E082233	GILL RD WESTBANK	WESTBANK	5
40	47769	2599	082E082422	S.W. CORNER OF SHANNON LAKE	WESTBANK	20
40	48633		082E083133			4
40	48687		082E082244	SHANNON LK RD		45
40	48727	220	082E072342	BOX 170 SUMMERLAND	SUMMERLAND	300
40	48887	3484	082E082231	WESTBANK	WESTBANK	2
40	49440	3864	082E082231	WESTBANK	WESTBANK	2
40	49504	2601	082E083311	1870 HWY 97 S		3
40	49561	2601	082E083311	KELOWNA	KELOWNA	2
40	49596	2601	082E083311	KELOWNA	KELOWNA	18
40	49714	3493	082E082212	WESTBANK	WESTBANK	0
40	49961		082E082244	WESTBANK	WESTBANK	0
40	50055		082E082244	WESTBANK	WESTBANK	6
40	50065		082E082244	WESTBANK	WESTBANK	0
40	50076		082E083131	KELOWNA	KELOWNA	0
40	50119		082E082244	WESTBANK	WESTBANK	0
40	50196	2188	082E083331	WESTBANK	WESTBANK	0
40	50225	3484	082E082232	WESTBANK	WESTBANK	5
40	50236	3189	082E082234	WESTBANK	WESTBANK	2
40	50323	3111	082E093141		WESTBANK	0
40	51461	449	082E072433	PEACHLAND	PEACHLAND	4
40	51464	487	082E082221	WHITWORTH RD WESTBANK	WESTBANK	50
40	51466	3484	082E082231	WESTBANK	WESTBANK	9
40	51467	3484	082E082231	WESTBANK	WESTBANK	6
40	52442	2601	082E083311	WESTBANK	WESTBANK	4
40	52850	2602	082E083313	WESTBANK	WESTBANK	4
40	53024	3190	082E082234	WESTBANK	WESTBANK	1
40	53497	2601	082E082422	WESTBANK	WESTBANK	100
40	53883	3483	082E082233	4693 RAYMOR WESTBANK	WESTBANK	7
40	53940	3484	082E082232	WESTBANK	WESTBANK	0
40	54001		082E083133	GRIZZLY RD	WESTBANK I R #9	10
40	54499	2044	082E082244	OLD OKANAGAN ROAD KELOWNA	KELOWNA	2
40	54500	2044	082E082244	OLD OKANAGAN ROAD KELOWNA	KELOWNA	8
40	54532	2044	082E083311	OLD OK RD KELOWNA	KELOWNA	1

Land District	Well Tag Number	District Lot	BCGS Mapsheet	Street Name	Site Area	Reported Yield (gpm)
40	54564	3484	082E082232	WESTBANK	WESTBANK	17
40	54573		082E083311	DAJMBLER DR & HWY 97	WESTBANK	18
40	54647	2044	082E082422	OLD OKANAGAN RD KELOWNA	KELOWNA	0
40	54701	3188	082E082241	GELLATLY RD.& HWY 97	WESTBANK	30
40	54709		082E082244	WESTBANK	WESTBANK	1
40	54803	2602	082E083313	SHANNON LK RD WESTBANK	WESTBANK	2
40	54807	2602	082E082424	SHANNON LK RD WESTBANK	WESTBANK	15
40	54953	523	082E083132	GREEN BAY RD		10
40	55019	2599	082E082422	SHANNON LK RD WESTBANK	WESTBANK	20
40	55053	3485	082E082421	ASQUITH RD	WESTBANK	1
40	55063	3485	082E082421	ASQUITH RD	WESTBANK	0
40	55700	487	082E082221	WESTBANK	WESTBANK	25
40	55859	487	082E082221	GEORGE COURT RD.	WESTBANK	40
40	55874	487	082E082221	WHITWORTH RD	WESTBANK	40
40	55875	487	082E082221	WHITWORTH RD.	WESTBANK	40
40	56047	2600	082E082422	WESTBANK	WESTBANK	30
40	56113	3190	082E082234	GLENROSA RD	WESTBANK	3
40	56125	2600	082E082422	WESTBANK	WESTBANK	25
40	56126	2600	082E082422	WESTBANK	WESTBANK	50
40	56134	2600	082E082422	WESTBANK	WESTBANK	40
40	56138	2600	082E082422	WESTBANK	WESTBANK	40
40	56228	3485	082E082422	ASQUITH RD	WESTBANK	15
40	56361	524	082E082114	4363 MAXWELL ROAD	PEACHLAND	0
40	56651	3484	082E082232	GATES RD WESTBANK	WESTBANK	2
40	56678	3190	082E082233	CORINE RD	WESTBANK	2
40	56682	3190	082E082233	PRESTON RD	WESTBANK	2
40	56825	434	082E083131	1470 WATER ST KELOWNA	KELOWNA	0
40	56826	434	082E083131	1470 WATER ST KELOWNA	KELOWNA	0
40	56827	434	082E083131	1470 WATER ST KELOWNA	KELOWNA	0
40	56828	434	082E083131	1470 WATER ST KELOWNA	KELOWNA	0
40	56829	434	082E083131	1470 WATER ST KELOWNA	KELOWNA	0
40	56858	487	082E082221	2517 WHITWORTH RD.	WESTBANK	16
40	56859	487	082E082221	WHITWORTH RD.	WESTBANK	140
40	56926	2602	082E083313	SHANNON LAKE RD	WESTBANK	4
40	56981	3483	082E082231	GILL & TURNBULL RDS	WESTBANK	70
40	56998	3485	082E082421	ASQUITH RD	WESTBANK	0
40	57005	3485	082E082421	ASQUITH RD	WESTBANK	1
40	57014	3485	082E082421	ASQUITH RD	WESTBANK	3
40	57018	487	082E082223	GELLATY RD	WESTBANK	30
40	57178	3864	082E082231	PRESTON RD	WESTBANK	1
40	57207	1274	082E072311	5101 LAW ST	PEACHLAND	30
40	57239	3745	082E093433	WESTSIDE RD	WILSONS LANDING	25
40	57299	3745	082E093433	2326 WESTSIDE RD	KELOWNA	20
40	57334	3104	082E093123	ROSE VALLEY RD	WESTSIDE	1
40	57344	487	082E082221	WHITWORTH RD.	WESTBANK	60
40	57465	487	082E082221	GEORGE COURT,WHITWORTH RD.	WESTBANK	50
40	57553	3104	082E093123	ROSE VALLEY RD	WESTSIDE	2
40	57646	487	082E082221	WHITWORTH RD	WESTBANK	70
40	57834	3483	082E082233	TURNBULL RD	GLENROSA	2

Land District	Well Tag Number	District Lot	BCGS Mapsheet	Street Name	Site Area	Reported Yield (gpm)
40	57838	2602	082E082424	SHANNON LK RD	WESTBANK	30
40	57849	2683	082E083313	BARTLEY RD	WESTBANK	1
40	57860	487	082E082221	WHITWORTH RD.	WESTBANK	60
40	57883	3484	082E082232	MCIVOR RD	GLENROSA/WESTBANK	1
40	58016	3483	082E082231	GILL RD	WESTBANK	60
40	58041	487	082E082221	WHITWORTH RD	WESTBANK	80
40	58049	3191	082E082233	LAST MTN RD	WESTBANK	2
40	58178	2599	082E082244	2266 WESTVILLE PLACE	WESTBANK /KELOWNA	5
40	58199	3190	082E082233	TURNBULL RD	WESTBANK	2
40	58200	3190	082E082233	TURNBULL RD	WESTBANK	2
40	58207	487	082E082221	GEORGE COURT	WESTBANK	40
40	58306	3191	082E082233	GLENROSA RD	WESTBANK	8
40	58326	3191	082E082233	PRESTON RD	WESTBANK	15
40	58389	3483	082E082231	MCKELLAR RD	WESTBANK	0
40	58407	2188	082E083331	1901 BARTLEY RD	WESTBANK	1
40	58466	3483	082E082231	TURNBULL & EMERALD RDS	WESTBANK	2
40	58496	3745	082E083133	2307 WESTSIDE PL	WILSONS LANDING	80
40	58530	3483	082E082233	MCKELLAR RD	WESTBANK	1
40	58531	3191	082E082233	PRESTON RD	WESTBANK	2
40	58552	507	082E082311	BARTLEY RD	WESTBANK	75
40	58628	4056	082E082214	HWY 97	WESTBANK	1
40	58692	487	082E082221	GELLATLY RD	WESTBANK	40
40	58693	487	082E082222	GELLATLY RD	WESTBANK	40
40	58714	2186	082E091333	BKOWSE RD	WESTBANK/OK LK	3
40	58752	3190	082E082233	PRESTON RD	WESTBANK	4
40	58811		082E082311	HWY 97	WESTBANK	48
40	58812	487	082E082224	4229 GELLATLY RD.	WESTBANK	60
40	58813		082E082311	HWY 97 SOUTH	KELOWNA	60
40	58818		082E082311	WESTVIEW VILLAGE	WESTBANK	100
40	58819		082E082311	HWY 97	WESTBANK	0
40	58820		082E082311	HWY 97	WESTBANK	0
40	58822		082E082333	HWY 97	WESTBANK	0
40	58835		082E082311	HWY 97 WESTBANK	WESTBANK	60
40	58879	3189	082E082232	MCIVER RD. / WESTBANK	KELOWNA	35
40	58890	2602	082E083313	SHANNON LAKE RD	WESTBANK	3
40	58916	2683	082E083313	BARTLEY RD.	WESTSIDE	0
40	58917		082E082311	HWY 97	WESTBANK	50
40	58927	490	082E082341	HWY 97	PEACHLAND	5
40	58935	2601	082E082122	2781 DAIMLER RD	WESTBANK	75
40	58968	487	082E082222	WHITWORTH RD.	WESTBANK	90
40	58969	487	082E082222	GELLATLY RD	WESTBANK	70
40	59000	3190	082E082233	MCKELLAR RD	WESTBANK	1
40	59001	3483	082E082234	FINTON RD	WESTBANK	12
40	59057	3484	082E082231	TURNBULL RD	WESTBANK	1
40	59074	3745	082E083133	WESTSIDE PLACE	WESTBANK	16
40	59228	4056	082E082214	HWY 97	WESTBANK/KELOWNA	1
40	59809	3484	082E082232	GAMES RD.	WESTBANK	1

Land District	Well Tag Number	District Lot	BCGS Mapsheet	Street Name	Site Area	Reported Yield (gpm)
40	61553	1380	082F082114	TREPANIER BENCH ROAD	PEACHLAND	2
40	61555	1380	082E082114	PARADISE VALLEY ROAD	PEACHLAND	10
40	61561	524	082E082114	MAXWELL ROAD	PEACHLAND	30
40	61567	524	082E082114	MAXWELL ROAD	PEACHLAND	30
40	62023	3104	082E093123	ROSE VALLEY RD OFF BEAR CK RD	KELOWNA	10
40	62024	3104	082E093123	DOUMAC RD OFF ROSE VALLEY RD	WESTSIDE/KELOWNA	0
40	62025	3104	082E093123	ROSE VALLEY ROAD	KELOWNA	35
40	62026	4054	082E093123	ROSE VALLEY ROAD	KELOWNA	20
40	62027	2176	082E093134	551 BEAR CREEK ROAD	KELOWNA	1.5
40	62028	539	082E093142		BEAR CREEK	656
40	62029	2176	082E093143	BEAR CREEK ROAD, TOWNSHIP K	KELOWNA	0
40	62030	2176	082E093143		WESTBANK	1
40	62031	2176	082E093143	BEAR CREEK ROAD	WESTSIDE/KELOWNA	6
40	62032	2176	082E093143	BEAR CREEK ROAD	WESTSIDE/KELOWNA	4
40	62036	2186	082E093433	2058 BROWSE ROAD	KELOWNA	0
40	62037	2186	082E093433	2058 BROWSE ROAD	KELOWNA	6
40	62038	2186	082E093433	WILSONS LDG, END BANCROFT ROAD	KELOWNA	0
40	62039	2186	082E093433	WESTSIDE ROAD, WILSONS LANDING	KELOWNA	1
40	62040	2186	082E093433	BROWSE ROAD	KELOWNA	18
40	62146	3842	082L013142	FAIRBRIDGE ROAD	FINTRY	0
40	62587	1380	082F082114	PARADISE VALLEY DRIVE	PEACHLAND	15
40	62589	3862	082E082114	MAXWELL ROAD	PEACHLAND	15
40	62897	524	082F082114	MAXWELL	PEACHLAND, BC	11
40	75675	524	082F082114	4375 MAXWELL ROAD	PEACHLAND	15
TOTAL:						5190

Appendix H

CURRENT AND FUTURE WATER USE BY LAND USE

SUMMARY OF ESTIMATED CURRENT (2001) AND FUTURE (2020 AND 2050) RESIDENTIAL, COMMERCIAL/INDUSTRIAL, AND AGRICULTURAL WATER USE IN THE TLU SCENARIOS 1.1 & 1.2

ESTIMATED AVERAGE ANNUAL WATER USE BY LAND USE (m³)

Community	2001	2001	2001	2001	2001	2020	2020	2020	2020	2020	2050	2050	2050	2050	2050
	Residential	Commercial / Industrial	Agricultural	Distribution System Leakage	TOTAL	Residential	Commercial / Industrial	Agricultural	Distribution System Leakage	TOTAL	Residential	Commercial / Industrial	Agricultural	Distribution System Leakage	TOTAL
A Rural Westside Road	375,261	0	241,968	30,861	648,091	706,704	0	241,968	47,434	996,106	1,230,035	0	241,968	73,600	1,545,604
B Crystal Mtn & Brenda Mines	57,581	0	141,045	9,931	208,557	457,439	0	141,045	29,924	628,408	1,088,794	0	141,045	61,492	1,291,331
C Westlake Road & West Kelowna Estates	851,921	911,614	458,175	111,085	2,332,795	1,084,212	1,889,078	458,175	171,573	3,603,038	1,450,988	1,888,996	458,175	189,908	3,988,066
D Westbank I.R. #10	240,437	3,482	2,387	12,315	258,621	955,989	66,924	2,387	51,265	1,076,565	2,085,808	68,169	2,387	107,818	2,264,181
E Shannon Lake	747,151	241,941	1,807,053	139,807	2,935,953	1,429,700	443,378	1,807,053	184,007	3,864,137	2,507,407	443,339	1,807,053	237,890	4,995,689
F Lakeview	1,951,582	174,158	1,575,308	185,052	3,886,100	2,320,664	412,517	1,575,308	215,424	4,523,913	2,903,424	412,712	1,575,308	244,572	5,136,016
G Smith Creek	374,699	0	370,417	37,256	782,372	1,178,870	2,504	370,417	77,590	1,629,380	2,448,614	2,503	370,417	141,077	2,962,610
H Upper Glenrosa	274,283	1,040,239	629,560	97,204	2,041,286	877,327	1,039,222	629,560	127,306	2,673,416	1,829,502	1,038,982	629,560	174,902	3,672,947
I Westbank I.R. #9	1,410,599	150,372	1,083,956	132,246	2,777,174	2,746,203	391,595	1,083,956	211,088	4,432,842	4,855,050	408,518	1,083,956	317,376	6,664,901
J Lower Glenrosa	1,397,679	14,345	147,185	77,960	1,637,170	1,397,679	25,725	147,185	78,529	1,649,118	1,397,679	25,728	147,185	78,530	1,649,122
K Westbank North	568,790	180,359	562,247	65,570	1,376,965	848,270	339,060	562,247	87,479	1,837,055	1,289,553	339,277	562,247	109,554	2,300,630
L Trepanier	30,476	0	166,106	9,829	206,411	28,088	0	166,106	9,710	203,904	24,319	0	166,106	9,521	199,945
M Goats Peak & Gellatly	618,507	84,014	668,970	68,575	1,440,065	1,040,984	263,913	668,970	98,693	2,072,560	1,708,054	264,255	668,970	132,064	2,773,343
N Peachland	1,307,234	2,126,355	439,237	193,641	4,066,468	1,763,109	2,931,658	439,237	256,700	5,390,704	2,482,911	4,208,531	439,237	356,534	7,487,213
Total	10,206,201	4,926,878	8,293,613	1,171,335	24,598,026	16,835,238	7,805,574	8,293,613	1,646,721	34,581,146	27,302,137	9,101,009	8,293,613	2,234,838	46,931,597

PERCENT CHANGE IN WATER USE WITH REFERENCE TO 2001

Community	2001	2001	2001	2001	2001	2020	2020	2020	2020	2020	2050	2050	2050	2050	2050
	Residential	Commercial / Industrial	Agricultural	Distribution System Leakage	TOTAL	Residential	Commercial / Industrial	Agricultural	Distribution System Leakage	TOTAL	Residential	Commercial / Industrial	Agricultural	Distribution System Leakage	TOTAL
A Rural Westside Road						88	-	0	54	54	228	-	0	138	138
B Crystal Mtn & Brenda Mines						694	-	0	201	201	1791	-	0	519	519
C Westlake Road & West Kelowna Estates						27	107	0	54	54	70	107	0	71	71
D Westbank I.R. #10						298	1822	0	316	316	768	1858	0	775	775
E Shannon Lake						91	83	0	32	32	236	83	0	70	70
F Lakeview						19	137	0	16	16	49	137	0	32	32
G Smith Creek						215	-	0	108	108	553	-	0	279	279
H Upper Glenrosa						220	0	0	31	31	567	0	0	80	80
I Westbank I.R. #9						95	160	0	60	60	244	172	0	140	140
J Lower Glenrosa						0	79	0	1	1	0	79	0	1	1
K Westbank North						49	88	0	33	33	127	88	0	67	67
L Trepanier						-8	-	0	-1	-1	-20	-	0	-3	-3
M Goats Peak & Gellatly						68	214	0	44	44	176	215	0	93	93
N Peachland						35	38	0	33	33	90	98	0	84	84
Total						65	58	0	41	41	168	85	0	91	91

SUMMARY OF ESTIMATED CURRENT (2001) AND FUTURE (2020 AND 2050) RESIDENTIAL, COMMERCIAL/INDUSTRIAL, AND AGRICULTURAL WATER USE IN THE TLU SCENARIOS 2.1 & 2.2

ESTIMATED AVERAGE ANNUAL WATER USE BY LAND USE (m³)

Community	2001	2001	2001	2001	2001	2020	2020	2020	2020	2020	2050	2050	2050	2050	2050
	Residential	Commercial / Industrial	Agricultural	Distribution System Leakage	TOTAL	Residential	Commercial / Industrial	Agricultural	Distribution System Leakage	TOTAL	Residential	Commercial / Industrial	Agricultural	Distribution System Leakage	TOTAL
A Rural Westside Road	375,261	0	241,968	30,861	648,091	767,611	0	278,230	52,292	1,098,133	1,440,498	0	306,566	87,353	1,834,417
B Crystal Mtn & Brenda Mines	57,581	0	141,045	9,931	208,557	496,864	0	165,399	33,113	695,376	1,275,090	0	185,271	73,018	1,533,378
C Westlake Road & West Kelowna Estates	851,921	911,614	458,175	111,085	2,332,795	1,177,655	2,051,888	534,609	188,208	3,952,360	1,699,255	2,212,208	600,422	225,594	4,737,480
D Westbank I.R. #10	240,437	3,482	2,387	12,315	258,621	1,038,381	72,692	2,802	55,694	1,169,568	2,442,695	79,832	3,150	126,284	2,651,961
E Shannon Lake	747,151	241,941	1,807,053	139,807	2,935,953	1,552,918	481,590	2,058,946	204,673	4,298,127	2,936,431	519,195	2,278,218	286,692	6,020,536
F Lakeview	1,951,582	174,158	1,575,308	185,052	3,886,100	2,520,670	448,070	1,869,803	241,927	5,080,470	3,400,208	483,328	2,118,701	300,112	6,302,348
G Smith Creek	374,699	0	370,417	37,256	782,372	1,280,471	2,720	438,453	86,082	1,807,726	2,867,578	2,932	495,536	168,302	3,534,347
H Upper Glenrosa	274,283	1,040,239	629,560	97,204	2,041,286	952,940	1,128,788	719,912	140,082	2,941,722	2,142,534	1,216,755	793,417	207,635	4,360,341
I Westbank I.R. #9	1,410,599	150,372	1,083,956	132,246	2,777,174	2,982,884	425,345	1,225,912	231,707	4,865,849	5,685,762	478,417	1,360,728	376,245	7,901,152
J Lower Glenrosa	1,397,679	14,345	147,185	77,960	1,637,170	1,518,138	27,942	169,707	85,789	1,801,575	1,636,825	30,131	187,171	92,706	1,946,833
K Westbank North	568,790	180,359	562,247	65,570	1,376,965	921,378	368,282	666,943	97,830	2,054,432	1,510,199	397,328	755,905	133,172	2,796,604
L Trepanier	30,476	0	166,106	9,829	206,411	30,509	0	191,325	11,092	232,926	28,480	0	210,796	11,964	251,249
M Goats Peak & Gellatly	618,507	84,014	668,970	68,575	1,440,065	1,130,701	286,658	789,211	110,329	2,316,899	2,000,307	309,469	889,452	159,961	3,359,189
N Peachland	1,307,234	2,126,355	439,237	193,641	4,066,468	1,915,062	3,184,323	515,182	280,728	5,895,296	2,907,744	4,928,621	580,875	420,862	8,838,102
Total	10,206,201	4,926,878	8,293,613	1,171,335	24,598,026	18,286,183	8,478,298	9,626,434	1,819,546	38,210,460	31,973,606	10,658,216	10,766,207	2,669,901	56,067,929

PERCENT CHANGE IN WATER USE WITH REFERENCE TO 2001

Community	2001	2001	2001	2001	2001	2020	2020	2020	2020	2020	2050	2050	2050	2050	2050
	Residential	Commercial / Industrial	Agricultural	Distribution System Leakage	TOTAL	Residential	Commercial / Industrial	Agricultural	Distribution System Leakage	TOTAL	Residential	Commercial / Industrial	Agricultural	Distribution System Leakage	TOTAL
A Rural Westside Road						105	-	15	69	69	284	-	27	183	183
B Crystal Mtn & Brenda Mines						763	-	17	233	233	2114	-	31	635	635
C Westlake Road & West Kelowna Estates						38	125	17	69	69	99	143	31	103	103
D Westbank I.R. #10						332	1987	17	352	352	916	2193	32	925	925
E Shannon Lake						108	99	14	46	46	293	115	26	105	105
F Lakeview						29	157	19	31	31	74	178	34	62	62
G Smith Creek						242	-	18	131	131	665	-	34	352	352
H Upper Glenrosa						247	9	14	44	44	681	17	26	114	114
I Westbank I.R. #9						111	183	13	75	75	303	218	26	185	185
J Lower Glenrosa						9	95	15	10	10	17	110	27	19	19
K Westbank North						62	104	19	49	49	166	120	34	103	103
L Trepanier						0	-	15	13	13	-7	-	27	22	22
M Goats Peak & Gellatly						83	241	18	61	61	223	268	33	133	133
N Peachland						46	50	17	45	45	122	132	32	117	117
Total						79	72	16	55	55	213	116	30	128	128

ESTIMATED FUTURE (2020) RESIDENTIAL, COMMERCIAL/INDUSTRIAL, AND AGRICULTURAL WATER USE IN THE TLU

ESTIMATED FUTURE (2020) WATER USE (Scenario L1)

Community	Population	Number of Dwellings	Persons per Dwelling	Residential Water Use										Commercial / Industrial Water Use										Agricultural Water Use	Distribution System Leakage	TOTAL ANNUAL WATER DEMAND (m ³)							
				Residential					Finance, Insurance, Real Estate					Institutional					Retail Wholesale								Resource, Manufacturing, Construction, Utilities					Golf Courses	
				Average Daily Water Use (litres): Residential	Average Annual Water Use (m ³): Residential	Number of Employees	Square Footage	Equivalent Number of Dwellings	Average Daily Water Use (litres): Finance, Insurance, Real Estate	Average Annual Water Use (m ³): Finance, Insurance, Real Estate	Number of Employees	Square Footage	Equivalent Number of Dwellings	Average Daily Water Use (litres): Institutional	Average Annual Water Use (m ³): Institutional	Number of Employees	Square Footage	Equivalent Number of Dwellings	Average Daily Water Use (litres): Retail Wholesale	Average Annual Water Use (m ³): Retail Wholesale	Number of Employees	Square Footage	Equivalent Number of Dwellings				Average Daily Water Use (litres): Resource, Manufacturing, Construction, Utilities	Average Annual Water Use (m ³): Resource, Manufacturing, Construction, Utilities	Number of Employees	Square Footage	Equivalent Number of Dwellings	Average Annual Water Use (m ³): Golf Courses	Average Annual Water Use (m ³): Agricultural
Source/Assumptions:	RDCO (2003b)	RDCO (2003b)		- Population * 789 L/day	= (Average Daily Water Use * 365 days/year) / (1000 L/m ³)	Urban Systems (1999)	Assume 170 sq. ft. per employ (Urban Systems, 1999)	Assume 1000 sq. ft. = 0.38 single family residential units (Urban Systems, 2002)	= Equivalent Number of Dwellings * Persons per Dwelling * 789 L/day	= (Average Daily Water Use * 365 days/year) / (1000 L/m ³)	Urban Systems (1999)	Assume 200 sq. ft. per employ (Urban Systems, 1999)	Assume 1000 sq. ft. = 0.38 single family residential units (Urban Systems, 2002)	= Equivalent Number of Dwellings * Persons per Dwelling * 789 L/day	= (Average Daily Water Use * 365 days/year) / (1000 L/m ³)	Urban Systems (1999)	Assume 1,425 sq. ft. per employ (Urban Systems, 1999)	Assume 1000 sq. ft. = 0.38 single family residential units (Urban Systems, 2002)	= Equivalent Number of Dwellings * Persons per Dwelling * 789 L/day	= (Average Daily Water Use * 365 days/year) / (1000 L/m ³)	Urban Systems (1999)	Assume 1,800 sq. ft. per employ (Urban Systems, 1999)	Assume 1000 sq. ft. = 2.8 single family residential units (Urban Systems, 2002)	= Equivalent Number of Dwellings * Persons per Dwelling * 789 L/day	= Equivalent Number of Dwellings * Persons per Dwelling * 789 L/day	Based on crop demand and land use data from Agriculture and Agri-Food Canada	Estimated at 5% of total demand (Earthtech, 2003)						
A Rural Westside Road	2,516	1,674	1.5	1,985,124	706,704	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	241,968	47,434	996,106				
B Crystal Mtn & Brenda Mines	1,629	684	2.4	1,284,242	457,434	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	141,045	26,924	628,408				
C Westlake Road & West Kelowna Estates	3,860	1,400	2.8	3,045,540	1,084,212	254	48,260	18	39,894	14,561	80	16,000	6	13,226	1,828	337	480,225	182	396,976	144,896	431	775,800	2,172	4,725,460	1,724,791	0	458,175	171,573	3,403,838				
D Westbank I.R. #10	3,404	1,247	2.7	2,685,362	955,984	24	4,580	2	3,732	1,362	0	0	0	0	154	219,450	83	179,622	65,502	0	0	0	0	0	0	0	2,387	51,265	1,676,565				
E Shannon Lake	5,091	1,885	2.7	4,016,010	1,429,704	18	3,420	1	2,769	1,011	191	38,209	15	30,923	11,287	121	172,425	66	139,580	49,947	97	174,600	489	1,041,461	380,173	399,000	1,317,653	184,077	3,864,137				
F Lakeview	8,262	3,141	2.6	6,518,718	2,320,664	110	20,900	8	16,480	6,015	239	47,800	18	37,692	15,757	455	648,375	246	511,261	186,110	54	97,200	272	564,751	206,134	0	1,575,508	215,124	4,523,913				
G Smith Creek	4,197	1,467	2.9	3,311,433	1,178,870	0	0	0	0	0	40	8,000	3	6,860	2,544	0	0	0	0	0	0	0	0	0	0	0	0	479,417	77,346	1,629,388			
H Upper Glenora	3,123	1,092	2.9	2,464,402	877,127	0	0	0	0	0	23	4,600	2	3,944	1,440	0	0	0	0	0	250	450,000	1,260	2,843,240	1,037,783	0	629,560	127,306	2,673,416				
I Westbank I.R. #9	9,777	4,091	2.4	7,714,053	2,746,203	130	24,700	9	17,699	6,409	145	29,000	11	20,781	7,585	892	1,271,100	483	910,832	332,154	13	23,400	66	123,552	45,000	404,000	679,956	211,008	4,432,942				
J Lower Glenora	4,976	1,637	3.0	3,926,064	1,397,679	0	0	0	0	0	180	36,000	14	32,812	11,676	29	41,325	16	37,666	15,748	0	0	0	0	0	0	147,183	78,529	1,649,118				
K Westbank North	3,020	1,213	2.5	2,382,780	848,370	578	109,820	42	81,986	29,925	293	58,600	22	43,748	15,948	755	1,075,875	409	803,196	291,167	0	0	0	0	0	0	0	562,247	87,479	1,837,055			
L Trepanier	100	38	2.6	78,900	28,088	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	166,106	9,710	283,904				
M Greats Peak & Gellatly	3,786	1,844	2.0	2,924,113	1,040,984	208	39,520	15	23,816	8,693	44	8,800	3	5,303	1,936	110	156,750	60	94,464	34,479	75	135,000	378	599,466	218,802	0	648,970	58,695	2,672,560				
N Peachland	6,277	2,694	2.3	4,952,553	1,763,109	0	0	0	0	0	2,960	592,000	225	413,560	150,949	570	812,250	309	567,422	207,019	761	1,369,800	3,835	7,050,958	2,571,000	250,000	189,217	259,740	5,390,704				
Total	89,937	34,100		47,389,993	16,835,238	1,322	251,180	95	186,377	68,026	4,195	839,000	319	668,849	222,230	3,423	4,877,778	1,854	3,641,019	1,328,972	1,681	3,025,808	8,472	16,948,888	6,186,344	1,044,000	7,249,613	1,646,721	34,581,146				

Notes:
 Assumed average annual per capita water use 789 L/day
 Assumed average annual water use for golf 10,000 m³/ha

ESTIMATED FUTURE (2050) RESIDENTIAL, COMMERCIAL/INDUSTRIAL, AND AGRICULTURAL WATER USE IN THE TLU

ESTIMATED FUTURE (2050) WATER USE (Scenario L2)

Community	Population	Number of Dwellings	Persons per Dwelling	Residential Water Use		Commercial / Industrial Water Use										Resource, Manufacturing, Construction, Utilities										Agricultural Water Use	Distribution System Leakage	TOTAL ANNUAL WATER DEMAND (m ³)		
				Average Daily Water Use (litres): Residential	Average Annual Water Use (m ³): Residential	Finance, Insurance, Real Estate					Institutional					Retail Wholesale					Golf Courses									
						Number of Employees	Square Footage	Equivalent Number of Dwellings	Average Daily Water Use (litres): Finance, Insurance, Real Estate	Average Annual Water Use (m ³): Finance, Insurance, Real Estate	Number of Employees	Square Footage	Equivalent Number of Dwellings	Average Daily Water Use (litres): Institutional	Average Annual Water Use (m ³): Institutional	Number of Employees	Square Footage	Equivalent Number of Dwellings	Average Daily Water Use (litres): Retail Wholesale	Average Annual Water Use (m ³): Retail Wholesale	Number of Employees	Square Footage	Equivalent Number of Dwellings	Average Daily Water Use (litres): Resource, Manufacturing, Construction, Utilities	Average Annual Water Use (m ³): Resource, Manufacturing, Construction, Utilities				Average Annual Water Use (m ³): Golf Courses	Average Annual Water Use (m ³): Agricultural
				Population * 789 L/day	Average Daily Water Use * 365 days/year / 1000 L/m ³	Urban Systems (1999)	Assume 190 sq. ft. per employee (Urban Systems, 1999)	Assume 1000 sq. ft. = 0.38 residential units (Urban Systems, 2002)	= Equivalent Number of Dwellings * Persons per Dwelling * 789 L/day	= (Average Daily Water Use * 365 days/year) / 1000 L/m ³	Urban Systems (1999)	Assume 200 sq. ft. per employee (Urban Systems, 1999)	Assume 1000 sq. ft. = 0.38 single family residential units (Urban Systems, 2002)	= Equivalent Number of Dwellings * Persons per Dwelling * 789 L/day	= (Average Daily Water Use * 365 days/year) / 1000 L/m ³	Urban Systems (1999)	Assume 1,425 sq. ft. per employee (Urban Systems, 1999)	Assume 1000 sq. ft. = 0.38 single family residential units (Urban Systems, 2002)	= Equivalent Number of Dwellings * Persons per Dwelling * 789 L/day	= (Average Daily Water Use * 365 days/year) / 1000 L/m ³	Urban Systems (1999)	Assume 1,800 sq. ft. per employee (Urban Systems, 1999)	Assume 1000 sq. ft. = 2.8 single family residential units (Urban Systems, 2002)	= Equivalent Number of Dwellings * Persons per Dwelling * 789 L/day	= Equivalent Number of Dwellings * Persons per Dwelling * 789 L/day		Based on crop demand and land use data from Agriculture and Agri-Food Canada	Estimated at 5% of total demand (Earliest, 2003)		
	RDCO (2003b)	RDCO (2003b)																												
A Rural Westside Road	4,379	2,913	1.5	3,455,156	1,270,035	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	241,908	73,600	1,545,604	
B Crystal Mtn & Brenda Mines	3,876	1,632	2.4	3,058,410	1,088,794	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	141,045	61,302	1,291,331	
C Westlake Road & West Kelowna Estates	5,166	1,874	2.8	4,075,808	1,450,988	254	48,260	18	39,892	14,561	80	16,000	6	13,226	4,827	337	480,225	182	396,959	144,890	431	775,800	2,172	4,725,254	1,724,718	0	458,175	189,908	3,988,066	
D Westbank I.R. #10	7,426	2,670	2.8	5,859,010	2,085,808	24	4,560	2	3,802	1,788	0	0	0	0	0	154	219,450	83	182,902	66,781	0	0	0	0	0	0	0	2,387	107,818	2,264,181
E Shannon Lake	8,927	3,307	2.7	7,043,278	2,507,407	18	3,420	1	2,768	1,610	191	38,200	15	30,921	11,286	121	172,425	66	139,568	50,942	97	174,680	489	1,041,369	380,100	190,000	1,417,052	217,890	4,995,609	
F Lakeview	10,337	3,928	2.6	8,155,685	2,903,424	110	20,900	8	16,488	6,418	239	47,800	18	37,709	13,764	455	648,375	246	511,502	186,698	54	97,200	272	565,018	206,231	0	1,575,908	244,572	5,136,816	
G Smith Creek	8,718	3,049	2.9	6,878,128	2,448,614	0	0	0	0	0	23	4,600	2	3,944	1,439	0	0	0	0	0	0	250	450,000	1,260	2,842,583	1,037,541	0	629,560	174,902	3,672,947
H Upper Glenrosa	6,513	2,278	2.9	5,139,050	1,829,502	0	0	0	0	0	180	36,000	14	32,817	11,978	29	41,325	16	37,672	13,750	0	0	0	0	0	0	0	0	0	6,664,901
I Westbank I.R. #9	17,385	6,933	2.5	13,637,782	4,854,050	130	24,700	9	18,464	6,739	145	29,000	11	21,679	7,917	892	1,271,100	483	950,194	316,821	13	23,400	66	138,891	47,045	404,000	679,950	317,170	1,649,122	
J Lower Glenrosa	4,976	1,637	3.0	3,926,064	1,397,679	0	0	0	0	0	180	36,000	14	32,817	11,978	29	41,325	16	37,672	13,750	0	0	0	0	0	0	0	0	0	1,649,122
K Westbank North	4,591	1,843	2.5	3,622,341	1,289,553	578	109,820	42	82,039	29,944	293	58,600	22	43,776	15,978	755	1,075,875	409	803,711	293,354	0	0	0	0	0	0	562,247	109,554	2,300,630	
L Trepanier	87	38	2.3	68,311	24,319	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	199,945
M Goats Peak & Gellatly	6,081	3,021	2.0	4,797,905	1,708,054	208	39,520	15	23,847	8,704	44	8,800	3	5,310	1,938	110	156,750	60	94,586	34,424	75	134,000	378	600,243	219,089	0	668,970	112,064	2,773,343	
N Peachland	8,840	3,675	2.4	6,974,469	2,482,911	0	0	0	0	0	5,360	1,072,000	407	773,198	282,217	870	1,239,750	471	894,191	326,380	1,031	1,855,800	5,196	9,862,832	3,599,934	250,000	189,217	36,514	7,487,213	
Total	97,201	38,797		76,691,397	27,402,137	1,322	251,180	95	187,300	68,365	6,595	1,319,000	501	969,438	353,845	3,723	5,305,275	2,016	4,011,344	1,464,140	1,951	3,511,800	9,833	19,766,189	7,214,659	1,044,080	7,249,613	2,234,838	46,931,597	

Notes:
 Assumed average annual per capita water use: 789 L/day
 Assumed average annual water use for golf courses: 10,000 m³/ha

ESTIMATED FUTURE (2050) RESIDENTIAL, COMMERCIAL/INDUSTRIAL, AND AGRICULTURAL WATER USE IN THE TLU

ESTIMATED FUTURE (2050) WATER USE (Scenario 2.7)

Community	Population	Number of Dwellings	Persons per Dwelling	Residential Water Use		Commercial / Industrial Water Use										Agricultural Water Use		Distribution System Leakage	TOTAL ANNUAL WATER DEMAND (m ³)																					
				Average Daily Water Use (litres): Residential	Average Annual Water Use (m ³): Residential	Finance, Insurance, Real Estate					Institutional			Retail Wholesale		Resource, Manufacturing, Construction, Utilities					Average Annual Water Use (m ³): Golf Courses																			
						Number of Employees	Square Footage	Equivalent Number of Dwellings	Average Daily Water Use (litres): Finance, Insurance, Real Estate	Average Annual Water Use (m ³): Finance, Insurance, Real Estate	Number of Employees	Square Footage	Equivalent Number of Dwellings	Average Daily Water Use (litres): Institutional	Average Annual Water Use (m ³): Institutional	Number of Employees	Square Footage			Equivalent Number of Dwellings		Average Daily Water Use (litres): Retail Wholesale	Average Annual Water Use (m ³): Retail Wholesale	Number of Employees	Square Footage	Equivalent Number of Dwellings	Average Daily Water Use (litres): Resource, Manufacturing, Construction, Utilities	Average Annual Water Use (m ³): Resource, Manufacturing, Construction, Utilities												
	<i>Assume the same rate of population growth from 2020 to 2050 as from 2001 to 2020</i>	<i>Assume the same rate of development growth from 2020 to 2050 as from 2001 to 2020</i>		<i>Population * 924 L/day</i>	<i>(Average Daily Water Use * 365 days/year) / (1000 L/m³)</i>	<i>Urban Systems (1999)</i>	<i>Assume 190 sq. ft. per employee (Urban Systems, 1999)</i>	<i>Assume 1000 sq. ft. = 0.38 single family residential units (Urban Systems, 2002)</i>	<i>Equivalent Number of Dwellings * Persons per Dwelling * 924 L/day</i>	<i>(Average Daily Water Use * 365 days/year) / (1000 L/m³)</i>	<i>Urban Systems (1999)</i>	<i>Assume 200 sq. ft. per employee (Urban Systems, 1999)</i>	<i>Assume 1000 sq. ft. = 0.38 single family residential units (Urban Systems, 2002)</i>	<i>Equivalent Number of Dwellings * Persons per Dwelling * 924 L/day</i>	<i>(Average Daily Water Use * 365 days/year) / (1000 L/m³)</i>	<i>Urban Systems (1999)</i>	<i>Assume 1,425 sq. ft. per employee (Urban Systems, 1999)</i>	<i>Assume 1000 sq. ft. = 0.38 single family residential units (Urban Systems, 2002)</i>	<i>Equivalent Number of Dwellings * Persons per Dwelling * 924 L/day</i>	<i>(Average Daily Water Use * 365 days/year) / (1000 L/m³)</i>	<i>Urban Systems (1999)</i>	<i>Assume 1,800 sq. ft. per employee (Urban Systems, 1999)</i>	<i>Assume 1000 sq. ft. = 2.8 single family residential units (Urban Systems, 2002)</i>	<i>Equivalent Number of Dwellings * Persons per Dwelling * 924 L/day</i>	<i>(Average Daily Water Use * 365 days/year) / (1000 L/m³)</i>	<i>Urban Systems (1999)</i>	<i>Based on crop demand and land use data from Agriculture and Agri-Food Canada</i>	<i>Estimated at 5% of total demand (Earitech, 2003)</i>												
A Rural Westside Road	4,379	2,913	1.5	4,046,342	1,440,498	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	366,560	8" 35"	1,834,417							
B Crystal Mtn & Brenda Mines	3,876	1,632	2.4	3,581,712	1,275,090	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	185,271	7" 018"	1,533,378					
C Westlake Road & West Kelowna Estates	5,166	1,874	2.8	4,773,189	1,699,255	234	48,260	18	46,718	17,952	80	16,000	6	15,489	5,653	337	480,225	182	464,880	169,681	431	775,800	2,172	5,533,757	2,019,821	0	600,422	225,594	0	0	0	0	0	600,422	225,594	4,737,480				
D Westbank I.R. #10	7,426	2,670	2.8	6,861,502	2,442,695	24	4,560	2	4,452	1,625	0	0	0	0	0	154	219,450	83	214,267	78,207	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3,150	126,284	2,651,961			
E Shannon Lake	8,927	3,307	2.7	8,248,402	2,976,431	18	3,420	1	3,242	1,183	191	38,200	15	36,211	13,217	121	172,425	66	163,449	59,659	97	174,600	489	1,219,550	445,136	507,000	1,771,218	286,092	0	0	0	0	2,118,701	300,112	6,201,536					
F Lakeview	10,337	3,928	2.6	9,551,145	3,400,208	110	20,900	8	19,309	7,048	239	47,800	18	44,162	16,119	455	648,375	246	599,022	218,643	54	97,200	272	661,694	241,518	0	0	0	0	0	0	0	0	0	0	495,536	168,302	3,534,347		
G Smith Creek	8,718	3,049	2.9	8,054,994	2,867,578	0	0	0	0	0	40	8,000	3	8,032	2,932	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	495,536	168,302	3,534,347		
H Upper Glenrosa	6,513	2,278	2.9	6,018,355	2,142,534	0	0	0	0	0	23	4,600	2	4,618	1,686	0	0	0	0	0	250	450,000	1,260	3,328,957	1,215,000	0	0	0	0	0	0	0	0	0	0	793,417	207,635	4,360,341		
I Westbank I.R. #9	17,285	6,933	2.5	15,971,243	5,685,762	130	24,700	9	21,623	7,893	145	29,000	11	25,388	9,267	892	1,271,100	483	1,112,775	406,163	13	23,400	66	150,945	55,095	525,200	835,528	176,245	0	0	0	0	0	0	0	835,528	176,245	7,901,152		
J Lower Glenrosa	4,976	1,637	3.0	4,597,824	1,636,825	0	0	0	0	0	180	36,000	14	38,432	14,028	29	41,325	16	44,117	16,103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	187,171	92,706	1,946,833		
K Westbank North	4,591	1,843	2.5	4,242,133	1,510,199	578	109,820	42	96,076	35,068	293	58,600	22	51,266	18,712	755	1,075,875	409	941,228	341,548	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	210,796	11,964	2,796,604	
L Trepanier	87	38	2.3	79,999	28,480	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	210,796	11,964	2,796,604	
M Goats Peak & Gellatly	6,081	3,021	2.0	5,618,839	2,060,707	208	39,520	15	27,927	10,194	44	8,800	3	6,219	2,270	110	156,750	60	110,770	40,471	75	135,000	378	702,946	256,575	0	0	0	0	0	0	0	0	0	0	0	0	889,452	159,961	3,359,189
N Peachland	8,840	3,675	2.4	8,167,820	2,907,744	0	0	0	0	0	5,360	1,072,000	407	905,494	330,505	870	1,239,750	471	1,047,189	382,224	1,031	1,855,800	5,196	11,550,388	4,215,892	125,000	255,875	420,862	0	0	0	0	0	0	0	0	255,875	420,862	8,838,102	
Total	97,201	38,797		89,813,499	31,973,606	1,322	251,180	95	219,348	80,062	6,595	1,319,000	501	1,135,311	414,389	3,723	5,305,275	2,016	4,697,695	1,714,659	1,951	3,511,000	9,833	23,148,236	8,449,106	1,357,200	9,409,007	2,669,901							56,867,929					

Notes:
 Assumed average annual per capita water use 924 L/day [With climate change the anticipated average annual per capita water use in 2050 is expected to be 924 L/day (based on 30% increase in outdoor domestic use)]
 Assumed average annual water use for golf courses 13,000 m³/ho [assuming a 30% increase in water use from 2001 as estimated for agricultural water use]

Appendix I

LAMBLY CREEK STREAMFLOW ANALYSIS

Stream: LAMBLY CREEK
 Location: AT THE MOUTH
 Year: 2050
 Scenario: 1.2 ASSUMING POPULATION CHANGE ONLY

COMPARISONS (See text for descriptions):

Month	DATA:											Formulas:											#1: Naturalized flow vs Net flow	#2: Instream licenses vs Net flow	#3: Conservation flow vs Net flow	#4: Total licenses vs Naturalized flow	#5: Offstream licenses vs Naturalized flow	#6: Instream licenses vs Naturalized flow	#7a: Actual offstream use vs Naturalized flow	#7b: Actual offstream use (assuming 10% demand reduction) vs Naturalized flow	#7c: Actual offstream use (assuming 20% demand reduction) vs Naturalized flow	#7d: Actual offstream use (assuming 30% demand reduction) vs Naturalized flow	#8: Offstream licenses vs Total licenses	#9: Instream licenses vs Total licenses	#10a: Actual offstream use vs Offstream licenses	#10b: Actual offstream use (assuming 10% demand reduction) vs Offstream licenses	#10c: Actual offstream use (assuming 20% demand reduction) vs Offstream licenses	#10d: Actual offstream use (assuming 30% demand reduction) vs Offstream licenses	#11: Conservation flow vs. Instream licenses								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)																		(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
	Net flow	Naturalized flow	Total licenses (offstream & instream)	Offstream licenses	Instream licenses	Estimated actual offstream use	Est. actual offstream use (assuming 10% reduction)	Est. actual offstream use (assuming 20% reduction)	Est. actual offstream use (assuming 30% reduction)	Storage release	Conservation Flows	Remarks:	neg = net flow is less than naturalized flow	neg = net flow is less than naturalized flow	neg = instream licenses are less than net flow	neg = conservation flow is less than net flow	neg = there is no additional flow licensed to offstream use	% of naturalized flow licensed	% of naturalized flow licensed	% of naturalized flow actually withdrawn for use	% of naturalized flow actually withdrawn for use	% of naturalized flow actually withdrawn for use																		% of naturalized flow actually withdrawn for use	% of total licenses that are for offstream use	% of total licenses that are for instream use	neg = no additional room to remove water without additional licensing	neg = no additional room to remove water without additional licensing	neg = no additional room to remove water without additional licensing	neg = no additional room to remove water without additional licensing	% of conservation flow legally protected with licenses
Jan	0.256	0.250	0.083	0.083	0.000	0.109	0.098	0.087	0.076	-0.075	0.354	-0.034	-11.9	0.256	-0.098	72	29	0	38	34	30	28	100	0	-0.026	-0.015	-0.004	0.007	0																		
Feb	0.254	0.230	0.090	0.090	0.000	0.118	0.106	0.095	0.083	-0.083	0.354	-0.036	-12.3	0.254	-0.100	72	29	0	41	37	33	29	100	0	-0.028	-0.017	-0.005	0.007	0																		
Mar	0.496	0.500	0.101	0.101	0.000	0.122	0.109	0.097	0.085	-0.118	0.354	-0.004	-0.7	0.496	-0.142	140	20	0	24	22	19	17	100	0	-0.021	-0.008	0.004	0.016	0																		
Apr	2.012	2.400	0.250	0.250	0.000	0.237	0.213	0.190	0.166	0.151	1.770	-0.388	-16.2	2.012	-0.242	114	10	0	10	9	8	7	100	0	0.013	0.036	0.060	0.084	0																		
May	7.343	8.320	0.583	0.583	0.000	0.471	0.424	0.377	0.329	0.506	3.540	-0.877	-11.7	7.343	-0.803	207	7	0	6	5	4	100	0	0.122	0.170	0.217	0.264	0																			
Jun	4.440	5.380	0.723	0.723	0.000	0.612	0.551	0.490	0.428	0.328	1.770	-0.940	-17.5	4.440	-2.670	251	13	0	11	10	9	8	100	0	0.111	0.172	0.233	0.295	0																		
Jul	4.440	5.380	0.723	0.723	0.000	0.612	0.551	0.490	0.428	0.328	1.770	-0.940	-17.5	4.440	-2.670	251	13	0	11	10	9	8	100	0	0.111	0.172	0.233	0.295	0																		
Aug	0.939	1.640	1.046	1.046	0.000	0.833	0.750	0.666	0.583	-0.132	0.708	-0.701	-42.7	0.939	-0.231	133	0	0	51	46	41	36	100	0	0.213	0.296	0.380	0.463	0																		
Sep	0.145	0.500	0.605	0.605	0.000	0.485	0.438	0.388	0.339	-0.130	0.531	-0.662	-108.6	-0.052	-0.583	-10	-0.419	160	0	130	117	104	91	100	0	0.234	0.313	0.383	0.472	0																	
Oct	0.338	0.450	0.238	0.238	0.000	0.232	0.208	0.185	0.162	-0.120	0.354	-0.112	-24.8	0.338	-0.019	96	0	0	51	46	41	36	100	0	0.006	0.030	0.053	0.076	0																		
Nov	0.431	0.440	0.089	0.089	0.000	0.131	0.118	0.105	0.092	-0.122	0.354	-0.009	-2.1	0.431	-0.077	122	0	0	30	27	24	21	100	0	-0.031	-0.018	-0.005	0.008	0																		
Dec	0.279	0.320	0.088	0.088	0.000	0.115	0.104	0.092	0.081	-0.075	0.354	-0.041	-12.7	0.279	-0.075	79	0	0	36	32	29	25	100	0	-0.028	-0.016	-0.005	0.007	0																		
Annual	1.413	1.770	0.415	0.415	0.000	0.357	0.321	0.285	0.250	0.000		-0.357	-20.2	1.413	-1.356	23	0	0	20	18	18	14	100	0	0.058	0.094	0.128	0.165	0																		

Stream: LAMBLY CREEK
 Location: ABOVE PDSB106 (LAKEVIEW IRRIGATION DISTRICT WEIR)
 Year: 2050
 Scenario: 1.2 ASSUMING POPULATION CHANGE ONLY

COMPARISONS (See text for descriptions):

Month	DATA:											Formulas:											#1: Naturalized flow vs Net flow	#2: Instream licenses vs Net flow	#3: Conservation flow vs Net flow	#4: Total licenses vs Naturalized flow	#5: Offstream licenses vs Naturalized flow	#6: Instream licenses vs Naturalized flow	#7a: Actual offstream use vs Naturalized flow	#7b: Actual offstream use (assuming 10% demand reduction) vs Naturalized flow	#7c: Actual offstream use (assuming 20% demand reduction) vs Naturalized flow	#7d: Actual offstream use (assuming 30% demand reduction) vs Naturalized flow	#8: Offstream licenses vs Total licenses	#9: Instream licenses vs Total licenses	#10a: Actual offstream use vs Offstream licenses	#10b: Actual offstream use (assuming 10% demand reduction) vs Offstream licenses	#10c: Actual offstream use (assuming 20% demand reduction) vs Offstream licenses	#10d: Actual offstream use (assuming 30% demand reduction) vs Offstream licenses	#11: Conservation flow vs. Instream licenses								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)																		(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
	Net flow	Naturalized flow	Total licenses (offstream & instream)	Offstream licenses	Instream licenses	Estimated actual offstream use	Est. actual offstream use (assuming 10% reduction)	Est. actual offstream use (assuming 20% reduction)	Est. actual offstream use (assuming 30% reduction)	Storage release	Conservation Flows	Remarks:	neg = net flow is less than naturalized flow	neg = net flow is less than naturalized flow	neg = instream licenses are less than net flow	neg = conservation flow is less than net flow	neg = there is no additional flow licensed to offstream use	% of naturalized flow licensed	% of naturalized flow licensed	% of naturalized flow actually withdrawn for use	% of naturalized flow actually withdrawn for use	% of naturalized flow actually withdrawn for use																		% of naturalized flow actually withdrawn for use	% of total licenses that are for offstream use	% of total licenses that are for instream use	neg = no additional room to remove water without additional licensing	neg = no additional room to remove water without additional licensing	neg = no additional room to remove water without additional licensing	neg = no additional room to remove water without additional licensing	% of conservation flow legally protected with licenses
Jan	0.328	0.287	0.032	0.032	0.000	0.033	0.030	0.028	0.023	-0.075	0.350	0.042	14.5	0.328	-0.022	94	0	0	12	10	9	8	100	0	-0.001	0.002	0.005	0.009	0																		
Feb	0.336	0.287	0.033	0.033	0.000	0.034	0.031	0.027	0.024	-0.083	0.350	0.048	17.0	0.336	-0.025	96	0	0	12	11	9	8	100	0	-0.001	0.002	0.005	0.009	0																		
Mar	0.577	0.494	0.034	0.034	0.000	0.035	0.032	0.028	0.025	-0.118	0.350	0.082	16.7	0.577	0.227	185	0	0	7	6	5	4	100	0	-0.001	0.002	0.008	0.009	0																		
Apr	2.158	2.373	0.064	0.064	0.000	0.067	0.060	0.054	0.047	0.064	1.750	-0.218	-9.2	2.158	-0.405	123	0	0	3	3	2	2	100	0	-0.003	0.004	0.011	0.017	0																		
May	7.575	8.228	0.141	0.141	0.000	0.147	0.132	0.117	0.104	0.114	3.501	-0.653	-7.9	7.575	-0.074	216	0	0	2	2	1	1	100	0	-0.006	0.008	0.023	0.038	0																		
Jun	4.828	5.320	0.158	0.158	0.000	0.163	0.147	0.130	0.114	0.328	1.750	-0.491	-9.2	4.828	-0.039	278	0	0	3	3	2	2	100	0	-0.007	0.010	0.026	0.042	0																		
Jul	1.517	1.622	0.227	0.227	0.000	0.237	0.213	0.190	0.166	-0.132	0.700	-0.105	-6.5	1.517	-0.017	217	0	0	15	13	12	10	100	0	-0.009	0.014	0.038	0.052	0																		
Aug	0.485	0.603	0.231	0.231	0.000	0.241	0.217	0.192	0.168	-0.133	0.525	-0.108	-17.9	0.485	-0.030	94	0	0	40	36	32	28	100	0	-0.010	0.014	0.038	0.053	0																		
Sep	0.475	0.494	0.143	0.143	0.000	0.149	0.134	0.118	0.104	-0.130	0.438	-0.019	-3.9	0.475	-0.038	109	0	0	30	27	24	21	100	0	-0.006	0.008	0.024	0.038	0																		
Oct	0.519	0.435	0.036	0.036	0.000	0.038	0.034	0.030	0.026	-0.122	0.350	0.057	12.9	0.519	-0.152	144	0	0	14	13	11	10	100	0	-0.002	0.004	0.010	0.016	0																		
Nov	0.359	0.316	0.032	0.032	0.000	0.033	0.030	0.026	0.023	-0.075	0.350	0.042	13.2	0.359	-0.008	102	0	0	10	9	8	7	100	0	-0.001	0.002	0.005	0.009	0																		
Annual	1.646	1.750	0.100	0.100	0.000	0.104	0.093	0.083	0.073	0.000		-0.104	-5.9	1.646	-1.651	6	0	0	6	5	5	4	100	0	-0.004	0.006	0.017	0.027	0																		

Stream: LAMBLY CREEK
 Location: BELOW CONFLUENCE OF LAMBLY AND TERRACE CREEKS
 Year: 2050
 Scenario: 1.2 ASSUMING POPULATION CHANGE ONLY

COMPARISONS (See text for descriptions):

Month	DATA:											Formulas:											#1: Naturalized flow vs Net flow	#2: Instream licenses vs Net flow	#3: Conservation flow vs Net flow	#4: Total licenses vs Naturalized flow	#5: Offstream licenses vs Naturalized flow	#6: Instream licenses vs Naturalized flow	#7a: Actual offstream use vs Naturalized flow	#7b: Actual offstream use (assuming 10% demand reduction) vs Naturalized flow	#7c: Actual offstream use (assuming 20% demand reduction) vs Naturalized flow	#7d: Actual offstream use (assuming 30% demand reduction) vs Naturalized flow	#8: Offstream licenses vs Total licenses	#9: Instream licenses vs Total licenses	#10a: Actual offstream use vs Offstream licenses	#10b: Actual offstream use (assuming 10% demand reduction) vs Offstream licenses	#10c: Actual offstream use (assuming 20% demand reduction) vs Offstream licenses	#10d: Actual offstream use (assuming 30% demand reduction) vs Offstream licenses	#11: Conservation flow vs. Instream licenses								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)																		(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
	Net flow	Naturalized flow	Total licenses (offstream & instream)	Offstream licenses	Instream licenses	Estimated actual offstream use	Est. actual offstream use (assuming 10% reduction)	Est. actual offstream use (assuming 20% reduction)	Est. actual offstream use (assuming 30% reduction)	Storage release	Conservation Flows	Remarks:	neg = net flow is less than naturalized flow	neg = net flow is less than naturalized flow	neg = instream licenses are less than net flow	neg = conservation flow is less than net flow	neg = there is no additional flow licensed to offstream use	% of naturalized flow licensed	% of naturalized flow licensed	% of naturalized flow actually withdrawn for use	% of naturalized flow actually withdrawn for use	% of naturalized flow actually withdrawn for use																		% of naturalized flow actually withdrawn for use	% of total licenses that are for offstream use	% of total licenses that are for instream use	neg = no additional room to remove water without additional licensing	neg = no additional room to remove water without additional licensing	neg = no additional room to remove water without additional licensing	neg = no additional room to remove water without additional licensing	% of conservation flow legally protected with licenses
Jan	0.296	0.248	0.031	0.031	0.000	0.032	0.029	0.026	0.023	-0.075	0.303	0.042	17.0	0.290	-0.012	96	0	0	13	12	10	9	100	0	-0.001	0.002	0.005	0.008	0																		
Feb	0.287	0.248	0.032	0.032	0.000	0.033	0.030	0.027	0.023	-0.083	0.303	0.049	18.9	0.287	-0.005	98	0	0	13	12	11	9	100	0	-0.001	0.002	0.005	0.009	0																		
Mar	0.510	0.427	0.033	0.033	0.000	0.035	0.031	0.028	0.024	-0.118	0.303	0.083	18.4	0.510	0.208	168	0	0	8	7	7	6	100	0	-0.001	0.002	0.008	0.009	0																		
Apr	1.836	2.051	0.063	0.063	0.000	0.066	0.059	0.053	0.046	0.140	1.513	-0.215	-10.9	1.836	-0.323	121	0	0	3	3	3	2	100	0	-0.003	0.004	0.010	0.017	0																		
May	6.465	7.110	0.138	0.138	0.000	0.144	0.130	0.115	0.101	0.501	3.025	-0.945	-9.1	6.465	-0.440	214	0	0	2	2	2	1	100	0	-0.006	0.009	0.023	0.037	0																		
Jun	4.112	4.597	0.154	0.154	0.000	0.160	0.144	0.128	0.112	0.326	1.513	-0.486	-10.6	4.112	-2.599	272	0	0	3	3	3	2	100	0	-0.007	0.009	0.025	0.042	0																		
Jul	1.297	1.401	0.223	0.223	0.000	0.233	0.210	0.186	0.163	-0.129	0.605	-0.104	-7.4	1.297	-0.092	214	0	0	17	15	13	12	100	0	-0.009	0.014	0.037	0.050	0																		
Aug	0.414	0.521	0.227	0.227	0.000	0.237	0.213	0.190	0.166	-0.129	0.454	-0.107	-20.6	0.414	-0.040	91	0	0																													

Stream: LAMBLY CREEK
 Location: AT THE MOUTH
 Year: 2020
 Scenario: 2 1 ASSUMING POPULATION AND CLIMATE CHANGE

COMPARISONS (See text for descriptions):

Month	DATA:											COMPARISONS (See text for descriptions):																			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	#1: Naturalized flow vs Net flow	#2: Instream licencess vs Net flow	#3: Conservation flow vs Net flow	#4: Total licencess vs Naturalized flow	#5: Offstream licencess vs Naturalized flow	#6: Instream licencess vs Naturalized flow	#7a: Actual offstream use vs Naturalized flow	#7b: Actual offstream use (assuming 10% demand reduction) vs Naturalized flow	#7c: Actual offstream use (assuming 20% demand reduction) vs Naturalized flow	#7d: Actual offstream use (assuming 30% demand reduction) vs Naturalized flow	#8: Offstream licencess vs Total licencess	#9: Instream licencess vs Total licencess	#10a: Actual offstream use vs Offstream licencess (assuming 10% demand reduction)	#10b: Actual offstream use vs Offstream licencess (assuming 20% demand reduction)	#10c: Actual offstream use vs Offstream licencess (assuming 30% demand reduction)	#11: Conservation flow vs. Instream licencess				
	Net flow	Naturalized flow	Total licencess (offstream & instream)	Offstream licencess	Instream licencess	Estimated actual offstream use	Est. actual offstream use (assuming 10% reduction)	Est. actual offstream use (assuming 20% reduction)	Est. actual offstream use (assuming 30% reduction)	Storage pos = release neg = withdrawal	Conservation Flows	Change in naturalized discharge from 2003	neg = net flow is less than naturalized flow	neg = net flow is less than naturalized flow	neg = instream licencess are not met by net flow	neg = conservation 100% = conservation flow is not met by net flow	neg = there is no additional surface water to license	% of naturalized flow licensed	% of naturalized flow actually withdrawn for use	% of naturalized flow actually withdrawn for use	% of naturalized flow actually withdrawn for use	% of total licencess that are for offstream use	% of total licencess that are for instream use	room to remove water without additional licencess	room to remove water without additional licencess	room to remove water without additional licencess	room to remove water without additional licencess	% of conservation flow legally protected with licencess			
Jan	0.249	0.275	0.083	0.083	0.000	0.100	0.080	0.080	0.070	-0.075	0.354	-5.2	-0.026	-9.3	0.248	-0.105	70	0.192	30	0	36	33	29	26	100	0	-0.017	-0.007	0.003	0.013	0
Feb	0.361	0.366	0.080	0.080	0.000	0.108	0.087	0.086	0.076	-0.083	0.354	33.2	-0.025	-6.8	0.361	0.007	102	0.267	23	0	28	25	22	20	100	0	-0.018	-0.008	0.003	0.014	0
Mar	0.668	0.862	0.101	0.101	0.000	0.111	0.100	0.089	0.078	-0.118	0.354	72.3	0.006	0.7	0.668	0.514	245	0.781	12	0	13	12	10	9	100	0	-0.011	0.001	0.012	0.023	0
Apr	2.705	3.074	0.250	0.250	0.000	0.218	0.196	0.174	0.152	0.151	1.770	28.1	-0.369	-12.0	2.705	0.835	153	2.824	8	0	7	6	6	5	100	0	0.032	0.054	0.076	0.098	0
May	6.056	7.001	0.595	0.595	0.000	0.439	0.395	0.351	0.307	0.506	3.540	-15.9	-0.946	-13.5	6.056	2.516	171	6.408	8	0	6	6	5	4	100	0	0.156	0.200	0.243	0.287	0
Jun	2.978	3.867	0.725	0.725	0.000	0.560	0.504	0.448	0.392	0.328	1.770	-28.1	-0.888	-23.0	2.978	1.298	168	3.141	19	0	14	13	12	10	100	0	0.185	0.221	0.277	0.333	0
Jul	0.604	1.240	1.049	1.049	0.000	0.789	0.692	0.615	0.528	-0.132	0.708	-24.4	-0.637	-51.3	0.604	-0.104	85	0.191	85	0	62	56	50	43	100	0	0.281	0.357	0.434	0.511	0
Aug	-0.083	0.523	1.032	1.032	0.000	0.739	0.665	0.592	0.518	-0.133	0.531	-14.2	-0.607	-115.9	-0.083	-0.614	-16	-0.509	197	0	141	127	113	99	100	0	0.293	0.366	0.440	0.514	0
Sep	0.123	0.445	0.607	0.607	0.000	0.452	0.406	0.361	0.316	-0.130	0.443	-11.1	-0.322	-72.3	0.123	-0.319	28	-0.162	136	0	102	91	81	71	100	0	0.155	0.201	0.246	0.291	0
Oct	0.315	0.407	0.238	0.238	0.000	0.211	0.180	0.169	0.148	-0.122	0.354	-9.6	-0.092	-22.5	0.315	-0.039	89	0.168	59	0	52	47	42	36	100	0	0.027	0.048	0.069	0.090	0
Nov	0.412	0.410	0.069	0.069	0.000	0.120	0.108	0.096	0.084	-0.099	0.354	-6.9	0.002	0.4	0.412	0.058	116	0.310	24	0	24	26	23	20	100	0	-0.020	-0.008	0.004	0.010	0
Dec	0.288	0.298	0.087	0.087	0.000	0.105	0.095	0.084	0.074	-0.075	0.354	6.7	-0.031	-10.3	0.288	-0.068	76	0.211	29	0	35	32	28	25	100	0	-0.018	-0.007	0.003	0.014	0
Annual	1.242	1.571	0.416	0.416	0.000	0.330	0.297	0.264	0.231	0.000			-0.330	-21.0	1.242	0.268	1155	26	0	21	19	17	15	100	0	0.086	0.119	0.152	0.185	0	

Stream: LAMBLY CREEK
 Location: ABOVE PDS9106 (LAKEVIEW IRRIGATION DISTRICT WEIR)
 Year: 2020
 Scenario: 2 1 ASSUMING POPULATION AND CLIMATE CHANGE

COMPARISONS (See text for descriptions):

Month	DATA:											COMPARISONS (See text for descriptions):																			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	#1: Naturalized flow vs Net flow	#2: Instream licencess vs Net flow	#3: Conservation flow vs Net flow	#4: Total licencess vs Naturalized flow	#5: Offstream licencess vs Naturalized flow	#6: Instream licencess vs Naturalized flow	#7a: Actual offstream use vs Naturalized flow	#7b: Actual offstream use (assuming 10% demand reduction) vs Naturalized flow	#7c: Actual offstream use (assuming 20% demand reduction) vs Naturalized flow	#7d: Actual offstream use (assuming 30% demand reduction) vs Naturalized flow	#8: Offstream licencess vs Total licencess	#9: Instream licencess vs Total licencess	#10a: Actual offstream use vs Offstream licencess (assuming 10% demand reduction)	#10b: Actual offstream use vs Offstream licencess (assuming 20% demand reduction)	#10c: Actual offstream use vs Offstream licencess (assuming 30% demand reduction)	#11: Conservation flow vs. Instream licencess				
	Net flow	Naturalized flow	Total licencess (offstream & instream)	Offstream licencess	Instream licencess	Estimated actual offstream use	Est. actual offstream use (assuming 10% reduction)	Est. actual offstream use (assuming 20% reduction)	Est. actual offstream use (assuming 30% reduction)	Storage pos = release neg = withdrawal	Conservation Flows	Change in naturalized discharge from 2003	neg = net flow is less than naturalized flow	neg = net flow is less than naturalized flow	neg = instream licencess are not met by net flow	neg = conservation 100% = conservation flow is not met by net flow	neg = there is no additional surface water to license	% of naturalized flow licensed	% of naturalized flow actually withdrawn for use	% of naturalized flow actually withdrawn for use	% of naturalized flow actually withdrawn for use	% of total licencess that are for offstream use	% of total licencess that are for instream use	room to remove water without additional licencess	room to remove water without additional licencess	room to remove water without additional licencess	room to remove water without additional licencess	% of conservation flow legally protected with licencess			
Jan	0.308	0.272	0.032	0.032	0.000	0.039	0.035	0.031	0.027	-0.076	0.350	-5.2	0.036	13.2	0.308	-0.042	88	0.240	12	0	14	13	11	10	100	0	-0.007	-0.003	0.001	0.004	0
Feb	0.425	0.382	0.032	0.032	0.000	0.040	0.036	0.032	0.028	-0.083	0.350	33.2	0.043	11.2	0.425	0.075	121	0.349	8	0	10	9	8	7	100	0	-0.007	-0.003	0.001	0.005	0
Mar	0.928	0.852	0.034	0.034	0.000	0.042	0.038	0.033	0.029	-0.118	0.350	72.3	0.076	8.9	0.928	0.578	265	0.818	4	0	5	4	4	3	100	0	-0.008	-0.004	0.001	0.005	0
Apr	2.810	3.040	0.064	0.064	0.000	0.079	0.071	0.063	0.055	0.151	1.750	28.1	-0.230	-7.6	2.810	1.060	161	2.976	2	0	3	2	2	2	100	0	-0.015	-0.007	0.001	0.009	0
May	6.244	6.623	0.141	0.141	0.000	0.173	0.156	0.139	0.121	0.506	3.501	-15.9	-0.680	-9.8	6.244	2.743	178	6.782	2	0	3	2	2	2	100	0	-0.032	-0.015	0.002	0.020	0
Jun	3.303	3.824	0.157	0.157	0.000	0.192	0.173	0.154	0.135	0.328	1.750	-28.1	-0.521	-13.8	3.303	1.553	189	3.667	4	0	5	5	4	4	100	0	-0.036	-0.017	0.003	0.022	0
Jul	1.079	1.226	0.228	0.228	0.000	0.280	0.252	0.224	0.196	-0.132	0.700	-24.4	-0.148	-12.0	1.079	0.378	154	0.988	19	0	23	21	18	16	100	0	-0.052	-0.024	0.004	0.032	0
Aug	0.368	0.518	0.231	0.231	0.000	0.260	0.226	0.228	0.199	-0.133	0.525	-14.2	-0.152	-29.3	0.368	-0.159	70	0.288	45	0	55	49	44	38	100	0	-0.053	-0.024	0.004	0.032	0
Sep	0.394	0.440	0.143	0.143	0.000	0.176	0.158	0.141	0.123	-0.130	0.438	-11.1	-0.046	-10.5	0.394	-0.044	90	0.297	33	0	40	38	32	28	100	0	-0.033	-0.015	0.002	0.020	0
Oct	0.448	0.402	0.080	0.080	0.000	0.074	0.066	0.059	0.052	-0.120	0.350	-9.6	0.046	11.5	0.448	0.098	128	0.342	16	0	18	16	15	13	100	0	-0.014	-0.006	0.001	0.006	0
Nov	0.482	0.405	0.036	0.036	0.000	0.045	0.040	0.036	0.031	-0.122	0.350	-6.9	0.077	19.0	0.482	0.132	138	0.369	9	0	11	10	9	8	100	0	-0.006	-0.004	0.001	0.005	0
Dec	0.331	0.295	0.032	0.032	0.000	0.039	0.035	0.031	0.027	-0.075	0.350	-6.7	0.036	12.1	0.331	-0.016	65	0.264	11	0	12	13	11	9	100	0	-0.007	-0.003	0.001	0.004	0
Annual	1.431	1.564	0.100	0.100	0.000	0.123	0.110	0.098	0.086	0.000			-0.123	-7.9	1.431	0.268	1454	6	0	8	7	6	6	6	100	0	-0.023	-0.011	0.002	0.014	0

Stream: LAMBLY CREEK
 Location: BELOW CONFLUENCE OF LAMBLY AND TERRACE CREEKS
 Year: 2020
 Scenario: 2 1 ASSUMING POPULATION AND CLIMATE CHANGE

COMPARISONS (See text for descriptions):

Month	DATA:											COMPARISONS (See text for descriptions):																			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	#1: Naturalized flow vs Net flow	#2: Instream licencess vs Net flow	#3: Conservation flow vs Net flow	#4: Total licencess vs Naturalized flow	#5: Offstream licencess vs Naturalized flow	#6: Instream licencess vs Naturalized flow	#7a: Actual offstream use vs Naturalized flow	#7b: Actual offstream use (assuming 10% demand reduction) vs Naturalized flow	#7c: Actual offstream use (assuming 20% demand reduction) vs Naturalized flow	#7d: Actual offstream use (assuming 30% demand reduction) vs Naturalized flow	#8: Offstream licencess vs Total licencess	#9: Instream licencess vs Total licencess	#10a: Actual offstream use vs Offstream licencess (assuming 10% demand reduction)	#10b: Actual offstream use vs Offstream licencess (assuming 20% demand reduction)	#10c: Actual offstream use vs Offstream licencess (assuming 30% demand reduction)	#11: Conservation flow vs. Instream licencess				
	Net flow	Naturalized flow	Total licencess (offstream & instream)	Offstream licencess	Instream licencess	Estimated actual offstream use	Est. actual offstream use (assuming 10% reduction)	Est. actual offstream use (assuming 20% reduction)	Est. actual offstream use (assuming 30% reduction)	Storage pos = release neg = withdrawal	Conservation Flows	Change in naturalized discharge from 2003	neg = net flow is less than naturalized flow	neg = net flow is less than naturalized flow	neg = instream licencess are not met by net flow	neg = conservation 100% = conservation flow is not met by net flow	neg = there is no additional surface water to license	% of naturalized flow licensed	% of naturalized flow actually withdrawn for use	% of naturalized flow actually withdrawn for use	% of naturalized flow actually withdrawn for use	% of total licencess that are for offstream use	% of total licencess that are for instream use	room to remove water without additional licencess	room to remove water without additional licencess	room to remove water without additional licencess	room to remove water without additional licencess	% of conservation flow legally protected with licencess			
Jan	0.271	0.235	0.031	0.031	0.000	0.038	0.035	0.031	0.027	-0.075	0.303	-5.2	0.036	15.6	0.271	-0.031	90	0.204	13	0	16	15	13	11	100	0	-0.007	-0.003	0.000	0.004	0
Feb	0.373	0.330	0.032	0.032	0.000	0.039	0.035	0.031	0.028	-0.083	0.303	33.2	0.043	13.1	0.373	0.071	123	0.298	10	0	12	11	10	8	100	0	-0.007	-0.004	0.000	0.004	0
Mar	0.813	0.736	0.039	0.039	0.000	0.041	0.037	0.033	0.029	-0.118	0.303	72.3	0.077	10.4	0.813	0.510	259	0.703	5	0	6	5	4	4	100	0	-0.008	-0.004	0.000	0.005	0
Apr	2.400	2.627	0.063	0.063	0.000	0.078	0.062	0.054	0.048	0.148	1.513	28.1	-0.227	-8.9	2.400	0.887	159	2.584	2	0	3	3	2	2	100	0	-0.015	-0.007	0.001	0.009	0
May	5.311	5.853	0.138	0.138	0.000	0.170	0.153	0.136	0.119	0.601	3.025	-15.9	-0.672	-11.2	5.311	2.286	175	5.645	2	0	3	3	2	2	100	0	-0.032	-0.015	0.002	0.020	0
Jun	2.789	3.304	0.154	0.154	0.000	0.189	0.170	0.151	0.133	0.326	1.513	-28.1	-0.515	-15.6	2.789	1.060	164	3.151	5	0	6	5	5	4	100	0	-0.036	-0.017	0.003	0.021	0
Jul	0.813	1.080																													

Stream: LAMBLY CREEK
 Location: AT THE MOUTH
 Year: 2050
 Scenario: 2.2 ASSUMING POPULATION AND CLIMATE CHANGE

COMPARISONS (See text for descriptions):

Month	DATA:											Ratio of 2050 naturalized discharge to 2003	#1: Naturalized flow vs Net flow		#2: Instream licences vs Net flow		#3: Conservation flow vs Net flow		#4: Total licences vs Naturalized flow	#5: Offstream licences vs Naturalized flow	#6: Instream licences vs Naturalized flow	#7a: Actual offstream use vs Naturalized flow	#7b: Actual offstream use (assuming 10% demand reduction) vs Naturalized flow	#7c: Actual offstream use (assuming 20% demand reduction) vs Naturalized flow	#7d: Actual offstream use (assuming 30% demand reduction) vs Naturalized flow	#8: Offstream licences vs Total licences	#9: Instream licences vs Total licences	#10a: Actual offstream use vs Offstream licences	#10b: Actual offstream use (assuming 10% demand reduction) vs Offstream licences	#10c: Actual offstream use (assuming 20% demand reduction) vs Offstream licences	#10d: Actual offstream use (assuming 30% demand reduction) vs Offstream licences	#11: Conservatio n flow vs. Instream licences														
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)		=(2)-(1)	100*((2-1)/1)	=(5)-(1)	=(1)-(11)	=100*(1/11)	=(3)-(2)															=100*(4/2)	=100*(5/2)	=100*(6/2)	=100*(7/2)	=100*(8/2)	=100*(9/2)	=100*(4/3)	=100*(5/3)	=(4)-(6)	=(4)-(7)	=(4)-(8)	=(4)-(9)	=100*(5/11)	
	Net flow	Naturalized flow	Total licences	Offstream licences	Instream licences	Estimated actual offstream use	Est. actual offstream use (assuming 10% reduction)	Est. actual offstream use (assuming 20% reduction)	Est. actual offstream use (assuming 30% reduction)	Storage neg = release pos = withdrawal	Conservation Flows		naturalized discharge to 2003	neg = net flow is less than	neg = net flow is less than	neg = instream licences are flow is not met	neg = conservation 100% = conserved flow is not met	neg = there is no additional surface water to license															% of naturalized flow licensed to offstream use	% of naturalized flow licensed to instream use	% of naturalized flow actually withdrawn for use	% of naturalized flow actually withdrawn for use	% of naturalized flow actually withdrawn for use	% of naturalized flow actually withdrawn for use	% of total licences that are for offstream use	% of total licences that are for instream use	room to remove water without additional licences	room to remove water without additional licences	room to remove water without additional licences	room to remove water without additional licences	room to remove water without additional licences	flow legally protected with licences
	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)		(m ³ /s)	(m ³ /s)	(%)	(m ³ /s)	(%)	(%)															(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(%)
Jan	0.177	0.247	0.084	0.084	0.000	0.145	0.131	0.116	0.102	-0.075	0.354	0.85	-0.071	-28.6	0.177	-0.177	50	0.184	34	0	59	53	47	41	100	0	-0.062	-0.047	-0.033	-0.018	0															
Feb	0.372	0.446	0.090	0.090	0.000	0.157	0.141	0.125	0.110	-0.083	0.354	1.54	-0.074	-16.5	0.372	0.018	105	0.356	20	0	35	32	28	25	100	0	-0.067	-0.051	-0.035	-0.020	0															
Mar	1.197	1.241	0.101	0.101	0.000	0.181	0.145	0.129	0.113	-0.118	0.354	2.48	-0.044	-3.5	1.197	0.843	338	1.140	8	0	13	12	10	9	100	0	-0.060	-0.044	-0.028	-0.012	0															
Apr	2.567	3.033	0.251	0.251	0.000	0.314	0.283	0.251	0.220	-0.465	1.770	1.28	-0.465	-15.3	2.567	0.797	145	2.781	8	0	10	8	7	100	0	-0.063	-0.031	0.000	0.031	0																
May	3.764	4.901	0.598	0.598	0.000	0.630	0.567	0.504	0.441	-0.506	3.540	0.59	-1.137	-23.2	3.764	0.224	106	4.303	12	0	13	12	10	9	100	0	-0.033	0.030	0.083	0.156	0															
Jun	1.297	2.433	0.728	0.728	0.000	0.808	0.727	0.646	0.565	-0.328	1.770	0.45	-1.136	-46.7	1.297	-0.473	73	1.705	30	0	33	30	27	23	100	0	-0.060	0.001	0.082	0.163	0															
Jul	-0.113	0.861	1.054	1.054	0.000	1.106	0.995	0.895	0.774	-0.132	0.708	0.52	-0.974	-113.1	-0.113	-0.113	-16	-0.193	122	0	129	118	103	90	100	0	-0.053	0.058	0.169	0.279	0															
Aug	-0.528	0.401	1.036	1.036	0.000	1.062	0.955	0.849	0.743	-0.133	0.531	0.66	-0.928	-231.6	-0.528	-1.059	-99	-0.835	258	0	265	238	212	185	100	0	-0.025	0.081	0.187	0.293	0															
Sep	-0.186	0.352	0.609	0.609	0.000	0.649	0.584	0.519	0.454	-0.130	0.443	0.70	-0.518	-147.2	-0.186	-0.609	-38	-0.257	173	0	184	168	147	129	100	0	-0.039	0.026	0.091	0.155	0															
Oct	0.139	0.325	0.239	0.239	0.000	0.306	0.275	0.245	0.214	-0.120	0.354	0.72	-0.186	-57.2	0.139	-0.215	38	0.086	74	0	84	85	75	66	100	0	-0.066	-0.036	-0.005	0.025	0															
Nov	0.285	0.337	0.160	0.160	0.000	0.174	0.156	0.138	0.121	-0.122	0.354	0.77	-0.052	-15.4	0.285	-0.069	81	0.237	30	0	51	46	41	36	100	0	-0.074	-0.057	-0.039	-0.022	0															
Dec	0.167	0.245	0.088	0.088	0.000	0.153	0.137	0.122	0.107	-0.075	0.354	0.77	-0.078	-31.8	0.167	-0.187	47	0.157	36	0	62	56	50	44	100	0	-0.065	-0.050	-0.034	-0.018	0															
Annual	0.764	1.238	0.418	0.418	0.000	0.475	0.427	0.380	0.332	0.000			-0.475	-38.3	0.764		0.821		34	0	38	34	31	27	100	0	-0.057	-0.010	0.038	0.085	0															

Stream: LAMBLY CREEK
 Location: ABOVE P059108 (LAKEVIEW IRRIGATION DISTRICT WEIR)
 Year: 2050
 Scenario: 2.2 ASSUMING POPULATION AND CLIMATE CHANGE

COMPARISONS (See text for descriptions):

Month	DATA:											Ratio of 2050 naturalized discharge to 2003	#1: Naturalized flow vs Net flow		#2: Instream licences vs Net flow		#3: Conservation flow vs Net flow		#4: Total licences vs Naturalized flow	#5: Offstream licences vs Naturalized flow	#6: Instream licences vs Naturalized flow	#7a: Actual offstream use vs Naturalized flow	#7b: Actual offstream use (assuming 10% demand reduction) vs Naturalized flow	#7c: Actual offstream use (assuming 20% demand reduction) vs Naturalized flow	#7d: Actual offstream use (assuming 30% demand reduction) vs Naturalized flow	#8: Offstream licences vs Total licences	#9: Instream licences vs Total licences	#10a: Actual offstream use vs Offstream licences	#10b: Actual offstream use (assuming 10% demand reduction) vs Offstream licences	#10c: Actual offstream use (assuming 20% demand reduction) vs Offstream licences	#10d: Actual offstream use (assuming 30% demand reduction) vs Offstream licences	#11: Conservatio n flow vs. Instream licences														
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)		=(2)-(1)	100*((2-1)/1)	=(5)-(1)	=(1)-(11)	=100*(1/11)	=(3)-(2)															=100*(4/2)	=100*(5/2)	=100*(6/2)	=100*(7/2)	=100*(8/2)	=100*(9/2)	=100*(4/3)	=100*(5/3)	=(4)-(6)	=(4)-(7)	=(4)-(8)	=(4)-(9)	=100*(5/11)	
	Net flow	Naturalized flow	Total licences	Offstream licences	Instream licences	Estimated actual offstream use	Est. actual offstream use (assuming 10% reduction)	Est. actual offstream use (assuming 20% reduction)	Est. actual offstream use (assuming 30% reduction)	Storage neg = release pos = withdrawal	Conservation Flows		naturalized discharge to 2003	neg = net flow is less than	neg = net flow is less than	neg = instream licences are flow is not met	neg = conservation 100% = conserved flow is not met	neg = there is no additional surface water to license															% of naturalized flow licensed to offstream use	% of naturalized flow licensed to instream use	% of naturalized flow actually withdrawn for use	% of naturalized flow actually withdrawn for use	% of naturalized flow actually withdrawn for use	% of naturalized flow actually withdrawn for use	% of total licences that are for offstream use	% of total licences that are for instream use	room to remove water without additional licences	room to remove water without additional licences	room to remove water without additional licences	room to remove water without additional licences	room to remove water without additional licences	flow legally protected with licences
	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)		(m ³ /s)	(m ³ /s)	(%)	(m ³ /s)	(%)	(%)															(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(%)
Jan	0.266	0.245	0.032	0.032	0.000	0.054	0.021	0.043	0.038	-0.075	0.350	0.85	0.021	8.6	0.266	-0.085	76	0.213	13	0	22	20	18	15	100	0	-0.022	-0.017	-0.011	-0.006	0															
Feb	0.469	0.441	0.033	0.033	0.000	0.056	0.050	0.044	0.039	-0.083	0.350	1.54	0.028	6.2	0.469	0.119	134	0.409	7	0	12	11	10	9	100	0	-0.022	-0.017	-0.011	-0.006	0															
Mar	1.287	1.227	0.034	0.034	0.000	0.058	0.052	0.046	0.040	-0.118	0.350	2.48	0.060	4.9	1.287	0.937	368	1.193	3	0	5	4	4	3	100	0	-0.024	-0.018	-0.012	-0.006	0															
Apr	2.739	2.999	0.065	0.065	0.000	0.109	0.098	0.087	0.076	0.151	1.750	1.26	-0.260	-8.7	2.739	0.895	156	2.934	2	0	4	3	3	3	100	0	-0.044	-0.034	-0.023	-0.012	0															
May	4.101	4.846	0.141	0.141	0.000	0.238	0.215	0.191	0.167	-0.506	3.501	0.59	-1.54	-40.1	4.101	0.600	117	4.705	3	0	5	4	4	3	100	0	-0.097	-0.074	-0.050	-0.026	0															
Jun	1.813	2.406	0.157	0.157	0.000	0.265	0.239	0.212	0.185	-0.328	1.750	0.45	-0.593	-24.7	1.813	0.052	104	2.249	7	0	11	10	8	8	100	0	-0.108	-0.082	-0.055	-0.029	0															
Jul	0.597	0.851	0.229	0.229	0.000	0.386	0.347	0.309	0.270	-0.132	0.700	0.52	-0.347	-28.8	0.597	-0.103	85	0.623	27	0	41	36	32	28	100	0	-0.157	-0.119	-0.080	-0.042	0															
Aug	0.137	0.397	0.232	0.232	0.000	0.392	0.363	0.314	0.274	-0.133	0.525	0.66	-0.258	-65.4	0.137	-0.288	26	0.165	59	0	99	89	79	69	100	0	-0.160	-0.121	-0.081	-0.042	0															
Sep	0.236	0.348	0.144	0.144	0.000	0.243	0.218	0.184	0.170	-0.130	0.438	0.70	-0.113	-32.4	0.236	-0.202	54	0.205	41	0	70	63	56	49	100	0	-0.099	-0.075	-0.050	-0.025	0															
Oct	0.340	0.321	0.060	0.060	0.000	0.102	0.091	0.081	0.071	-0.120	0.350	0.72	0.018	5.7	0.340	-0.011	97	0.291	19	0	32	28	25	22	100	0	-0.041	-0.031	-0.021	-0.011	0															
Nov	0.393	0.333	0.036	0.036	0.000	0.062	0.055	0.049	0.043	-0.122	0.350	0.77	0.060	18.0	0.393	0.043	112	0.360	17	0	18	17	15	13	100	0	-0.025	-0.019	-0.013	-0.007	0															
Dec	0.263	0.242	0.032	0.032	0.000	0.054	0.048	0.043	0.038	-0.075	0.350	0.77	0.021	8.6	0.263	-0.097	75	0.211	13	0	22	20	18	16	100	0	-0.022	-0.017	-0.011	-0.006	0															
Annual	1.055	1.225	0.100	0.100	0.000	0.169	0.152	0.135	0.116	0.000			-0.169	-13.8	1.055		1.214		8	0	14	12	11	10	100	0	-0.069	-0.052	-0.035	-0.018	0															

Stream: LAMBLY CREEK
 Location: BELOW CONFLUENCE OF LAMBLY AND TERRACE CREEKS
 Year: 2050
 Scenario: 2.2 ASSUMING POPULATION AND CLIMATE CHANGE

COMPARISONS (See text for descriptions):

Month	DATA:											Ratio of 2050 naturalized discharge to 2003	#1: Naturalized flow vs Net flow		#2: Instream licences vs Net flow		#3: Conservation flow vs Net flow		#4: Total licences vs Naturalized flow	#5: Offstream licences vs Naturalized flow	#6: Instream licences vs Naturalized flow	#7a: Actual offstream use vs Naturalized flow	#7b: Actual offstream use (assuming 10% demand reduction) vs Naturalized flow	#7c: Actual offstream use (assuming 20% demand reduction) vs Naturalized flow	#7d: Actual offstream use (assuming 30% demand reduction) vs Naturalized flow	#8: Offstream licences vs Total licences	#9: Instream licences vs Total licences	#10a: Actual offstream use vs Offstream licences	#10b: Actual offstream use (assuming 10% demand reduction) vs Offstream licences	#10c: Actual offstream use (assuming 20% demand reduction) vs Offstream licences	#10d: Actual offstream use (assuming 30% demand reduction) vs Offstream licences	#11: Conservatio n flow vs. Instream licences								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)		=(2)-(1)	100*((2-1)/1)	=(5)-(1)	=(1)-(11)	=100*(1/11)	=(3)-(2)															=100*(4/2)	=100*(5/2)	=100*(6/2)	=100*(7/2)	=100*(8/2)	=100*(9/2)	=100*(4/3)	=100*(5/3

Stream: LAMBLY CREEK
 Location: AT THE MOUTH
 Year: 2003
 Scenario: CURRENT CONDITIONS

COMPARISONS (See text for descriptions):

Month	DATA:											Formula:	Remarks:	#1: Naturalized flow vs Net flow	#2: Instream licenses vs Net flow	#3: Conservation flow vs Net flow	#4: Total licenses vs Naturalized flow	#5: Offstream licenses vs Naturalized flow	#6: Instream licenses vs Naturalized flow	#7a: Actual offstream use vs Naturalized flow	#7b: Actual offstream use (assuming 10% demand reduction) vs Naturalized flow	#7c: Actual offstream use (assuming 20% demand reduction) vs Naturalized flow	#7d: Actual offstream use (assuming 30% demand reduction) vs Naturalized flow	#8: Offstream licenses vs Total licenses	#9: Instream licenses vs Total licenses	#10a: Actual offstream use vs Offstream licenses	#10b: Actual offstream use (assuming 10% demand reduction) vs Offstream licenses	#10c: Actual offstream use (assuming 20% demand reduction) vs Offstream licenses	#10d: Actual offstream use (assuming 30% demand reduction) vs Offstream licenses	#11: Conservation flow vs. Instream licenses																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)																				(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)	(40)	(41)	(42)	(43)	(44)	(45)	(46)	(47)	(48)	(49)	(50)	(51)	(52)	(53)	(54)	(55)	(56)	(57)	(58)	(59)	(60)	(61)	(62)	(63)	(64)	(65)	(66)	(67)	(68)	(69)	(70)	(71)	(72)	(73)	(74)	(75)	(76)	(77)	(78)	(79)	(80)	(81)	(82)	(83)	(84)	(85)	(86)	(87)	(88)	(89)	(90)	(91)	(92)	(93)	(94)	(95)	(96)	(97)	(98)	(99)	(100)	(101)	(102)	(103)	(104)	(105)	(106)	(107)	(108)	(109)	(110)	(111)	(112)	(113)	(114)	(115)	(116)	(117)	(118)	(119)	(120)	(121)	(122)	(123)	(124)	(125)	(126)	(127)	(128)	(129)	(130)	(131)	(132)	(133)	(134)	(135)	(136)	(137)	(138)	(139)	(140)	(141)	(142)	(143)	(144)	(145)	(146)	(147)	(148)	(149)	(150)	(151)	(152)	(153)	(154)	(155)	(156)	(157)	(158)	(159)	(160)	(161)	(162)	(163)	(164)	(165)	(166)	(167)	(168)	(169)	(170)	(171)	(172)	(173)	(174)	(175)	(176)	(177)	(178)	(179)	(180)	(181)	(182)	(183)	(184)	(185)	(186)	(187)	(188)	(189)	(190)	(191)	(192)	(193)	(194)	(195)	(196)	(197)	(198)	(199)	(200)	(201)	(202)	(203)	(204)	(205)	(206)	(207)	(208)	(209)	(210)	(211)	(212)	(213)	(214)	(215)	(216)	(217)	(218)	(219)	(220)	(221)	(222)	(223)	(224)	(225)	(226)	(227)	(228)	(229)	(230)	(231)	(232)	(233)	(234)	(235)	(236)	(237)	(238)	(239)	(240)	(241)	(242)	(243)	(244)	(245)	(246)	(247)	(248)	(249)	(250)	(251)	(252)	(253)	(254)	(255)	(256)	(257)	(258)	(259)	(260)	(261)	(262)	(263)	(264)	(265)	(266)	(267)	(268)	(269)	(270)	(271)	(272)	(273)	(274)	(275)	(276)	(277)	(278)	(279)	(280)	(281)	(282)	(283)	(284)	(285)	(286)	(287)	(288)	(289)	(290)	(291)	(292)	(293)	(294)	(295)	(296)	(297)	(298)	(299)	(300)	(301)	(302)	(303)	(304)	(305)	(306)	(307)	(308)	(309)	(310)	(311)	(312)	(313)	(314)	(315)	(316)	(317)	(318)	(319)	(320)	(321)	(322)	(323)	(324)	(325)	(326)	(327)	(328)	(329)	(330)	(331)	(332)	(333)	(334)	(335)	(336)	(337)	(338)	(339)	(340)	(341)	(342)	(343)	(344)	(345)	(346)	(347)	(348)	(349)	(350)	(351)	(352)	(353)	(354)	(355)	(356)	(357)	(358)	(359)	(360)	(361)	(362)	(363)	(364)	(365)	(366)	(367)	(368)	(369)	(370)	(371)	(372)	(373)	(374)	(375)	(376)	(377)	(378)	(379)	(380)	(381)	(382)	(383)	(384)	(385)	(386)	(387)	(388)	(389)	(390)	(391)	(392)	(393)	(394)	(395)	(396)	(397)	(398)	(399)	(400)	(401)	(402)	(403)	(404)	(405)	(406)	(407)	(408)	(409)	(410)	(411)	(412)	(413)	(414)	(415)	(416)	(417)	(418)	(419)	(420)	(421)	(422)	(423)	(424)	(425)	(426)	(427)	(428)	(429)	(430)	(431)	(432)	(433)	(434)	(435)	(436)	(437)	(438)	(439)	(440)	(441)	(442)	(443)	(444)	(445)	(446)	(447)	(448)	(449)	(450)	(451)	(452)	(453)	(454)	(455)	(456)	(457)	(458)	(459)	(460)	(461)	(462)	(463)	(464)	(465)	(466)	(467)	(468)	(469)	(470)	(471)	(472)	(473)	(474)	(475)	(476)	(477)	(478)	(479)	(480)	(481)	(482)	(483)	(484)	(485)	(486)	(487)	(488)	(489)	(490)	(491)	(492)	(493)	(494)	(495)	(496)	(497)	(498)	(499)	(500)	(501)	(502)	(503)	(504)	(505)	(506)	(507)	(508)	(509)	(510)	(511)	(512)	(513)	(514)	(515)	(516)	(517)	(518)	(519)	(520)	(521)	(522)	(523)	(524)	(525)	(526)	(527)	(528)	(529)	(530)	(531)	(532)	(533)	(534)	(535)	(536)	(537)	(538)	(539)	(540)	(541)	(542)	(543)	(544)	(545)	(546)	(547)	(548)	(549)	(550)	(551)	(552)	(553)	(554)	(555)	(556)	(557)	(558)	(559)	(560)	(561)	(562)	(563)	(564)	(565)	(566)	(567)	(568)	(569)	(570)	(571)	(572)	(573)	(574)	(575)	(576)	(577)	(578)	(579)	(580)	(581)	(582)	(583)	(584)	(585)	(586)	(587)	(588)	(589)	(590)	(591)	(592)	(593)	(594)	(595)	(596)	(597)	(598)	(599)	(600)	(601)	(602)	(603)	(604)	(605)	(606)	(607)	(608)	(609)	(610)	(611)	(612)	(613)	(614)	(615)	(616)	(617)	(618)	(619)	(620)	(621)	(622)	(623)	(624)	(625)	(626)	(627)	(628)	(629)	(630)	(631)	(632)	(633)	(634)	(635)	(636)	(637)	(638)	(639)	(640)	(641)	(642)	(643)	(644)	(645)	(646)	(647)	(648)	(649)	(650)	(651)	(652)	(653)	(654)	(655)	(656)	(657)	(658)	(659)	(660)	(661)	(662)	(663)	(664)	(665)	(666)	(667)	(668)	(669)	(670)	(671)	(672)	(673)	(674)	(675)	(676)	(677)	(678)	(679)	(680)	(681)	(682)	(683)	(684)	(685)	(686)	(687)	(688)	(689)	(690)	(691)	(692)	(693)	(694)	(695)	(696)	(697)	(698)	(699)	(700)	(701)	(702)	(703)	(704)	(705)	(706)	(707)	(708)	(709)	(710)	(711)	(712)	(713)	(714)	(715)	(716)	(717)	(718)	(719)	(720)	(721)	(722)	(723)	(724)	(725)	(726)	(727)	(728)	(729)	(730)	(731)	(732)	(733)	(734)	(735)	(736)	(737)	(738)	(739)	(740)	(741)	(742)	(743)	(744)	(745)	(746)	(747)	(748)	(749)	(750)	(751)	(752)	(753)	(754)	(755)	(756)	(757)	(758)	(759)	(760)	(761)	(762)	(763)	(764)	(765)	(766)	(767)	(768)	(769)	(770)	(771)	(772)	(773)	(774)	(775)	(776)	(777)	(778)	(779)	(780)	(781)	(782)	(783)	(784)	(785)	(786)	(787)	(788)	(789)	(790)	(791)	(792)	(793)	(794)	(795)	(796)	(797)	(798)	(799)	(800)	(801)	(802)	(803)	(804)	(805)	(806)	(807)	(808)	(809)	(810)	(811)	(812)	(813)	(814)	(815)	(816)	(817)	(818)	(819)	(820)	(821)	(822)	(823)	(824)	(825)	(826)	(827)	(828)	(829)	(830)	(831)	(832)	(833)	(834)	(835)	(836)	(837)	(838)	(839)	(840)	(841)	(842)	(843)	(844)	(845)	(846)	(847)	(848)	(849)	(850)	(851)	(852)	(853)	(854)	(855)	(856)	(857)	(858)	(859)	(860)	(861)	(862)	(863)	(864)	(865)	(866)	(867)	(868)	(869)	(870)	(871)	(872)	(873)	(874)	(875)	(876)	(877)	(878)	(879)	(880)	(881)	(882)	(883)	(884)	(885)	(886)	(887)	(888)	(889)	(890)	(891)	(892)	(893)	(894)	(895)	(896)	(897)	(898)	(899)	(900)	(901)	(902)	(903)	(904)	(905)	(906)	(907)	(908)	(909)	(910)	(911)	(912)	(913)	(914)	(915)	(916)	(917)	(918)	(919)	(920)	(921)	(922)	(923)	(924)	(925)	(926)	(927)	(928)	(929)	(930)	(931)	(932)	(933)	(934)	(935)	(936)	(937)	(938)	(939)	(940)	(941)	(942)	(943)	(944)	(945)	(946)	(947)	(948)	(949)	(950)	(951)	(952)	(953)	(954)	(955)	(956)	(957)	(958)	(959)	(960)	(961)	(962)	(963)	(964)	(965)	(966)	(967)	(968)	(969)	(970)	(971)	(972)	(973)	(974)	(975)	(976)	(977)	(978)	(979)	(980)	(981)	(982)	(983)	(984)	(985)	(986)	(987)	(988)	(989)	(990)	(991)	(992)	(993)	(994)	(995)	(996)	(997)	(998)	(999)	(1000)
	Jan	0.308	0.296	0.083	0.083	0.000	0.057	0.061	0.046	0.040	-0.075																				0.354	0.018	8.2	0.308	-0.046	87	0.207	29	0	20	18	16	14	100	0	0.028	0.034	0.040	0.046	0	0	0	0.123	0.136	0.148	0.151	0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
Feb	0.311	0.290	0.080	0.080	0.000	0.062	0.056	0.049	0.043	-0.083	0.354	0.021	7.3	0.311	-0.043	89	0.201	31	0	21	19	17	15	100	0	0.028	0.034	0.040	0.046	0	0	0	0.123	0.136	0.148	0.151	0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Mar	0.554	0.500	0.101	0.101	0.000	0.063	0.057	0.051	0.044	-0.118	0.354	0.054	10.9	0.554	0.200	157	0.398	20	0	13	11	10	8	100	0	0.037	0.043	0.050	0.056	0	0	0	0.342	0.367	0.392	0.417	0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Apr	2.124	2.409	0.249	0.249	0.000	0.125	0.113	0.100	0.088	0.151	1.770	-0.276	-11.5	2.124	0.354	120	2.151	10	0	5	5	4	4	100	0	0.123	0.136	0.148	0.151	0	0	0	0.342	0.367	0.392	0.417	0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
May	7.564	8.320	0.582	0.582	0.000	0.250	0.225	0.200	0.175	0.506	3.540	-0.756	-9.1	7.564	4.024	214	7.728	7	0	3	3	2	2	100	0	0.342	0.367	0.392	0.417	0	0	0	0.600	0.645	0.689	0.734	0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Jun	4.725	5.380	0.722	0.722	0.000	0.327	0.284	0.261	0.229	0.328	1.770	-0.655	-12.2	4.725	2.955	267	4.658	13	0	8	5	5	4	100	0	0.395	0.428	0.460	0.493	0	0	0	0.600	0.645	0.689	0.734	0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Jul	1.328	1.640	1.045	1.045	0.000	0.445	0.400	0.356	0.311	-0.132	0.708	-0.400	-19.1	1.328	0.595	84	0.27	24	0	27	24	22	19	100	0	0.347	0.372	0.398	0.424	0	0	0	0.600	0.645	0.689	0.734	0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Aug	0.319	0.610	1.028	1.028	0.000	0.424	0.381	0.338	0.297	-0.133	0.531	-0.291	-47.7	0.319	-0.212	60	-0.418	168	0	69	62	56	48	100	0	0.604	0.646	0.689	0.731	0	0	0	0.604	0.646	0.689	0.731	0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Sep	0.372	0.500	0.604	0.604	0.000	0.258	0.232	0.208	0.180	-0.130	0.443	-0.232	-25.6	0.372	-0.070	84	-0.104	121	0	52	46	41	36	100	0	0.347	0.372	0.398	0.424	0	0	0	0.604	0.646	0.689	0.731	0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Oct	0.447	0.450	0.237	0.237	0.000	0.123	0.110	0.098	0.086	-0.120	0.354	-0.003	-0.6	0.447	0.093	126	0.213	53	0	27	25	22	19	100	0	0.116	0.127	0.139	0.152	0	0	0	0.116	0.127	0.139	0.152	0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Nov	0.483	0.440	0.099	0.099	0.000	0.098	0.061	0.054	0.048	-0.122	0.354	0.063	12.2	0.483	0.139	139	0.341	23	0	15	14	12	11	100	0	0.031	0.038	0.045	0.051	0	0	0	0.031	0.038	0.045	0.051	0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Dec	0.335	0.320	0.087	0.087	0.000	0.080	0.054	0.048	0.042	-0.075	0.354	0.015	4.6	0.335	-0.019	95	0.233	27	0	19																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							

Stream: LAMBLY CREEK
 Location: AT THE MOUTH
 Year: 2020
 Scenario: 1.1 ASSUMING POPULATION CHANGE ONLY

COMPARISONS (See text for descriptions):

Month	DATA:											Formula:	#1: Naturalized flow vs Net flow	#2: Instream licences vs Net flow	#3: Conservation flow vs Net flow	#4: Total licences vs Naturalized flow	#5: Offstream licences vs Naturalized flow	#6: Instream licences vs Naturalized flow	#7a: Actual offstream use vs Naturalized flow	#7b: Actual offstream use (assuming 10% demand reduction) vs Naturalized flow	#7c: Actual offstream use (assuming 20% demand reduction) vs Naturalized flow	#7d: Actual offstream use (assuming 30% demand reduction) vs Naturalized flow	#8: Offstream licences vs Total licences	#9: Instream licences vs Total licences	#10a: Actual offstream use vs Offstream licences	#10b: Actual offstream use (assuming 10% demand reduction) vs Offstream licences	#10c: Actual offstream use (assuming 20% demand reduction) vs Offstream licences	#10d: Actual offstream use (assuming 30% demand reduction) vs Offstream licences	#11: Conservation flow vs. Instream licences																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)																			(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)	(40)	(41)	(42)	(43)	(44)	(45)	(46)	(47)	(48)	(49)	(50)	(51)	(52)	(53)	(54)	(55)	(56)	(57)	(58)	(59)	(60)	(61)	(62)	(63)	(64)	(65)	(66)	(67)	(68)	(69)	(70)	(71)	(72)	(73)	(74)	(75)	(76)	(77)	(78)	(79)	(80)	(81)	(82)	(83)	(84)	(85)	(86)	(87)	(88)	(89)	(90)	(91)	(92)	(93)	(94)	(95)	(96)	(97)	(98)	(99)	(100)	(101)	(102)	(103)	(104)	(105)	(106)	(107)	(108)	(109)	(110)	(111)	(112)	(113)	(114)	(115)	(116)	(117)	(118)	(119)	(120)	(121)	(122)	(123)	(124)	(125)	(126)	(127)	(128)	(129)	(130)	(131)	(132)	(133)	(134)	(135)	(136)	(137)	(138)	(139)	(140)	(141)	(142)	(143)	(144)	(145)	(146)	(147)	(148)	(149)	(150)	(151)	(152)	(153)	(154)	(155)	(156)	(157)	(158)	(159)	(160)	(161)	(162)	(163)	(164)	(165)	(166)	(167)	(168)	(169)	(170)	(171)	(172)	(173)	(174)	(175)	(176)	(177)	(178)	(179)	(180)	(181)	(182)	(183)	(184)	(185)	(186)	(187)	(188)	(189)	(190)	(191)	(192)	(193)	(194)	(195)	(196)	(197)	(198)	(199)	(200)	(201)	(202)	(203)	(204)	(205)	(206)	(207)	(208)	(209)	(210)	(211)	(212)	(213)	(214)	(215)	(216)	(217)	(218)	(219)	(220)	(221)	(222)	(223)	(224)	(225)	(226)	(227)	(228)	(229)	(230)	(231)	(232)	(233)	(234)	(235)	(236)	(237)	(238)	(239)	(240)	(241)	(242)	(243)	(244)	(245)	(246)	(247)	(248)	(249)	(250)	(251)	(252)	(253)	(254)	(255)	(256)	(257)	(258)	(259)	(260)	(261)	(262)	(263)	(264)	(265)	(266)	(267)	(268)	(269)	(270)	(271)	(272)	(273)	(274)	(275)	(276)	(277)	(278)	(279)	(280)	(281)	(282)	(283)	(284)	(285)	(286)	(287)	(288)	(289)	(290)	(291)	(292)	(293)	(294)	(295)	(296)	(297)	(298)	(299)	(300)	(301)	(302)	(303)	(304)	(305)	(306)	(307)	(308)	(309)	(310)	(311)	(312)	(313)	(314)	(315)	(316)	(317)	(318)	(319)	(320)	(321)	(322)	(323)	(324)	(325)	(326)	(327)	(328)	(329)	(330)	(331)	(332)	(333)	(334)	(335)	(336)	(337)	(338)	(339)	(340)	(341)	(342)	(343)	(344)	(345)	(346)	(347)	(348)	(349)	(350)	(351)	(352)	(353)	(354)	(355)	(356)	(357)	(358)	(359)	(360)	(361)	(362)	(363)	(364)	(365)	(366)	(367)	(368)	(369)	(370)	(371)	(372)	(373)	(374)	(375)	(376)	(377)	(378)	(379)	(380)	(381)	(382)	(383)	(384)	(385)	(386)	(387)	(388)	(389)	(390)	(391)	(392)	(393)	(394)	(395)	(396)	(397)	(398)	(399)	(400)	(401)	(402)	(403)	(404)	(405)	(406)	(407)	(408)	(409)	(410)	(411)	(412)	(413)	(414)	(415)	(416)	(417)	(418)	(419)	(420)	(421)	(422)	(423)	(424)	(425)	(426)	(427)	(428)	(429)	(430)	(431)	(432)	(433)	(434)	(435)	(436)	(437)	(438)	(439)	(440)	(441)	(442)	(443)	(444)	(445)	(446)	(447)	(448)	(449)	(450)	(451)	(452)	(453)	(454)	(455)	(456)	(457)	(458)	(459)	(460)	(461)	(462)	(463)	(464)	(465)	(466)	(467)	(468)	(469)	(470)	(471)	(472)	(473)	(474)	(475)	(476)	(477)	(478)	(479)	(480)	(481)	(482)	(483)	(484)	(485)	(486)	(487)	(488)	(489)	(490)	(491)	(492)	(493)	(494)	(495)	(496)	(497)	(498)	(499)	(500)	(501)	(502)	(503)	(504)	(505)	(506)	(507)	(508)	(509)	(510)	(511)	(512)	(513)	(514)	(515)	(516)	(517)	(518)	(519)	(520)	(521)	(522)	(523)	(524)	(525)	(526)	(527)	(528)	(529)	(530)	(531)	(532)	(533)	(534)	(535)	(536)	(537)	(538)	(539)	(540)	(541)	(542)	(543)	(544)	(545)	(546)	(547)	(548)	(549)	(550)	(551)	(552)	(553)	(554)	(555)	(556)	(557)	(558)	(559)	(560)	(561)	(562)	(563)	(564)	(565)	(566)	(567)	(568)	(569)	(570)	(571)	(572)	(573)	(574)	(575)	(576)	(577)	(578)	(579)	(580)	(581)	(582)	(583)	(584)	(585)	(586)	(587)	(588)	(589)	(590)	(591)	(592)	(593)	(594)	(595)	(596)	(597)	(598)	(599)	(600)	(601)	(602)	(603)	(604)	(605)	(606)	(607)	(608)	(609)	(610)	(611)	(612)	(613)	(614)	(615)	(616)	(617)	(618)	(619)	(620)	(621)	(622)	(623)	(624)	(625)	(626)	(627)	(628)	(629)	(630)	(631)	(632)	(633)	(634)	(635)	(636)	(637)	(638)	(639)	(640)	(641)	(642)	(643)	(644)	(645)	(646)	(647)	(648)	(649)	(650)	(651)	(652)	(653)	(654)	(655)	(656)	(657)	(658)	(659)	(660)	(661)	(662)	(663)	(664)	(665)	(666)	(667)	(668)	(669)	(670)	(671)	(672)	(673)	(674)	(675)	(676)	(677)	(678)	(679)	(680)	(681)	(682)	(683)	(684)	(685)	(686)	(687)	(688)	(689)	(690)	(691)	(692)	(693)	(694)	(695)	(696)	(697)	(698)	(699)	(700)	(701)	(702)	(703)	(704)	(705)	(706)	(707)	(708)	(709)	(710)	(711)	(712)	(713)	(714)	(715)	(716)	(717)	(718)	(719)	(720)	(721)	(722)	(723)	(724)	(725)	(726)	(727)	(728)	(729)	(730)	(731)	(732)	(733)	(734)	(735)	(736)	(737)	(738)	(739)	(740)	(741)	(742)	(743)	(744)	(745)	(746)	(747)	(748)	(749)	(750)	(751)	(752)	(753)	(754)	(755)	(756)	(757)	(758)	(759)	(760)	(761)	(762)	(763)	(764)	(765)	(766)	(767)	(768)	(769)	(770)	(771)	(772)	(773)	(774)	(775)	(776)	(777)	(778)	(779)	(780)	(781)	(782)	(783)	(784)	(785)	(786)	(787)	(788)	(789)	(790)	(791)	(792)	(793)	(794)	(795)	(796)	(797)	(798)	(799)	(800)	(801)	(802)	(803)	(804)	(805)	(806)	(807)	(808)	(809)	(810)	(811)	(812)	(813)	(814)	(815)	(816)	(817)	(818)	(819)	(820)	(821)	(822)	(823)	(824)	(825)	(826)	(827)	(828)	(829)	(830)	(831)	(832)	(833)	(834)	(835)	(836)	(837)	(838)	(839)	(840)	(841)	(842)	(843)	(844)	(845)	(846)	(847)	(848)	(849)	(850)	(851)	(852)	(853)	(854)	(855)	(856)	(857)	(858)	(859)	(860)	(861)	(862)	(863)	(864)	(865)	(866)	(867)	(868)	(869)	(870)	(871)	(872)	(873)	(874)	(875)	(876)	(877)	(878)	(879)	(880)	(881)	(882)	(883)	(884)	(885)	(886)	(887)	(888)	(889)	(890)	(891)	(892)	(893)	(894)	(895)	(896)	(897)	(898)	(899)	(900)	(901)	(902)	(903)	(904)	(905)	(906)	(907)	(908)	(909)	(910)	(911)	(912)	(913)	(914)	(915)	(916)	(917)	(918)	(919)	(920)	(921)	(922)	(923)	(924)	(925)	(926)	(927)	(928)	(929)	(930)	(931)	(932)	(933)	(934)	(935)	(936)	(937)	(938)	(939)	(940)	(941)	(942)	(943)	(944)	(945)	(946)	(947)	(948)	(949)	(950)	(951)	(952)	(953)	(954)	(955)	(956)	(957)	(958)	(959)	(960)	(961)	(962)	(963)	(964)	(965)	(966)	(967)	(968)	(969)	(970)	(971)	(972)	(973)	(974)	(975)	(976)	(977)	(978)	(979)	(980)	(981)	(982)	(983)	(984)	(985)	(986)	(987)	(988)	(989)	(990)	(991)	(992)	(993)	(994)	(995)	(996)	(997)	(998)	(999)	(1000)
	Jan	0.288	0.290	0.083	0.083	0.000	0.077	0.083	0.083	0.054	-0.075																			0.354	-0.002	-0.8	0.288	-0.086	81	0.207	29	24	21	19	100	0	0.006	0.014	0.022	0.029	0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
Feb	0.289	0.289	0.090	0.090	0.000	0.084	0.075	0.067	0.058	-0.083	0.354	-0.001	-0.3	0.289	-0.065	82	0.200	31	0	29	26	23	20	100	0	0.006	0.014	0.023	0.031	0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
Mar	0.532	0.500	0.101	0.101	0.000	0.086	0.077	0.069	0.080	-0.118	0.354	0.032	6.4	0.532	-0.178	150	0.399	20	0	17	15	14	12	100	0	0.015	0.023	0.032	0.041	0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
Apr	2.080	2.400	0.249	0.249	0.000	0.169	0.152	0.135	0.118	0.151	1.770	-0.320	-13.3	2.080	-0.310	118	2.151	10	0	7	5	5	3	100	0	0.060	0.087	0.114	0.131	0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
May	7.478	8.320	0.603	0.593	0.000	0.336	0.302	0.288	0.235	0.506	3.540	-0.842	-10.1	7.478	-3.938	211	7.727	7	0	4	4	3	3	100	0	0.257	0.290	0.324	0.358	0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
Jun	4.614	5.380	0.723	0.723	0.000	0.437	0.394	0.360	0.306	0.328	1.770	-0.766	-14.2	4.614	-2.844	261	4.657	13	0	8	7	7	6	100	0	0.285	0.329	0.373	0.418	0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
Jul	1.177	1.640	1.045	1.045	0.000	0.595	0.535	0.476	0.416	-0.132	0.700	-0.463	-28.2	1.177	-0.460	166	0.595	84	0	36	33	29	25	100	0	0.451	0.510	0.570	0.628	0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
Aug	0.175	0.610	1.028	1.028	0.000	0.607	0.510	0.454	0.397	-0.133	0.531	-0.435	-71.2	0.175	-0.355	33	-0.418	169	0	83	84	74	65	100	0	0.451	0.510	0.570	0.628	0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
Sep	0.284	0.500	0.605	0.605	0.000	0.346	0.311	0.277	0.242	-0.130	0.443	-0.215	-43.2	0.284	-0.158	64	-0.105	121	0	59	52	55	48	100	0	0.258	0.294	0.328	0.363	0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
Oct	0.466	0.450	0.238	0.238	0.000	0.165	0.148	0.132	0.118	-0.120	0.354	-0.045	-10.0	0.466	-0.051	114	0.212	53	0	37	33	29	28	100	0	0.073	0.089	0.106	0.122	0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
Nov	0.469	0.440	0.089	0.089	0.000	0.092	0.083	0.074	0.065	-0.122	0.354	0.029	8.6	0.469	0.115	133	0.341	23	0	21	18	17	15	100	0	0.007	0.018	0.025	0.035	0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
Dec	0.313	0.320	0.067	0.067	0.000	0.081	0.073	0.065	0.057	-0.075	0.354	-0.007	-2.1	0.313	-0.041	88	0.233	27	0	25	22	20	18	100	0	0.006	0.014	0.022	0.030	0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
Annual	1.516	1.770	0.414	0.414	0.000	0.254	0.229	0.203	0.178	0.000		-0.254	-14.4	1.516		23				14	13	11	10	100	0	0.159	0.188	0.211	0.236	0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												

Stream: LAMBLY CREEK
 Location: ABOVE PDS106 (LAKEVIEW IRRIGATION DISTRICT WEIR)
 Year: 2020
 Scenario: 1.1 ASSUMING POPULATION CHANGE ONLY

COMPARISONS (See text for descriptions):

Month	DATA:											Formula:	#1: Naturalized flow vs Net flow	#2: Instream licences vs Net flow	#3: Conservation flow vs Net flow	#4: Total licences vs Naturalized flow	#5: Offstream licences vs Naturalized flow	#
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Appendix J

McDOUGALL CREEK STREAMFLOW ANALYSIS

Stream: McDOUGALL CREEK
 Location: AT THE MOUTH
 Year: 2003
 Scenario: CURRENT CONDITIONS

COMPARISONS (See text for descriptions):

Month	DATA:											Formula:	#1: Naturalized flow vs Net flow	#2: Instream licences vs Net flow	#3: Conservation flow vs Net flow	#4: Total licences vs Naturalized flow	#5: Offstream licences vs Naturalized flow	#6: Instream licences vs Naturalized flow	#7a: Actual offstream use vs Naturalized flow	#7b: Actual offstream use (assuming 10% demand reduction) vs Naturalized flow	#7c: Actual offstream use (assuming 20% demand reduction) vs Naturalized flow	#7d: Actual offstream use (assuming 30% demand reduction) vs Naturalized flow	#8: Offstream licences vs Total licences	#9: Instream licences vs Total licences	#10a: Actual offstream use vs Offstream licences	#10b: Actual offstream use (assuming 10% demand reduction) vs Offstream licences	#10c: Actual offstream use (assuming 20% demand reduction) vs Offstream licences	#10d: Actual offstream use (assuming 30% demand reduction) vs Offstream licences	#11: Conservation flow vs. Instream licences														
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)																			(2)-(1)	$\frac{100 \times ((2)-(1))}{(2)}$	(5)-(1)	$\frac{(1)-(11)}{100 \times ((1)/(11))}$	(3)-(2)	$\frac{100 \times (4)/(2)}{100 \times (5)/(2)}$	$\frac{100 \times (6)/(2)}{100 \times (7)/(2)}$	$\frac{100 \times (8)/(2)}{100 \times (9)/(2)}$	$\frac{100 \times (4)/(3)}{100 \times (5)/(3)}$	(4)-(6)	(4)-(7)	(4)-(8)	(4)-(9)	$\frac{100 \times (5)/(11)}{100 \times (5)/(11)}$
	Net flow	Naturalized flow	Total licences	Offstream licences	Instream licences	Estimated actual offstream use	Est. actual offstream use (assuming 10% reduction)	Est. actual offstream use (assuming 20% reduction)	Est. actual offstream use (assuming 30% reduction)	Storage	Conservation																			Remarks:	neg = net flow is less than naturalized flow	neg = net flow is less than naturalized flow	neg = instream licences are not met by net flow	neg = conservation flow is not met by net flow	neg = there is no additional flow licensed to offstream use	% of naturalized flow licensed to offstream use	% of naturalized flow licensed to instream use	% of naturalized flow actually withdrawn for use	% of naturalized flow actually withdrawn for use	% of naturalized flow actually withdrawn for use	% of total licences that are for offstream use	% of total licences that are for instream use	neg = no additional room to remove water without additional licences
Jan	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.024		0.000	-1.3	0.019	-0.005	80	0.019	1	0	1	1	100	0	0.000	0.000	0.000	0.000	0															
Feb	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.024		0.000	-1.5	0.019	-0.005	80	0.019	1	0	1	1	100	0	0.000	0.000	0.000	0.000	0															
Mar	0.032	0.034	0.002	0.002	0.000	0.002	0.002	0.002	-0.001	0.024		-0.001	-4.2	0.032	0.008	135	0.031	7	0	7	6	100	0	0.000	0.000	0.000	0.001	0															
Apr	0.124	0.162	0.017	0.017	0.000	0.017	0.016	0.014	0.012	0.119		-0.038	-23.5	0.124	0.005	104	0.144	11	0	11	10	100	0	0.000	0.002	0.003	0.005	0															
May	0.434	0.561	0.057	0.057	0.000	0.057	0.052	0.046	0.040	0.238		-0.127	-22.6	0.434	0.195	182	0.503	10	0	10	9	100	0	0.000	0.006	0.011	0.017	0															
Jun	0.263	0.361	0.065	0.065	0.000	0.065	0.058	0.052	0.045	0.119		-0.098	-27.2	0.263	0.144	221	0.297	18	0	18	16	100	0	0.000	0.006	0.013	0.019	0															
Jul	0.053	0.110	0.102	0.102	0.000	0.102	0.092	0.082	0.071	0.048		-0.057	-52.1	0.053	0.005	111	0.008	93	0	93	83	100	0	0.000	0.010	0.020	0.031	0															
Aug	-0.017	0.041	0.104	0.104	0.000	0.104	0.093	0.083	0.073	0.036		-0.058	-140.8	-0.017	-0.053	-47	-0.052	251	0	251	226	100	0	0.000	0.010	0.021	0.031	0															
Sep	0.001	0.034	0.058	0.058	0.000	0.058	0.052	0.046	0.040	0.030		-0.033	-96.6	0.001	-0.029	4	-0.024	172	0	172	154	100	0	0.000	0.006	0.012	0.017	0															
Oct	0.021	0.030	0.016	0.016	0.000	0.016	0.014	0.013	0.011	0.024		-0.009	-30.1	0.021	-0.003	87	0.014	53	0	53	46	100	0	0.000	0.002	0.003	0.005	0															
Nov	0.030	0.030	0.000	0.000	0.000	0.030	0.030	0.030	0.030	0.024		0.000	-0.9	0.030	0.006	124	0.030	1	0	1	1	100	0	0.000	0.000	0.000	0.000	0															
Dec	0.022	0.022	0.000	0.000	0.000	0.022	0.022	0.022	0.022	0.024		0.000	-1.2	0.022	-0.002	91	0.022	1	0	1	1	100	0	0.000	0.000	0.000	0.000	0															
Annual	0.084	0.119	0.035	0.035	0.000	0.035	0.032	0.028	0.025	0.000		-0.035	-29.8	0.084	0.084	30	0.064	30	0	30	27	100	0	0.000	0.004	0.007	0.011	0															

Stream: McDOUGALL CREEK
 Location: BELOW PD59093
 Year: 2003
 Scenario: CURRENT CONDITIONS

COMPARISONS (See text for descriptions):

Month	DATA:											Formula:	#1: Naturalized flow vs Net flow	#2: Instream licences vs Net flow	#3: Conservation flow vs Net flow	#4: Total licences vs Naturalized flow	#5: Offstream licences vs Naturalized flow	#6: Instream licences vs Naturalized flow	#7a: Actual offstream use vs Naturalized flow	#7b: Actual offstream use (assuming 10% demand reduction) vs Naturalized flow	#7c: Actual offstream use (assuming 20% demand reduction) vs Naturalized flow	#7d: Actual offstream use (assuming 30% demand reduction) vs Naturalized flow	#8: Offstream licences vs Total licences	#9: Instream licences vs Total licences	#10a: Actual offstream use vs Offstream licences	#10b: Actual offstream use (assuming 10% demand reduction) vs Offstream licences	#10c: Actual offstream use (assuming 20% demand reduction) vs Offstream licences	#10d: Actual offstream use (assuming 30% demand reduction) vs Offstream licences	#11: Conservation flow vs. Instream licences														
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)																			(2)-(1)	$\frac{100 \times ((2)-(1))}{(2)}$	(5)-(1)	$\frac{(1)-(11)}{100 \times ((1)/(11))}$	(3)-(2)	$\frac{100 \times (4)/(2)}{100 \times (5)/(2)}$	$\frac{100 \times (6)/(2)}{100 \times (7)/(2)}$	$\frac{100 \times (8)/(2)}{100 \times (9)/(2)}$	$\frac{100 \times (4)/(3)}{100 \times (5)/(3)}$	(4)-(6)	(4)-(7)	(4)-(8)	(4)-(9)	$\frac{100 \times (5)/(11)}{100 \times (5)/(11)}$
	Net flow	Naturalized flow	Total licences	Offstream licences	Instream licences	Estimated actual offstream use	Est. actual offstream use (assuming 10% reduction)	Est. actual offstream use (assuming 20% reduction)	Est. actual offstream use (assuming 30% reduction)	Storage	Conservation																			Remarks:	neg = net flow is less than naturalized flow	neg = net flow is less than naturalized flow	neg = instream licences are not met by net flow	neg = conservation flow is not met by net flow	neg = there is no additional flow licensed to offstream use	% of naturalized flow licensed to offstream use	% of naturalized flow licensed to instream use	% of naturalized flow actually withdrawn for use	% of naturalized flow actually withdrawn for use	% of naturalized flow actually withdrawn for use	% of total licences that are for offstream use	% of total licences that are for instream use	neg = no additional room to remove water without additional licences
Jan	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.023		0.000	-0.5	0.019	-0.004	81	0.019	1	0	1	1	100	0	0.000	0.000	0.000	0.000	0															
Feb	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.023		0.000	-0.7	0.019	-0.004	81	0.019	1	0	1	1	100	0	0.000	0.000	0.000	0.000	0															
Mar	0.032	0.033	0.001	0.001	0.000	0.001	0.001	0.001	-0.001	0.023		0.000	-0.9	0.032	0.009	140	0.032	4	0	4	3	100	0	0.000	0.000	0.000	0.000	0															
Apr	0.128	0.158	0.009	0.009	0.000	0.009	0.008	0.007	0.006	0.116		-0.030	-19.0	0.128	0.012	110	0.148	6	0	6	5	100	0	0.000	0.001	0.002	0.003	0															
May	0.446	0.546	0.030	0.030	0.000	0.030	0.027	0.024	0.021	0.232		-0.100	-18.3	0.446	0.214	192	0.515	6	0	6	5	100	0	0.000	0.003	0.006	0.009	0															
Jun	0.284	0.352	0.034	0.034	0.000	0.034	0.031	0.027	0.024	0.116		-0.068	-19.4	0.284	0.168	245	0.317	10	0	10	9	100	0	0.000	0.003	0.007	0.010	0															
Jul	0.098	0.107	0.054	0.054	0.000	0.054	0.049	0.043	0.039	0.046		-0.010	-9.0	0.098	0.051	210	0.053	51	0	51	46	100	0	0.000	0.005	0.011	0.016	0															
Aug	0.031	0.040	0.055	0.055	0.000	0.055	0.044	0.039	0.035	0.035		-0.010	-24.2	0.031	-0.004	88	-0.015	137	0	137	123	100	0	0.000	0.005	0.011	0.017	0															
Sep	0.027	0.033	0.031	0.031	0.000	0.031	0.028	0.025	0.022	0.029		-0.005	-16.7	0.027	-0.002	94	0.002	94	0	94	84	100	0	0.000	0.003	0.006	0.009	0															
Oct	0.027	0.029	0.008	0.008	0.000	0.008	0.007	0.007	-0.007	0.023		-0.002	-5.4	0.027	0.004	118	0.021	29	0	29	26	100	0	0.000	0.001	0.002	0.003	0															
Nov	0.029	0.029	0.000	0.000	0.000	0.029	0.029	0.029	0.029	0.023		0.000	-0.4	0.029	0.006	124	0.029	0	0	0	0	100	0	0.000	0.000	0.000	0.000	0															
Dec	0.021	0.021	0.000	0.000	0.000	0.021	0.021	0.021	0.021	0.023		0.000	-0.5	0.021	-0.002	92	0.021	1	0	1	1	100	0	0.000	0.000	0.000	0.000	0															
Annual	0.097	0.116	0.019	0.019	0.000	0.019	0.017	0.015	0.013	0.000		-0.019	-16.3	0.097	0.097	16	0.097	16	0	16	15	100	0	0.000	0.002	0.004	0.006	0															

Stream: McDOUGALL CREEK
 Location: AT THE MOUTH
 Year: 2020
 Scenario: 1.1 ASSUMING POPULATION CHANGE ONLY

COMPARISONS (See text for descriptions):

Month	DATA:											Formula:	#1: Naturalized flow vs Net flow	#2: Instream licences vs Net flow	#3: Conservation flow vs Net flow	#4: Total licences vs Naturalized flow	#5: Offstream licences vs Naturalized flow	#6: Instream licences vs Naturalized flow	#7a: Actual offstream use vs Naturalized flow	#7b: Actual offstream use (assuming 10% demand reduction) vs Naturalized flow	#7c: Actual offstream use (assuming 20% demand reduction) vs Naturalized flow	#7d: Actual offstream use (assuming 30% demand reduction) vs Naturalized flow	#8: Offstream licences vs Total licences	#9: Instream licences vs Total licences	#10a: Actual offstream use vs Offstream licences	#10b: Actual offstream use (assuming 10% demand reduction) vs Offstream licences	#10c: Actual offstream use (assuming 20% demand reduction) vs Offstream licences	#10d: Actual offstream use (assuming 30% demand reduction) vs Offstream licences	#11: Conservation flow vs. Instream licences		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)																				
	Net flow	Naturalized flow	Total licences (offstream & instream)	Offstream licences	Instream licences	Estimated actual offstream use	Est. actual offstream use (assuming 10% reduction)	Est. actual offstream use (assuming 20% reduction)	Est. actual offstream use (assuming 30% reduction)	Storage (neg = release, pos = withdrawal)	Conservation Flows																				
Jan	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.024	0.000	-2.2	0.019	-0.005	80	0.019	2	0	2	2	2	100	0	0.000	0.000	0.000	0.000	0			
Feb	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.024	0.000	-2.5	0.019	-0.005	80	0.019	2	0	2	2	2	100	0	0.000	0.000	0.000	0.000	0			
Mar	0.032	0.034	0.003	0.003	0.000	0.003	0.002	0.002	-0.001	0.024	0.002	-0.002	-4.8	0.032	0.008	135	0.031	7	0	7	8	5	100	0	0.000	0.000	0.001	0.001	0		
Apr	0.123	0.162	0.018	0.018	0.000	0.018	0.016	0.014	0.012	0.119	0.021	-0.038	-23.7	0.123	0.004	104	0.144	11	0	11	10	8	100	0	0.000	0.002	0.004	0.005	0		
May	0.433	0.561	0.058	0.058	0.000	0.058	0.052	0.048	0.040	0.238	0.070	-0.127	-22.7	0.433	0.185	182	0.503	10	0	10	9	8	100	0	0.000	0.006	0.012	0.017	0		
Jun	0.262	0.361	0.065	0.065	0.000	0.065	0.059	0.052	0.046	0.119	0.034	-0.099	-27.4	0.262	0.143	220	0.298	18	0	18	16	14	100	0	0.000	0.007	0.013	0.020	0		
Jul	0.052	0.110	0.10	0.10	0.000	0.10	0.093	0.082	0.072	0.048	0.024	-0.058	-52.8	0.052	0.004	109	0.007	83	0	83	84	75	100	0	0.000	0.010	0.021	0.031	0		
Aug	-0.018	0.041	0.10	0.10	0.000	0.10	0.094	0.084	0.073	0.036	0.021	-0.059	-142.9	-0.018	-0.018	-0.053	-50	-0.063	253	0	253	227	202	177	100	0	0.000	0.010	0.021	0.031	0
Sep	0.001	0.034	0.058	0.058	0.000	0.058	0.052	0.047	0.041	0.030	0.021	-0.033	-98.2	0.001	-0.029	2	-0.025	173	0	173	158	139	121	100	0	0.000	0.006	0.012	0.017	0	
Oct	0.021	0.030	0.016	0.016	0.000	0.016	0.014	0.013	0.011	0.024	0.011	-0.009	-31.0	0.021	-0.003	88	0.014	54	0	54	49	43	38	100	0	0.000	0.002	0.003	0.005	0	
Nov	0.029	0.030	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.024	0.000	0.000	-1.5	0.029	0.006	123	0.029	1	0	1	1	1	100	0	0.000	0.000	0.000	0.000	0		
Dec	0.022	0.022	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.024	0.000	0.000	-2.0	0.022	0.006	91	0.022	2	0	2	2	2	100	0	0.000	0.000	0.000	0.000	0		
Annual	0.083	0.119	0.036	0.036	0.000	0.036	0.032	0.029	0.025	0.000	0.000	-0.036	-30.1	0.083	0.083	30	0	30	27	24	21	100	0	0.000	0.004	0.007	0.011	0			

Stream: McDOUGALL CREEK
 Location: BELOW PD59083
 Year: 2020
 Scenario: 1.1 ASSUMING POPULATION CHANGE ONLY

COMPARISONS (See text for descriptions):

Month	DATA:											Formula:	#1: Naturalized flow vs Net flow	#2: Instream licences vs Net flow	#3: Conservation flow vs Net flow	#4: Total licences vs Naturalized flow	#5: Offstream licences vs Naturalized flow	#6: Instream licences vs Naturalized flow	#7a: Actual offstream use vs Naturalized flow	#7b: Actual offstream use (assuming 10% demand reduction) vs Naturalized flow	#7c: Actual offstream use (assuming 20% demand reduction) vs Naturalized flow	#7d: Actual offstream use (assuming 30% demand reduction) vs Naturalized flow	#8: Offstream licences vs Total licences	#9: Instream licences vs Total licences	#10a: Actual offstream use vs Offstream licences	#10b: Actual offstream use (assuming 10% demand reduction) vs Offstream licences	#10c: Actual offstream use (assuming 20% demand reduction) vs Offstream licences	#10d: Actual offstream use (assuming 30% demand reduction) vs Offstream licences	#11: Conservation flow vs. Instream licences	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)																			
	Net flow	Naturalized flow	Total licences (offstream & instream)	Offstream licences	Instream licences	Estimated actual offstream use	Est. actual offstream use (assuming 10% reduction)	Est. actual offstream use (assuming 20% reduction)	Est. actual offstream use (assuming 30% reduction)	Storage (neg = release, pos = withdrawal)	Conservation Flows																			
Jan	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.023	0.000	-1.0	0.019	-0.004	81	0.019	1	0	1	1	1	100	0	0.000	0.000	0.000	0.000	0		
Feb	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.023	0.000	-1.1	0.019	-0.004	81	0.019	1	0	1	1	1	100	0	0.000	0.000	0.000	0.000	0		
Mar	0.032	0.033	0.001	0.001	0.000	0.001	0.001	0.001	-0.001	0.023	0.000	-1.2	0.032	0.009	140	0.031	4	0	4	4	3	100	0	0.000	0.000	0.000	0.000	0		
Apr	0.128	0.158	0.009	0.009	0.000	0.009	0.007	0.007	0.021	0.116	0.021	-0.030	-19.1	0.128	0.012	110	0.148	8	0	8	5	4	100	0	0.000	0.001	0.002	0.003	0	
May	0.446	0.546	0.031	0.031	0.000	0.031	0.028	0.025	0.021	0.232	0.070	-0.100	-18.4	0.446	0.214	192	0.515	6	0	6	5	5	4	100	0	0.000	0.003	0.006	0.009	0
Jun	0.283	0.352	0.035	0.035	0.000	0.035	0.031	0.028	0.024	0.116	0.024	-0.068	-19.4	0.283	0.167	244	0.317	10	0	10	8	7	100	0	0.000	0.003	0.007	0.010	0	
Jul	0.097	0.107	0.055	0.055	0.000	0.055	0.049	0.044	0.038	0.048	0.021	-0.010	-9.3	0.097	0.051	209	0.053	51	0	51	46	41	36	100	0	0.000	0.005	0.011	0.016	0
Aug	0.030	0.040	0.056	0.056	0.000	0.056	0.050	0.045	0.039	0.035	0.021	-0.010	-25.2	0.030	-0.005	87	-0.015	138	0	138	124	110	97	100	0	0.000	0.006	0.011	0.017	0
Sep	0.027	0.033	0.031	0.031	0.000	0.031	0.028	0.025	0.022	0.029	0.022	-0.006	-17.5	0.027	0.002	93	0.002	94	0	94	85	76	66	100	0	0.000	0.003	0.006	0.009	0
Oct	0.027	0.029	0.009	0.009	0.000	0.009	0.008	0.007	0.006	0.023	0.006	-0.002	-5.8	0.027	0.004	118	0.020	29	0	29	28	23	21	100	0	0.000	0.001	0.002	0.003	0
Nov	0.029	0.029	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.023	0.000	0.000	-0.7	0.029	0.006	124	0.029	1	0	1	1	1	100	0	0.000	0.000	0.000	0.000	0	
Dec	0.021	0.021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.023	0.000	0.000	-0.9	0.021	0.006	92	0.021	1	0	1	1	1	100	0	0.000	0.000	0.000	0.000	0	
Annual	0.097	0.116	0.019	0.019	0.000	0.019	0.017	0.015	0.013	0.000	0.000	-0.019	-16.4	0.097	0.097	16	0	16	15	13	11	100	0	0.000	0.002	0.004	0.006	0		

Stream: McDOUGALL CREEK
 Location: AT THE MOUTH
 Year: 2050
 Scenario: 1.2 ASSUMING POPULATION CHANGE ONLY

COMPARISONS (See text for descriptions):

DATA:												#1: Naturalized flow vs Net flow	#2: Instream licences vs Net flow	#3: Conservation flow vs Net flow	#4: Total licences vs Naturalized flow	#5: Offstream licences vs Naturalized flow	#6: Instream licences vs Naturalized flow	#7a: Actual offstream use vs Naturalized flow	#7b: Actual offstream use (assuming 10% demand reduction) vs Naturalized flow	#7c: Actual offstream use (assuming 20% demand reduction) vs Naturalized flow	#7d: Actual offstream use (assuming 30% demand reduction) vs Naturalized flow	#8: Offstream licences vs Total licences	#9: Instream licences vs Total licences	#10a: Actual offstream use vs Offstream licences	#10b: Actual offstream use (assuming 10% demand reduction) vs Offstream licences	#10c: Actual offstream use (assuming 20% demand reduction) vs Offstream licences	#10d: Actual offstream use (assuming 30% demand reduction) vs Offstream licences	#11: Conservation flow vs. Instream licences		
Month	(1) Net flow	(2) Naturalized flow	(3) Total licences	(4) Offstream licences	(5) Instream licences	(6) Estimated actual	(7) Est. actual offstream use	(8) Est. actual offstream use	(9) Est. actual offstream use	(10) Storage	(11) Conservation	Formula: #1: Naturalized flow vs Net flow	Formula: #2: Instream licences vs Net flow	Formula: #3: Conservation flow vs Net flow	Formula: #4: Total licences vs Naturalized flow	Formula: #5: Offstream licences vs Naturalized flow	Formula: #6: Instream licences vs Naturalized flow	Formula: #7a: Actual offstream use vs Naturalized flow	Formula: #7b: Actual offstream use (assuming 10% demand reduction) vs Naturalized flow	Formula: #7c: Actual offstream use (assuming 20% demand reduction) vs Naturalized flow	Formula: #7d: Actual offstream use (assuming 30% demand reduction) vs Naturalized flow	Formula: #8: Offstream licences vs Total licences	Formula: #9: Instream licences vs Total licences	Formula: #10a: Actual offstream use vs Offstream licences	Formula: #10b: Actual offstream use (assuming 10% demand reduction) vs Offstream licences	Formula: #10c: Actual offstream use (assuming 20% demand reduction) vs Offstream licences	Formula: #10d: Actual offstream use (assuming 30% demand reduction) vs Offstream licences	Formula: #11: Conservation flow vs. Instream licences		
	flow	flow	licences	licences	licences	actual	offstream use	offstream use	offstream use	neg = release pos = withdrawal	Flows	neg = net flow is less than	neg = net flow is less than	neg = instream licences are flow is not met	neg = conservation flow is not met	neg = there is no additional flow licensed	% of naturalized flow licensed	% of naturalized flow licensed	% of naturalized flow actually withdrawn for use	% of naturalized flow actually withdrawn for use	% of naturalized flow actually withdrawn for use	% of total licences that are for offstream use	% of total licences that are for instream use	room to remove water without additional licensing	room to remove water without additional licensing	room to remove water without additional licensing	room to remove water without additional licensing	% of conservation flow legally protected with licences		
	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(%)	(m ³ /s)	(m ³ /s)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)		
Jan	0.019	0.019	0.001	0.001	0.000	0.001	0.001	0.001	0.000	0.000	0.024	-0.001	-3.6	0.019	-0.005	79	0.019	4	0	4	3	3	100	0	0.000	0.000	0.000	0.000	0	
Feb	0.019	0.019	0.001	0.001	0.000	0.001	0.001	0.001	0.000	0.000	0.024	-0.001	-4.0	0.019	-0.005	78	0.019	4	0	4	3	100	0	0.000	0.000	0.000	0.000	0		
Mar	0.032	0.034	0.003	0.003	0.000	0.003	0.003	0.002	-0.001	0.024	0.024	-0.002	-5.6	0.032	0.008	133	0.031	8	0	8	7	6	100	0	0.000	0.000	0.001	0.001	0	
Apr	0.123	0.162	0.016	0.016	0.000	0.016	0.016	0.014	0.013	0.021	0.119	-0.038	-24.0	0.123	0.004	103	0.144	11	0	11	10	8	100	0	0.000	0.002	0.004	0.005	0	
May	0.432	0.561	0.059	0.059	0.000	0.059	0.053	0.047	0.041	0.070	0.238	-0.128	-22.8	0.432	0.194	181	0.502	10	0	10	9	8	7	100	0	0.000	0.006	0.012	0.018	0
Jun	0.261	0.361	0.066	0.066	0.000	0.066	0.059	0.053	0.046	0.034	0.119	-0.100	-27.7	0.261	0.142	219	0.295	18	0	18	15	13	100	0	0.000	0.007	0.013	0.020	0	
Jul	0.051	0.110	0.104	0.104	0.000	0.104	0.094	0.083	0.073	-0.045	0.048	-0.059	-54.0	0.051	0.003	106	0.006	95	0	95	85	76	66	100	0	0.000	0.010	0.021	0.031	0
Aug	-0.019	0.041	0.106	0.106	0.000	0.106	0.085	0.085	0.074	-0.045	0.036	-0.061	-146.1	-0.019	-0.055	-53	-0.065	258	0	258	230	205	179	100	0	0.000	0.011	0.021	0.032	0
Sep	0.000	0.034	0.059	0.059	0.000	0.059	0.053	0.047	0.041	-0.025	0.030	-0.034	-100.8	0.000	-0.030	-1	-0.026	176	0	176	156	141	123	100	0	0.000	0.006	0.012	0.018	0
Oct	0.020	0.030	0.016	0.016	0.000	0.016	0.015	0.013	0.012	-0.007	0.024	-0.010	-32.5	0.020	-0.004	84	0.013	55	0	55	50	44	39	100	0	0.000	0.002	0.003	0.005	0
Nov	0.029	0.030	0.001	0.001	0.000	0.001	0.001	0.001	0.001	0.000	0.024	-0.001	-2.4	0.029	0.005	122	0.029	2	0	2	2	2	2	100	0	0.000	0.000	0.000	0.000	0
Dec	0.021	0.022	0.001	0.001	0.000	0.001	0.001	0.001	0.000	0.000	0.024	-0.001	-3.2	0.021	-0.003	89	0.021	3	0	3	3	3	2	100	0	0.000	0.000	0.000	0.000	0
Annual	0.083	0.119	0.036	0.036	0.000	0.036	0.033	0.029	0.026	0.000	0.024	-0.036	-30.6	0.083	0.083	31	0	31	28	25	21	100	0	0.000	0.004	0.007	0.011	0		

Stream: McDOUGALL CREEK
 Location: BELOW PD59093
 Year: 2050
 Scenario: 1.2 ASSUMING POPULATION CHANGE ONLY

COMPARISONS (See text for descriptions):

DATA:												#1: Naturalized flow vs Net flow	#2: Instream licences vs Net flow	#3: Conservation flow vs Net flow	#4: Total licences vs Naturalized flow	#5: Offstream licences vs Naturalized flow	#6: Instream licences vs Naturalized flow	#7a: Actual offstream use vs Naturalized flow	#7b: Actual offstream use (assuming 10% demand reduction) vs Naturalized flow	#7c: Actual offstream use (assuming 20% demand reduction) vs Naturalized flow	#7d: Actual offstream use (assuming 30% demand reduction) vs Naturalized flow	#8: Offstream licences vs Total licences	#9: Instream licences vs Total licences	#10a: Actual offstream use vs Offstream licences	#10b: Actual offstream use (assuming 10% demand reduction) vs Offstream licences	#10c: Actual offstream use (assuming 20% demand reduction) vs Offstream licences	#10d: Actual offstream use (assuming 30% demand reduction) vs Offstream licences	#11: Conservation flow vs. Instream licences		
Month	(1) Net flow	(2) Naturalized flow	(3) Total licences	(4) Offstream licences	(5) Instream licences	(6) Estimated actual	(7) Est. actual offstream use	(8) Est. actual offstream use	(9) Est. actual offstream use	(10) Storage	(11) Conservation	Formula: #1: Naturalized flow vs Net flow	Formula: #2: Instream licences vs Net flow	Formula: #3: Conservation flow vs Net flow	Formula: #4: Total licences vs Naturalized flow	Formula: #5: Offstream licences vs Naturalized flow	Formula: #6: Instream licences vs Naturalized flow	Formula: #7a: Actual offstream use vs Naturalized flow	Formula: #7b: Actual offstream use (assuming 10% demand reduction) vs Naturalized flow	Formula: #7c: Actual offstream use (assuming 20% demand reduction) vs Naturalized flow	Formula: #7d: Actual offstream use (assuming 30% demand reduction) vs Naturalized flow	Formula: #8: Offstream licences vs Total licences	Formula: #9: Instream licences vs Total licences	Formula: #10a: Actual offstream use vs Offstream licences	Formula: #10b: Actual offstream use (assuming 10% demand reduction) vs Offstream licences	Formula: #10c: Actual offstream use (assuming 20% demand reduction) vs Offstream licences	Formula: #10d: Actual offstream use (assuming 30% demand reduction) vs Offstream licences	Formula: #11: Conservation flow vs. Instream licences		
	flow	flow	licences	licences	licences	actual	offstream use	offstream use	offstream use	neg = release pos = withdrawal	Flows	neg = net flow is less than	neg = net flow is less than	neg = instream licences are flow is not met	neg = conservation flow is not met	neg = there is no additional flow licensed	% of naturalized flow licensed	% of naturalized flow licensed	% of naturalized flow actually withdrawn for use	% of naturalized flow actually withdrawn for use	% of naturalized flow actually withdrawn for use	% of total licences that are for offstream use	% of total licences that are for instream use	room to remove water without additional licensing	room to remove water without additional licensing	room to remove water without additional licensing	room to remove water without additional licensing	% of conservation flow legally protected with licences		
	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(%)	(m ³ /s)	(m ³ /s)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)		
Jan	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.023	0.000	-1.7	0.019	-0.005	80	0.019	2	0	2	1	1	1	100	0	0.000	0.000	0.000	0.000	0
Feb	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.023	0.000	-1.8	0.018	-0.005	80	0.019	2	0	2	1	1	1	100	0	0.000	0.000	0.000	0.000	0
Mar	0.032	0.033	0.001	0.001	0.000	0.001	0.001	0.001	0.001	-0.001	0.023	-0.001	-1.8	0.032	0.009	139	0.031	4	0	4	4	3	3	100	0	0.000	0.000	0.000	0.000	0
Apr	0.127	0.158	0.010	0.010	0.000	0.010	0.009	0.008	0.007	0.021	0.116	-0.030	-19.2	0.127	0.011	110	0.148	6	0	6	5	4	4	100	0	0.000	0.001	0.002	0.003	0
May	0.445	0.546	0.031	0.031	0.000	0.031	0.028	0.025	0.022	0.070	0.232	-0.101	-18.4	0.445	0.213	192	0.515	8	0	8	5	4	4	100	0	0.000	0.003	0.006	0.008	0
Jun	0.283	0.352	0.035	0.035	0.000	0.035	0.032	0.028	0.025	0.034	0.116	-0.069	-19.6	0.283	0.167	244	0.317	10	0	10	9	8	7	100	0	0.000	0.004	0.007	0.011	0
Jul	0.097	0.107	0.055	0.055	0.000	0.055	0.050	0.044	0.039	-0.045	0.046	-0.011	-9.9	0.097	0.050	208	0.052	52	0	52	46	41	36	100	0	0.000	0.006	0.011	0.017	0
Aug	0.030	0.040	0.056	0.056	0.000	0.056	0.051	0.045	0.039	-0.045	0.035	-0.011	-26.6	0.030	-0.005	85	-0.016	139	0	139	125	112	98	100	0	0.000	0.006	0.011	0.017	0
Sep	0.027	0.033	0.031	0.031	0.000	0.031	0.028	0.025	0.022	-0.025	0.029	-0.006	-18.7	0.027	-0.002	92	0.001	96	0	96	86	77	67	100	0	0.000	0.003	0.006	0.008	0
Oct	0.027	0.029	0.009	0.009	0.000	0.009	0.008	0.007	0.006	-0.007	0.023	-0.002	-6.5	0.027	0.004	117	0.020	30	0	30	27	24	21	100	0	0.000	0.001	0.002	0.003	0
Nov	0.029	0.029	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.023	0.000	-1.1	0.029	0.005	124	0.029	1	0	1	1	1	1	100	0	0.000	0.000	0.000	0.000	0
Dec	0.021	0.021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.023	0.000	-1.5	0.021	-0.002	91	0.021	1	0	1	1	1	1	100	0	0.000	0.000	0.000	0.000	0
Annual	0.097	0.116	0.019	0.019	0.000	0.019	0.017	0.015	0.014	0.000	0.023	-0.019	-16.7	0.097	0.097	17	0	17	15	13	12	100	0	0.000	0.002	0.004	0.006	0		

Stream: McDougall Creek
 Location: AT THE MOUTH
 Year: 2020
 Scenario: 2.1 ASSUMING POPULATION AND CLIMATE CHANGE

COMPARISONS (See text for descriptions):

Month	DATA:											COMPARISONS (See text for descriptions):																			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	% Change in	#1: Naturalized flow vs Net flow	#2: Instream licenes vs Net flow	#3: Conservation flow vs Net flow	#4: Total licenes vs Naturalized flow	#5: Offstream licenes vs Naturalized flow	#6: Instream licenes vs Naturalized flow	#7a: Actual offstream use vs Naturalized flow	#7b: Actual offstream use (assuming 10% demand reduction) vs Naturalized flow	#7c: Actual offstream use (assuming 20% demand reduction) vs Naturalized flow	#7d: Actual offstream use (assuming 30% demand reduction) vs Naturalized flow	#8: Offstream licenes vs Total licenes	#9: Instream licenes vs Total licenes	#10a: Actual offstream use vs Offstream licenes	#10b: Actual offstream use (assuming 10% demand reduction) vs Offstream licenes	#10c: Actual offstream use (assuming 20% demand reduction) vs Offstream licenes	#10d: Actual offstream use (assuming 30% demand reduction) vs Offstream licenes	#11: Conservation flow vs. Instream licenes		
	Net flow	Naturalized flow	Total licenes (offstream & instream)	Offstream licenes	Instream licenes	Estimated actual use	Est. actual offstream use (assuming 10% reduction)	Est. actual offstream use (assuming 20% reduction)	Est. actual offstream use (assuming 30% reduction)	Storage (neg = release pos = withdrawal)	Conservation Flows	naturalized discharge from 2003	=(2)-(1)	100*((2)-(1))/(1)	=(5)-(1)	=(1)-(11)	100*((1)-(11))	=(3)-(2)	100*((4)-(2))	100*((5)-(2))	100*((6)-(2))	100*((7)-(2))	100*((8)-(2))	100*((9)-(2))	100*((4)-(3))	100*((5)-(3))	=(4)-(6)	=(4)-(7)	=(4)-(8)	=(4)-(9)	100*((5)-(11))
Jan	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.024	-5.2	0.000	-2.6	0.018	-0.006	75	0.018	3	0	3	2	2	2	100	0	0.000	0.000	0.000	0.000	0	
Feb	0.025	0.028	0.001	0.001	0.000	0.001	0.000	0.000	0.000	0.024	33.2	-0.001	-2.0	0.025	0.002	106	0.025	2	0	2	2	1	100	0	0.000	0.000	0.000	0.000	0		
Mar	0.056	0.058	0.003	0.003	0.000	0.003	0.003	0.002	-0.001	0.024	72.3	-0.002	-3.4	0.056	0.032	235	0.055	5	0	5	4	4	3	100	0	0.000	0.000	0.001	0.001	0	
Apr	0.166	0.207	0.020	0.020	0.000	0.020	0.018	0.016	0.014	0.021	28.1	-0.041	-19.8	0.166	0.047	140	0.187	10	0	10	9	8	7	100	0	0.000	0.002	0.004	0.008	0	
May	0.335	0.472	0.067	0.067	0.000	0.067	0.060	0.054	0.047	0.070	-15.9	-0.137	-28.9	0.335	0.097	141	0.405	14	0	14	13	11	10	100	0	0.000	0.007	0.013	0.020	0	
Jun	0.150	0.260	0.075	0.075	0.000	0.075	0.068	0.060	0.053	0.034	0.119	-28.1	-0.109	-42.1	0.150	0.031	126	0.164	29	0	29	26	23	20	100	0	0.000	0.008	0.015	0.023	0
Jul	0.009	0.083	0.119	0.119	0.000	0.119	0.107	0.095	0.083	-0.045	0.048	-24.4	-0.074	-89.5	0.009	-0.039	18	-0.036	143	0	143	129	115	100	0	0.000	0.012	0.024	0.038	0	
Aug	-0.040	0.036	0.121	0.121	0.000	0.121	0.109	0.097	0.085	-0.045	0.036	-14.2	-0.076	-213.2	-0.040	-0.076	-113	-0.086	341	0	341	307	273	239	100	0	0.000	0.012	0.024	0.038	0
Sep	-0.012	0.030	0.068	0.068	0.000	0.068	0.061	0.054	0.047	-0.025	0.030	-11.1	-0.042	-141.3	-0.012	-0.042	-42	-0.038	226	0	226	203	180	158	100	0	0.000	0.007	0.014	0.020	0
Oct	0.015	0.027	0.019	0.019	0.000	0.019	0.017	0.015	0.013	-0.007	0.024	-9.6	-0.012	-43.7	0.015	-0.009	64	0.008	69	0	69	62	55	49	100	0	0.000	0.002	0.004	0.008	0
Nov	0.027	0.028	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.024	-6.8	0.000	-1.8	0.027	0.003	114	0.027	2	0	2	2	1	1	100	0	0.000	0.000	0.000	0.000	0	
Dec	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.024	-6.7	0.000	-2.3	0.020	-0.004	84	0.020	2	0	2	2	2	2	100	0	0.000	0.000	0.000	0.000	0	
Annual	0.064	0.106	0.042	0.042	0.000	0.042	0.037	0.033	0.028	0.000		-0.042	-38.3	0.064			0.064	39	0	39	35	31	27	100	0	0.000	0.004	0.008	0.012		

Stream: McDougall Creek
 Location: BELOW PD58093
 Year: 2020
 Scenario: 2.1 ASSUMING POPULATION AND CLIMATE CHANGE

COMPARISONS (See text for descriptions):

Month	DATA:											COMPARISONS (See text for descriptions):																			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	% Change in	#1: Naturalized flow vs Net flow	#2: Instream licenes vs Net flow	#3: Conservation flow vs Net flow	#4: Total licenes vs Naturalized flow	#5: Offstream licenes vs Naturalized flow	#6: Instream licenes vs Naturalized flow	#7a: Actual offstream use vs Naturalized flow	#7b: Actual offstream use (assuming 10% demand reduction) vs Naturalized flow	#7c: Actual offstream use (assuming 20% demand reduction) vs Naturalized flow	#7d: Actual offstream use (assuming 30% demand reduction) vs Naturalized flow	#8: Offstream licenes vs Total licenes	#9: Instream licenes vs Total licenes	#10a: Actual offstream use vs Offstream licenes	#10b: Actual offstream use (assuming 10% demand reduction) vs Offstream licenes	#10c: Actual offstream use (assuming 20% demand reduction) vs Offstream licenes	#10d: Actual offstream use (assuming 30% demand reduction) vs Offstream licenes	#11: Conservation flow vs. Instream licenes		
	Net flow	Naturalized flow	Total licenes (offstream & instream)	Offstream licenes	Instream licenes	Estimated actual use	Est. actual offstream use (assuming 10% reduction)	Est. actual offstream use (assuming 20% reduction)	Est. actual offstream use (assuming 30% reduction)	Storage (neg = release pos = withdrawal)	Conservation Flows	naturalized discharge from 2003	=(2)-(1)	100*((2)-(1))/(1)	=(5)-(1)	=(1)-(11)	100*((1)-(11))	=(3)-(2)	100*((4)-(2))	100*((5)-(2))	100*((6)-(2))	100*((7)-(2))	100*((8)-(2))	100*((9)-(2))	100*((4)-(3))	100*((5)-(3))	=(4)-(6)	=(4)-(7)	=(4)-(8)	=(4)-(9)	100*((5)-(11))
Jan	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.023	-5.2	0.000	-1.2	0.018	-0.005	76	0.018	1	0	1	1	1	1	100	0	0.000	0.000	0.000	0.000	0	
Feb	0.025	0.025	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.023	33.2	0.000	-0.9	0.025	0.002	108	0.025	1	0	1	1	1	1	100	0	0.000	0.000	0.000	0.000	0	
Mar	0.056	0.056	0.001	0.001	0.000	0.001	0.001	0.001	-0.001	0.023	72.3	-0.001	-1.0	0.056	0.033	241	0.055	3	0	3	2	2	2	100	0	0.000	0.000	0.000	0.000	0	
Apr	0.170	0.202	0.011	0.011	0.000	0.011	0.010	0.009	0.008	0.021	28.1	-0.032	-15.6	0.170	0.054	147	0.181	5	0	5	5	4	4	100	0	0.000	0.001	0.002	0.003	0	
May	0.354	0.458	0.036	0.036	0.000	0.036	0.032	0.028	0.025	0.070	-15.9	-0.105	-22.9	0.354	0.122	153	0.424	8	0	8	7	6	5	100	0	0.000	0.004	0.007	0.011	0	
Jun	0.179	0.253	0.040	0.040	0.000	0.040	0.036	0.032	0.028	0.034	0.116	-28.1	-0.074	-29.2	0.179	0.063	154	0.213	16	0	16	14	13	11	100	0	0.000	0.004	0.008	0.012	0
Jul	0.062	0.081	0.063	0.063	0.000	0.063	0.057	0.044	0.046	-0.045	0.046	-24.4	-0.019	-23.0	0.062	0.016	134	0.018	76	0	76	70	63	55	100	0	0.000	0.006	0.013	0.019	0
Aug	0.016	0.035	0.064	0.064	0.000	0.064	0.058	0.052	0.045	0.035	-14.2	-0.018	-54.9	0.016	-0.019	45	-0.030	186	0	186	168	149	130	100	0	0.000	0.006	0.013	0.019	0	
Sep	0.019	0.029	0.036	0.036	0.000	0.036	0.032	0.029	0.025	-0.025	0.029	-11.1	-0.011	-36.5	0.019	-0.010	64	-0.007	123	0	123	111	98	86	100	0	0.000	0.004	0.007	0.011	0
Oct	0.023	0.026	0.010	0.010	0.000	0.010	0.009	0.008	0.007	-0.007	0.023	-9.6	-0.003	-11.5	0.023	0.000	100	0.019	38	0	38	34	30	26	100	0	0.000	0.001	0.002	0.003	0
Nov	0.027	0.027	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.023	-6.8	0.000	-0.8	0.027	0.004	115	0.027	1	0	1	1	1	1	100	0	0.000	0.000	0.000	0.000	0	
Dec	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.023	-6.7	0.000	-1.1	0.020	-0.003	85	0.020	1	0	1	1	1	1	100	0	0.000	0.000	0.000	0.000	0	
Annual	0.081	0.103	0.022	0.022	0.000	0.022	0.020	0.018	0.015	0.000		-0.022	-21.4	0.081			0.081	21	0	21	19	17	15	100	0	0.000	0.002	0.004	0.007		

Appendix K
POWERS CREEK
STREAMFLOW ANALYSIS

Stream: POWERS CREEK
 Location: AT THE MOUTH
 Year: 2050
 Scenario: 1.2 ASSUMING POPULATION CHANGE ONLY

COMPARISONS (See text for descriptions):

Month	DATA:											Formula:	Remarks:	#1: Naturalized flow vs Net flow	#2: Instream licenses vs Net flow	#3: Conservation flow vs Net flow	#4: Total licenses vs Naturalized flow	#5: Offstream licenses vs Naturalized flow	#6: Instream licenses vs Naturalized flow	#7a: Actual offstream use vs Naturalized flow	#7b: Actual offstream use (assuming 10% demand reduction) vs Naturalized flow	#7c: Actual offstream use (assuming 20% demand reduction) vs Naturalized flow	#7d: Actual offstream use (assuming 30% demand reduction) vs Naturalized flow	#8: Offstream licenses vs Total licenses	#9: Instream licenses vs Total licenses	#10a: Actual offstream use vs Offstream licenses	#10b: Actual offstream use (assuming 10% demand reduction) vs Offstream licenses	#10c: Actual offstream use (assuming 20% demand reduction) vs Offstream licenses	#10d: Actual offstream use (assuming 30% demand reduction) vs Offstream licenses	#11: Conservation flow vs Instream licenses
	(1) Net flow	(2) Naturalized flow	(3) Total licenses	(4) Offstream licenses	(5) Instream licenses	(6) Estimated actual offstream use	(7) Est. actual offstream use (assuming 10% reduction)	(8) Est. actual offstream use (assuming 20% reduction)	(9) Est. actual offstream use (assuming 30% reduction)	(10) Storage	(11) Conservation																			
	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)																			
Jan	0.039	0.150	0.096	0.013	0.083	0.111	0.100	0.089	0.078	0.000	0.184	0.111	-73.9	-0.044	-0.145	21	0.054	9	56	74	87	59	52	13	87	-0.098	-0.067	-0.076	-0.055	45
Feb	0.034	0.150	0.106	0.013	0.092	0.116	0.104	0.093	0.081	0.000	0.184	-116	-77.4	-0.058	-0.150	18	0.044	9	62	77	70	62	54	13	87	-0.103	-0.091	-0.080	-0.068	50
Mar	0.140	0.260	0.111	0.027	0.083	0.120	0.108	0.086	0.084	0.000	0.184	-120	-46.3	0.056	-0.044	78	0.149	10	32	46	42	37	32	25	75	-0.093	-0.081	-0.069	-0.057	45
Apr	0.645	1.250	0.222	0.136	0.086	0.231	0.208	0.185	0.162	0.374	0.920	-80.5	-48.4	0.559	-0.275	70	1.028	11	7	16	17	15	13	51	39	-0.094	-0.071	-0.048	-0.025	9
May	2.182	4.330	0.508	0.426	0.083	0.511	0.460	0.408	0.358	1.637	1.840	-2.148	-49.5	2.099	-0.242	119	3.822	10	2	12	11	9	8	64	16	-0.088	-0.036	0.016	0.067	5
Jun	1.564	2.790	0.564	0.478	0.086	0.567	0.510	0.453	0.397	0.669	0.920	-1.236	-44.3	1.468	0.534	169	2.226	17	3	20	18	16	14	85	15	-0.089	-0.032	0.025	0.081	9
Jul	1.474	0.850	0.832	0.749	0.083	0.830	0.747	0.664	0.581	-1.454	0.368	0.624	73.4	1.391	1.106	401	0.018	68	10	98	88	78	68	90	10	-0.081	0.032	0.085	0.158	23
Aug	0.854	0.320	0.645	0.762	0.093	0.843	0.759	0.674	0.580	-1.477	0.278	0.634	198.2	0.871	0.978	346	-0.525	238	26	253	237	211	184	90	10	-0.081	0.033	0.088	0.172	30
Sep	0.637	0.250	0.515	0.428	0.086	0.518	0.465	0.415	0.363	-0.895	0.230	0.377	145.0	0.551	0.407	277	-0.255	165	33	199	179	159	140	83	17	-0.089	-0.038	0.014	0.066	37
Oct	0.014	0.230	0.208	0.125	0.083	0.216	0.195	0.173	0.151	0.000	0.184	-0.216	-84.0	-0.070	-0.170	8	0.022	54	36	94	85	75	66	60	40	-0.092	-0.070	-0.048	-0.027	45
Nov	0.103	0.230	0.101	0.015	0.086	0.127	0.114	0.101	0.089	0.000	0.184	-0.127	-55.2	0.017	-0.081	56	0.129	6	37	55	50	44	39	15	65	-0.112	-0.100	-0.087	-0.074	47
Dec	0.057	0.170	0.086	0.013	0.083	0.113	0.101	0.090	0.079	0.000	0.184	-0.113	-66.3	-0.026	-0.127	31	0.074	8	49	68	60	53	46	13	67	-0.100	-0.089	-0.077	-0.065	45
Annual	0.656	0.920	0.352	0.267	0.085	0.381	0.325	0.288	0.252	-0.097	0.264	-26.6	-0.571	0.558	29	0	39	35	31	27	76	24	24	24	24	-0.093	-0.057	-0.021	0.015	

Stream: POWERS CREEK
 Location: ABOVE PD58625 (WESTBANK IRRIGATION INTAKE)
 Year: 2050
 Scenario: 1.2 ASSUMING POPULATION CHANGE ONLY

COMPARISONS (See text for descriptions):

Month	DATA:											Formula:	Remarks:	#1: Naturalized flow vs Net flow	#2: Instream licenses vs Net flow	#3: Conservation flow vs Net flow	#4: Total licenses vs Naturalized flow	#5: Offstream licenses vs Naturalized flow	#6: Instream licenses vs Naturalized flow	#7a: Actual offstream use vs Naturalized flow	#7b: Actual offstream use (assuming 10% demand reduction) vs Naturalized flow	#7c: Actual offstream use (assuming 20% demand reduction) vs Naturalized flow	#7d: Actual offstream use (assuming 30% demand reduction) vs Naturalized flow	#8: Offstream licenses vs Total licenses	#9: Instream licenses vs Total licenses	#10a: Actual offstream use vs Offstream licenses	#10b: Actual offstream use (assuming 10% demand reduction) vs Offstream licenses	#10c: Actual offstream use (assuming 20% demand reduction) vs Offstream licenses	#10d: Actual offstream use (assuming 30% demand reduction) vs Offstream licenses	#11: Conservation flow vs Instream licenses
	(1) Net flow	(2) Naturalized flow	(3) Total licenses	(4) Offstream licenses	(5) Instream licenses	(6) Estimated actual offstream use	(7) Est. actual offstream use (assuming 10% reduction)	(8) Est. actual offstream use (assuming 20% reduction)	(9) Est. actual offstream use (assuming 30% reduction)	(10) Storage	(11) Conservation																			
	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)																			
Jan	0.145	0.146	0.012	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.179	0.000	-0.1	0.145	-0.033	81	0.133	0	0	0	0	0	100	0	0.012	0.012	0.012	0.012	0	
Feb	0.145	0.146	0.012	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.179	0.000	-0.1	0.145	-0.033	81	0.133	0	0	0	0	0	100	0	0.012	0.012	0.012	0.012	0	
Mar	0.252	0.252	0.022	0.022	0.000	0.000	0.000	0.000	0.000	0.000	0.179	0.000	-0.1	0.252	0.074	141	0.231	0	0	0	0	0	100	0	0.021	0.021	0.021	0.021	0	
Apr	0.839	1.213	0.086	0.086	0.000	0.001	0.000	0.000	0.000	0.374	0.853	-0.375	-30.9	0.839	-0.054	94	1.117	0	0	0	0	0	100	0	0.021	0.021	0.021	0.021	0	
May	2.564	4.203	0.294	0.294	0.000	0.002	0.001	0.001	0.001	1.637	1.786	-1.638	-39.0	2.564	0.778	144	3.006	7	0	0	0	0	100	0	0.293	0.293	0.293	0.293	0	
Jun	2.037	2.708	0.331	0.331	0.000	0.002	0.001	0.001	0.001	0.869	0.937	-0.871	-24.8	2.037	1.144	228	2.377	12	0	0	0	0	100	0	0.329	0.329	0.329	0.329	0	
Jul	2.276	0.825	0.516	0.516	0.000	0.003	0.003	0.002	0.002	-1.454	0.357	1.451	175.9	2.276	1.919	637	0.309	53	0	0	0	0	100	0	0.513	0.514	0.514	0.514	0	
Aug	1.785	0.311	0.525	0.525	0.000	0.003	0.003	0.002	0.002	-1.477	0.268	1.474	474.7	1.785	1.517	856	-0.215	169	0	1	1	1	100	0	0.522	0.523	0.523	0.523	0	
Sep	1.146	0.262	0.267	0.267	0.000	0.002	0.001	0.001	0.001	-0.865	0.223	0.894	354.1	1.146	0.923	513	-0.048	118	0	1	1	1	100	0	0.295	0.295	0.295	0.295	0	
Oct	0.223	0.223	0.088	0.088	0.000	0.001	0.000	0.000	0.000	0.179	0.000	-0.001	-0.2	0.223	0.044	125	0.135	40	0	0	0	0	100	0	0.088	0.088	0.088	0.088	0	
Nov	0.223	0.223	0.014	0.014	0.000	0.000	0.000	0.000	0.000	0.179	0.000	0.000	-0.1	0.223	0.045	125	0.210	6	0	0	0	0	100	0	0.013	0.013	0.013	0.013	0	
Dec	0.165	0.165	0.012	0.012	0.000	0.000	0.000	0.000	0.000	0.179	0.000	0.000	-0.1	0.165	-0.014	82	0.153	7	0	0	0	0	100	0	0.012	0.012	0.012	0.012	0	
Annual	0.989	0.893	0.185	0.185	0.000	0.001	0.001	0.001	0.001	-0.097	0.086	10.7	0.989	0.707	0	21	0	0	0	0	0	0	100	0	0.185	0.185	0.185	0.185		

Stream: POWERS CREEK
 Location: BELOW CONFLUENCE WITH NORTH POWERS CREEK
 Year: 2050
 Scenario: 1.2 ASSUMING POPULATION CHANGE ONLY

COMPARISONS (See text for descriptions):

Month	DATA:											Formula:	Remarks:	#1: Naturalized flow vs Net flow	#2: Instream licenses vs Net flow	#3: Conservation flow vs Net flow	#4: Total licenses vs Naturalized flow	#5: Offstream licenses vs Naturalized flow	#6: Instream licenses vs Naturalized flow	#7a: Actual offstream use vs Naturalized flow	#7b: Actual offstream use (assuming 10% demand reduction) vs Naturalized flow	#7c: Actual offstream use (assuming 20% demand reduction) vs Naturalized flow	#7d: Actual offstream use (assuming 30% demand reduction) vs Naturalized flow	#8: Offstream licenses vs Total licenses	#9: Instream licenses vs Total licenses	#10a: Actual offstream use vs Offstream licenses	#10b: Actual offstream use (assuming 10% demand reduction) vs Offstream licenses	#10c: Actual offstream use (assuming 20% demand reduction) vs Offstream licenses	#10d: Actual offstream use (assuming 30% demand reduction) vs Offstream licenses	#11: Conservation flow vs Instream licenses
	(1) Net flow	(2) Naturalized flow	(3) Total licenses	(4) Offstream licenses	(5) Instream licenses	(6) Estimated actual offstream use	(7) Est. actual offstream use (assuming 10% reduction)	(8) Est. actual offstream use (assuming 20% reduction)	(9) Est. actual offstream use (assuming 30% reduction)	(10) Storage	(11) Conservation																			
	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)																			
Jan	0.116	0.116	0.012	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.303	0.000	0.0	0.116	-0.187	39	0.104	10	0	0	0	0	100	0	0.012	0.012	0.012	0.012	0	
Feb	0.116	0.116	0.012	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.303	0.000	0.0	0.116	-0.187	39	0.104	10	0	0	0	0	100	0	0.012	0.012	0.012	0.012	0	
Mar	0.200	0.200	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.303	0.000	0.0	0.200	-0.102	66	0.180	10	0	0	0	0	100	0	0.020	0.020	0.020	0.020	0	
Apr	0.589	0.963	0.085	0.085	0.000	0.000	0.000	0.000	0.000	0.374	1.513	-0.374	-36.8	0.589	-0.324	39	0.879	9	0	0	0	0	100	0	0.085	0.085	0.085	0.085	0	
May	1.700	3.338	0.295	0.295	0.000	0.000	0.000	0.000	0.000	1.637	3.025	-1.637	-49.1	1.700	-1.325	55	3.081	8	0	0	0	0	100	0	0.295	0.295	0.295	0.295	0	
Jun	1.481	2.190	0.287	0.287	0.000	0.000	0.000	0.000	0.000	0.869	1.513																			

Stream: POWERS CREEK
 Location: AT THE MOUTH
 Year: 2050
 Scenario: 2.2 ASSUMING POPULATION AND CLIMATE CHANGE

COMPARISONS (See text for descriptions):

DATA:											COMPARISONS (See text for descriptions):																				
Month	(1) Net flow	(2) Naturalized flow	(3) Total licenses (offstream & instream)	(4) Offstream licenses	(5) Instream licenses	(6) Estimated actual offstream use	(7) Est. actual offstream use (assuming 10% reduction)	(8) Est. actual offstream use (assuming 20% reduction)	(9) Est. actual offstream use (assuming 30% reduction)	(10) Storage pos = release; neg = withdrawal	(11) Conservation Flows expressed as a ratio of 2003 flow	(12) #1: Naturalized flow vs Net flow	(13) #2: Instream licenses vs Net flow	(14) #3: Conservation flow vs Net flow	(15) #4: Total licenses vs Naturalized flow	(16) #5: Offstream licenses vs Naturalized flow	(17) #6: Instream licenses vs Naturalized flow	(18) #7a: Actual offstream use vs Naturalized flow	(19) #7b: Actual offstream use (assuming 10% demand reduction) vs Naturalized flow	(20) #7c: Actual offstream use (assuming 20% demand reduction) vs Naturalized flow	(21) #7d: Actual offstream use (assuming 30% demand reduction) vs Naturalized flow	(22) #8: Offstream licenses vs Total licenses	(23) #9: Instream licenses vs Total licenses	(24) #10a: Actual offstream use vs Offstream licenses	(25) #10b: Actual offstream use (assuming 10% demand reduction) vs Offstream licenses	(26) #10c: Actual offstream use (assuming 20% demand reduction) vs Offstream licenses	(27) #10d: Actual offstream use (assuming 30% demand reduction) vs Offstream licenses	(28) #11: Conservation flow vs. Instream licenses			
	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)		
Jan	0.160	0.291	0.096	0.013	0.083	0.131	0.118	0.105	0.092	0.000	0.184	1.94	-0.131	45.0	0.077	-0.024	87	0.195	4	29	45	41	36	32	13	87	-0.118	-0.105	-0.082	-0.079	45
Feb	0.333	0.470	0.106	0.013	0.092	0.137	0.124	0.110	0.096	0.000	0.184	3.13	-0.137	29.2	0.240	0.149	181	0.364	3	20	29	26	23	20	13	87	-0.124	-0.110	-0.086	-0.083	50
Mar	0.372	0.515	0.111	0.028	0.083	0.143	0.128	0.114	0.100	0.000	0.184	1.98	-0.143	-27.7	0.289	0.188	202	0.404	5	16	28	25	22	19	25	75	-0.115	-0.101	-0.087	-0.072	45
Apr	0.462	1.110	0.224	0.138	0.086	0.274	0.246	0.219	0.192	0.374	0.920	0.89	-0.648	-58.4	0.378	-0.458	50	0.888	12	8	25	22	20	17	62	-0.136	-0.108	-0.081	-0.054	9	
May	-0.262	1.982	0.513	0.430	0.083	0.607	0.547	0.486	0.425	1.637	1.840	0.46	-2.244	-113.2	-0.346	-2.102	-14	1.468	22	4	31	28	25	21	84	16	-0.177	-0.116	-0.056	0.005	5
Jun	0.089	1.412	0.570	0.484	0.086	0.673	0.608	0.538	0.471	0.668	0.920	0.51	-1.342	-95.1	-0.017	-0.851	8	0.842	34	6	48	43	38	33	85	15	-0.189	-0.122	-0.055	0.013	9
Jul	0.986	0.518	0.841	0.758	0.083	0.986	0.886	0.789	0.690	-1.454	0.368	0.61	0.468	90.3	0.902	0.618	268	-0.323	146	16	190	171	152	133	90	10	-0.228	-0.130	-0.031	0.068	23
Aug	0.694	0.216	0.855	0.771	0.083	1.002	0.901	0.801	0.701	-1.477	0.276	0.68	0.476	217.6	0.811	0.418	252	-0.636	353	38	458	412	366	321	90	10	-0.230	-0.130	-0.030	0.070	30
Sep	0.475	0.196	0.520	0.434	0.086	0.616	0.554	0.492	0.431	-0.895	0.230	0.75	0.260	142.7	0.389	0.245	207	-0.324	222	44	314	283	251	220	83	17	-0.181	-0.120	-0.058	0.003	37
Oct	-0.083	0.173	0.209	0.126	0.083	0.256	0.231	0.205	0.179	0.000	0.184	0.75	-0.256	-148.2	-0.167	-0.287	-45	-0.036	73	48	148	133	119	104	60	40	-0.130	-0.105	-0.079	-0.053	45
Nov	0.058	0.208	0.101	0.015	0.086	0.150	0.135	0.120	0.105	0.000	0.184	0.90	-0.150	-72.3	-0.029	-0.126	31	0.107	7	41	72	65	58	51	15	85	-0.135	-0.120	-0.105	-0.090	47
Dec	0.092	0.226	0.096	0.013	0.083	0.133	0.120	0.107	0.093	0.000	0.184	1.33	-0.133	-59.2	0.009	-0.092	50	0.129	8	37	59	53	47	41	13	87	-0.120	-0.094	-0.080	-0.080	45
Annual	0.279	0.610	0.356	0.271	0.085	0.426	0.385	0.342	0.300	-0.097			-0.331	-54.3	0.193			0.254	44	14	70	63	56	49	76	24	-0.157	-0.115	-0.072	-0.029	

Stream: POWERS CREEK
 Location: ABOVE PDS8825 (WESTBANK IRRIGATION INTAKE)
 Year: 2050
 Scenario: 2.2 ASSUMING POPULATION AND CLIMATE CHANGE

COMPARISONS (See text for descriptions):

DATA:											COMPARISONS (See text for descriptions):																				
Month	(1) Net flow	(2) Naturalized flow	(3) Total licenses (offstream & instream)	(4) Offstream licenses	(5) Instream licenses	(6) Estimated actual offstream use	(7) Est. actual offstream use (assuming 10% reduction)	(8) Est. actual offstream use (assuming 20% reduction)	(9) Est. actual offstream use (assuming 30% reduction)	(10) Storage pos = release; neg = withdrawal	(11) Conservation Flows expressed as a ratio of 2003 flow	(12) #1: Naturalized flow vs Net flow	(13) #2: Instream licenses vs Net flow	(14) #3: Conservation flow vs Net flow	(15) #4: Total licenses vs Naturalized flow	(16) #5: Offstream licenses vs Naturalized flow	(17) #6: Instream licenses vs Naturalized flow	(18) #7a: Actual offstream use vs Naturalized flow	(19) #7b: Actual offstream use (assuming 10% demand reduction) vs Naturalized flow	(20) #7c: Actual offstream use (assuming 20% demand reduction) vs Naturalized flow	(21) #7d: Actual offstream use (assuming 30% demand reduction) vs Naturalized flow	(22) #8: Offstream licenses vs Total licenses	(23) #9: Instream licenses vs Total licenses	(24) #10a: Actual offstream use vs Offstream licenses	(25) #10b: Actual offstream use (assuming 10% demand reduction) vs Offstream licenses	(26) #10c: Actual offstream use (assuming 20% demand reduction) vs Offstream licenses	(27) #10d: Actual offstream use (assuming 30% demand reduction) vs Offstream licenses	(28) #11: Conservation flow vs. Instream licenses			
	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	
Jan	0.263	0.263	0.012	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.179	1.94	0.000	0.0	0.283	0.104	158	0.271	4	0	0	0	100	0	0.012	0.012	0.012	0.012	0		
Feb	0.456	0.456	0.012	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.179	3.13	0.000	0.0	0.456	0.278	255	0.444	3	0	0	0	100	0	0.012	0.012	0.012	0.012	0		
Mar	0.500	0.500	0.022	0.022	0.000	0.000	0.000	0.000	0.000	0.000	0.179	1.98	0.000	0.0	0.500	0.321	280	0.478	4	0	0	0	100	0	0.021	0.021	0.021	0.021	0		
Apr	0.702	1.077	0.097	0.097	0.000	0.001	0.001	0.001	0.001	0.374	0.893	0.89	-0.375	-34.8	0.702	-0.191	79	0.981	9	0	0	0	100	0	0.096	0.096	0.096	0.096	0		
May	0.285	1.924	0.295	0.295	0.000	0.002	0.002	0.001	0.001	1.637	1.786	0.46	-1.639	-85.2	0.285	-1.501	16	1.629	15	0	0	0	100	0	0.293	0.293	0.293	0.293	0		
Jun	0.699	1.370	0.331	0.331	0.000	0.002	0.002	0.002	0.002	0.669	0.893	0.51	-0.672	-49.0	0.699	-0.194	78	1.039	24	0	0	0	100	0	0.329	0.329	0.329	0.329	0		
Jul	1.953	0.503	0.517	0.517	0.000	0.004	0.003	0.003	0.003	-1.454	0.367	0.61	1.450	298.5	1.953	1.596	547	-0.014	103	0	1	1	1	100	0	0.513	0.514	0.514	0.514	0	
Aug	1.686	0.212	0.526	0.526	0.000	0.004	0.003	0.003	0.003	-1.477	0.268	0.68	1.474	694.4	1.686	1.418	629	-0.314	248	0	2	2	1	1	100	0	0.522	0.523	0.523	0.523	0
Sep	1.063	0.190	0.298	0.298	0.000	0.002	0.002	0.001	-0.895	0.223	0.002	0.75	0.893	459.8	1.063	0.860	485	-0.107	157	0	1	1	1	100	0	0.295	0.296	0.296	0.296	0	
Oct	0.167	0.168	0.088	0.088	0.000	0.001	0.001	0.000	0.000	0.000	0.179	0.75	-0.001	-0.4	0.167	-0.011	94	0.080	53	0	0	0	0	100	0	0.088	0.088	0.088	0.088	0	
Nov	0.201	0.202	0.014	0.014	0.000	0.000	0.000	0.000	0.000	0.000	0.179	0.90	0.000	-0.1	0.201	0.023	113	0.198	7	0	0	0	100	0	0.013	0.013	0.013	0.014	0		
Dec	0.219	0.219	0.012	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.179	1.33	0.000	-0.1	0.219	0.040	122	0.207	5	0	0	0	100	0	0.012	0.012	0.012	0.012	0		
Annual	0.687	0.592	0.187	0.187	0.000	0.001	0.001	0.001	0.001	-0.097			0.096	16.2	0.687			0.405	32	0	0	0	100	0	0.185	0.185	0.185	0.186			

Stream: POWERS CREEK
 Location: BELOW CONFLUENCE WITH NORTH POWERS CREEK
 Year: 2050
 Scenario: 2.2 ASSUMING POPULATION AND CLIMATE CHANGE

COMPARISONS (See text for descriptions):

DATA:											COMPARISONS (See text for descriptions):																			
Month	(1) Net flow	(2) Naturalized flow	(3) Total licenses (offstream & instream)	(4) Offstream licenses	(5) Instream licenses	(6) Estimated actual offstream use	(7) Est. actual offstream use (assuming 10% reduction)	(8) Est. actual offstream use (assuming 20% reduction)	(9) Est. actual offstream use (assuming 30% reduction)	(10) Storage pos = release; neg = withdrawal	(11) Conservation Flows expressed as a ratio of 2003 flow	(12) #1: Naturalized flow vs Net flow	(13) #2: Instream licenses vs Net flow	(14) #3: Conservation flow vs Net flow	(15) #4: Total licenses vs Naturalized flow	(16) #5: Offstream licenses vs Naturalized flow	(17) #6: Instream licenses vs Naturalized flow	(18) #7a: Actual offstream use vs Naturalized flow	(19) #7b: Actual offstream use (assuming 10% demand reduction) vs Naturalized flow	(20) #7c: Actual offstream use (assuming 20% demand reduction) vs Naturalized flow	(21) #7d: Actual offstream use (assuming 30% demand reduction) vs Naturalized flow	(22) #8: Offstream licenses vs Total licenses	(23) #9: Instream licenses vs Total licenses	(24) #10a: Actual offstream use vs Offstream licenses	(25) #10b: Actual offstream use (assuming 10% demand reduction) vs Offstream licenses	(26) #10c: Actual offstream use (assuming 20% demand reduction) vs Offstream licenses	(27) #10d: Actual offstream use (assuming 30% demand reduction) vs Offstream licenses	(28) #11: Conservation flow vs. Instream licenses		
	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
Jan	0.225	0.225	0.012	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.142	1.94	0.000	0.0	0.225	0.083	158	0.213	5	0	0	0	100	0	0.012	0.012	0.012	0.012	0	
Feb	0.362	0.362	0.012	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.142	3.13	0.000	0.0	0.362	0.220	255	0.350	3	0	0	0	100	0	0.012	0.012	0.012	0.012	0	
Mar	0.397	0.397	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.142	1.98	0.000	0.0	0.397	0.255	280	0.377	5	0	0	0	100	0	0.020	0.020	0.020	0.020	0	
Apr	0.481	0.855	0.085	0.085	0.000	0.000	0.000	0.000	0.000	0.374	0.709	0.89	-0.374	-43.7	0.481	-0.228	88	0.771	10	0	0	0	100	0	0.085	0.085	0.085	0.085	0	
May	-0.110	1.527	0.266	0.265	0.000	0.000	0.000	0.000	0.000	1.637	1.418	0.46	-1.637	-107.2	-0.110	-1.527	-8	1.272	17	0	0	0	100	0	0.255	0.255	0.255	0.255	0	
Jun	0.419	1.088	0.287	0.287	0.000	0.000	0.000	0.000	0.000	0.669	0.709	0.51	-0.669	-61.5	0.419	-0.290	59	0.801	26	0	0	0	100	0	0.287	0.28				

Appendix L

TREPANIER CREEK STREAMFLOW ANALYSIS

Stream: TREPANIER CREEK
 Location: AT THE MOUTH
 Year: 2003
 Scenario: CURRENT CONDITIONS

COMPARISONS (See text for descriptions):

DATA:												Formulas:																		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	Remarks:	#1: Naturalized flow vs Net flow	#2: Instream licences vs Net flow	#3: Conservation flow vs Net flow	#4: Total licences vs Naturalized flow	#5: Offstream licences vs Naturalized flow	#6: Instream licences vs Naturalized flow	#7a: Actual offstream use vs Naturalized flow	#7b: Actual offstream use (assuming 10% demand reduction) vs Naturalized flow	#7c: Actual offstream use (assuming 20% demand reduction) vs Naturalized flow	#7d: Actual offstream use (assuming 30% demand reduction) vs Naturalized flow	#8: Offstream licences vs Total licences	#9: Instream licences vs Total licences	#10a: Actual offstream use vs Offstream licences	#10b: Actual offstream use (assuming 10% demand reduction) vs Offstream licences	#10c: Actual offstream use (assuming 20% demand reduction) vs Offstream licences	#10d: Actual offstream use (assuming 30% demand reduction) vs Offstream licences	#11: Conservation flow vs. Instream licences		
Month	Net flow	Naturalized flow	Total licences (offstream & instream)	Offstream licences	Instream licences	Estimated actual offstream use	Est. actual offstream use (assuming 10% reduction)	Est. actual offstream use (assuming 20% reduction)	Est. actual offstream use (assuming 30% reduction)	Storage	Conservation	neg = net flow is less than naturalized flow	neg = net flow is less than naturalized flow	neg = instream licences are not met by net flow	neg = conserve 100% = conserve flow is not met by net flow	neg = there is no additional surface water to offstream use	% of naturalized flow licensed	% of naturalized flow licensed	% of naturalized flow actually withdrawn for use	% of naturalized flow actually withdrawn for use	% of naturalized flow actually withdrawn for use	% of naturalized flow actually withdrawn for use	% of total licences that are for offstream use	% of total licences that are for instream use	room to remove water without additional licensing	room to remove water without additional licensing	room to remove water without additional licensing	room to remove water without additional licensing	room to remove water without additional licensing	% of conservation flow legally protected with licences
	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(%)	(m ³ /s)	(%)	(m ³ /s)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(%)
Jan	0.105	0.120	0.028	0.028	0.000	0.015	0.014	0.012	0.011	0.000	0.218	-0.015	-12.9	0.105	-0.113	48	0.092	23	0	13	12	10	9	100	0	0.012	0.014	0.015	0.017	0
Feb	0.125	0.140	0.026	0.026	0.000	0.015	0.013	0.012	0.010	0.000	0.218	-0.015	-10.6	0.125	-0.093	57	0.114	19	0	11	10	8	7	100	0	0.012	0.013	0.015	0.016	0
Mar	0.205	0.220	0.032	0.032	0.000	0.017	0.015	0.014	0.012	-0.002	0.218	-0.015	-7.0	0.205	-0.013	94	0.188	15	0	8	7	6	5	100	0	0.016	0.017	0.019	0.021	0
Apr	1.106	1.160	0.074	0.074	0.000	0.032	0.029	0.026	0.022	0.022	1.090	-0.054	-4.7	1.106	0.016	101	1.086	6	0	3	2	2	2	100	0	0.042	0.045	0.048	0.052	0
May	6.314	6.510	0.167	0.167	0.000	0.056	0.051	0.045	0.040	0.139	2.180	-0.196	-3.0	6.314	4.134	290	6.353	2	0	1	1	1	1	100	0	0.100	0.106	0.111	0.117	0
Jun	3.172	3.310	0.227	0.227	0.000	0.080	0.081	0.072	0.063	0.048	1.090	-0.138	-4.2	3.172	2.082	291	3.083	7	0	3	2	2	2	100	0	0.136	0.145	0.154	0.163	0
Jul	0.801	0.870	0.362	0.362	0.000	0.144	0.130	0.115	0.101	-0.076	0.436	-0.069	-10.3	0.801	0.165	139	0.308	54	0	22	19	17	15	100	0	0.217	0.232	0.246	0.261	0
Aug	0.189	0.260	0.370	0.370	0.000	0.148	0.133	0.118	0.103	-0.077	0.327	-0.071	-27.3	0.189	-0.138	58	-0.110	142	0	57	51	45	40	100	0	0.222	0.237	0.251	0.266	0
Sep	0.137	0.180	0.212	0.212	0.000	0.086	0.077	0.069	0.060	-0.043	0.273	-0.043	-24.0	0.137	-0.136	50	-0.032	118	0	48	43	38	33	100	0	0.128	0.135	0.143	0.152	0
Oct	0.143	0.170	0.085	0.085	0.000	0.038	0.035	0.031	0.027	-0.012	0.218	-0.027	-16.0	0.143	-0.075	86	0.085	30	0	23	21	18	15	100	0	0.047	0.051	0.054	0.058	0
Nov	0.183	0.200	0.031	0.031	0.000	0.017	0.016	0.014	0.012	0.000	0.418	-0.017	-8.7	0.183	-0.035	84	0.189	16	0	9	8	7	6	100	0	0.014	0.016	0.017	0.019	0
Dec	0.134	0.150	0.029	0.029	0.000	0.016	0.015	0.013	0.011	0.000	0.218	-0.016	-10.8	0.134	-0.084	61	0.121	19	0	11	10	9	8	100	0	0.013	0.015	0.016	0.018	0
Annual	1.033	1.090	0.137	0.137	0.000	0.057	0.051	0.045	0.040	0.000		-0.057	-5.2	1.033		0.953	13	0	5	5	4	4	100	0	0.080	0.086	0.092	0.097	0	

Stream: TREPANIER CREEK
 Location: ABOVE P058726 (DISTRICT OF PEACHLAND INTAKE)
 Year: 2003
 Scenario: CURRENT CONDITIONS

COMPARISONS (See text for descriptions):

DATA:												Formulas:																		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	Remarks:	#1: Naturalized flow vs Net flow	#2: Instream licences vs Net flow	#3: Conservation flow vs Net flow	#4: Total licences vs Naturalized flow	#5: Offstream licences vs Naturalized flow	#6: Instream licences vs Naturalized flow	#7a: Actual offstream use vs Naturalized flow	#7b: Actual offstream use (assuming 10% demand reduction) vs Naturalized flow	#7c: Actual offstream use (assuming 20% demand reduction) vs Naturalized flow	#7d: Actual offstream use (assuming 30% demand reduction) vs Naturalized flow	#8: Offstream licences vs Total licences	#9: Instream licences vs Total licences	#10a: Actual offstream use vs Offstream licences	#10b: Actual offstream use (assuming 10% demand reduction) vs Offstream licences	#10c: Actual offstream use (assuming 20% demand reduction) vs Offstream licences	#10d: Actual offstream use (assuming 30% demand reduction) vs Offstream licences	#11: Conservation flow vs. Instream licences		
Month	Net flow	Naturalized flow	Total licences (offstream & instream)	Offstream licences	Instream licences	Estimated actual offstream use	Est. actual offstream use (assuming 10% reduction)	Est. actual offstream use (assuming 20% reduction)	Est. actual offstream use (assuming 30% reduction)	Storage	Conservation	neg = net flow is less than naturalized flow	neg = net flow is less than naturalized flow	neg = instream licences are not met by net flow	neg = conserve 100% = conserve flow is not met by net flow	neg = there is no additional surface water to offstream use	% of naturalized flow licensed	% of naturalized flow licensed	% of naturalized flow actually withdrawn for use	% of naturalized flow actually withdrawn for use	% of naturalized flow actually withdrawn for use	% of naturalized flow actually withdrawn for use	% of total licences that are for offstream use	% of total licences that are for instream use	room to remove water without additional licensing	room to remove water without additional licensing	room to remove water without additional licensing	room to remove water without additional licensing	room to remove water without additional licensing	% of conservation flow legally protected with licences
	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(%)	(m ³ /s)	(%)	(m ³ /s)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(%)
Jan	0.116	0.116	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.211	0.000	-0.2	0.116	-0.095	55	0.116	0	0	0	0	0	100	0	0.000	0.000	0.000	0.000	0	
Feb	0.135	0.135	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.211	0.000	-0.2	0.135	-0.078	64	0.135	0	0	0	0	0	100	0	0.000	0.000	0.000	0.000	0	
Mar	0.214	0.213	0.001	0.001	0.000	0.000	0.000	0.000	0.000	-0.001	0.211	0.001	0.5	0.214	0.003	101	0.212	1	0	0	0	0	100	0	0.001	0.001	0.001	0.001	0	
Apr	1.103	1.124	0.010	0.010	0.000	0.001	0.000	0.000	0.000	0.020	1.066	-0.021	-1.9	1.103	0.047	104	1.114	1	0	0	0	0	100	0	0.009	0.010	0.010	0.010	0	
May	6.179	6.307	0.033	0.033	0.000	0.001	0.001	0.001	0.001	0.127	2.112	-0.129	-2.0	6.179	4.067	293	6.273	1	0	0	0	0	100	0	0.032	0.032	0.032	0.032	0	
Jun	3.162	3.207	0.037	0.037	0.000	0.002	0.001	0.001	0.001	0.043	1.056	-0.045	-1.4	3.162	2.106	299	3.159	1	0	0	0	0	100	0	0.036	0.036	0.036	0.036	0	
Jul	0.716	0.649	0.059	0.059	0.000	0.002	0.002	0.002	0.002	-0.069	0.422	0.066	10.2	0.716	0.293	159	0.580	9	0	0	0	0	100	0	0.057	0.057	0.057	0.057	0	
Aug	0.320	0.252	0.060	0.060	0.000	0.002	0.002	0.002	0.002	-0.070	0.317	0.068	26.9	0.320	0.003	101	0.192	24	0	1	1	1	1	100	0	0.058	0.058	0.058	0.058	0
Sep	0.212	0.174	0.033	0.033	0.000	0.001	0.001	0.001	0.001	-0.039	0.264	0.037	21.5	0.212	-0.052	80	0.141	19	0	1	1	1	1	100	0	0.032	0.032	0.032	0.032	0
Oct	0.175	0.165	0.009	0.009	0.000	0.001	0.000	0.000	0.000	-0.011	0.211	0.010	6.1	0.175	-0.037	83	0.156	6	0	0	0	0	100	0	0.009	0.009	0.009	0.009	0	
Nov	0.184	0.194	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.211	0.000	-0.1	0.184	-0.018	92	0.194	0	0	0	0	0	100	0	0.000	0.000	0.000	0.000	0	
Dec	0.145	0.145	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.211	0.000	-0.1	0.145	-0.066	69	0.145	0	0	0	0	0	100	0	0.000	0.000	0.000	0.000	0	
Annual	1.055	1.056	0.020	0.020	0.000	0.001	0.001	0.001	0.001	0.000		-0.001	-0.1	1.055		1.035	2	0	0	0	0	0	100	0	0.020	0.020	0.020	0.020	0	

Stream: TREPANIER CREEK
 Location: BELOW CONFLUENCE WITH MACDONALD CREEK
 Year: 2003
 Scenario: CURRENT CONDITIONS

COMPARISONS (See text for descriptions):

DATA:												Formulas:																		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	Remarks:	#1: Naturalized flow vs Net flow	#2: Instream licences vs Net flow	#3: Conservation flow vs Net flow	#4: Total licences vs Naturalized flow	#5: Offstream licences vs Naturalized flow	#6: Instream licences vs Naturalized flow	#7a: Actual offstream use vs Naturalized flow	#7b: Actual offstream use (assuming 10% demand reduction) vs Naturalized flow	#7c: Actual offstream use (assuming 20% demand reduction) vs Naturalized flow	#7d: Actual offstream use (assuming 30% demand reduction) vs Naturalized flow	#8: Offstream licences vs Total licences	#9: Instream licences vs Total licences	#10a: Actual offstream use vs Offstream licences	#10b: Actual offstream use (assuming 10% demand reduction) vs Offstream licences	#10c: Actual offstream use (assuming 20% demand reduction) vs Offstream licences	#10d: Actual offstream use (assuming 30% demand reduction) vs Offstream licences	#11: Conservation flow vs. Instream licences		
Month	Net flow	Naturalized flow	Total licences (offstream & instream)	Offstream licences	Instream licences	Estimated actual offstream use	Est. actual offstream use (assuming 10% reduction)	Est. actual offstream use (assuming 20% reduction)	Est. actual offstream use (assuming 30% reduction)	Storage	Conservation	neg = net flow is less than naturalized flow	neg = net flow is less than naturalized flow	neg = instream licences are not met by net flow	neg = conserve 100% = conserve flow is not met by net flow	neg = there is no additional surface water to offstream use	% of naturalized flow licensed	% of naturalized flow licensed	% of naturalized flow actually withdrawn for use	% of naturalized flow actually withdrawn for use	% of naturalized flow actually withdrawn for use	% of naturalized flow actually withdrawn for use	% of total licences that are for offstream use	% of total licences that are for instream use	room to remove water without additional licensing	room to remove water without additional licensing	room to remove water without additional licensing	room to remove water without additional licensing	room to remove water without additional licensing	% of conservation flow legally protected with licences
	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(%)	(m ³ /s)	(%)	(m ³ /s)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(%)
Jan	0.095	0.095	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.173	0.000	0.0	0.095	0.000	0	0.095	0	0	0	0	0	#DIV/0!	#DIV/0!	0.000	0.000	0.000	0.000	0	
Feb	0.111	0.111	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.173	0.000	0.0	0.111	-0.062	64	0.111	0	0	0	0	0	#DIV/0!	#DIV/0!	0.000	0.000	0.000	0.000	0	
Mar	0.175	0.174	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.173	0.000	0.2	0.175	0.002	101	0.173	1	0	0	0	0	100	0	0.001	0.001	0.001	0.001	0	
Apr	0.914	0.919	0.009	0.009	0.000	0.000	0.000	0.000	0.000	0.005	0.883	-0.005	-0.5	0.914	0.050	108	0.909	1	0	0	0	0	100	0	0.009	0.009	0.009	0.009	0	
May	5.125	5.16	0.032	0.032																										

Stream: TREPANIER CREEK
 Location: AT THE MOUTH
 Year: 2020
 Scenario: 1 1 ASSUMING POPULATION CHANGE ONLY

COMPARISONS (See text for descriptions):

Month	DATA:											Formula:	#1: Naturalized flow vs Net flow	#2: Instream licenes vs Net flow	#3: Conservation flow vs Net flow	#4: Total licenes vs Naturalized flow	#5: Offstream licenes vs Naturalized flow	#6: Instream licenes vs Naturalized flow	#7a: Actual offstream use vs Naturalized flow	#7b: Actual offstream use (assuming 10% demand reduction) vs Naturalized flow	#7c: Actual offstream use (assuming 20% demand reduction) vs Naturalized flow	#7d: Actual offstream use (assuming 30% demand reduction) vs Naturalized flow	#8: Offstream licenes vs Total licenes	#9: Instream licenes vs Total licenes	#10a: Actual offstream use vs Offstream licenes	#10b: Actual offstream use (assuming 10% demand reduction) vs Offstream licenes	#10c: Actual offstream use (assuming 20% demand reduction) vs Offstream licenes	#10d: Actual offstream use (assuming 30% demand reduction) vs Offstream licenes	#11: Conservation flow vs. Instream licenes																			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)																			= (2)-(1)	= 100*((2)-(1))/2	= (5)-(1)	= (1)-(11)	= 100*((1)-(11))	= (3)-(2)	= 100*(4)/(2)	= 100*(5)/(2)	= 100*(6)/(2)	= 100*(7)/(2)	= 100*(8)/(2)	= 100*(9)/(2)	= 100*(4)/(3)	= 100*(5)/(3)	= (4)-(6)	= (4)-(7)	= (4)-(8)	= (4)-(9)	= 100*(5)/(11)
	Net flow	Naturalized flow	Total licenes (offstream & instream)	Offstream licenes	Instream licenes	Estimated offstream use	Est. actual offstream use (assuming 10% reduction)	Est. actual offstream use (assuming 20% reduction)	Est. actual offstream use (assuming 30% reduction)	Storage pos = withdrawal	Conservation Flows																			Remarks:	neg = net flow is less than naturalized flow	neg = net flow is less than naturalized flow	neg = instream licenes are less than flow by net	neg = conservation flow is not met by net flow	neg = there is no additional surface water to license	% of naturalized flow licensed to offstream use	% of naturalized flow licensed to instream use	flow actually withdrawn for use	flow actually withdrawn for use	flow actually withdrawn for use	flow actually withdrawn for use	% of total licenes that are for offstream use	% of total licenes that are for instream use	room to remove water without additional licenes	room to remove water without additional licenes	room to remove water without additional licenes	room to remove water without additional licenes	flow legally protected with licenes
Jan	0.098	0.120	0.028	0.028	0.000	0.022	0.018	0.015	0.000	0.218		neg	neg	licenes are less than flow by net	flow is not met by net flow	neg	24	0	18	16	15	13	100	0	0.007	0.009	0.011	0.013	0																			

Stream: TREPANIER CREEK
 Location: ABOVE PD58726 (DISTRICT OF PEACHLAND INTAKE)
 Year: 2020
 Scenario: 1 1 ASSUMING POPULATION CHANGE ONLY

COMPARISONS (See text for descriptions):

Month	DATA:											Formula:	#1: Naturalized flow vs Net flow	#2: Instream licenes vs Net flow	#3: Conservation flow vs Net flow	#4: Total licenes vs Naturalized flow	#5: Offstream licenes vs Naturalized flow	#6: Instream licenes vs Naturalized flow	#7a: Actual offstream use vs Naturalized flow	#7b: Actual offstream use (assuming 10% demand reduction) vs Naturalized flow	#7c: Actual offstream use (assuming 20% demand reduction) vs Naturalized flow	#7d: Actual offstream use (assuming 30% demand reduction) vs Naturalized flow	#8: Offstream licenes vs Total licenes	#9: Instream licenes vs Total licenes	#10a: Actual offstream use vs Offstream licenes	#10b: Actual offstream use (assuming 10% demand reduction) vs Offstream licenes	#10c: Actual offstream use (assuming 20% demand reduction) vs Offstream licenes	#10d: Actual offstream use (assuming 30% demand reduction) vs Offstream licenes	#11: Conservation flow vs. Instream licenes																			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)																			= (2)-(1)	= 100*((2)-(1))/2	= (5)-(1)	= (1)-(11)	= 100*((1)-(11))	= (3)-(2)	= 100*(4)/(2)	= 100*(5)/(2)	= 100*(6)/(2)	= 100*(7)/(2)	= 100*(8)/(2)	= 100*(9)/(2)	= 100*(4)/(3)	= 100*(5)/(3)	= (4)-(6)	= (4)-(7)	= (4)-(8)	= (4)-(9)	= 100*(5)/(11)
	Net flow	Naturalized flow	Total licenes (offstream & instream)	Offstream licenes	Instream licenes	Estimated offstream use	Est. actual offstream use (assuming 10% reduction)	Est. actual offstream use (assuming 20% reduction)	Est. actual offstream use (assuming 30% reduction)	Storage pos = withdrawal	Conservation Flows																			Remarks:	neg = net flow is less than naturalized flow	neg = net flow is less than naturalized flow	licenes are less than flow by net	flow is not met by net flow	neg = there is no additional surface water to license	% of naturalized flow licensed to offstream use	% of naturalized flow licensed to instream use	flow actually withdrawn for use	flow actually withdrawn for use	flow actually withdrawn for use	flow actually withdrawn for use	% of total licenes that are for offstream use	% of total licenes that are for instream use	room to remove water without additional licenes	room to remove water without additional licenes	room to remove water without additional licenes	room to remove water without additional licenes	flow legally protected with licenes
Jan	0.116	0.116	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.211		neg	neg	licenes are less than flow by net <td>flow is not met by net flow <td>neg</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>100</td> <td>0</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> <td>0</td> </td>	flow is not met by net flow <td>neg</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>100</td> <td>0</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> <td>0</td>	neg	0	0	0	0	0	100	0	0.000	0.000	0.000	0.000	0																				

Stream: TREPANIER CREEK
 Location: BELOW CONFLUENCE WITH MACDONALD CREEK
 Year: 2020
 Scenario: 1 1 ASSUMING POPULATION CHANGE ONLY

COMPARISONS (See text for descriptions):

Month	DATA:											Formula:	#1: Naturalized flow vs Net flow	#2: Instream licenes vs Net flow	#3: Conservation flow vs Net flow	#4: Total licenes vs Naturalized flow	#5: Offstream licenes vs Naturalized flow	#6: Instream licenes vs Naturalized flow	#7a: Actual offstream use vs Naturalized flow	#7b: Actual offstream use (assuming 10% demand reduction) vs Naturalized flow	#7c: Actual offstream use (assuming 20% demand reduction) vs Naturalized flow	#7d: Actual offstream use (assuming 30% demand reduction) vs Naturalized flow	#8: Offstream licenes vs Total licenes	#9: Instream licenes vs Total licenes	#10a: Actual offstream use vs Offstream licenes	#10b: Actual offstream use (assuming 10% demand reduction) vs Offstream licenes	#10c: Actual offstream use (assuming 20% demand reduction) vs Offstream licenes	#10d: Actual offstream use (assuming 30% demand reduction) vs Offstream licenes	#11: Conservation flow vs. Instream licenes																			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)																			= (2)-(1)	= 100*((2)-(1))/2	= (5)-(1)	= (1)-(11)	= 100*((1)-(11))	= (3)-(2)	= 100*(4)/(2)	= 100*(5)/(2)	= 100*(6)/(2)	= 100*(7)/(2)	= 100*(8)/(2)	= 100*(9)/(2)	= 100*(4)/(3)	= 100*(5)/(3)	= (4)-(6)	= (4)-(7)	= (4)-(8)	= (4)-(9)	= 100*(5)/(11)
	Net flow	Naturalized flow	Total licenes (offstream & instream)	Offstream licenes	Instream licenes	Estimated offstream use	Est. actual offstream use (assuming 10% reduction)	Est. actual offstream use (assuming 20% reduction)	Est. actual offstream use (assuming 30% reduction)	Storage pos = withdrawal	Conservation Flows																			Remarks:	neg = net flow is less than naturalized flow	neg = net flow is less than naturalized flow	licenes are less than flow by net	flow is not met by net flow	neg = there is no additional surface water to license	% of naturalized flow licensed to offstream use	% of naturalized flow licensed to instream use	flow actually withdrawn for use	flow actually withdrawn for use	flow actually withdrawn for use	flow actually withdrawn for use	% of total licenes that are for offstream use	% of total licenes that are for instream use	room to remove water without additional licenes	room to remove water without additional licenes	room to remove water without additional licenes	room to remove water without additional licenes	flow legally protected with licenes
Jan	0.095	0.095	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.303		neg	neg	licenes are less than flow by net <td>flow is not met by net flow <td>neg</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>#DIV/0!</td> <td>#DIV/0!</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> <td>0</td> </td>	flow is not met by net flow <td>neg</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>#DIV/0!</td> <td>#DIV/0!</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> <td>0</td>	neg	0	0	0	0	0	#DIV/0!	#DIV/0!	0.000	0.000	0.000	0.000	0																				

Stream: TREPANIER CREEK
 Location: AT THE MOUTH
 Year: 2050
 Scenario: 1.2 ASSUMING POPULATION CHANGE ONLY

COMPARISONS (See text for descriptions):

DATA:											Formulas:											#1: Naturalized flow vs Net flow	#2: Instream licenses vs Net flow	#3: Conservation flow vs Net flow	#4: Total licenses vs Naturalized flow	#5: Offstream licenses vs Naturalized flow	#6: Instream licenses vs Naturalized flow	#7a: Actual offstream use vs Naturalized flow	#7b: Actual offstream use (assuming 10% demand reduction) vs Naturalized flow	#7c: Actual offstream use (assuming 20% demand reduction) vs Naturalized flow	#7d: Actual offstream use (assuming 30% demand reduction) vs Naturalized flow	#8: Offstream licenses vs Total licenses	#9: Instream licenses vs Total licenses	#10a: Actual offstream use vs Offstream licenses	#10b: Actual offstream use (assuming 10% demand reduction) vs Offstream licenses	#10c: Actual offstream use (assuming 20% demand reduction) vs Offstream licenses	#10d: Actual offstream use (assuming 30% demand reduction) vs Offstream licenses	#11: Conservation flow vs. Instream licenses
Month	(1) Net flow	(2) Naturalized flow	(3) Total licenses (offstream & instream)	(4) Offstream licenses	(5) Instream licenses	(6) Estimated actual offstream use	(7) Est. actual offstream use (assuming 10% reduction)	(8) Est. actual offstream use (assuming 20% reduction)	(9) Est. actual offstream use (assuming 30% reduction)	(10) Storage pos = withdrawal	(11) Conservation Flows	Remarks:	= (2)-(1)	= 100*(2)-(1)/1	= (5)-(1)	= (1)-(11)	= 100*(1)/(11)	= (3)-(2)	= 100*(4)/(2)	= 100*(5)/(2)	= 100*(6)/(2)	= 100*(7)/(2)	= 100*(8)/(2)	= 100*(9)/(2)	= 100*(4)/(3)	= 100*(5)/(3)	= (4)-(6)	= (4)-(7)	= (4)-(8)	= (4)-(9)	= 100*(5)/(11)							
	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)		(m ³ /s)	(%)	(m ³ /s)	(%)	(m ³ /s)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)								
Jan	0.090	0.120	0.030	0.030	0.000	0.030	0.027	0.024	0.021	0.000	0.218	-0.030	-25.0	0.000	-0.128	41	0.090	25	0	25	23	20	18	100	0	0.000	0.003	0.006	0.009	0								
Feb	0.111	0.140	0.028	0.028	0.000	0.028	0.026	0.023	0.020	0.000	0.218	-0.029	-26.5	0.111	-0.107	51	0.112	20	0	21	19	16	14	100	0	0.000	0.003	0.005	0.008	0								
Mar	0.190	0.220	0.035	0.035	0.000	0.032	0.029	0.025	0.022	-0.002	0.218	-0.030	-13.7	0.190	-0.028	87	0.195	16	0	14	13	12	10	100	0	0.003	0.006	0.009	0.012	0								
Apr	1.086	1.160	0.077	0.077	0.000	0.051	0.045	0.041	0.036	0.022	1.090	-0.074	-6.4	1.086	-0.004	100	1.093	7	0	4	4	4	3	100	0	0.026	0.031	0.036	0.041	0								
May	6.296	6.510	0.162	0.162	0.000	0.075	0.067	0.060	0.052	0.139	2.180	-0.214	-3.3	6.296	4.116	288	6.348	2	0	1	1	1	1	100	0	0.087	0.095	0.102	0.110	0								
Jun	3.127	3.310	0.233	0.233	0.000	0.135	0.121	0.108	0.094	0.048	1.090	-0.183	-5.5	3.127	2.037	287	3.077	7	0	4	4	3	3	100	0	0.098	0.111	0.125	0.138	0								
Jul	0.530	0.670	0.370	0.370	0.000	0.215	0.194	0.172	0.151	-0.076	0.436	-0.140	-20.9	0.530	0.094	122	0.300	55	0	32	29	29	22	100	0	0.155	0.176	0.198	0.219	0								
Aug	0.116	0.260	0.378	0.378	0.000	0.221	0.199	0.177	0.155	-0.077	0.327	-0.144	-55.3	0.116	-0.211	36	-0.118	146	0	85	76	68	59	100	0	0.168	0.202	0.224	0	0								
Sep	0.092	0.180	0.218	0.218	0.000	0.130	0.117	0.104	0.091	-0.043	0.273	-0.088	-48.7	0.092	-0.180	34	-0.038	121	0	72	65	58	51	100	0	0.067	0.100	0.113	0.127	0								
Oct	0.116	0.170	0.088	0.088	0.000	0.065	0.059	0.052	0.046	-0.012	0.218	-0.054	-31.5	0.116	-0.102	53	0.082	52	0	38	34	31	27	100	0	0.023	0.030	0.036	0.043	0								
Nov	0.166	0.200	0.033	0.033	0.000	0.034	0.030	0.027	0.024	0.000	0.218	-0.034	-16.9	0.166	-0.052	76	0.167	17	0	17	15	14	12	100	0	0.000	0.003	0.006	0.010	0								
Dec	0.119	0.150	0.031	0.031	0.000	0.031	0.028	0.025	0.022	0.000	0.218	-0.031	-20.9	0.119	-0.089	54	0.119	21	0	21	19	17	15	100	0	0.000	0.003	0.006	0.009	0								
Annual	1.002	1.090	0.141	0.141	0.000	0.088	0.079	0.070	0.062	0.000		-0.088	-8.1	1.002	0.949	13	0	8	7	6	6	6	100	0	0.053	0.062	0.071	0.080	0									

Stream: TREPANIER CREEK
 Location: ABOVE PD56726 (DISTRICT OF PEACHLAND INTAKE)
 Year: 2050
 Scenario: 1.2 ASSUMING POPULATION CHANGE ONLY

COMPARISONS (See text for descriptions):

DATA:											Formulas:											#1: Naturalized flow vs Net flow	#2: Instream licenses vs Net flow	#3: Conservation flow vs Net flow	#4: Total licenses vs Naturalized flow	#5: Offstream licenses vs Naturalized flow	#6: Instream licenses vs Naturalized flow	#7a: Actual offstream use vs Naturalized flow	#7b: Actual offstream use (assuming 10% demand reduction) vs Naturalized flow	#7c: Actual offstream use (assuming 20% demand reduction) vs Naturalized flow	#7d: Actual offstream use (assuming 30% demand reduction) vs Naturalized flow	#8: Offstream licenses vs Total licenses	#9: Instream licenses vs Total licenses	#10a: Actual offstream use vs Offstream licenses	#10b: Actual offstream use (assuming 10% demand reduction) vs Offstream licenses	#10c: Actual offstream use (assuming 20% demand reduction) vs Offstream licenses	#10d: Actual offstream use (assuming 30% demand reduction) vs Offstream licenses	#11: Conservation flow vs. Instream licenses
Month	(1) Net flow	(2) Naturalized flow	(3) Total licenses (offstream & instream)	(4) Offstream licenses	(5) Instream licenses	(6) Estimated actual offstream use	(7) Est. actual offstream use (assuming 10% reduction)	(8) Est. actual offstream use (assuming 20% reduction)	(9) Est. actual offstream use (assuming 30% reduction)	(10) Storage pos = withdrawal	(11) Conservation Flows	Remarks:	= (2)-(1)	= 100*(2)-(1)/1	= (5)-(1)	= (1)-(11)	= 100*(1)/(11)	= (3)-(2)	= 100*(4)/(2)	= 100*(5)/(2)	= 100*(6)/(2)	= 100*(7)/(2)	= 100*(8)/(2)	= 100*(9)/(2)	= 100*(4)/(3)	= 100*(5)/(3)	= (4)-(6)	= (4)-(7)	= (4)-(8)	= (4)-(9)	= 100*(5)/(11)							
	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)		(m ³ /s)	(%)	(m ³ /s)	(%)	(m ³ /s)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)								
Jan	0.116	0.116	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.211	0.000	-0.3	0.116	-0.095	55	0.116	0	0	0	0	0	0	100	0	0.000	0.000	0.000	0.000	0								
Feb	0.135	0.136	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.211	0.000	-0.3	0.135	-0.076	64	0.135	0	0	0	0	0	0	100	0	0.000	0.000	0.000	0.000	0								
Mar	0.214	0.213	0.002	0.002	0.000	0.000	0.000	0.000	0.000	-0.001	0.211	0.001	0.5	0.214	0.003	101	0.212	1	0	0	0	0	0	100	0	0.001	0.001	0.001	0.001	0								
Apr	1.103	1.124	0.010	0.010	0.000	0.001	0.001	0.001	0.001	0.020	1.056	-0.021	-1.9	1.103	0.047	104	1.113	1	0	0	0	0	0	100	0	0.009	0.010	0.010	0.010	0								
May	6.178	6.307	0.033	0.033	0.000	0.002	0.002	0.001	0.001	0.127	2.112	-0.128	-2.0	6.178	4.066	293	6.273	1	0	0	0	0	0	100	0	0.032	0.032	0.032	0.032	0								
Jun	3.161	3.207	0.038	0.038	0.000	0.002	0.002	0.001	0.001	0.043	1.056	-0.045	-1.4	3.161	2.105	299	3.166	1	0	0	0	0	0	100	0	0.036	0.036	0.036	0.036	0								
Jul	0.715	0.649	0.059	0.059	0.000	0.003	0.002	0.002	0.002	-0.069	0.422	0.066	10.2	0.715	0.293	169	0.590	9	0	0	0	0	0	100	0	0.057	0.057	0.057	0.057	0								
Aug	0.319	0.252	0.060	0.060	0.000	0.003	0.002	0.002	0.002	-0.070	0.317	0.067	26.7	0.319	0.032	101	0.192	24	0	1	1	1	1	100	0	0.058	0.058	0.058	0.058	0								
Sep	0.212	0.174	0.034	0.034	0.000	0.002	0.002	0.001	0.001	-0.039	0.264	0.037	21.3	0.212	-0.052	80	0.141	19	0	1	1	1	1	100	0	0.032	0.032	0.032	0.032	0								
Oct	0.174	0.165	0.009	0.009	0.000	0.001	0.001	0.001	0.001	-0.011	0.211	0.010	5.9	0.174	-0.037	83	0.155	6	0	0	0	0	0	100	0	0.009	0.009	0.009	0.009	0								
Nov	0.193	0.194	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.211	0.000	0.000	-0.2	0.193	-0.018	92	0.193	0	0	0	0	0	0	100	0	0.000	0.000	0.000	0.000	0								
Dec	0.145	0.145	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.211	0.000	-0.3	0.145	-0.066	69	0.145	0	0	0	0	0	0	100	0	0.000	0.000	0.000	0.000	0								
Annual	1.055	1.059	0.021	0.021	0.000	0.001	0.001	0.001	0.001	0.000		-0.001	-0.1	1.055	1.035	2	0	0	0	0	0	0	0	100	0	0.020	0.020	0.020	0.020	0								

Stream: TREPANIER CREEK
 Location: BELOW CONFLUENCE WITH MACDONALD CREEK
 Year: 2050
 Scenario: 1.2 ASSUMING POPULATION CHANGE ONLY

COMPARISONS (See text for descriptions):

DATA:											Formulas:											#1: Naturalized flow vs Net flow	#2: Instream licenses vs Net flow	#3: Conservation flow vs Net flow	#4: Total licenses vs Naturalized flow	#5: Offstream licenses vs Naturalized flow	#6: Instream licenses vs Naturalized flow	#7a: Actual offstream use vs Naturalized flow	#7b: Actual offstream use (assuming 10% demand reduction) vs Naturalized flow	#7c: Actual offstream use (assuming 20% demand reduction) vs Naturalized flow	#7d: Actual offstream use (assuming 30% demand reduction) vs Naturalized flow	#8: Offstream licenses vs Total licenses	#9: Instream licenses vs Total licenses	#10a: Actual offstream use vs Offstream licenses	#10b: Actual offstream use (assuming 10% demand reduction) vs Offstream licenses	#10c: Actual offstream use (assuming 20% demand reduction) vs Offstream licenses	#10d: Actual offstream use (assuming 30% demand reduction) vs Offstream licenses	#11: Conservation flow vs. Instream licenses
Month	(1) Net flow	(2) Naturalized flow	(3) Total licenses (offstream & instream)	(4) Offstream licenses	(5) Instream licenses	(6) Estimated actual offstream use	(7) Est. actual offstream use (assuming 10% reduction)	(8) Est. actual offstream use (assuming 20% reduction)	(9) Est. actual offstream use (assuming 30% reduction)	(10) Storage pos = withdrawal	(11) Conservation Flows	Remarks:	= (2)-(1)	= 100*(2)-(1)/1	= (5)-(1)	= (1)-(11)	= 100*(1)/(11)	= (3)-(2)	= 100*(4)/(2)	= 100*(5)/(2)	= 100*(6)/(2)	= 100*(7)/(2)	= 100*(8)/(2)	= 100*(9)/(2)	= 100*(4)/(3)	= 100*(5)/(3)	= (4)-(6)	= (4)-(7)	= (4)-(8)	= (4)-(9)	= 100*(5)/(11)							
	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)		(m ³ /s)	(%)	(m ³ /s)	(%)	(m ³ /s)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)								
Jan	0.095	0.095	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.303	0.000	0.0	0.095	-0.207	31	0.095	0	0	0	0	0	0	#DIV/0!	#DIV/0!	0.000	0.000	0.000	0.000	0								
Feb	0.111	0.111	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.303	0.000	0.0	0.111	-0.192	37	0.111	0	0	0	0	0	0	#DIV/0!	#DIV/0!	0.000	0.000	0.000	0.000	0								
Mar	0.175	0.174	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.303	0.000	0.2	0.175	-0.128	58	0.173	1	0	0	0	0	0	100	0	0.001	0.001	0.001	0.001	0								
Apr	0.914	0.919	0.009	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1.513	-0.005	-0.5	0.914	-0.599	60	0.909	1	0	0	0	0	0	100	0	0.009	0.009	0.009	0.009	0								
May	5.125	5.156	0.032	0.032	0.000	0.000	0.000	0.000	0.000	0.031	3.025	-0.031	-0.6	5.125	2.099	169	5.124	1	0	0	0	0	0	100	0	0.032	0.032	0.032	0.032	0								
Jun	2.611																																					

Stream: **TREPANIER CREEK**
 Location: **AT THE MOUTH**
 Year: **2020**
 Scenario: **2.1 ASSUMING POPULATION AND CLIMATE CHANGE**

COMPARISONS (See text for descriptions):

DATA:											COMPARISONS (See text for descriptions):																				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	#1: Naturalized flow vs Net flow	#2: Instream licenses vs Net flow	#3: Conservation flow vs Net flow	#4: Total licenses vs Naturalized flow	#5: Offstream licenses vs Naturalized flow	#6: Instream licenses vs Naturalized flow	#7a: Actual offstream use vs Naturalized flow	#7b: Actual offstream use (assuming 10% demand reduction) vs Naturalized flow	#7c: Actual offstream use (assuming 20% demand reduction) vs Naturalized flow	#7d: Actual offstream use (assuming 30% demand reduction) vs Naturalized flow	#8: Offstream licenses vs Total licenses	#9: Instream licenses vs Total licenses	#10a: Actual offstream use vs Offstream licenses	#10b: Actual offstream use (assuming 10% demand reduction) vs Offstream licenses	#10c: Actual offstream use (assuming 20% demand reduction) vs Offstream licenses	#10d: Actual offstream use (assuming 30% demand reduction) vs Offstream licenses	#11: Conservation flow vs. Instream licenses				
Month	Net flow	Naturalized flow	Total licenses (offstream & instream)	Offstream licenses	Instream licenses	Estimated actual offstream use	Est. actual offstream use (assuming 10% reduction)	Est. actual offstream use (assuming 20% reduction)	Est. actual offstream use (assuming 30% reduction)	Storage (neg = release, pos = withdrawal)	Conservation Flows	expressed as a ratio of 2003 flow (based on UBC modeling)	reg = net flow is less than naturalized flow	reg = net flow is less than naturalized flow	licenses are not met by net flow	flow is not met by net flow	flow is not met by net flow	additional surface water to license	flow licensed to offstream use	flow licensed to instream use	flow actually withdrawn for use	% of naturalized flow actually withdrawn for use	% of naturalized flow actually withdrawn for use	% of naturalized flow actually withdrawn for use	% of total licenses that are for offstream use	% of total licenses that are for instream use	room to remove water without additional licensing	room to remove water without additional licensing	room to remove water without additional licensing	room to remove water without additional licensing	flow legally protected with licenses
Jan	0.142	0.167	0.028	0.029	0.000	0.026	0.023	0.020	0.019	0.000	0.218	1.4	-0.026	-15.3	0.142	-0.076	65	0.139	17	0	15	14	12	11	100	0	0.003	0.006	0.009	0.011	0
Feb	0.347	0.372	0.027	0.027	0.000	0.024	0.022	0.020	0.017	0.000	0.218	2.7	-0.024	-6.9	0.347	0.129	159	0.344	7	0	7	6	5	5	100	0	0.003	0.005	0.008	0.010	0
Mar	0.325	0.351	0.034	0.034	0.000	0.027	0.025	0.022	0.019	-0.002	0.219	1.6	-0.025	-7.4	0.325	0.107	149	0.318	10	0	8	7	6	5	100	0	0.006	0.009	0.012	0.015	0
Apr	1.146	1.218	0.078	0.078	0.000	0.047	0.042	0.038	0.033	0.022	0.219	1.0	-0.069	-5.7	1.146	0.058	105	1.140	8	0	4	3	3	3	100	0	0.030	0.035	0.040	0.045	0
May	4.347	4.561	0.165	0.165	0.000	0.075	0.067	0.060	0.052	0.139	2.180	0.7	-0.214	-4.7	4.347	2.167	199	4.396	4	0	2	1	1	1	100	0	0.051	0.059	0.106	0.113	0
Jun	2.162	2.337	0.237	0.237	0.000	0.128	0.115	0.103	0.090	0.048	1.090	0.7	-0.176	-7.5	2.162	1.072	198	2.101	10	0	5	4	4	4	100	0	0.108	0.121	0.134	0.147	0
Jul	0.390	0.519	0.377	0.377	0.000	0.205	0.184	0.164	0.143	-0.076	0.436	0.8	-0.128	-24.9	0.390	-0.046	90	0.143	73	0	39	35	32	29	100	0	0.172	0.193	0.213	0.234	0
Aug	0.084	0.217	0.385	0.385	0.000	0.210	0.189	0.168	0.147	-0.077	0.327	0.8	-0.133	-61.3	0.084	-0.243	26	-0.168	178	0	87	87	77	68	100	0	0.175	0.186	0.217	0.238	0
Sep	0.079	0.159	0.221	0.221	0.000	0.123	0.111	0.098	0.086	-0.043	0.273	0.9	-0.080	-50.3	0.079	-0.193	29	-0.062	139	0	77	69	62	54	100	0	0.099	0.110	0.123	0.135	0
Oct	0.103	0.150	0.089	0.089	0.000	0.059	0.053	0.047	0.041	-0.012	0.218	0.8	-0.047	-31.5	0.103	-0.115	47	0.062	59	0	39	35	31	27	100	0	0.030	0.036	0.042	0.047	0
Nov	0.166	0.195	0.032	0.032	0.000	0.029	0.026	0.023	0.020	0.000	0.218	1.0	-0.029	-14.8	0.166	-0.052	76	0.162	17	0	15	13	12	10	100	0	0.004	0.006	0.009	0.012	0
Dec	0.155	0.182	0.030	0.030	0.000	0.027	0.024	0.021	0.019	0.000	0.218	1.2	-0.027	-14.7	0.155	-0.063	71	0.152	17	0	15	13	12	10	100	0	0.003	0.006	0.009	0.011	0
Annual	0.790	0.872	0.143	0.143	0.000	0.082	0.074	0.066	0.057	0.000	0.000	0.000	-0.082	-9.4	0.790	-0.063	71	0.729	16	0	9	8	7	7	100	0	0.061	0.069	0.077	0.085	0

Stream: **TREPANIER CREEK**
 Location: **ABOVE PD58728 (DISTRICT OF PEACHLAND INTAKE)**
 Year: **2020**
 Scenario: **2.1 ASSUMING POPULATION AND CLIMATE CHANGE**

COMPARISONS (See text for descriptions):

DATA:											COMPARISONS (See text for descriptions):																				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	#1: Naturalized flow vs Net flow	#2: Instream licenses vs Net flow	#3: Conservation flow vs Net flow	#4: Total licenses vs Naturalized flow	#5: Offstream licenses vs Naturalized flow	#6: Instream licenses vs Naturalized flow	#7a: Actual offstream use vs Naturalized flow	#7b: Actual offstream use (assuming 10% demand reduction) vs Naturalized flow	#7c: Actual offstream use (assuming 20% demand reduction) vs Naturalized flow	#7d: Actual offstream use (assuming 30% demand reduction) vs Naturalized flow	#8: Offstream licenses vs Total licenses	#9: Instream licenses vs Total licenses	#10a: Actual offstream use vs Offstream licenses	#10b: Actual offstream use (assuming 10% demand reduction) vs Offstream licenses	#10c: Actual offstream use (assuming 20% demand reduction) vs Offstream licenses	#10d: Actual offstream use (assuming 30% demand reduction) vs Offstream licenses	#11: Conservation flow vs. Instream licenses				
Month	Net flow	Naturalized flow	Total licenses (offstream & instream)	Offstream licenses	Instream licenses	Estimated actual offstream use	Est. actual offstream use (assuming 10% reduction)	Est. actual offstream use (assuming 20% reduction)	Est. actual offstream use (assuming 30% reduction)	Storage (neg = release, pos = withdrawal)	Conservation Flows	expressed as a ratio of 2003 flow (based on UBC modeling)	reg = net flow is less than naturalized flow	reg = net flow is less than naturalized flow	licenses are not met by net flow	flow is not met by net flow	flow is not met by net flow	additional surface water to license	flow licensed to offstream use	flow licensed to instream use	flow actually withdrawn for use	% of naturalized flow actually withdrawn for use	% of naturalized flow actually withdrawn for use	% of naturalized flow actually withdrawn for use	% of total licenses that are for offstream use	% of total licenses that are for instream use	room to remove water without additional licensing	room to remove water without additional licensing	room to remove water without additional licensing	room to remove water without additional licensing	flow legally protected with licenses
Jan	0.162	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.211	1.4	0.000	-0.2	0.162	-0.049	77	0.162	0	0	0	0	0	0	100	0	0.000	0.000	0.000	0.000	0
Feb	0.360	0.360	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.211	2.7	0.000	-0.1	0.360	0.148	170	0.360	0	0	0	0	0	0	100	0	0.000	0.000	0.000	0.000	0
Mar	0.341	0.340	0.002	0.002	0.000	0.000	0.000	0.000	0.000	-0.001	0.211	1.8	0.001	0.3	0.341	0.130	162	0.339	0	0	0	0	0	0	100	0	0.001	0.001	0.001	0.001	0
Apr	1.158	1.180	0.010	0.010	0.000	0.001	0.001	0.001	0.001	0.020	1.056	1.0	-0.021	-1.8	1.158	0.103	110	1.169	1	0	0	0	0	0	100	0	0.009	0.010	0.010	0.010	0
May	4.290	4.419	0.033	0.033	0.000	0.002	0.003	0.001	0.001	0.127	2.112	0.7	-0.128	-2.9	4.290	2.178	203	4.395	1	0	0	0	0	0	100	0	0.032	0.032	0.032	0.032	0
Jun	2.215	2.264	0.038	0.038	0.000	0.002	0.002	0.002	0.002	0.043	1.056	0.7	-0.045	-2.0	2.218	1.163	210	2.227	2	0	0	0	0	0	100	0	0.036	0.036	0.036	0.036	0
Jul	0.569	0.503	0.059	0.059	0.000	0.003	0.003	0.002	0.002	-0.069	0.803	0.8	0.068	13.1	0.569	0.147	135	0.444	12	0	1	1	1	1	100	0	0.057	0.057	0.057	0.057	0
Aug	0.277	0.210	0.060	0.060	0.000	0.003	0.003	0.002	0.002	-0.070	0.317	0.8	0.067	32.0	0.277	-0.040	87	0.149	29	0	1	1	1	1	100	0	0.058	0.058	0.058	0.058	0
Sep	0.192	0.154	0.034	0.034	0.000	0.002	0.002	0.001	0.001	-0.038	0.264	0.9	0.037	24.0	0.192	-0.072	73	0.121	22	0	1	1	1	1	100	0	0.032	0.032	0.032	0.032	0
Oct	0.155	0.146	0.009	0.009	0.000	0.001	0.001	0.001	0.000	-0.011	0.211	0.9	0.010	6.7	0.155	-0.056	74	0.136	6	0	0	0	0	0	100	0	0.009	0.009	0.009	0.009	0
Nov	0.188	0.189	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.211	1.0	0.000	-0.2	0.188	-0.023	89	0.188	0	0	0	0	0	0	100	0	0.000	0.000	0.000	0.000	0
Dec	0.176	0.177	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.211	1.2	0.000	-0.2	0.176	-0.035	83	0.176	0	0	0	0	0	0	100	0	0.000	0.000	0.000	0.000	0
Annual	0.844	0.845	0.021	0.021	0.000	0.001	0.001	0.001	0.001	0.000	0.000	0.000	-0.001	-0.1	0.844	-0.035	83	0.824	2	0	0	0	0	0	100	0	0.020	0.020	0.020	0.020	0

Stream: **TREPANIER CREEK**
 Location: **BELOW CONFLUENCE WITH MACDONALD CREEK**
 Year: **2020**
 Scenario: **2.1 ASSUMING POPULATION AND CLIMATE CHANGE**

COMPARISONS (See text for descriptions):

DATA:											COMPARISONS (See text for descriptions):																				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	#1: Naturalized flow vs Net flow	#2: Instream licenses vs Net flow	#3: Conservation flow vs Net flow	#4: Total licenses vs Naturalized flow	#5: Offstream licenses vs Naturalized flow	#6: Instream licenses vs Naturalized flow	#7a: Actual offstream use vs Naturalized flow	#7b: Actual offstream use (assuming 10% demand reduction) vs Naturalized flow	#7c: Actual offstream use (assuming 20% demand reduction) vs Naturalized flow	#7d: Actual offstream use (assuming 30% demand reduction) vs Naturalized flow	#8: Offstream licenses vs Total licenses	#9: Instream licenses vs Total licenses	#10a: Actual offstream use vs Offstream licenses	#10b: Actual offstream use (assuming 10% demand reduction) vs Offstream licenses	#10c: Actual offstream use (assuming 20% demand reduction) vs Offstream licenses	#10d: Actual offstream use (assuming 30% demand reduction) vs Offstream licenses	#11: Conservation flow vs. Instream licenses				
Month	Net flow	Naturalized flow	Total licenses (offstream & instream)	Offstream licenses	Instream licenses	Estimated actual offstream use	Est. actual offstream use (assuming 10% reduction)	Est. actual offstream use (assuming 20% reduction)	Est. actual offstream use (assuming 30% reduction)	Storage (neg = release, pos = withdrawal)	Conservation Flows	expressed as a ratio of 2003 flow (based on UBC modeling)	reg = net flow is less than naturalized flow	reg = net flow is less than naturalized flow	licenses are not met by net flow	flow is not met by net flow	flow is not met by net flow	additional surface water to license	flow licensed to offstream use	flow licensed to instream use	flow actually withdrawn for use	% of naturalized flow actually withdrawn for use	% of naturalized flow actually withdrawn for use	% of naturalized flow actually withdrawn for use	% of total licenses that are for offstream use	% of total licenses that are for instream use	room to remove water without additional licensing	room to remove water without additional licensing	room to remove water without additional licensing	room to remove water without additional licensing	flow legally protected with licenses
Jan	0.133	0.133	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.173	1.4	0.000	0.0	0.133	-0.040	77	0.133	0	0	0	0	0	0	100	0	0.000	0.000	0.000	0.000	0
Feb	0.294	0.294	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.173	2.7	0.000	0.0	0.294	0.122	170	0.294	0	0	0	0	0	0	100	0	0.000	0.000	0.000	0.000	0
Mar	0.279	0.278	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.173	1.6	0.000	0.1	0.279	0.106	161	0.277	0	0	0	0	0	0	100	0	0.001	0.001			

Appendix M
PEACHLAND CREEK
STREAMFLOW ANALYSIS

Stream PEACHLAND CREEK
 Location AT THE MOUTH
 Year 2003
 Scenario CURRENT CONDITIONS

COMPARISONS (See text for descriptions):

Month	DATA:											Formula:	#1: Naturalized flow vs Net flow	#2: Instream licenes vs Nat flow	#3: Conservation flow vs Net flow	#4: Total licenes vs Naturalized flow	#5: Offstream licenes vs Naturalized flow	#6: Instream licenes vs Naturalized flow	#7a: Actual offstream use vs Naturalized flow	#7b: Actual offstream use (assuming 10% demand reduction) vs Naturalized flow	#7c: Actual offstream use (assuming 20% demand reduction) vs Naturalized flow	#7d: Actual offstream use (assuming 30% demand reduction) vs Naturalized flow	#8: Offstream licenes vs Total licenes	#9: Instream licenes vs Total licenes	#10a: Actual offstream use vs Offstream licenes	#10b: Actual offstream use (assuming 10% demand reduction) vs Offstream licenes	#10c: Actual offstream use (assuming 20% demand reduction) vs Offstream licenes	#10d: Actual offstream use (assuming 30% demand reduction) vs Offstream licenes	#11: Conservation flow vs. Instream licenes		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)																				
	Net flow	Naturalized flow	Total licenes (offstream & instream)	Offstream licenes	Instream licenes	Estimated actual offstream use	Est. actual offstream use assuming 10% reduction	Est. actual offstream use assuming 20% reduction	Est. actual offstream use assuming 30% reduction	Storage	Conservation																				
	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)																				
Jan	0.225	0.090	0.348	0.042	0.306	0.013	0.012	0.010	0.009	-0.147	0.114	0.135	149.6	-0.081	0.111	197	0.258	47	340	14	13	11	10	12	88	0.030	0.031	0.032	0.033	0.033	297
Feb	0.234	0.090	0.380	0.041	0.338	0.013	0.011	0.010	0.008	-0.156	0.114	0.144	159.7	-0.105	0.120	205	0.250	46	376	14	13	11	10	11	89	0.029	0.030	0.031	0.031	0.033	297
Mar	0.297	0.160	0.357	0.051	0.306	0.014	0.013	0.012	0.010	-0.152	0.114	0.137	85.7	-0.008	0.183	261	-0.197	32	191	9	8	7	6	14	86	0.037	0.038	0.040	0.041	0.041	298
Apr	0.458	0.270	0.480	0.164	0.316	0.040	0.036	0.032	0.028	0.272	0.570	-0.312	-40.5	0.142	-0.112	80	0.290	21	41	5	5	4	4	34	66	0.124	0.128	0.132	0.136	0.136	55
May	1.234	2.68	0.683	0.378	0.306	0.083	0.075	0.067	0.058	1.363	1.140	-1.446	-54.0	0.028	0.094	108	1.997	14	11	3	3	2	2	55	45	0.294	0.303	0.311	0.319	0.319	27
Jun	0.617	1.730	0.750	0.434	0.000	0.095	0.087	0.077	0.067	0.717	0.570	-0.613	-47.0	0.017	0.347	161	0.980	26	0	5	5	4	4	58	0	0.338	0.347	0.357	0.365	0.365	0
Jul	0.913	0.530	0.92	0.62	0.306	0.131	0.118	0.105	0.092	-0.514	0.228	0.383	72.2	0.607	0.985	400	-0.392	116	58	25	22	20	17	67	33	0.485	0.498	0.511	0.524	0.524	134
Aug	0.586	0.200	0.931	0.625	0.306	0.133	0.120	0.106	0.093	-0.519	0.171	0.386	192.9	0.280	0.415	343	-0.731	313	153	67	60	53	47	67	33	0.482	0.506	0.519	0.532	0.532	179
Sep	0.436	0.160	0.681	0.365	0.316	0.079	0.071	0.063	0.056	-0.356	0.143	0.276	172.8	0.121	0.284	306	-0.521	228	197	50	45	40	35	54	46	0.286	0.294	0.302	0.310	0.310	222
Oct	0.322	0.140	0.446	0.141	0.306	0.034	0.031	0.027	0.024	-0.216	0.114	0.182	130.2	0.017	0.209	283	-0.306	100	218	24	22	19	17	31	69	0.106	0.110	0.113	0.117	0.117	268
Nov	0.277	0.140	0.357	0.041	0.316	0.013	0.011	0.010	0.009	-0.149	0.114	0.137	97.9	-0.039	0.163	243	-0.217	30	228	9	8	7	6	12	88	0.029	0.030	0.031	0.033	0.033	277
Dec	0.230	0.100	0.343	0.037	0.306	0.011	0.010	0.009	0.008	-0.141	0.114	0.130	129.9	-0.075	0.116	202	-0.243	37	308	11	10	9	8	11	89	0.026	0.027	0.028	0.030	0.030	268
Annual	0.515	0.570	0.558	0.246	0.311	0.055	0.050	0.044	0.039	0.000		-0.055	-9.7	0.203		0.012	43	55	10	9	8	7	44	56	0.191	0.196	0.202	0.208	0.208		

Stream PEACHLAND CREEK
 Location ABOVE PDS8648 (DISTRICT OF PEACHLAND INTAKE)
 Year 2003
 Scenario CURRENT CONDITIONS

COMPARISONS (See text for descriptions):

Month	DATA:											Formula:	#1: Naturalized flow vs Net flow	#2: Instream licenes vs Nat flow	#3: Conservation flow vs Net flow	#4: Total licenes vs Naturalized flow	#5: Offstream licenes vs Naturalized flow	#6: Instream licenes vs Naturalized flow	#7a: Actual offstream use vs Naturalized flow	#7b: Actual offstream use (assuming 10% demand reduction) vs Naturalized flow	#7c: Actual offstream use (assuming 20% demand reduction) vs Naturalized flow	#7d: Actual offstream use (assuming 30% demand reduction) vs Naturalized flow	#8: Offstream licenes vs Total licenes	#9: Instream licenes vs Total licenes	#10a: Actual offstream use vs Offstream licenes	#10b: Actual offstream use (assuming 10% demand reduction) vs Offstream licenes	#10c: Actual offstream use (assuming 20% demand reduction) vs Offstream licenes	#10d: Actual offstream use (assuming 30% demand reduction) vs Offstream licenes	#11: Conservation flow vs. Instream licenes	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)																			
	Net flow	Naturalized flow	Total licenes (offstream & instream)	Offstream licenes	Instream licenes	Estimated actual offstream use	Est. actual offstream use assuming 10% reduction	Est. actual offstream use assuming 20% reduction	Est. actual offstream use assuming 30% reduction	Storage	Conservation																			
	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)																			
Jan	0.223	0.081	0.120	0.036	0.083	0.000	0.000	0.000	0.000	-0.147	0.103	0.147	18.1	0.145	0.126	222	-0.038	45	102	0	0	0	30	70	0.036	0.036	0.036	0.036	0.036	81
Feb	0.238	0.081	0.128	0.035	0.092	0.000	0.000	0.000	0.000	-0.156	0.103	0.156	16.9	0.146	0.134	230	-0.046	43	113	0	0	0	28	72	0.035	0.035	0.035	0.035	0.035	90
Mar	0.296	0.145	0.123	0.040	0.083	0.000	0.000	0.000	0.000	-0.152	0.103	0.152	104.8	0.213	0.193	287	0.022	27	58	0	0	0	32	68	0.040	0.040	0.040	0.040	0.040	81
Apr	0.424	0.696	0.191	0.165	0.086	0.000	0.000	0.000	0.000	0.272	0.515	-0.272	-39.0	0.339	-0.091	82	0.505	15	12	0	0	0	55	45	0.104	0.104	0.104	0.105	0.105	17
May	1.060	2.423	0.286	0.202	0.083	0.000	0.000	0.000	0.000	1.363	1.031	-1.363	-56.3	0.976	0.029	103	2.137	8	3	0	0	0	71	28	0.202	0.202	0.202	0.202	0.202	8
Jun	0.847	1.564	0.321	0.235	0.000	0.000	0.000	0.000	0.000	0.717	0.515	-0.717	-45.9	0.847	0.331	164	1.243	15	0	0	0	0	73	0	0.235	0.235	0.235	0.235	0.235	0
Jul	0.993	0.479	0.395	0.311	0.083	0.000	0.000	0.000	0.000	-0.514	0.208	0.514	107.2	0.909	0.787	482	0.084	65	17	0	0	0	78	21	0.311	0.311	0.311	0.311	0.311	40
Aug	0.699	0.181	0.399	0.315	0.083	0.000	0.000	0.000	0.000	-0.519	0.155	0.519	296.8	0.616	0.545	452	-0.218	174	45	0	0	0	79	21	0.315	0.315	0.315	0.315	0.315	54
Sep	0.500	0.145	0.277	0.190	0.086	0.000	0.000	0.000	0.000	-0.356	0.129	0.356	245.9	0.414	0.371	388	-0.132	132	60	0	0	0	89	31	0.190	0.190	0.190	0.190	0.190	67
Oct	0.343	0.127	0.171	0.087	0.083	0.000	0.000	0.000	0.000	-0.216	0.103	0.216	170.9	0.259	0.240	333	-0.044	69	66	0	0	0	51	49	0.087	0.087	0.087	0.087	0.087	81
Nov	0.276	0.127	0.122	0.036	0.086	0.000	0.000	0.000	0.000	-0.149	0.103	0.148	118.0	0.190	0.173	268	0.005	28	68	0	0	0	28	72	0.035	0.035	0.035	0.035	0.035	84
Dec	0.232	0.090	0.115	0.032	0.083	0.000	0.000	0.000	0.000	-0.141	0.103	0.141	156.3	0.148	0.129	225	-0.025	36	92	0	0	0	28	72	0.032	0.032	0.032	0.032	0.032	81
Annual	0.515	0.515	0.221	0.136	0.085	0.000	0.000	0.000	0.000	0.000		0.000	0.0	0.430		0.294	29	16	0	0	0	62	38	0.136	0.136	0.136	0.136	0.136		

Stream PEACHLAND CREEK
 Location BELOW CONFLUENCE WITH GREATA CREEK
 Year 2003
 Scenario CURRENT CONDITIONS

COMPARISONS (See text for descriptions):

Month	DATA:											Formula:	#1: Naturalized flow vs Net flow	#2: Instream licenes vs Nat flow	#3: Conservation flow vs Net flow	#4: Total licenes vs Naturalized flow	#5: Offstream licenes vs Naturalized flow	#6: Instream licenes vs Naturalized flow	#7a: Actual offstream use vs Naturalized flow	#7b: Actual offstream use (assuming 10% demand reduction) vs Naturalized flow	#7c: Actual offstream use (assuming 20% demand reduction) vs Naturalized flow	#7d: Actual offstream use (assuming 30% demand reduction) vs Naturalized flow	#8: Offstream licenes vs Total licenes	#9: Instream licenes vs Total licenes	#10a: Actual offstream use vs Offstream licenes	#10b: Actual offstream use (assuming 10% demand reduction) vs Offstream licenes	#10c: Actual offstream use (assuming 20% demand reduction) vs Offstream licenes	#10d: Actual offstream use (assuming 30% demand reduction) vs Offstream licenes	#11: Conservation flow vs. Instream licenes	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)																			
	Net flow	Naturalized flow	Total licenes (offstream & instream)	Offstream licenes	Instream licenes	Estimated actual offstream use	Est. actual offstream use assuming 10% reduction	Est. actual offstream use assuming 20% reduction	Est. actual offstream use assuming 30% reduction	Storage	Conservation																			
	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)																			
Jan	0.225	0.077	0.120	0.039	0.083	0.000	0.000	0.000	0.000	-0.147	0.098	0.147	19.2	0.141	0.127	230	-0.043	47	108	0	0	0	30	70	0.036	0.036	0.036	0.036	0.036	85
Feb	0.233	0.077	0.128	0.035	0.092	0.000	0.000	0.000	0.000	-0.156	0.098	0.156	202.8	0.141	0.136	239	-0.050	48	120	0	0	0	28	72	0.035	0.035	0.035	0.035	0.035	84
Mar	0.289	0.137	0.123	0.040	0.083	0.000	0.000	0.000	0.000	-0.152	0.098	0.152	110.6	0.205	0.191	296	0.014	29	61	0	0	0	32	68	0.040	0.040	0.040	0.040	0.040	85
Apr	0.388	0.660	0.191	0.104	0.086	0.000	0.000	0.000	0.000	0.272	0.488	-0.272	-41.2	0.302	-0.100	79	0.488	16	13	0	0	0	55	45	0.104	0.104	0.104	0.104	0.104	18
May	0.933	2.296	0.285	0.202	0.083	0.000	0.000	0.000	0.000	1.363	0.977	-1.363	-59.4	0.850	-0.043	96	2.011	9	4	0	0	0	73	0	0.202	0.202	0.202	0.202	0.202	9
Jun	0.785	1.482	0.321	0.235	0.000	0.000	0.000	0.000	0.000	0.717	0.488	-0.717	-48.4	0.785	0.277	157	1.161	16	0	0	0	0	73	0	0.235	0.235	0.235	0.235	0.235	0
Jul	0.968	0.454	0.394	0.311	0.083	0.000	0.000	0.000	0.000	-0.514	0.195	0.514	113.2	0.885	0.773	496	0.080	68	18	0	0	0	79	21	0.311	0.311	0.311	0.311	0.311	43
Aug	0.690	0.171	0																											

Stream: PEACHLAND CREEK
 Location: AT THE MOUTH
 Year: 2020
 Scenario: 1.1 ASSUMING POPULATION CHANGE ONLY

COMPARISONS (See text for descriptions):

Month	DATA:											Formula:	Remarks:	#1: Naturalized flow vs Net flow	#2: Instream licenses vs Net flow	#3: Conservation flow vs Net flow	#4: Total licenses vs Naturalized flow	#5: Offstream licenses vs Naturalized flow	#6: Instream licenses vs Naturalized flow	#7a: Actual offstream use vs Naturalized flow	#7b: Actual offstream use (assuming 10% demand reduction) vs Naturalized flow	#7c: Actual offstream use (assuming 20% demand reduction) vs Naturalized flow	#7d: Actual offstream use (assuming 30% demand reduction) vs Naturalized flow	#8: Offstream licenses vs Total licenses	#9: Instream licenses vs Total licenses	#10a: Actual offstream use vs Offstream licenses	#10b: Actual offstream use (assuming 10% demand reduction) vs Offstream licenses	#10c: Actual offstream use (assuming 20% demand reduction) vs Offstream licenses	#10d: Actual offstream use (assuming 30% demand reduction) vs Offstream licenses	#11: Conservation flow vs. Instream licenses																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)																				(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)	(40)	(41)	(42)	(43)	(44)	(45)	(46)	(47)	(48)	(49)	(50)	(51)	(52)	(53)	(54)	(55)	(56)	(57)	(58)	(59)	(60)	(61)	(62)	(63)	(64)	(65)	(66)	(67)	(68)	(69)	(70)	(71)	(72)	(73)	(74)	(75)	(76)	(77)	(78)	(79)	(80)	(81)	(82)	(83)	(84)	(85)	(86)	(87)	(88)	(89)	(90)	(91)	(92)	(93)	(94)	(95)	(96)	(97)	(98)	(99)	(100)	(101)	(102)	(103)	(104)	(105)	(106)	(107)	(108)	(109)	(110)	(111)	(112)	(113)	(114)	(115)	(116)	(117)	(118)	(119)	(120)	(121)	(122)	(123)	(124)	(125)	(126)	(127)	(128)	(129)	(130)	(131)	(132)	(133)	(134)	(135)	(136)	(137)	(138)	(139)	(140)	(141)	(142)	(143)	(144)	(145)	(146)	(147)	(148)	(149)	(150)	(151)	(152)	(153)	(154)	(155)	(156)	(157)	(158)	(159)	(160)	(161)	(162)	(163)	(164)	(165)	(166)	(167)	(168)	(169)	(170)	(171)	(172)	(173)	(174)	(175)	(176)	(177)	(178)	(179)	(180)	(181)	(182)	(183)	(184)	(185)	(186)	(187)	(188)	(189)	(190)	(191)	(192)	(193)	(194)	(195)	(196)	(197)	(198)	(199)	(200)	(201)	(202)	(203)	(204)	(205)	(206)	(207)	(208)	(209)	(210)	(211)	(212)	(213)	(214)	(215)	(216)	(217)	(218)	(219)	(220)	(221)	(222)	(223)	(224)	(225)	(226)	(227)	(228)	(229)	(230)	(231)	(232)	(233)	(234)	(235)	(236)	(237)	(238)	(239)	(240)	(241)	(242)	(243)	(244)	(245)	(246)	(247)	(248)	(249)	(250)	(251)	(252)	(253)	(254)	(255)	(256)	(257)	(258)	(259)	(260)	(261)	(262)	(263)	(264)	(265)	(266)	(267)	(268)	(269)	(270)	(271)	(272)	(273)	(274)	(275)	(276)	(277)	(278)	(279)	(280)	(281)	(282)	(283)	(284)	(285)	(286)	(287)	(288)	(289)	(290)	(291)	(292)	(293)	(294)	(295)	(296)	(297)	(298)	(299)	(300)	(301)	(302)	(303)	(304)	(305)	(306)	(307)	(308)	(309)	(310)	(311)	(312)	(313)	(314)	(315)	(316)	(317)	(318)	(319)	(320)	(321)	(322)	(323)	(324)	(325)	(326)	(327)	(328)	(329)	(330)	(331)	(332)	(333)	(334)	(335)	(336)	(337)	(338)	(339)	(340)	(341)	(342)	(343)	(344)	(345)	(346)	(347)	(348)	(349)	(350)	(351)	(352)	(353)	(354)	(355)	(356)	(357)	(358)	(359)	(360)	(361)	(362)	(363)	(364)	(365)	(366)	(367)	(368)	(369)	(370)	(371)	(372)	(373)	(374)	(375)	(376)	(377)	(378)	(379)	(380)	(381)	(382)	(383)	(384)	(385)	(386)	(387)	(388)	(389)	(390)	(391)	(392)	(393)	(394)	(395)	(396)	(397)	(398)	(399)	(400)	(401)	(402)	(403)	(404)	(405)	(406)	(407)	(408)	(409)	(410)	(411)	(412)	(413)	(414)	(415)	(416)	(417)	(418)	(419)	(420)	(421)	(422)	(423)	(424)	(425)	(426)	(427)	(428)	(429)	(430)	(431)	(432)	(433)	(434)	(435)	(436)	(437)	(438)	(439)	(440)	(441)	(442)	(443)	(444)	(445)	(446)	(447)	(448)	(449)	(450)	(451)	(452)	(453)	(454)	(455)	(456)	(457)	(458)	(459)	(460)	(461)	(462)	(463)	(464)	(465)	(466)	(467)	(468)	(469)	(470)	(471)	(472)	(473)	(474)	(475)	(476)	(477)	(478)	(479)	(480)	(481)	(482)	(483)	(484)	(485)	(486)	(487)	(488)	(489)	(490)	(491)	(492)	(493)	(494)	(495)	(496)	(497)	(498)	(499)	(500)	(501)	(502)	(503)	(504)	(505)	(506)	(507)	(508)	(509)	(510)	(511)	(512)	(513)	(514)	(515)	(516)	(517)	(518)	(519)	(520)	(521)	(522)	(523)	(524)	(525)	(526)	(527)	(528)	(529)	(530)	(531)	(532)	(533)	(534)	(535)	(536)	(537)	(538)	(539)	(540)	(541)	(542)	(543)	(544)	(545)	(546)	(547)	(548)	(549)	(550)	(551)	(552)	(553)	(554)	(555)	(556)	(557)	(558)	(559)	(560)	(561)	(562)	(563)	(564)	(565)	(566)	(567)	(568)	(569)	(570)	(571)	(572)	(573)	(574)	(575)	(576)	(577)	(578)	(579)	(580)	(581)	(582)	(583)	(584)	(585)	(586)	(587)	(588)	(589)	(590)	(591)	(592)	(593)	(594)	(595)	(596)	(597)	(598)	(599)	(600)	(601)	(602)	(603)	(604)	(605)	(606)	(607)	(608)	(609)	(610)	(611)	(612)	(613)	(614)	(615)	(616)	(617)	(618)	(619)	(620)	(621)	(622)	(623)	(624)	(625)	(626)	(627)	(628)	(629)	(630)	(631)	(632)	(633)	(634)	(635)	(636)	(637)	(638)	(639)	(640)	(641)	(642)	(643)	(644)	(645)	(646)	(647)	(648)	(649)	(650)	(651)	(652)	(653)	(654)	(655)	(656)	(657)	(658)	(659)	(660)	(661)	(662)	(663)	(664)	(665)	(666)	(667)	(668)	(669)	(670)	(671)	(672)	(673)	(674)	(675)	(676)	(677)	(678)	(679)	(680)	(681)	(682)	(683)	(684)	(685)	(686)	(687)	(688)	(689)	(690)	(691)	(692)	(693)	(694)	(695)	(696)	(697)	(698)	(699)	(700)	(701)	(702)	(703)	(704)	(705)	(706)	(707)	(708)	(709)	(710)	(711)	(712)	(713)	(714)	(715)	(716)	(717)	(718)	(719)	(720)	(721)	(722)	(723)	(724)	(725)	(726)	(727)	(728)	(729)	(730)	(731)	(732)	(733)	(734)	(735)	(736)	(737)	(738)	(739)	(740)	(741)	(742)	(743)	(744)	(745)	(746)	(747)	(748)	(749)	(750)	(751)	(752)	(753)	(754)	(755)	(756)	(757)	(758)	(759)	(760)	(761)	(762)	(763)	(764)	(765)	(766)	(767)	(768)	(769)	(770)	(771)	(772)	(773)	(774)	(775)	(776)	(777)	(778)	(779)	(780)	(781)	(782)	(783)	(784)	(785)	(786)	(787)	(788)	(789)	(790)	(791)	(792)	(793)	(794)	(795)	(796)	(797)	(798)	(799)	(800)	(801)	(802)	(803)	(804)	(805)	(806)	(807)	(808)	(809)	(810)	(811)	(812)	(813)	(814)	(815)	(816)	(817)	(818)	(819)	(820)	(821)	(822)	(823)	(824)	(825)	(826)	(827)	(828)	(829)	(830)	(831)	(832)	(833)	(834)	(835)	(836)	(837)	(838)	(839)	(840)	(841)	(842)	(843)	(844)	(845)	(846)	(847)	(848)	(849)	(850)	(851)	(852)	(853)	(854)	(855)	(856)	(857)	(858)	(859)	(860)	(861)	(862)	(863)	(864)	(865)	(866)	(867)	(868)	(869)	(870)	(871)	(872)	(873)	(874)	(875)	(876)	(877)	(878)	(879)	(880)	(881)	(882)	(883)	(884)	(885)	(886)	(887)	(888)	(889)	(890)	(891)	(892)	(893)	(894)	(895)	(896)	(897)	(898)	(899)	(900)	(901)	(902)	(903)	(904)	(905)	(906)	(907)	(908)	(909)	(910)	(911)	(912)	(913)	(914)	(915)	(916)	(917)	(918)	(919)	(920)	(921)	(922)	(923)	(924)	(925)	(926)	(927)	(928)	(929)	(930)	(931)	(932)	(933)	(934)	(935)	(936)	(937)	(938)	(939)	(940)	(941)	(942)	(943)	(944)	(945)	(946)	(947)	(948)	(949)	(950)	(951)	(952)	(953)	(954)	(955)	(956)	(957)	(958)	(959)	(960)	(961)	(962)	(963)	(964)	(965)	(966)	(967)	(968)	(969)	(970)	(971)	(972)	(973)	(974)	(975)	(976)	(977)	(978)	(979)	(980)	(981)	(982)	(983)	(984)	(985)	(986)	(987)	(988)	(989)	(990)	(991)	(992)	(993)	(994)	(995)	(996)	(997)	(998)	(999)	(1000)
	Jan	0.220	0.080	0.348	0.042	0.306	0.018	0.016	0.014	0.013	-0.147																				0.114	0.130	143.9	-0.086	0.103	193	47	340	20	19	16	14	12	88	0.025	0.026	0.025	0.026	0.029	297	268																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
Feb	0.226	0.080	0.380	0.041	0.338	0.017	0.016	0.014	0.012	-0.156	0.114	0.139	154.2	-0.110	0.115	201	-0.290	46	376	16	17	16	14	11	89	0.024	0.026	0.027	0.029	297	268																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
Mar	0.232	0.180	0.357	0.052	0.306	0.020	0.016	0.014	0.014	-0.152	0.114	0.132	82.3	-0.014	0.178	256	-0.197	32	191	12	11	10	9	14	86	0.032	0.034	0.036	0.038	268	268																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
Apr	0.444	0.770	0.480	0.165	0.316	0.055	0.049	0.044	0.038	0.272	0.570	-0.326	-42.4	0.128	-0.126	78	0.290	21	41	7	5	8	5	34	66	0.110	0.115	0.121	0.128	55	268																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
May	1.207	2.580	0.694	0.378	0.306	0.110	0.099	0.088	0.077	1.363	1.140	-1.473	-56.0	0.902	0.067	106	1.998	14	11	4	4	3	58	45	0.268	0.279	0.290	0.301	27	268																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
Jun	0.886	1.730	0.750	0.434	0.000	0.127	0.115	0.102	0.086	0.717	0.570	-0.844	-48.8	0.886	0.316	155	0.980	25	0	7	7	5	58	0	0.307	0.320	0.332	0.345	0	268																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
Jul	0.872	0.530	0.92	0.62	0.306	0.172	0.155	0.138	0.120	-0.514	0.228	0.342	64.5	0.569	0.644	382	-0.382	116	58	32	29	26	67	33	0.445	0.462	0.479	0.496	134	268																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
Aug	0.546	0.200	0.93	0.63	0.306	0.174	0.157	0.139	0.122	-0.519	0.171	0.345	172.4	0.238	0.374	318	-0.731	313	153	87	78	70	81	57	33	0.452	0.469	0.486	0.504	179	268																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
Sep	0.411	0.160	0.691	0.365	0.316	0.104	0.094	0.083	0.073	-0.356	0.143	0.251	167.2	0.096	0.269	289	-0.521	228	107	65	59	52	46	54	46	0.261	0.272	0.282	0.292	222	268																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
Oct	0.311	0.140	0.446	0.141	0.306	0.046	0.041	0.037	0.032	-0.216	0.114	0.171	121.8	0.005	0.187	272	-0.306	100	218	33	28	25	23	32	68	0.095	0.099	0.104	0.108	268	268																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
Nov	0.272	0.140	0.357	0.042	0.316	0.018	0.014	0.014	0.012	-0.149	0.114	0.132	94.2	-0.044	0.158	239	-0.217	30	226	13	11	10	9	12	88	0.024	0.026	0.028	0.029	277	268																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
Dec	0.226	0.100	0.343	0.038	0.306	0.016	0.014	0.013	0.011	-0.141	0.114	0.125	125.4	-0.080	0.111	198	-0.243	38	306	19	14	13	11	11	89	0.022	0.023	0.025	0.026	298	268																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
Annual	0.50	0.570	0.558	0.247	0.311	0.074	0.068	0.069	0.051	0.000	0.000	-0.074	-12.9	0.185	0.000	0.012	43	55	13	12	10	9	44	58	0.173	0.180	0.189	0.196	268	268																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													

Stream: PEACHLAND CREEK
 Location: ABOVE POS8648 (DISTRICT OF PEACHLAND INTAKE)
 Year: 2020
 Scenario: 1.1 ASSUMING POPULATION CHANGE ONLY

Stream: PEACHLAND CREEK
 Location: AT THE MOUTH
 Year: 2050
 Scenario: 1.2 ASSUMING POPULATION CHANGE ONLY

COMPARISONS (See text for descriptions):

Month	DATA:											Formula:	Remarks:	#1: Naturalized flow vs Net flow	#2: Instream licenses vs Net flow	#3: Conservation flow vs Net flow	#4: Total licenses vs Naturalized flow	#5: Offstream licenses vs Naturalized flow	#6: Instream licenses vs Naturalized flow	#7a: Actual offstream use vs Naturalized flow	#7b: Actual offstream use (assuming 10% demand reduction) vs Naturalized flow	#7c: Actual offstream use (assuming 20% demand reduction) vs Naturalized flow	#7d: Actual offstream use (assuming 30% demand reduction) vs Naturalized flow	#8: Offstream licenses vs Total licenses	#9: Instream licenses vs Total licenses	#10a: Actual offstream use vs Offstream licenses	#10b: Actual offstream use (assuming 10% demand reduction) vs Offstream licenses	#10c: Actual offstream use (assuming 20% demand reduction) vs Offstream licenses	#10d: Actual offstream use (assuming 30% demand reduction) vs Offstream licenses	#11: Conservation flow vs. Instream licenses																			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)																				(2)-(1)	100*((2)-(1))/#2	=(5)-(1)	=(1)-(11)	=100*(1)/(11)	=(3)-(2)	=100*(4)/(2)	=100*(5)/(2)	=100*(6)/(2)	=100*(7)/(2)	=100*(8)/(2)	=100*(9)/(2)	=100*(4)/(3)	=100*(5)/(3)	=(4)-(6)	=(4)-(7)	=(4)-(8)	=(4)-(9)	=100*(5)/(11)
	Net flow	Naturalized flow	Total licenses	Offstream licenses	Instream licenses	Estimated actual offstream use	Est. actual offstream use (assuming 10% reduction)	Est. actual offstream use (assuming 20% reduction)	Est. actual offstream use (assuming 30% reduction)	Storage	Conservation																				Flows	neg = net flow is less than naturalized flow	neg = net flow is less than naturalized flow	neg = instream licenses are not met by net flow	neg = conservation flow is not met by net flow	neg = there is no additional flow licensed to instream use	% of naturalized flow licensed to offstream use	% of naturalized flow licensed to instream use	% of naturalized flow actually withdrawn for use	% of naturalized flow actually withdrawn for use	% of naturalized flow actually withdrawn for use	% of naturalized flow actually withdrawn for use	% of total licenses that are for offstream use	% of total licenses that are for instream use	neg = no additional room to remove water without additional licensing	neg = no additional room to remove water without additional licensing	neg = no additional room to remove water without additional licensing	neg = no additional room to remove water without additional licensing	% of conservation flow legally protected with licenses
Jan	0.213	0.090	0.348	0.043	0.306	0.024	0.022	0.019	0.017	-0.147	0.114	0.123	136.5	-0.092	0.099	187	-0.258	47	340	27	24	22	19	12	88	0.018	0.021	0.023	0.026	268																			
Feb	0.223	0.090	0.380	0.041	0.338	0.024	0.021	0.019	0.017	-0.156	0.114	0.133	147.3	-0.116	0.109	195	-0.250	48	376	26	24	21	18	11	88	0.018	0.020	0.023	0.025	297																			
Mar	0.285	0.160	0.357	0.052	0.306	0.027	0.024	0.021	-0.021	0.114	0.114	0.125	78.0	-0.021	0.171	250	-0.197	32	191	17	15	13	12	14	88	0.025	0.028	0.030	0.033	298																			
Apr	0.426	0.770	0.481	0.166	0.316	0.072	0.066	0.058	0.050	0.272	0.570	-0.344	-44.6	0.110	-0.144	75	0.269	21	41	9	8	7	7	34	96	0.093	0.100	0.107	0.114	55																			
May	1.174	2.680	0.684	0.378	0.308	0.143	0.129	0.114	0.100	1.383	1.140	-1.506	-56.2	0.868	0.034	103	1.996	14	11	5	5	4	4	55	45	0.235	0.250	0.264	0.278	27																			
Jun	0.847	1.730	0.750	0.434	0.000	0.166	0.149	0.133	0.116	0.717	0.570	-0.883	-51.0	0.847	0.277	148	0.880	25	0	10	9	8	7	58	0	0.289	0.285	0.302	0.318	0																			
Jul	0.821	0.530	0.923	0.617	0.306	0.222	0.200	0.178	0.156	-0.514	0.228	0.220	137.8	0.065	0.238	267	-0.522	229	197	85	76	68	59	54	46	0.230	0.244	0.258	0.271	222																			
Aug	0.494	0.200	0.932	0.620	0.306	0.225	0.203	0.180	0.158	-0.519	0.171	0.294	146.9	0.188	0.233	269	-0.732	313	153	113	101	90	79	67	33	0.401	0.424	0.446	0.469	179																			
Sep	0.380	0.160	0.682	0.366	0.316	0.135	0.122	0.108	0.085	-0.356	0.143	0.220	137.8	0.065	0.238	267	-0.522	229	197	85	76	68	59	54	46	0.230	0.244	0.258	0.271	222																			
Oct	0.296	0.140	0.446	0.141	0.306	0.060	0.054	0.048	0.042	-0.216	0.114	0.156	111.4	-0.010	0.182	260	-0.308	101	218	43	39	35	30	32	98	0.080	0.086	0.092	0.098	268																			
Nov	0.266	0.140	0.357	0.042	0.316	0.024	0.021	0.019	-0.017	0.114	0.114	0.126	88.8	-0.050	0.152	233	-0.217	30	226	17	15	14	12	12	88	0.018	0.020	0.023	0.025	277																			
Dec	0.220	0.100	0.343	0.038	0.306	0.022	0.019	0.017	0.015	-0.141	0.114	0.120	119.8	-0.086	0.106	193	-0.243	36	308	22	19	17	15	11	89	0.016	0.018	0.020	0.023	268																			
Annual	0.474	0.570	0.558	0.247	0.311	0.098	0.086	0.077	0.067	0.000		-0.096	-16.8	0.163		0.012	43	55	17	15	13	12	44	56	0.151	0.160	0.170	0.180																					

Stream: PEACHLAND CREEK
 Location: ABOVE PD58648 (DISTRICT OF PEACHLAND INTAKE)
 Year: 2050
 Scenario: 1.2 ASSUMING POPULATION CHANGE ONLY

COMPARISONS (See text for descriptions):

Month	DATA:											Formula:	Remarks:	#1: Naturalized flow vs Net flow	#2: Instream licenses vs Net flow	#3: Conservation flow vs Net flow	#4: Total licenses vs Naturalized flow	#5: Offstream licenses vs Naturalized flow	#6: Instream licenses vs Naturalized flow	#7a: Actual offstream use vs Naturalized flow	#7b: Actual offstream use (assuming 10% demand reduction) vs Naturalized flow	#7c: Actual offstream use (assuming 20% demand reduction) vs Naturalized flow	#7d: Actual offstream use (assuming 30% demand reduction) vs Naturalized flow	#8: Offstream licenses vs Total licenses	#9: Instream licenses vs Total licenses	#10a: Actual offstream use vs Offstream licenses	#10b: Actual offstream use (assuming 10% demand reduction) vs Offstream licenses	#10c: Actual offstream use (assuming 20% demand reduction) vs Offstream licenses	#10d: Actual offstream use (assuming 30% demand reduction) vs Offstream licenses	#11: Conservation flow vs. Instream licenses																			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)																				(2)-(1)	100*((2)-(1))/#2	=(5)-(1)	=(1)-(11)	=100*(1)/(11)	=(3)-(2)	=100*(4)/(2)	=100*(5)/(2)	=100*(6)/(2)	=100*(7)/(2)	=100*(8)/(2)	=100*(9)/(2)	=100*(4)/(3)	=100*(5)/(3)	=(4)-(6)	=(4)-(7)	=(4)-(8)	=(4)-(9)	=100*(5)/(11)
	Net flow	Naturalized flow	Total licenses	Offstream licenses	Instream licenses	Estimated actual offstream use	Est. actual offstream use (assuming 10% reduction)	Est. actual offstream use (assuming 20% reduction)	Est. actual offstream use (assuming 30% reduction)	Storage	Conservation																				Flows	neg = net flow is less than naturalized flow	neg = net flow is less than naturalized flow	neg = instream licenses are not met by net flow	neg = conservation flow is not met by net flow	neg = there is no additional flow licensed to instream use	% of naturalized flow licensed to offstream use	% of naturalized flow licensed to instream use	% of naturalized flow actually withdrawn for use	% of naturalized flow actually withdrawn for use	% of naturalized flow actually withdrawn for use	% of naturalized flow actually withdrawn for use	% of total licenses that are for offstream use	% of total licenses that are for instream use	neg = no additional room to remove water without additional licensing	neg = no additional room to remove water without additional licensing	neg = no additional room to remove water without additional licensing	neg = no additional room to remove water without additional licensing	% of conservation flow legally protected with licenses
Jan	0.229	0.081	0.120	0.036	0.083	0.000	0.000	0.000	-0.147	0.103	0.103	0.147	161.0	0.145	0.126	222	-0.038	45	102	0	0	0	0	30	70	0.036	0.036	0.036	0.036	81																			
Feb	0.237	0.081	0.128	0.035	0.082	0.000	0.000	0.000	-0.156	0.103	0.103	0.156	191.8	0.145	0.134	230	-0.046	44	113	0	0	0	0	28	72	0.035	0.035	0.035	0.035	80																			
Mar	0.286	0.145	0.123	0.040	0.083	0.000	0.000	0.000	-0.152	0.103	0.103	0.151	104.7	0.213	0.163	287	0.022	27	58	0	0	0	0	32	68	0.040	0.040	0.040	0.040	81																			
Apr	0.424	0.696	0.191	0.105	0.086	0.000	0.000	0.000	0.000	-0.272	-39.1	-0.272	-39.1	0.338	0.027	82	0.505	15	12	0	0	0	0	55	45	0.104	0.104	0.105	0.105	17																			
May	1.059	2.423	0.286	0.203	0.083	0.000	0.000	0.000	0.000	1.363	1.031	-1.363	-56.3	0.978	0.029	103	2.137	8	3	0	0	0	0	71	29	0.202	0.202	0.202	0.202	8																			
Jun	0.846	1.564	0.321	0.235	0.000	0.001	0.000	0.000	0.000	-0.718	-45.9	-0.718	-45.9	0.846	0.311	184	1.243	19	0	0	0	0	0	73	0	0.235	0.235	0.235	0.235	0																			
Jul	0.882	0.479	0.395	0.312	0.083	0.001	0.001	0.001	0.001	-0.514	0.206	0.513	107.1	0.509	0.785	481	0.084	65	17	0	0	0	0	79	21	0.311	0.311	0.311	0.311	40																			
Aug	0.659	0.181	0.359	0.316	0.083	0.001	0.001	0.001	0.001	0.518	286.6	0.518	286.6	0.618	0.544	452	-0.218	178	46	0	0	0	0	79	21	0.315	0.315	0.315	0.315	54																			
Sep	0.500	0.146	0.277	0.191	0.088	0.000	0.000	0.000	0.000	0.355	245.7	0.355	245.7	0.414	0.371	388	-0.132	132	60	0	0	0	0	69	31	0.190	0.190	0.190	0.190	67																			
Oct	0.343	0.127	0.171	0.067	0.083	0.000	0.000	0.000	-0.216	0.103	0.103	0.216	170.8	0.259	0.240	333	-0.044	69	88	0	0	0	0	51	49	0.087	0.087	0.087	0.087	81																			
Nov	0.276	0.127	0.122	0.036	0.086	0.000	0.000	0.000	-0.148	0.103	0.103	0.149	117.6	0.190	0.173	268	0.005	28	68	0	0	0	0	28	71	0.035	0.035	0.035	0.035	84																			
Dec	0.232	0.090	0.116	0.032	0.083	0.000	0.000	0.000	-0.141	0.103	0.103	0.141	156.2	0.148	0.129	225	-0.025	35	92	0	0	0	0	28	72	0.032	0.032	0.032	0.032	81																			
Annual	0.515	0.515	0.221	0.136	0.085	0.000	0.000	0.000	0.000	0.000		0.000	-0.1	0.430		0.294	29	16	0	0	0	0	62	38	0.138	0.138	0.138	0.138																					

Stream: PEACHLAND CREEK
 Location: BELOW CONFLUENCE WITH GREATA CREEK
 Year: 2050
 Scenario: 1.2 ASSUMING POPULATION CHANGE ONLY

COMPARISONS (See text for descriptions):

Month	DATA:											Formula:	Remarks:	#1: Naturalized flow vs Net flow	#2: Instream licenses vs Net flow	#3: Conservation flow vs Net flow	#4: Total licenses vs Naturalized flow	#5: Offstream licenses vs Naturalized flow	#6: Instream licenses vs Naturalized flow	#7a: Actual offstream use vs Naturalized flow	#7b: Actual offstream use (assuming 10% demand reduction) vs Naturalized flow	#7c: Actual offstream use (assuming 20% demand reduction) vs Naturalized flow	#7d: Actual offstream use (assuming 30% demand reduction) vs Naturalized flow	#8: Offstream licenses vs Total licenses	#9: Instream licenses vs Total licenses	#10a: Actual offstream use vs Offstream licenses	#10b: Actual offstream use (assuming 10% demand reduction) vs Offstream licenses	#10c: Actual offstream use (assuming 20% demand reduction) vs Offstream licenses	#10d: Actual offstream use (assuming 30% demand reduction) vs Offstream licenses	#11: Conservation flow vs. Instream licenses																			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)																				(2)-(1)	100*((2)-(1))/#2	=(5)-(1)	=(1)-(11)	=100*(1)/(11)	=(3)-(2)	=100*(4)/(2)	=100*(5)/(2)	=100*(6)/(2)	=100*(7)/(2)	=100*(8)/(2)	=100*(9)/(2)	=100*(4)/(3)	=100*(5)/(3)	=(4)-(6)	=(4)-(7)	=(4)-(8)	=(4)-(9)	=100*(5)/(11)
	Net flow	Naturalized flow	Total licenses	Offstream licenses	Instream licenses	Estimated actual offstream use	Est. actual offstream use (assuming 10% reduction)	Est. actual offstream use (assuming 20% reduction)	Est. actual offstream use (assuming 30% reduction)	Storage	Conservation																				Flows	neg = net flow is less than naturalized flow	neg = net flow is less than naturalized flow	neg = instream licenses are not met by net flow	neg = conservation flow is not met by net flow	neg = there is no additional flow licensed to instream use	% of naturalized flow licensed to offstream use	% of naturalized flow licensed to instream use	% of naturalized flow actually withdrawn for use	% of naturalized flow actually withdrawn for use	% of naturalized flow actually withdrawn for use	% of naturalized flow actually withdrawn for use	% of total licenses that are for offstream use	% of total licenses that are for instream use	neg = no additional room to remove water without additional licensing	neg = no additional room to remove water without additional licensing	neg = no additional room to remove water without additional licensing	neg = no additional room to remove water without additional licensing	% of conservation flow legally protected with licenses
Jan	0.225	0.077	0.120	0.036	0.083	0.000	0.000	0.000	-0.147	0.098	0.098	0.147	161.2	0.141	0.127	230	-0.043	47	108	0	0	0	0	30	70	0.036	0.036	0.036	0.036	85																			
Feb	0.233	0.077	0.128	0.035	0.082	0.000	0.000	0.000	-0.156	0.098	0.098	0.156	202.6	0.141	0.136	239	-0.050	48	120	0	0	0	0	28	72	0.035	0.035	0.035	0.035	84																			
Mar	0.285	0.137	0.123	0.040	0.083	0.000	0.000	0.000	-0.152	0.098	0.098	0.152	110.5	0.205	0.161	296	0.014	20	61	0	0	0	0	32	68	0.040	0.040	0.040	0.040	85																			
Apr	0.388	0.660	0.191	0.104	0.086	0.000	0.000	0.000	0.000	-0.272	-41.2	-0.272	-41.2	0.302	0.027	79	0.489	16	13	0	0	0	0	55	45	0.104	0.104	0.104	0.104	16																			
May	0.933	2.266	0.285	0.202	0.083	0.000	0.000	0.000	0.000																																								

Stream: PEACHLAND CREEK
 Location: AT THE MOUTH
 Year: 2020
 Scenarios: 2.1 ASSUMING POPULATION AND CLIMATE CHANGE

COMPARISONS (See text for descriptions):

Month	DATA:											#1: Naturalized flow vs Net flow											#2: Instream licenses vs Net flow											#3: Conservation flow vs Net flow											#4: Total licenses vs Naturalized flow											#5: Offstream licenses vs Naturalized flow											#6: Instream licenses vs Naturalized flow											#7a: Actual offstream use vs Naturalized flow											#7b: Actual offstream use (assuming 10% demand reduction) vs Naturalized flow											#7c: Actual offstream use (assuming 20% demand reduction) vs Naturalized flow											#7d: Actual offstream use (assuming 30% demand reduction) vs Naturalized flow											#8: Offstream licenses vs Total licenses											#9: Instream licenses vs Total licenses											#10a: Actual offstream use vs Offstream licenses											#10b: Actual offstream use (assuming 10% demand reduction) vs Offstream licenses											#10c: Actual offstream use (assuming 20% demand reduction) vs Offstream licenses											#10d: Actual offstream use (assuming 30% demand reduction) vs Offstream licenses											#11: Conservation flow vs. Instream licenses										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	=(2)-(1)	=100*((2)-(1))/(1)	=(5)-(1)	=(1)-(11)	=100*((1)-(11))	=(3)-(2)	=100*((4)/(2))	=100*((5)/(2))	=100*((6)/(2))	=100*((7)/(2))	=100*((8)/(2))	=100*((9)/(2))	=100*((4)/(3))	=100*((5)/(3))	=(4)-(6)	=(4)-(7)	=(4)-(8)	=(4)-(9)	=100*((5)/(11))																																																																																																																																																																								
	Net flow	Naturalized flow	Total licenses	Offstream licenses	Instream licenses	Estimated actual offstream use	Est. actual offstream use (assuming 10% reduction)	Est. actual offstream use (assuming 20% reduction)	Est. actual offstream use (assuming 30% reduction)	Storage pos = release, neg = withdrawal	Conservation Flows	neg = net flow is less than naturalized flow	neg = net flow is less than naturalized flow	licenses are not met by net flow	neg = conserve 100% = conserve	neg = there is no additional flow licensed to offstream use	% of naturalized flow licensed to offstream use	% of naturalized flow licensed to instream use	% of naturalized flow actually withdrawn for use	% of naturalized flow actually withdrawn for use	% of naturalized flow actually withdrawn for use	% of total licenses that are for offstream use	% of total licenses that are for instream use	room to remove water without additional licenses	room to remove water without additional licenses	room to remove water without additional licenses	room to remove water without additional licenses	% of conservation flow legally protected with licenses																																																																																																																																																																										
	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(%)	(m ³ /s)	(m ³ /s)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(%)																																																																																																																																																																								
Jan	0.252	0.128	0.348	0.043	0.306	0.021	0.019	0.017	0.015	-0.147	0.114	1.4	0.126	100.7	-0.354	0.138	221	-0.223	34	244	17	15	13	12	12	88	0.021	0.024	0.028	0.028	268																																																																																																																																																																							
Feb	0.375	0.239	0.380	0.041	0.338	0.021	0.018	0.016	0.014	-0.158	0.114	2.7	0.136	56.8	0.036	0.261	329	-0.141	17	142	9	8	7	5	11	89	0.021	0.023	0.025	0.027	297																																																																																																																																																																							
Mar	0.384	0.256	0.357	0.052	0.306	0.023	0.021	0.019	0.016	-0.152	0.114	1.9	0.128	50.2	0.078	0.270	337	-0.102	20	120	9	8	7	5	14	86	0.028	0.031	0.033	0.035	268																																																																																																																																																																							
Apr	0.472	0.608	0.481	0.165	0.316	0.064	0.058	0.051	0.045	0.272	0.570	1.0	-0.335	-41.5	0.157	-0.098	83	0.327	20	39	8	7	6	5	34	0.056	0.101	0.108	0.114	55																																																																																																																																																																								
May	0.386	1.878	0.886	0.381	0.306	0.129	0.116	0.103	0.090	1.363	1.140	0.7	-1.482	-79.5	0.080	-0.754	34	1.191	20	16	7	5	5	5	55	0.252	0.265	0.277	0.290	27																																																																																																																																																																								
Jun	0.355	1.222	0.753	0.437	0.000	0.149	0.134	0.120	0.105	0.717	0.570	0.7	-0.866	-70.9	0.355	-0.215	62	0.469	36	0	12	11	10	9	58	0	0.288	0.303	0.318	0.333	0																																																																																																																																																																							
Jul	0.723	0.411	0.927	0.521	0.306	0.202	0.182	0.161	0.141	-0.514	0.228	0.8	0.312	76.0	0.417	0.495	317	-0.516	151	74	49	44	38	34	67	33	0.420	0.440	0.460	0.480	194																																																																																																																																																																							
Aug	0.481	0.167	0.936	0.531	0.306	0.204	0.184	0.163	0.143	-0.514	0.171	0.8	0.315	189.7	0.176	0.310	281	-0.770	378	183	123	110	98	86	67	33	0.426	0.447	0.467	0.488	179																																																																																																																																																																							
Sep	0.375	0.142	0.684	0.368	0.316	0.122	0.110	0.098	0.086	-0.356	0.143	0.9	0.233	164.7	0.059	0.233	263	-0.542	260	223	88	78	69	60	54	46	0.246	0.258	0.270	0.283	222																																																																																																																																																																							
Oct	0.286	0.124	0.447	0.141	0.306	0.054	0.048	0.043	0.038	-0.216	0.114	0.9	0.163	131.4	-0.019	0.172	251	-0.323	114	247	44	39	35	30	32	68	0.068	0.093	0.098	0.104	268																																																																																																																																																																							
Nov	0.265	0.136	0.357	0.042	0.316	0.021	0.019	0.016	0.014	-0.149	0.114	1.0	0.129	84.4	-0.051	0.151	233	-0.221	30	231	15	14	12	11	12	88	0.021	0.023	0.025	0.027	277																																																																																																																																																																							
Dec	0.244	0.121	0.343	0.038	0.306	0.019	0.017	0.015	0.013	-0.141	0.114	1.2	0.123	100.9	-0.062	0.130	214	-0.222	31	252	15	14	12	11	11	89	0.019	0.021	0.023	0.024	268																																																																																																																																																																							
Annual	0.383	0.470	0.560	0.248	0.311	0.086	0.078	0.069	0.060	0.000			-0.086	-18.4	0.072		-0.090	53	66	18	17	15	13	44	56	0.162	0.171	0.179	0.188																																																																																																																																																																									

Stream: PEACHLAND CREEK
 Location: ABOVE PD58848 (DISTRICT OF PEACHLAND INTAKE)
 Year: 2020
 Scenarios: 2.1 ASSUMING POPULATION AND CLIMATE CHANGE

COMPARISONS (See text for descriptions):

Month	DATA:											#1: Naturalized flow vs Net flow											#2: Instream licenses vs Net flow											#3: Conservation flow vs Net flow											#4: Total licenses vs Naturalized flow											#5: Offstream licenses vs Naturalized flow											#6: Instream licenses vs Naturalized flow											#7a: Actual offstream use vs Naturalized flow											#7b: Actual offstream use (assuming 10% demand reduction) vs Naturalized flow											#7c: Actual offstream use (assuming 20% demand reduction) vs Naturalized flow											#7d: Actual offstream use (assuming 30% demand reduction) vs Naturalized flow											#8: Offstream licenses vs Total licenses											#9: Instream licenses vs Total licenses											#10a: Actual offstream use vs Offstream licenses											#10b: Actual offstream use (assuming 10% demand reduction) vs Offstream licenses											#10c: Actual offstream use (assuming 20% demand reduction) vs Offstream licenses											#10d: Actual offstream use (assuming 30% demand reduction) vs Offstream licenses											#11: Conservation flow vs. Instream licenses										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	=(2)-(1)	=100*((2)-(1))/(1)	=(5)-(1)	=(1)-(11)	=100*((1)-(11))	=(3)-(2)	=100*((4)/(2))	=100*((5)/(2))	=100*((6)/(2))	=100*((7)/(2))	=100*((8)/(2))	=100*((9)/(2))	=100*((4)/(3))	=100*((5)/(3))	=(4)-(6)	=(4)-(7)	=(4)-(8)	=(4)-(9)	=100*((5)/(11))																																																																																																																																																																								
	Net flow	Naturalized flow	Total licenses	Offstream licenses	Instream licenses	Estimated actual offstream use	Est. actual offstream use (assuming 10% reduction)	Est. actual offstream use (assuming 20% reduction)	Est. actual offstream use (assuming 30% reduction)	Storage pos = release, neg = withdrawal	Conservation Flows	neg = net flow is less than naturalized flow	neg = net flow is less than naturalized flow	licenses are not met by net flow	neg = conserve 100% = conserve	neg = there is no additional flow licensed to offstream use	% of naturalized flow licensed to offstream use	% of naturalized flow licensed to instream use	% of naturalized flow actually withdrawn for use	% of naturalized flow actually withdrawn for use	% of naturalized flow actually withdrawn for use	% of total licenses that are for offstream use	% of total licenses that are for instream use	room to remove water without additional licenses	room to remove water without additional licenses	room to remove water without additional licenses	room to remove water without additional licenses	% of conservation flow legally protected with licenses																																																																																																																																																																										
	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(%)	(m ³ /s)	(m ³ /s)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(%)																																																																																																																																																																								
Jan	0.261	0.113	0.120	0.036	0.083	0.000	0.000	0.000	0.000	-0.147	0.103	1.4	0.147	129.9	0.177	0.158	263	-0.006	32	73	0	0	0	0	30	70	0.036	0.036	0.036	0.036	81																																																																																																																																																																							
Feb	0.372	0.216	0.128	0.035	0.092	0.000	0.000	0.000	0.000	-0.156	0.103	2.7	0.156	72.3	0.280	0.289	361	0.088	16	43	0	0	0	0	28	72	0.035	0.035	0.035	0.035	90																																																																																																																																																																							
Mar	0.382	0.231	0.123	0.040	0.083	0.000	0.000	0.000	0.000	-0.152	0.103	1.6	0.151	65.6	0.299	0.279	371	0.108	17	36	0	0	0	0	32	68	0.040	0.040	0.040	0.040	81																																																																																																																																																																							
Apr	0.459	0.731	0.191	0.105	0.086	0.000	0.000	0.000	0.000	0.272	0.515	1.0	-0.272	-37.2	0.373	-0.057	89	0.540	14	12	0	0	0	0	55	45	0.104	0.104	0.105	0.105	17																																																																																																																																																																							
May	0.334	1.897	0.296	0.202	0.083	0.000	0.000	0.000	0.202	1.031	1.031	0.7	-1.363	-80.3	0.251	-0.696	32	1.412	12	5	0	0	0	0	71	29	0.202	0.202	0.202	0.202	8																																																																																																																																																																							
Jun	0.387	1.104	0.321	0.235	0.000	0.000	0.000	0.000	0.000	0.717	0.515	0.7	-0.717	-65.0	0.387	-0.128	75	0.783	21	0	0	0	0	0	73	0	0.235	0.235	0.235	0.235	0																																																																																																																																																																							
Jul	0.885	0.371	0.395	0.312	0.083	0.001	0.000	0.000	0.000	-0.514	0.206	0.8	0.513	138.2	0.801	0.679	429	-0.023	84	22	0	0	0	0	79	21	0.311	0.311	0.311	0.311	40																																																																																																																																																																							
Aug	0.659	0.151	0.399	0.315	0.083	0.001	0.000	0.000	0.000	-0.519	0.155	0.8	0.518	344.0	0.588	0.515	433	-0.248	209	55	0	0	0	0	79	21	0.315	0.315	0.315	0.315	54																																																																																																																																																																							
Sep	0.484	0.128	0.277	0.151	0.086	0.000	0.000	0.000	0.000	-0.277	0.129	0.9	0.355	277.5	0.397	0.355	375	-0.149	149	67	0	0	0	0	69	31	0.190	0.190	0.190	0.190	67																																																																																																																																																																							
Oct	0.328	0.112	0.171	0.087	0.083	0.000	0.000	0.000	0.000	-0.216	0.103	0.9	0.216	183.3	0.245	0.226	318	-0.059	78	75	0	0	0	0	51	49	0.087	0.087	0.087	0.087	81																																																																																																																																																																							
Nov	0.273	0.123	0.122	0.036	0.086	0.000	0.000	0.000	0.000	-0.149	0.103	1.0	0.149	121.1	0.187	0.170	265	0.002	29	70	0	0	0	0	29	71	0.035	0.035	0.035	0.035	84																																																																																																																																																																							
Dec	0.251	0.110	0.116	0.032	0.083	0.000	0.000	0.000	0.000	-0.141	0.103	1.2	0.141	128.6	0.168	0.148	244	-0.006	29	76	0	0	0	0	28	72	0.032	0.032	0.032	0.032	81																																																																																																																																																																							
Annual	0.424	0.425	0.221	0.135	0.085	0.000	0.000	0.000	0.000	0.000			0.000	-0.1	0.339		0.203	32	20	0	0	0	0	62	38	0.138	0.138	0.138	0.138																																																																																																																																																																									

Stream: PEACHLAND CREEK
 Location: BELOW CONFLUENCE WITH GREATA CREEK
 Year: 2020
 Scenarios: 2.1 ASSUMING POPULATION AND CLIMATE CHANGE

COMPARISONS (See text for descriptions):

Month	DATA:											#1: Naturalized flow vs Net flow											#2: Instream licenses vs Net flow											#3: Conservation flow vs Net flow											#4: Total licenses vs Naturalized flow											#5: Offstream licenses vs Naturalized flow											#6: Instream licenses vs Naturalized flow											#7a: Actual offstream use vs Naturalized flow											#7b: Actual offstream use (assuming 10% demand reduction) vs Naturalized flow											#7c: Actual offstream use (assuming 20% demand reduction) vs Naturalized flow											#7d: Actual offstream use (assuming 30% demand reduction) vs Naturalized flow											#8: Offstream licenses vs Total licenses											#9: Instream licenses vs Total licenses											#10a: Actual offstream use vs Offstream licenses											#10b: Actual offstream use (assuming 10% demand reduction) vs Offstream licenses											#10c: Actual offstream use (assuming 20% demand reduction) vs Offstream licenses											#10d: Actual offstream use (assuming 30% demand reduction) vs Offstream licenses											#11: Conservation flow vs. Instream licenses										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	=(2)-(1)	=100*((2)-(1))/(1)	=(5)-(1)	=(1)-(11)	=100*((1)-(11))	=(3)-(2)	=100*((4)/(2))	=100*((5)/(2))	=100*((6)/(2))	=100*((7)/(2))	=100*((8)/(2))	=100*((9)/(2))	=100*((4)/(3))	=100*((5)/(3))	=(4)-(6)	=(4)-(7)	=(4)-(8)	=(4)-(9)	=100*((5)/(11))																																																																																																																																																																								
	Net flow	Naturalized flow	Total licenses	Offstream licenses	Instream licenses	Estimated actual offstream use	Est. actual offstream use (assuming 10% reduction)	Est. actual offstream use (assuming 20% reduction)	Est. actual offstream use (assuming 30% reduction)	Storage pos = release, neg = withdrawal	Conservation Flows	neg = net flow is less than naturalized flow	neg = net flow is less than naturalized flow	licenses are not met by net flow	neg = conserve 100% = conserve	neg = there is no additional flow licensed to offstream use	% of naturalized flow licensed to offstream use	% of naturalized flow licensed to instream use	% of naturalized flow actually withdrawn for use	% of naturalized flow actually withdrawn for use	% of naturalized flow actually withdrawn for use	% of total licenses that are for offstream use	% of total licenses that are for instream use	room to remove water without additional licenses	room to remove water without additional licenses	room to remove water without additional licenses	room to remove water without additional licenses	% of conservation flow legally protected with licenses																																																																																																																																																																										
	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(%)	(m ³ /s)	(m ³ /s)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(%)																																																																																																																																																																								
Jan	0.255	0.108	0.120	0.036	0.083	0.000	0.000	0.000	0.000	-0.147	0.098	1.4	0.147	137.1	0.172	0.15																																																																																																																																																																																						

Stream: PEACHLAND CREEK
 Location: AT THE MOUTH
 Year: 2050
 Scenario: 2.2 ASSUMING POPULATION AND CLIMATE CHANGE

COMPARISONS (See text for descriptions):

Month	DATA:											COMPARISONS																					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)		
	Net flow	Naturalized flow	Total licencess	Offstream licencess	Instream licencess	Estimated actual	Est. actual offstream use	Est. actual offstream use	Est. actual offstream use	Storage	Conservation	2050 flow expressed as a ratio of 2003 flow	#1: Naturalized flow vs Net flow	#2: Instream licencess vs Net flow	#3: Conservation flow vs Net flow	#4: Total licencess vs Naturalized flow	#5: Offstream licencess vs Naturalized flow	#6: Instream licencess vs Naturalized flow	#7a: Actual offstream use vs Naturalized flow	#7b: Actual offstream use (assuming 10% demand reduction) vs Naturalized flow	#7c: Actual offstream use (assuming 20% demand reduction) vs Naturalized flow	#7d: Actual offstream use (assuming 30% demand reduction) vs Naturalized flow	#8: Offstream licencess vs Total licencess	#9: Instream licencess vs Total licencess	#10a: Actual offstream use vs Offstream licencess	#10b: Actual offstream use (assuming 10% demand reduction) vs Offstream licencess	#10c: Actual offstream use (assuming 20% demand reduction) vs Offstream licencess	#10d: Actual offstream use (assuming 30% demand reduction) vs Offstream licencess	#11: Conservation flow vs. Instream licencess				
	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(%)	(m ³ /s)	(%)	(m ³ /s)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	
Jan	0.292	0.175	0.348	0.043	0.306	0.028	0.027	0.024	0.021	-0.147	1.94	0.117	67.2	-0.013	0.178	256	-0.173	24	15	14	12	12	88	0.013	0.016	0.019	0.021	0.021	268	287			
Feb	0.405	0.282	0.380	0.042	0.338	0.028	0.026	0.023	0.020	-0.156	3.13	0.127	45.0	0.071	0.295	359	-0.098	15	12	10	8	7	11	89	0.012	0.015	0.018	0.021	0.021	268	287		
Mar	0.435	0.317	0.358	0.052	0.308	0.033	0.030	0.027	0.024	-0.152	1.98	0.118	37.4	0.130	0.321	382	-0.041	18	9	8	7	15	85	0.019	0.022	0.025	0.029	0.029	258	268			
Apr	0.323	0.684	0.482	0.166	0.316	0.089	0.080	0.072	0.063	0.272	0.89	-0.361	-52.8	0.007	-0.247	57	0.202	24	46	13	12	10	9	34	0.077	0.086	0.095	0.104	0.104	55	55		
May	-0.314	1.227	0.689	0.384	0.306	0.178	0.160	0.142	0.125	1.363	1.140	-1.541	-125.6	-0.620	-1.454	-29	0.538	31	25	15	13	12	10	56	0.206	0.223	0.241	0.259	0.259	27	27		
Jun	-0.648	0.875	0.756	0.440	0.000	0.208	0.185	0.165	0.144	0.717	0.570	-0.923	-105.5	-0.048	-0.618	-8	0.119	50	0	24	21	19	16	58	0	0.234	0.256	0.275	0.296	0.296	0	0	
Jul	0.560	0.323	0.832	0.626	0.308	0.277	0.249	0.221	0.194	-0.514	0.228	0.681	0.237	73.4	0.254	0.332	248	-0.609	194	85	86	77	69	80	67	33	0.349	0.377	0.405	0.433	0.433	134	134
Aug	0.375	0.137	0.841	0.635	0.308	0.290	0.252	0.224	0.196	-0.519	0.171	0.88	0.239	174.6	0.070	0.204	219	-0.804	465	224	205	185	164	144	88	32	0.355	0.383	0.411	0.439	0.439	179	179
Sep	0.247	0.105	0.446	0.371	0.316	0.188	0.151	0.135	0.118	-0.356	0.143	0.75	0.187	155.5	-0.098	0.166	218	-0.596	308	282	140	126	112	98	54	46	0.203	0.218	0.236	0.253	0.253	222	222
Oct	0.247	0.126	0.358	0.042	0.316	0.029	0.026	0.023	0.021	-0.148	0.114	0.90	0.120	95.0	-0.089	0.133	216	-0.231	33	250	23	21	19	16	12	83	0.012	0.015	0.018	0.021	0.021	277	277
Nov	0.247	0.133	0.343	0.038	0.306	0.027	0.024	0.021	0.019	-0.141	0.114	1.33	0.115	86.5	-0.058	0.133	217	-0.211	28	230	20	18	16	14	11	89	0.011	0.014	0.016	0.019	0.019	268	268
Annual	0.256	0.375	0.561	0.250	0.311	0.119	0.107	0.095	0.083	0.000		-0.119	-31.8	-0.055			-0.196	57	83	32	29	25	22	45	55	0.131	0.143	0.155	0.167	0.167			

Stream: PEACHLAND CREEK
 Location: ABOVE PDS8648 (DISTRICT OF PEACHLAND INTAKE)
 Year: 2050
 Scenario: 2.2 ASSUMING POPULATION AND CLIMATE CHANGE

COMPARISONS (See text for descriptions):

Month	DATA:											COMPARISONS																				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	
	Net flow	Naturalized flow	Total licencess	Offstream licencess	Instream licencess	Estimated actual	Est. actual offstream use	Est. actual offstream use	Est. actual offstream use	Storage	Conservation	2050 flow expressed as a ratio of 2003 flow	#1: Naturalized flow vs Net flow	#2: Instream licencess vs Net flow	#3: Conservation flow vs Net flow	#4: Total licencess vs Naturalized flow	#5: Offstream licencess vs Naturalized flow	#6: Instream licencess vs Naturalized flow	#7a: Actual offstream use vs Naturalized flow	#7b: Actual offstream use (assuming 10% demand reduction) vs Naturalized flow	#7c: Actual offstream use (assuming 20% demand reduction) vs Naturalized flow	#7d: Actual offstream use (assuming 30% demand reduction) vs Naturalized flow	#8: Offstream licencess vs Total licencess	#9: Instream licencess vs Total licencess	#10a: Actual offstream use vs Offstream licencess	#10b: Actual offstream use (assuming 10% demand reduction) vs Offstream licencess	#10c: Actual offstream use (assuming 20% demand reduction) vs Offstream licencess	#10d: Actual offstream use (assuming 30% demand reduction) vs Offstream licencess	#11: Conservation flow vs. Instream licencess			
	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(%)	(m ³ /s)	(%)	(m ³ /s)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	
Jan	0.305	0.158	0.120	0.036	0.083	0.000	0.000	0.000	0.000	-0.147	0.103	1.94	0.147	93.2	0.222	0.202	298	0.038	23	53	0	0	30	70	0.036	0.036	0.036	0.036	0.036	81	81	
Feb	0.411	0.255	0.128	0.036	0.092	0.000	0.000	0.000	0.000	-0.156	0.103	3.13	0.156	61.2	0.318	0.308	395	0.072	14	36	0	0	0	28	72	0.035	0.035	0.035	0.035	0.035	90	90
Mar	0.438	0.287	0.123	0.040	0.083	0.000	0.000	0.000	0.000	-0.152	0.103	1.98	0.151	52.8	0.355	0.335	425	0.183	14	23	0	0	0	32	68	0.040	0.040	0.040	0.040	0.040	81	81
Apr	0.346	0.618	0.191	0.105	0.086	0.000	0.000	0.000	0.000	0.272	0.515	0.89	-0.272	-44.0	0.290	-0.169	87	0.202	24	46	13	12	10	9	34	0.077	0.086	0.095	0.104	0.104	55	55
May	-0.254	1.109	0.285	0.203	0.083	0.001	0.001	0.000	0.000	1.363	1.031	0.46	-1.363	-122.9	-0.338	-1.285	-25	0.538	31	25	15	13	12	10	56	0.206	0.223	0.241	0.259	0.259	27	27
Jun	0.074	0.781	0.321	0.235	0.000	0.001	0.001	0.001	0.000	0.717	0.515	0.51	-0.717	-90.7	0.074	-0.442	14	0.470	30	0	0	0	0	73	0	0.235	0.235	0.235	0.235	0.235	0	0
Jul	0.805	0.292	0.395	0.312	0.083	0.001	0.001	0.001	0.001	-0.514	0.206	0.61	0.513	175.7	0.722	0.599	391	-0.103	107	29	0	0	0	79	21	0.311	0.311	0.311	0.311	0.311	40	40
Aug	0.642	0.124	0.389	0.316	0.083	0.001	0.001	0.001	0.001	-0.519	0.155	0.68	0.518	419.3	0.558	0.487	415	-0.278	256	67	1	1	1	79	21	0.315	0.315	0.315	0.315	0.315	54	54
Sep	0.642	0.109	0.277	0.191	0.086	0.001	0.001	0.000	0.000	-0.356	0.129	0.75	0.355	326.0	0.378	0.335	360	-0.168	175	76	1	0	0	69	31	0.190	0.190	0.190	0.190	0.190	67	67
Oct	0.311	0.095	0.171	0.088	0.083	0.000	0.000	0.000	0.000	-0.216	0.103	0.75	0.216	227.0	0.228	0.208	302	-0.076	82	88	0	0	0	51	49	0.087	0.087	0.087	0.087	0.087	81	81
Nov	0.264	0.114	0.122	0.036	0.085	0.000	0.000	0.000	0.000	-0.148	0.103	0.90	0.149	130.6	0.177	0.160	256	-0.007	31	75	0	0	0	29	71	0.035	0.035	0.035	0.035	0.035	84	84
Dec	0.261	0.120	0.116	0.032	0.083	0.000	0.000	0.000	0.000	-0.141	0.103	1.33	0.141	117.7	0.178	0.158	253	0.004	27	89	0	0	0	28	72	0.032	0.032	0.032	0.032	0.032	81	81
Annual	0.339	0.339	0.221	0.136	0.085	0.000	0.000	0.000	0.000	0.000		0.000	-0.1	0.254			0.118	40	25	0	0	0	62	38	0.136	0.136	0.136	0.136	0.136			

Stream: PEACHLAND CREEK
 Location: BELOW CONFLUENCE WITH GREATA CREEK
 Year: 2050
 Scenario: 2.2 ASSUMING POPULATION AND CLIMATE CHANGE

COMPARISONS (See text for descriptions):

Month	DATA:											COMPARISONS																				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	
	Net flow	Naturalized flow	Total licencess	Offstream licencess	Instream licencess	Estimated actual	Est. actual offstream use	Est. actual offstream use	Est. actual offstream use	Storage	Conservation	2050 flow expressed as a ratio of 2003 flow	#1: Naturalized flow vs Net flow	#2: Instream licencess vs Net flow	#3: Conservation flow vs Net flow	#4: Total licencess vs Naturalized flow	#5: Offstream licencess vs Naturalized flow	#6: Instream licencess vs Naturalized flow	#7a: Actual offstream use vs Naturalized flow	#7b: Actual offstream use (assuming 10% demand reduction) vs Naturalized flow	#7c: Actual offstream use (assuming 20% demand reduction) vs Naturalized flow	#7d: Actual offstream use (assuming 30% demand reduction) vs Naturalized flow	#8: Offstream licencess vs Total licencess	#9: Instream licencess vs Total licencess	#10a: Actual offstream use vs Offstream licencess	#10b: Actual offstream use (assuming 10% demand reduction) vs Offstream licencess	#10c: Actual offstream use (assuming 20% demand reduction) vs Offstream licencess	#10d: Actual offstream use (assuming 30% demand reduction) vs Offstream licencess	#11: Conservation flow vs. Instream licencess			
	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(%)	(m ³ /s)	(%)	(m ³ /s)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	
Jan	0.297	0.150	0.120	0.036	0.083	0.000	0.000	0.000	0.000	-0.147	0.098	1.94	0.147	99.4	0.214	0.200	304	0.030	24	58	0	0	0	30	70	0.036	0.036	0.036	0.036	0.036	85	85
Feb	0.398	0.242	0.128	0.035	0.092	0.000	0.000	0.000	0.000	-0.158	0.098	3.13	0.156	64.8	0.305	0.300	407	0.114	15	38	0	0	0	28	72	0.035	0.035	0.035	0.035	0.035	94	94
Mar	0.423	0.272	0.123	0.040	0.083	0.000	0.000	0.000	0.000	-0.152	0.098	1.98	0.152	55.8	0.340	0.325	433	0.149	15	31	0	0	0	32	68	0.040	0.040	0.040	0.040	0.040	85	85
Apr	0.314	0.586	0.191	0.104	0.086	0.000	0.000	0.000	0.000	0.272	0.488	0.89	-0.272	-46.4	0.228	-0.174	84	0.395	18	15	0	0	0	55	45	0.104	0.104	0.104	0.104	0.104	18	18
May	-0.312	1.051	0.285	0.202	0.083	0.000	0.000	0.000	0.00																							

Appendix N

CONSERVATION FLOW ANALYSIS

Stream: **LAMBLY CREEK**
 Location: **AT THE MOUTH**
 Year: **2003**
 Scenario: **CURRENT CONDITIONS**
 Note: all data except for columns (12) and (13) are linked to sheet "2003 Current"

DATA:

Month	(1)	(2)	(11)	(12)	(13)
	Net flow	Naturalized flow	Conservation Flows	Net flow 1:5 yr dry	Naturalized flow 1:5 yr dry
	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)
Jan	0.308	0.290	0.354	0.206	0.194
Feb	0.311	0.290	0.354	0.206	0.194
Mar	0.554	0.500	0.354	0.371	0.335
Apr	2.124	2.400	1.770	1.423	1.606
May	7.564	8.320	3.540	5.068	5.574
Jun	4.725	5.380	1.770	3.166	3.605
Jul	1.328	1.640	0.708	0.889	1.099
Aug	0.319	0.610	0.531	0.214	0.409
Sep	0.372	0.500	0.443	0.249	0.335
Oct	0.447	0.450	0.354	0.300	0.302
Nov	0.493	0.440	0.354	0.331	0.295
Dec	0.335	0.320	0.354	0.224	0.214
Annual	1.581	1.770		1.059	1.186

Stream: **LAMBLY CREEK**
 Location: **ABOVE PD59106 (LAKEVIEW IRRIGATION DISTRICT WEIR)**
 Year: **2003**
 Scenario: **CURRENT CONDITIONS**

DATA:

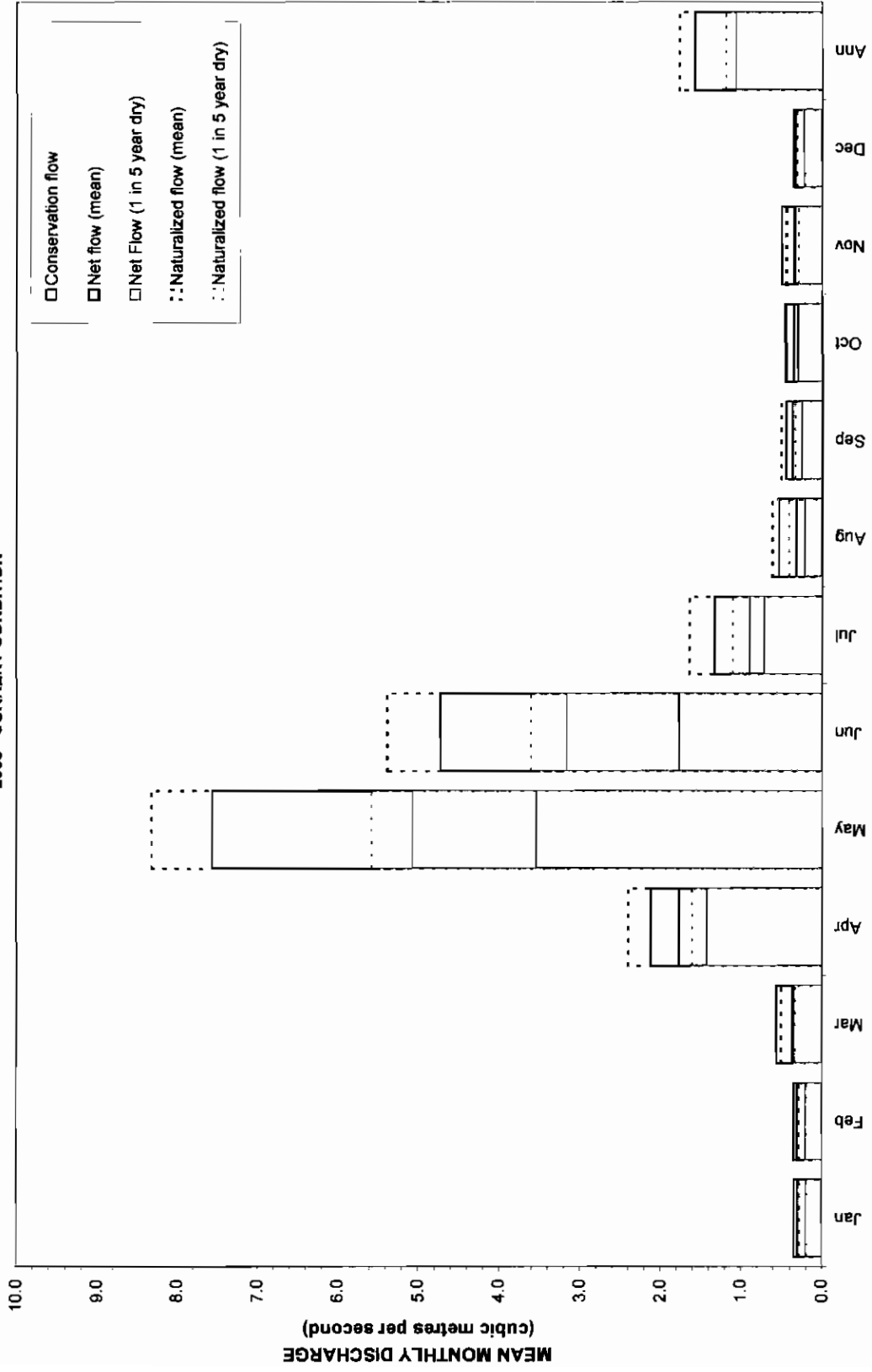
Month	(1)	(2)	(11)	(12)	(13)
	Net flow	Naturalized flow	Conservation Flows	Net flow 1:5 yr dry	Naturalized flow 1:5 yr dry
	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)
Jan	0.347	0.287	0.350	0.232	0.192
Feb	0.354	0.287	0.350	0.237	0.192
Mar	0.596	0.494	0.350	0.400	0.331
Apr	2.192	2.373	1.750	1.469	1.590
May	7.654	8.228	3.501	5.128	5.513
Jun	4.917	5.320	1.750	3.295	3.565
Jul	1.645	1.622	0.700	1.102	1.087
Aug	0.625	0.603	0.525	0.419	0.404
Sep	0.556	0.494	0.438	0.372	0.331
Oct	0.536	0.445	0.350	0.359	0.298
Nov	0.540	0.435	0.350	0.361	0.292
Dec	0.376	0.316	0.350	0.252	0.212
Annual	1.703	1.750		1.141	1.173

Stream: **LAMBLY CREEK**
 Location: **BELOW CONFLUENCE OF LAMBLY AND TERRACE CREEKS**
 Year: **2003**
 Scenario: **CURRENT CONDITIONS**

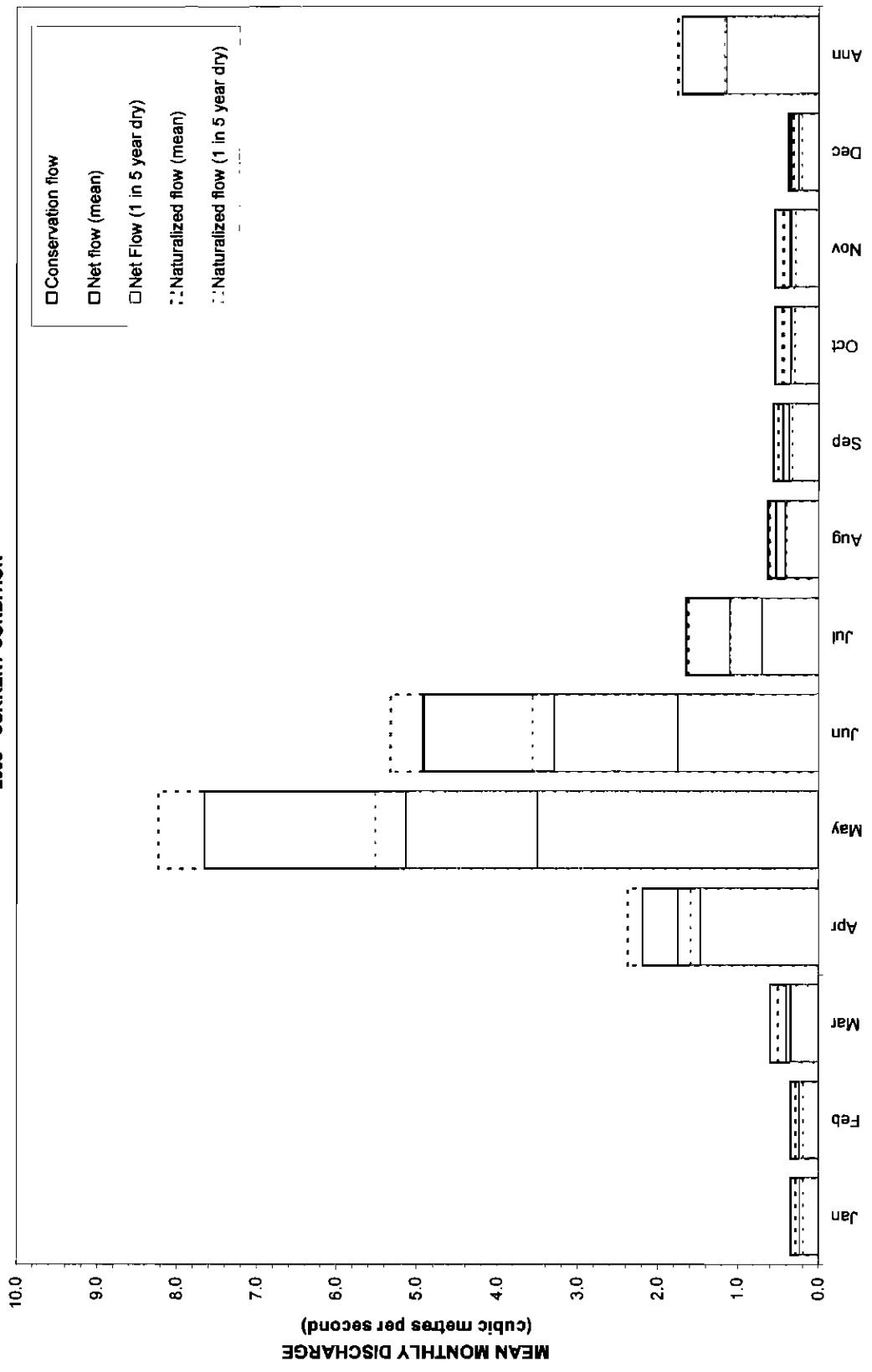
DATA:

Month	(1)	(2)	(11)	(12)	(13)
	Net flow	Naturalized flow	Conservation Flows	Net flow 1:5 yr dry	Naturalized flow 1:5 yr dry
	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)
Jan	0.308	0.248	0.303	0.206	0.166
Feb	0.316	0.248	0.303	0.211	0.166
Mar	0.529	0.427	0.303	0.355	0.286
Apr	1.872	2.051	1.513	1.254	1.374
May	6.544	7.110	3.025	4.384	4.784
Jun	4.200	4.597	1.513	2.614	3.080
Jul	1.425	1.401	0.605	0.955	0.939
Aug	0.544	0.521	0.454	0.364	0.349
Sep	0.489	0.427	0.378	0.328	0.286
Oct	0.476	0.385	0.303	0.319	0.258
Nov	0.481	0.376	0.303	0.322	0.252
Dec	0.334	0.273	0.303	0.223	0.183
Annual	1.467	1.513		0.983	1.013

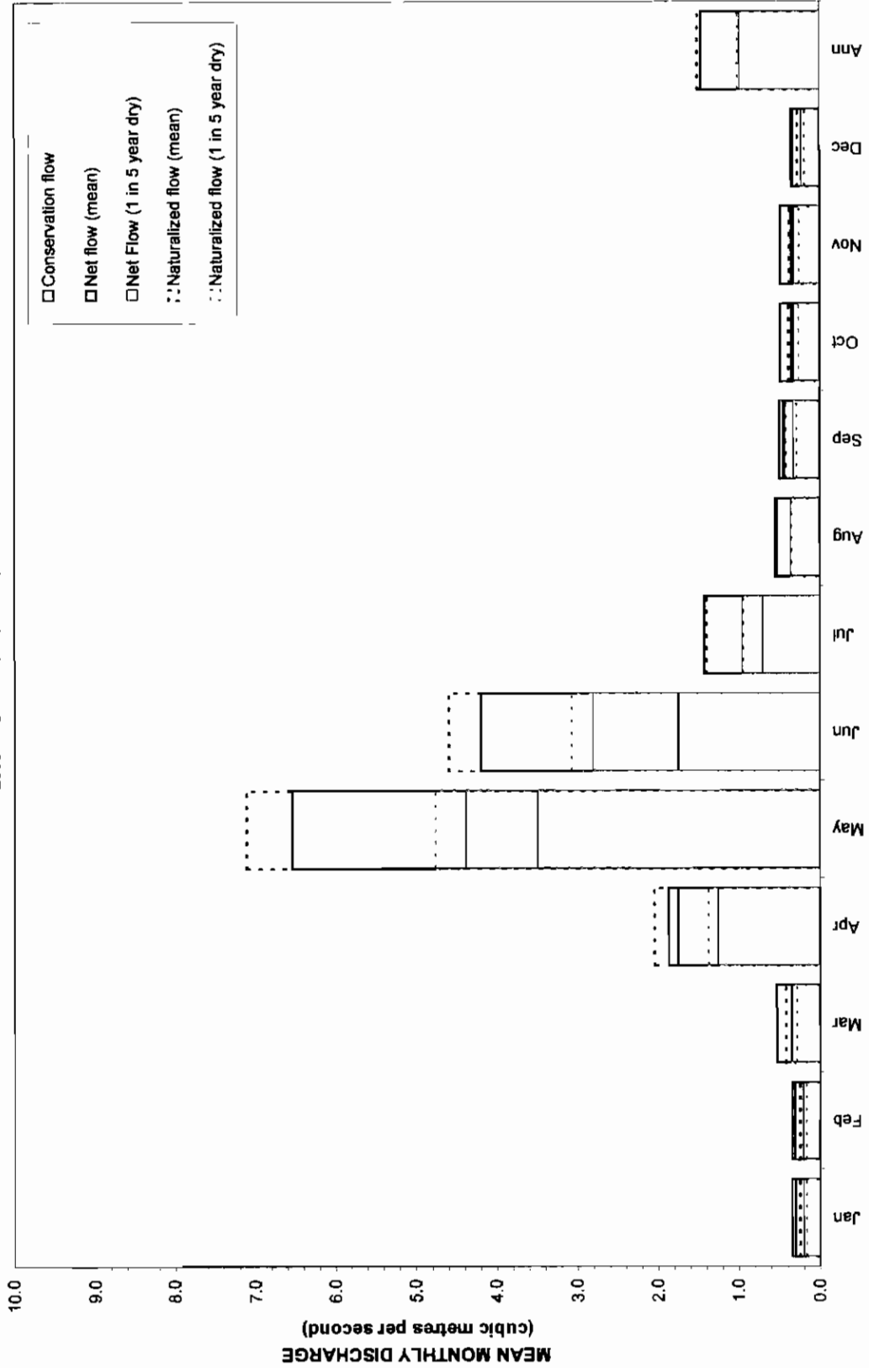
LAMBLY CREEK AT THE MOUTH
2003 - CURRENT CONDITION



LAMBLY CREEK ABOVE PD69106 (LAKEVIEW IRRIGATION DISTRICT INTAKE)
 2003 - CURRENT CONDITION



LAMBLY CREEK BELOW CONFLUENCE OF LAMBLY AND TERRACE CREEKS
 2003 - CURRENT CONDITION



Stream: **McDOUGALL CREEK**
 Location: **AT THE MOUTH**
 Year: **2003**
 Scenario: **CURRENT CONDITIONS**

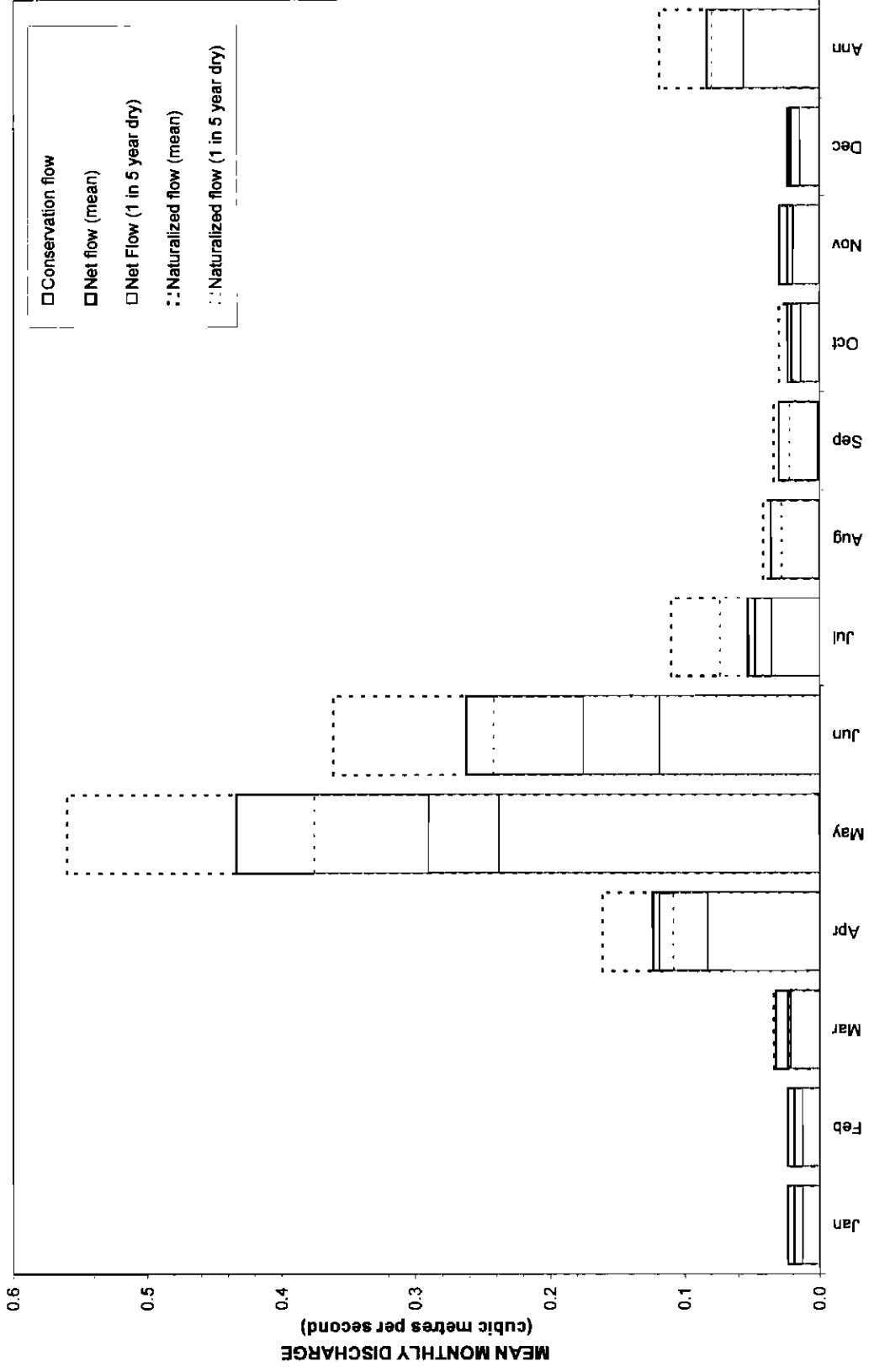
Note: all data except for columns (12) and (13) are linked to sheet "McDOUG - 2003 Current"

Month	DATA:				
	(1) Net flow	(2) Naturalized flow	(11) Conservation Flows	(12) Net flow 1:5 yr dry	(13) Naturalized flow 1:5 yr dry
	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)
Jan	0.019	0.019	0.024	0.013	0.013
Feb	0.019	0.019	0.024	0.013	0.013
Mar	0.032	0.034	0.024	0.022	0.023
Apr	0.124	0.162	0.119	0.083	0.108
May	0.434	0.561	0.238	0.291	0.376
Jun	0.263	0.361	0.119	0.176	0.242
Jul	0.053	0.110	0.048	0.035	0.074
Aug	-0.017	0.041	0.036	-0.011	0.028
Sep	0.001	0.034	0.030	0.001	0.023
Oct	0.021	0.030	0.024	0.014	0.020
Nov	0.030	0.030	0.024	0.020	0.020
Dec	0.022	0.022	0.024	0.015	0.015
Annual	0.084	0.119		0.056	0.080

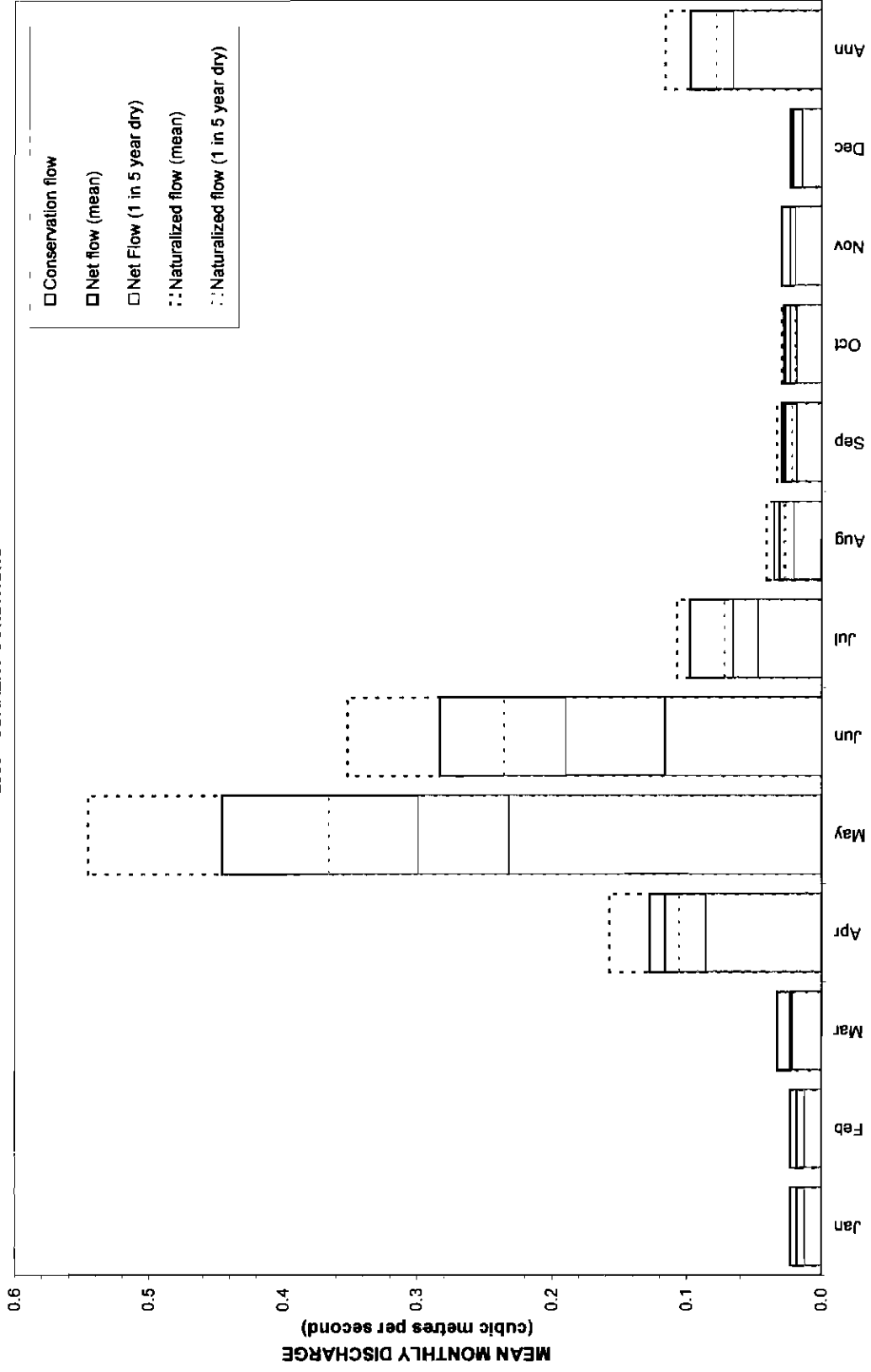
Stream: **McDOUGALL CREEK**
 Location: **BELOW PD59093**
 Year: **2003**
 Scenario: **CURRENT CONDITIONS**

Month	DATA:				
	(1) Net flow	(2) Naturalized flow	(11) Conservation Flows	(12) Net flow 1:5 yr dry	(13) Naturalized flow 1:5 yr dry
	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)
Jan	0.019	0.019	0.023	0.013	0.013
Feb	0.019	0.019	0.023	0.013	0.013
Mar	0.032	0.033	0.023	0.022	0.022
Apr	0.128	0.158	0.116	0.086	0.106
May	0.446	0.546	0.232	0.299	0.366
Jun	0.284	0.352	0.116	0.190	0.236
Jul	0.098	0.107	0.046	0.065	0.072
Aug	0.031	0.040	0.035	0.020	0.027
Sep	0.027	0.033	0.029	0.018	0.022
Oct	0.027	0.029	0.023	0.018	0.019
Nov	0.029	0.029	0.023	0.019	0.019
Dec	0.021	0.021	0.023	0.014	0.014
Annual	0.097	0.116		0.065	0.078

**McDOUGALL CREEK AT THE MOUTH
2003 - CURRENT CONDITIONS**



**McDOUGALL CREEK BELOW PD69093
2003 - CURRENT CONDITIONS**



Stream: POWERS CREEK
 Location: AT THE MOUTH
 Year: 2003
 Scenario: CURRENT CONDITIONS

Note: all data except for columns (12) and (13) are linked to sheet "POWERS - 2003 Current"

Month	DATA:				
	(1) Net flow	(2) Naturalized flow	(11) Conservation Flows	(12) Net flow 1:5 yr dry	(13) Naturalized flow 1:5 yr dry
	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)
Jan	0.100	0.150	0.184	0.067	0.101
Feb	0.097	0.150	0.184	0.065	0.101
Mar	0.205	0.260	0.184	0.137	0.174
Apr	0.769	1.250	0.920	0.515	0.838
May	2.454	4.330	1.840	1.644	2.901
Jun	1.855	2.790	0.920	1.243	1.669
Jul	1.914	0.850	0.368	1.262	0.570
Aug	1.401	0.320	0.276	0.939	0.214
Sep	0.912	0.260	0.230	0.511	0.174
Oct	0.130	0.230	0.164	0.087	0.154
Nov	0.173	0.230	0.184	0.116	0.154
Dec	0.119	0.170	0.184	0.080	0.114
Annual	0.849	0.920		0.589	0.616

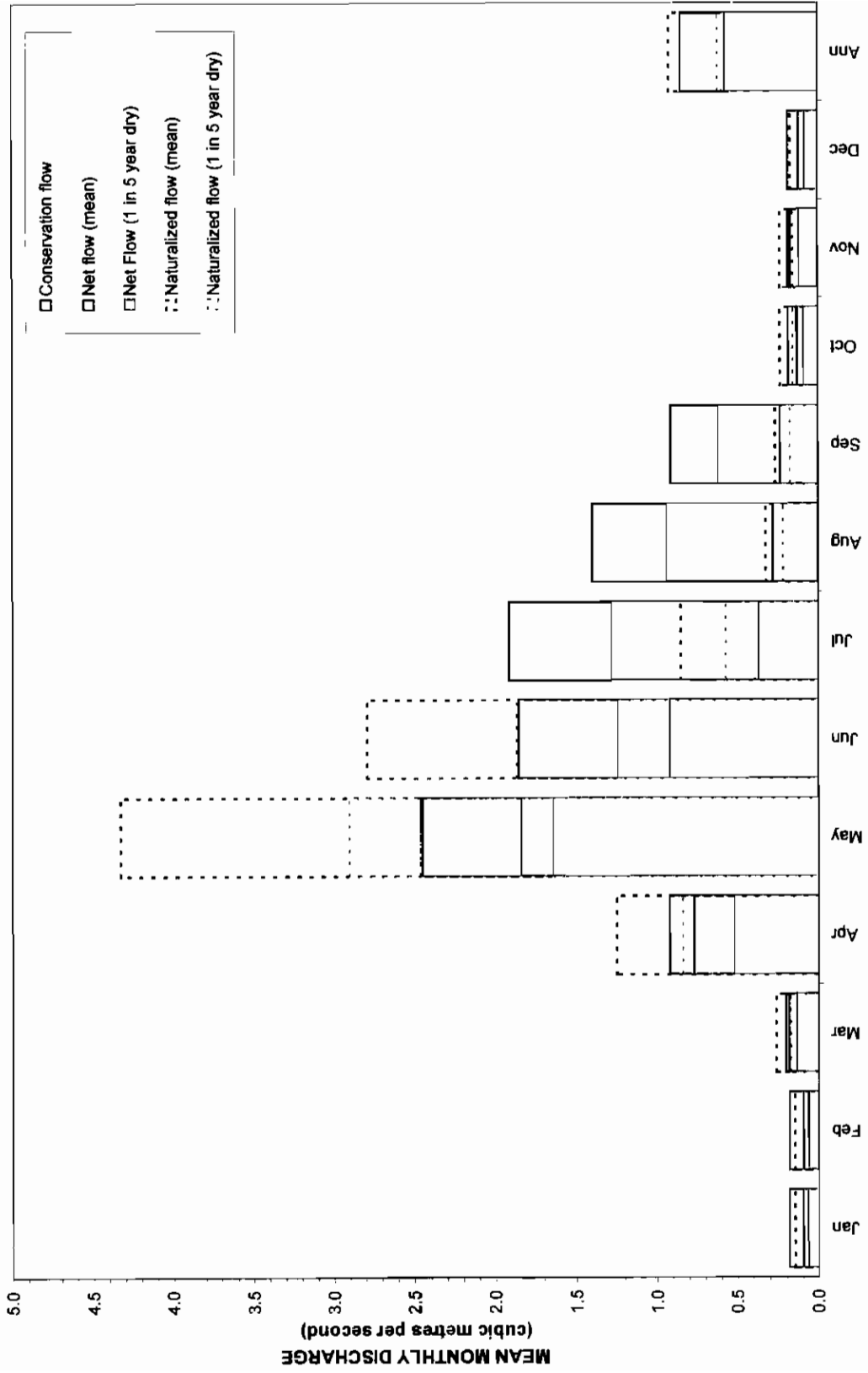
Stream: POWERS CREEK
 Location: ABOVE PD58825 (WESTBANK IRRIGATION INTAKE)
 Year: 2003
 Scenario: CURRENT CONDITIONS

Month	DATA:				
	(1) Net flow	(2) Naturalized flow	(11) Conservation Flows	(12) Net flow 1:5 yr dry	(13) Naturalized flow 1:5 yr dry
	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)
Jan	0.146	0.146	0.179	0.098	0.098
Feb	0.146	0.146	0.179	0.098	0.098
Mar	0.252	0.252	0.179	0.169	0.169
Apr	0.839	1.213	0.893	0.562	0.813
May	2.564	4.203	1.786	1.718	2.816
Jun	2.037	2.708	0.893	1.365	1.814
Jul	2.277	0.825	0.357	1.525	0.553
Aug	1.785	0.311	0.268	1.196	0.208
Sep	1.146	0.252	0.223	0.768	0.169
Oct	0.223	0.223	0.179	0.149	0.150
Nov	0.223	0.223	0.179	0.150	0.150
Dec	0.165	0.165	0.179	0.111	0.111
Annual	0.989	0.893		0.663	0.598

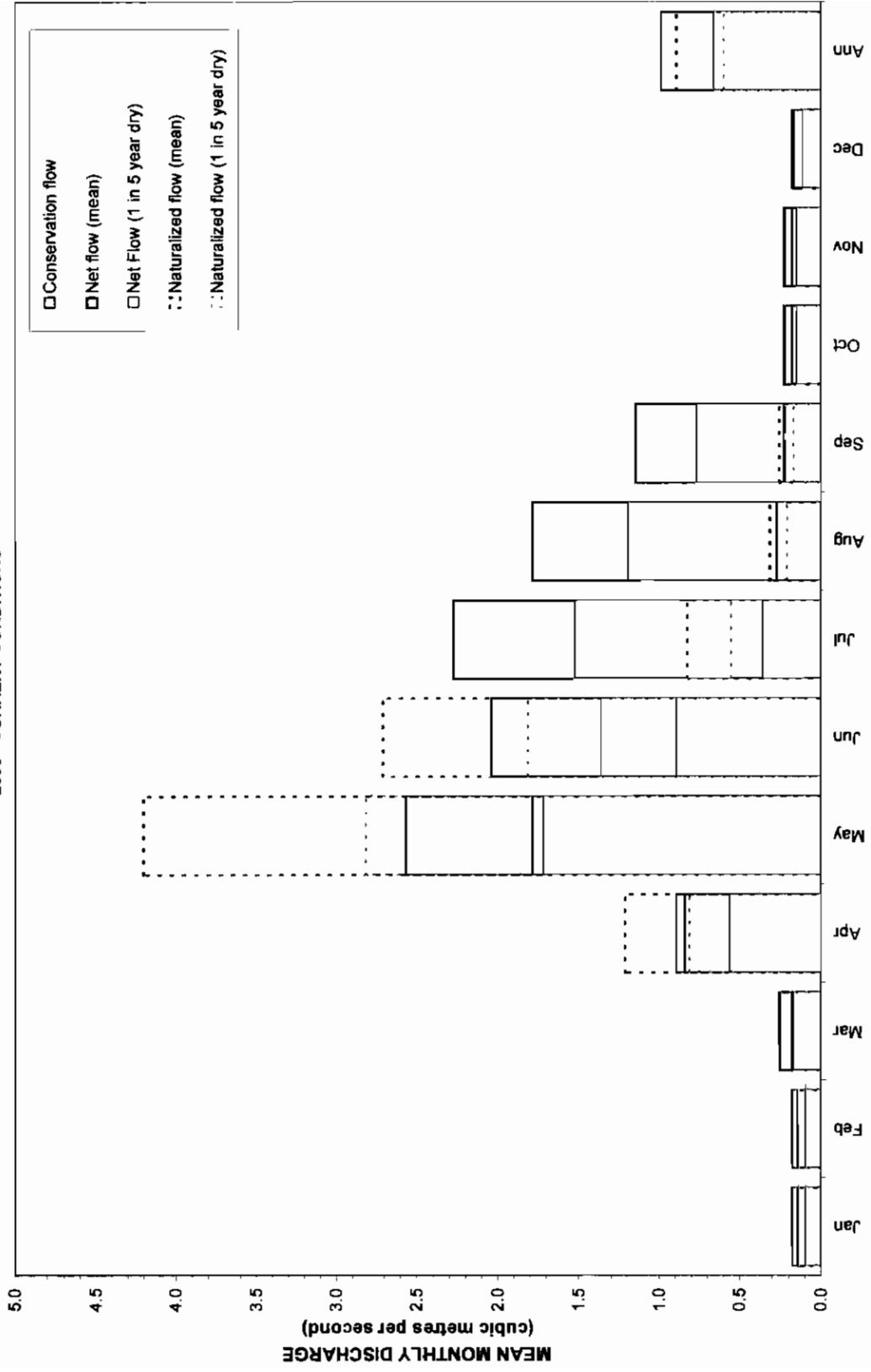
Stream: POWERS CREEK
 Location: BELOW CONFLUENCE WITH NORTH POWERS CREEK
 Year: 2003
 Scenario: CURRENT CONDITIONS

Month	DATA:				
	(1) Net flow	(2) Naturalized flow	(11) Conservation Flows	(12) Net flow 1:5 yr dry	(13) Naturalized flow 1:5 yr dry
	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)
Jan	0.116	0.118	0.142	0.077	0.077
Feb	0.116	0.118	0.142	0.077	0.077
Mar	0.200	0.200	0.142	0.134	0.134
Apr	0.589	0.963	0.709	0.395	0.645
May	1.700	3.336	1.418	1.139	2.235
Jun	1.481	2.150	0.709	0.992	1.440
Jul	2.109	0.655	0.284	1.413	0.439
Aug	1.724	0.247	0.213	1.155	0.165
Sep	1.065	0.200	0.177	0.734	0.134
Oct	0.177	0.177	0.142	0.119	0.119
Nov	0.177	0.177	0.142	0.119	0.119
Dec	0.131	0.131	0.142	0.088	0.088
Annual	0.806	0.709		0.540	0.475

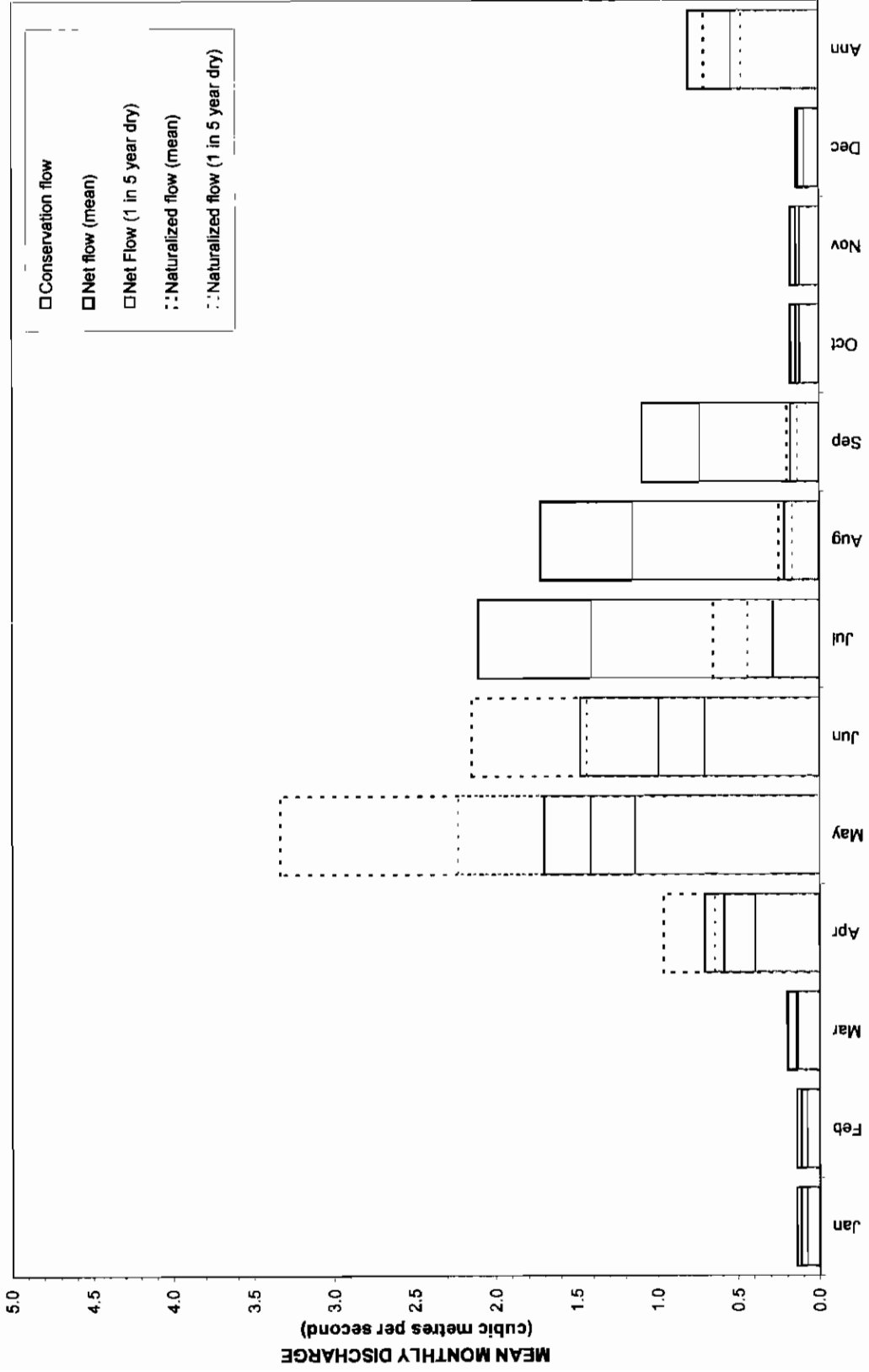
**POWERS CREEK AT THE MOUTH
2003 - CURRENT CONDITIONS**



**POWERS CREEK ABOVE PDS8826 (WESTBANK IRRIGATION DISTRICT INTAKE)
2003 - CURRENT CONDITIONS**



**POWERS CREEK BELOW CONFLUENCE WITH NORTH POWERS CREEK
2003 - CURRENT CONDITIONS**



Stream: **TREPANIER CREEK**
 Location: **AT THE MOUTH**
 Year: **2003**
 Scenario: **CURRENT CONDITIONS**
 Note: all data except for columns (12) and (13) are linked to sheet "TREPANIER - 2003 Current"

DATA:

Month	(1) Net flow	(2) Naturalized flow	(11) Conservation Flows	(12) Net flow 1:5 yr dry	(13) Naturalized flow 1:5 yr dry
	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)
Jan	0.105	0.120	0.218	0.070	0.080
Feb	0.125	0.140	0.218	0.084	0.094
Mar	0.205	0.220	0.218	0.137	0.147
Apr	1.106	1.160	1.090	0.741	0.777
May	6.314	6.510	2.180	4.231	4.362
Jun	3.172	3.310	1.090	2.125	2.218
Jul	0.601	0.670	0.436	0.403	0.449
Aug	0.189	0.280	0.327	0.127	0.174
Sep	0.137	0.180	0.273	0.092	0.121
Oct	0.143	0.170	0.218	0.096	0.114
Nov	0.183	0.200	0.218	0.122	0.134
Dec	0.134	0.150	0.218	0.090	0.101
Annual	1.033	1.090		0.692	0.730

Stream: **TREPANIER CREEK**
 Location: **ABOVE PD58726 (DISTRICT OF PEACHLAND INTAKE)**
 Year: **2003**
 Scenario: **CURRENT CONDITIONS**

DATA:

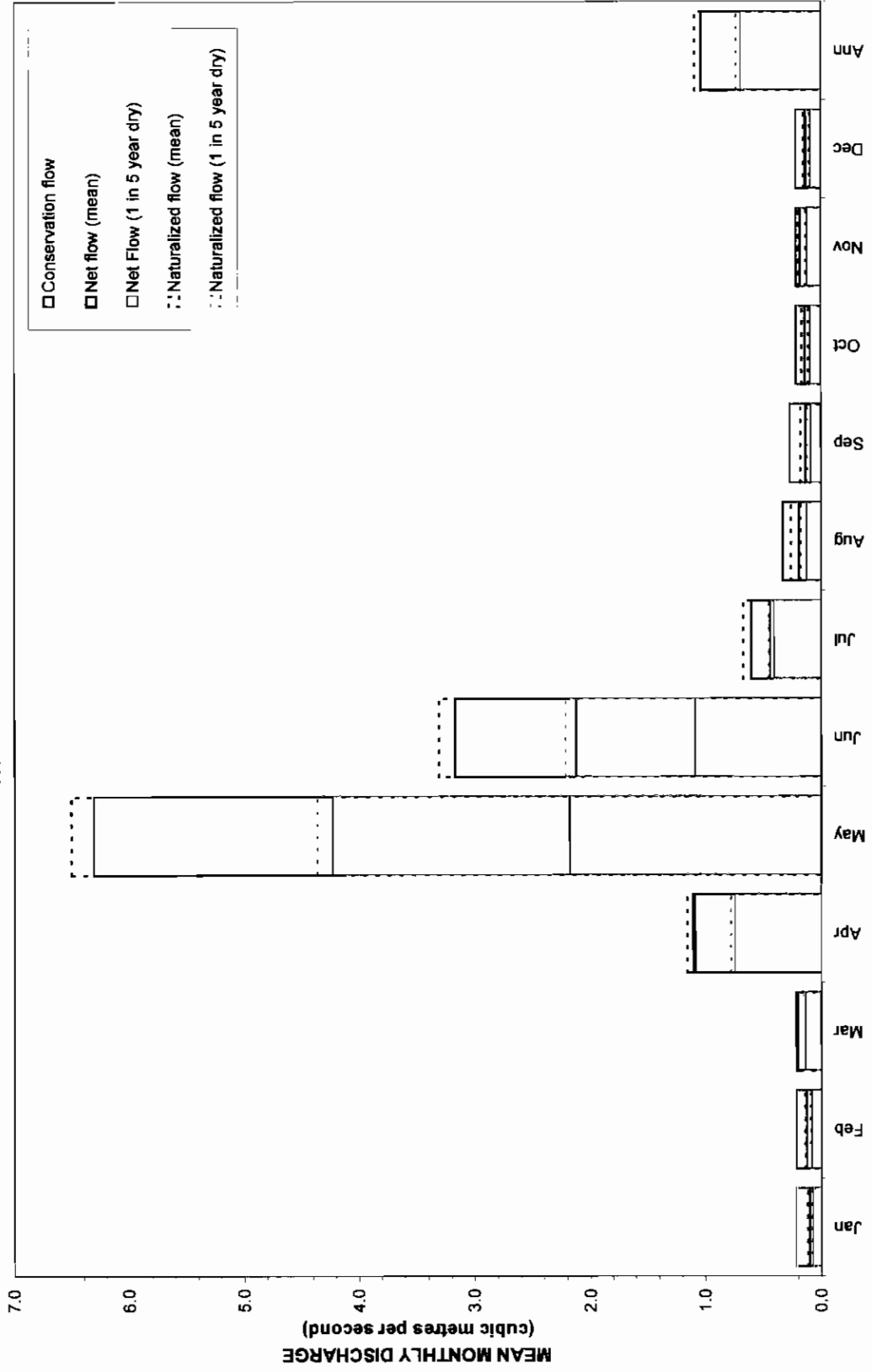
Month	(1) Net flow	(2) Naturalized flow	(11) Conservation Flows	(12) Net flow 1:5 yr dry	(13) Naturalized flow 1:5 yr dry
	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)
Jan	0.116	0.116	0.211	0.078	0.078
Feb	0.135	0.136	0.211	0.091	0.091
Mar	0.214	0.213	0.211	0.144	0.143
Apr	1.103	1.124	1.056	0.739	0.753
May	6.179	6.307	2.112	4.140	4.225
Jun	3.162	3.207	1.056	2.118	2.148
Jul	0.716	0.649	0.422	0.479	0.435
Aug	0.320	0.252	0.317	0.214	0.169
Sep	0.212	0.174	0.264	0.142	0.117
Oct	0.175	0.165	0.211	0.117	0.110
Nov	0.194	0.194	0.211	0.130	0.130
Dec	0.145	0.145	0.211	0.097	0.097
Annual	1.055	1.056		0.707	0.707

Stream: **TREPANIER CREEK**
 Location: **BELOW CONFLUENCE WITH MACDONALD CREEK**
 Year: **2003**
 Scenario: **CURRENT CONDITIONS**

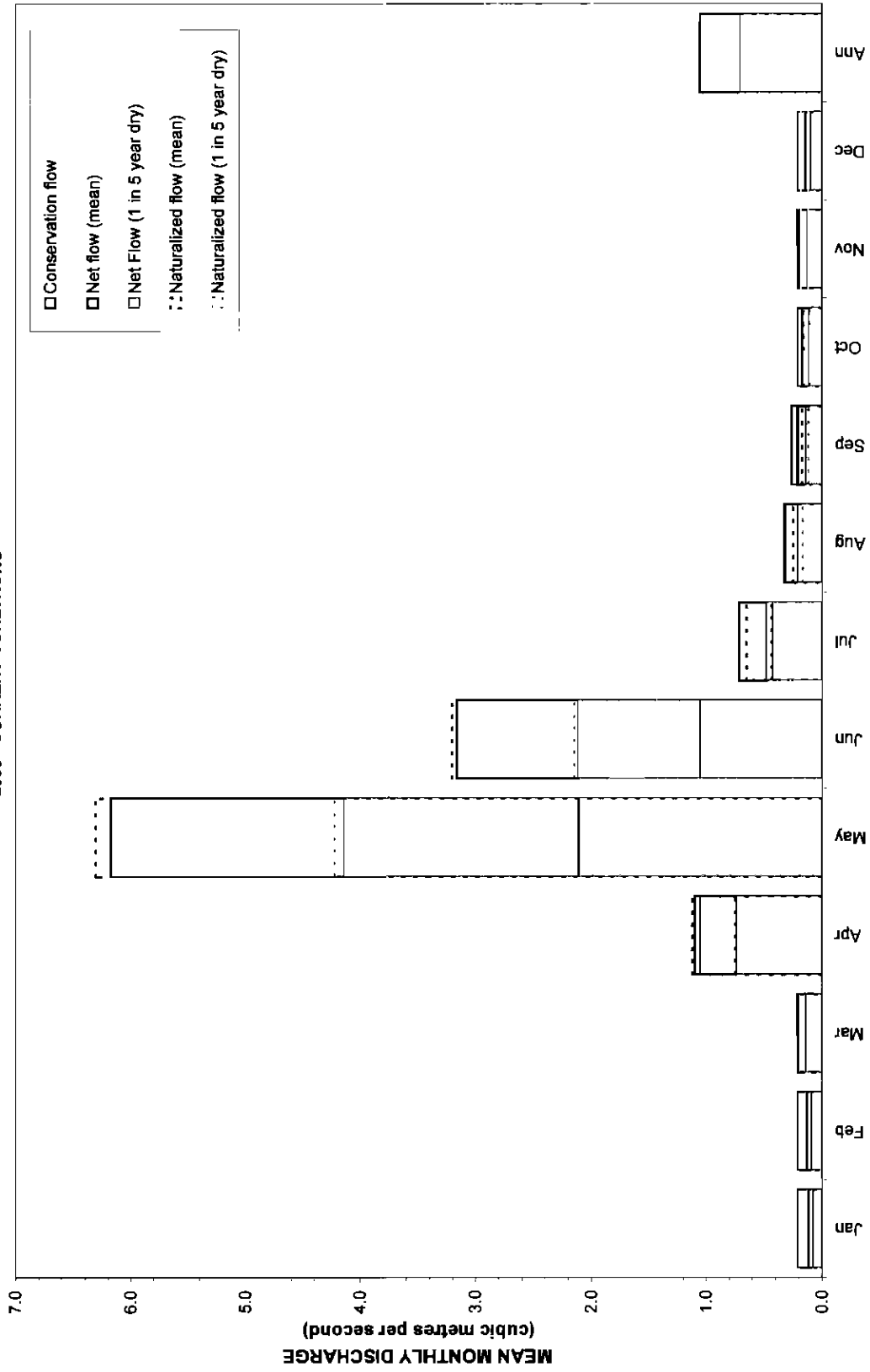
DATA:

Month	(1) Net flow	(2) Naturalized flow	(11) Conservation Flows	(12) Net flow 1:5 yr dry	(13) Naturalized flow 1:5 yr dry
	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)
Jan	0.095	0.095	0.173	0.064	0.064
Feb	0.111	0.111	0.173	0.074	0.074
Mar	0.175	0.174	0.173	0.117	0.117
Apr	0.914	0.919	0.863	0.612	0.616
May	5.125	5.156	1.727	3.433	3.455
Jun	2.611	2.622	0.863	1.749	1.756
Jul	0.548	0.531	0.345	0.367	0.356
Aug	0.223	0.206	0.259	0.150	0.138
Sep	0.152	0.143	0.216	0.102	0.096
Oct	0.137	0.135	0.173	0.092	0.090
Nov	0.158	0.158	0.173	0.106	0.106
Dec	0.119	0.119	0.173	0.080	0.080
Annual	0.863	0.863		0.578	0.578

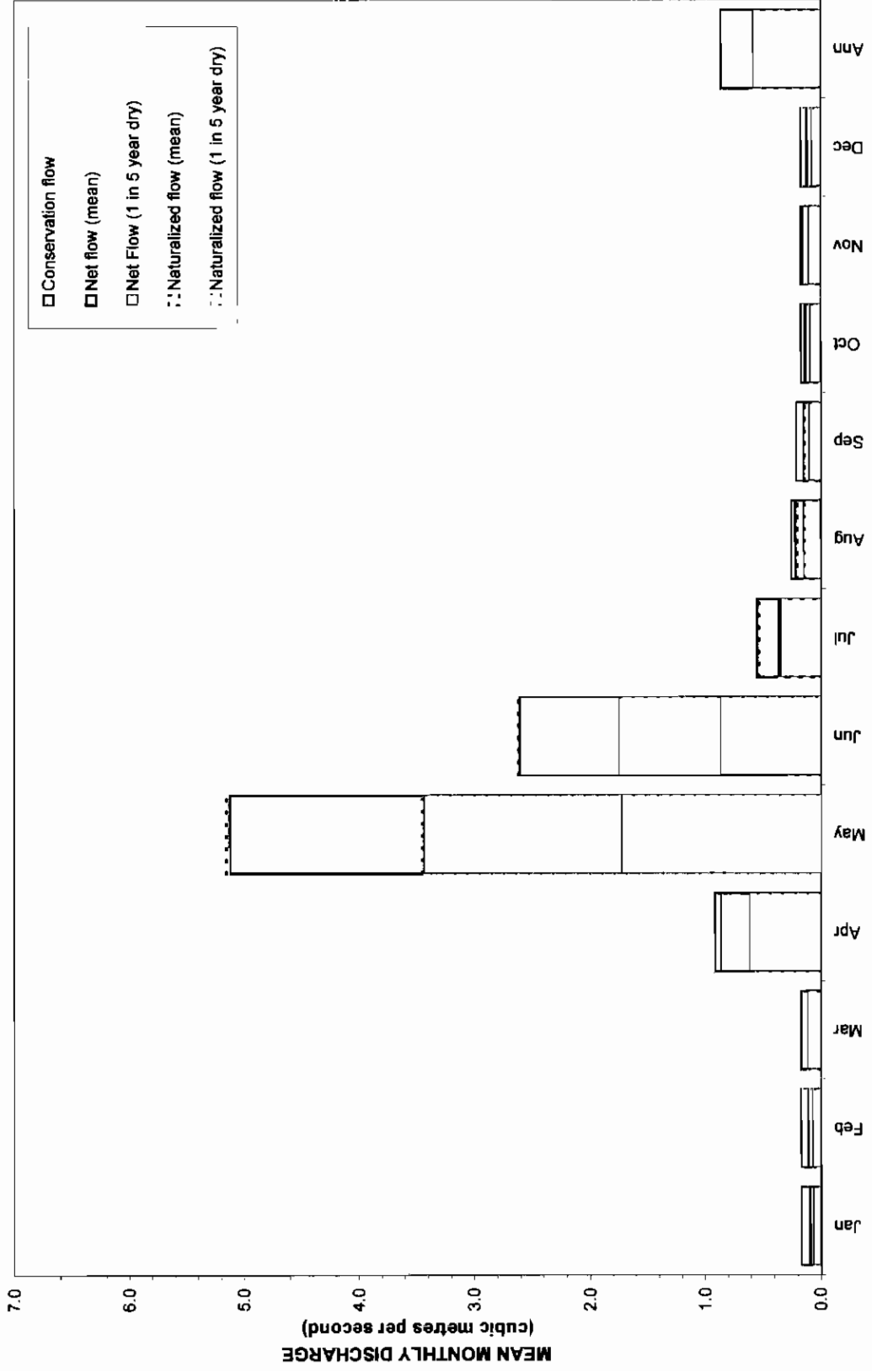
TREPANIER CREEK AT THE MOUTH
2003 - CURRENT CONDITIONS



TREPANIER CREEK ABOVE PD68726 (DISTRICT OF PEACHLAND INTAKE)
 2003 - CURRENT CONDITIONS



TREPANIER CREEK BELOW CONFLUENCE WITH McDONALD CREEK
2003 - CURRENT CONDITIONS



Stream: PEACHLAND CREEK
 Location: AT THE MOUTH
 Year: 2003
 Scenario: CURRENT CONDITIONS

Note: all data except for columns (12) and (13) are linked to sheet "LAMBLBY - 2003 Current"

DATA:

Month	(1)	(2)	(11)	(12)	(13)
	Net flow	Naturalized flow	Conservation Flows	Net flow 1:5 yr dry	Naturalized flow 1:5 yr dry
	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)
Jan	0.225	0.090	0.114	0.150	0.060
Feb	0.234	0.090	0.114	0.157	0.060
Mar	0.297	0.160	0.114	0.199	0.107
Apr	0.458	0.770	0.570	0.307	0.516
May	1.234	2.690	1.140	0.827	1.796
Jun	0.917	1.730	0.570	0.614	1.159
Jul	0.913	0.530	0.228	0.611	0.355
Aug	0.596	0.200	0.171	0.393	0.134
Sep	0.436	0.160	0.143	0.292	0.107
Oct	0.322	0.140	0.114	0.216	0.094
Nov	0.277	0.140	0.114	0.186	0.094
Dec	0.230	0.100	0.114	0.154	0.067
Annual	0.515	0.570		0.345	0.382

Stream: PEACHLAND CREEK
 Location: ABOVE PD58648 (DISTRICT OF PEACHLAND INTAKE)
 Year: 2003
 Scenario: CURRENT CONDITIONS

DATA:

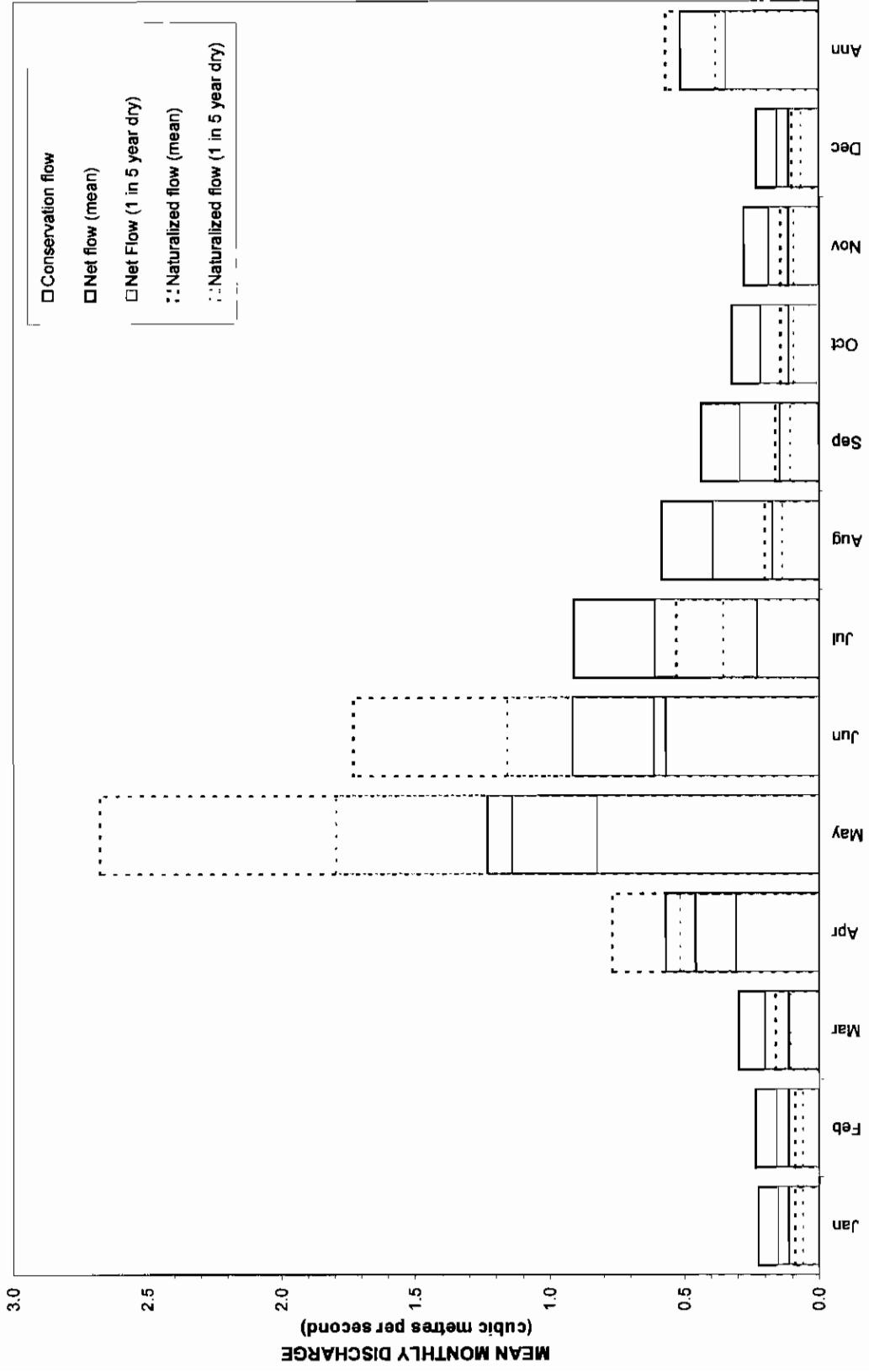
Month	(1)	(2)	(11)	(12)	(13)
	Net flow	Naturalized flow	Conservation Flows	Net flow 1:5 yr dry	Naturalized flow 1:5 yr dry
	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)
Jan	0.229	0.081	0.103	0.153	0.055
Feb	0.238	0.081	0.103	0.159	0.055
Mar	0.296	0.145	0.103	0.198	0.097
Apr	0.424	0.696	0.515	0.284	0.466
May	1.060	2.423	1.031	0.710	1.623
Jun	0.847	1.564	0.515	0.567	1.048
Jul	0.993	0.479	0.208	0.665	0.321
Aug	0.699	0.181	0.155	0.469	0.121
Sep	0.500	0.145	0.129	0.335	0.097
Oct	0.343	0.127	0.103	0.230	0.085
Nov	0.276	0.127	0.103	0.185	0.085
Dec	0.232	0.090	0.103	0.155	0.061
Annual	0.515	0.515		0.345	0.345

Stream: PEACHLAND CREEK
 Location: BELOW CONFLUENCE WITH GREATA CREEK
 Year: 2003
 Scenario: CURRENT CONDITIONS

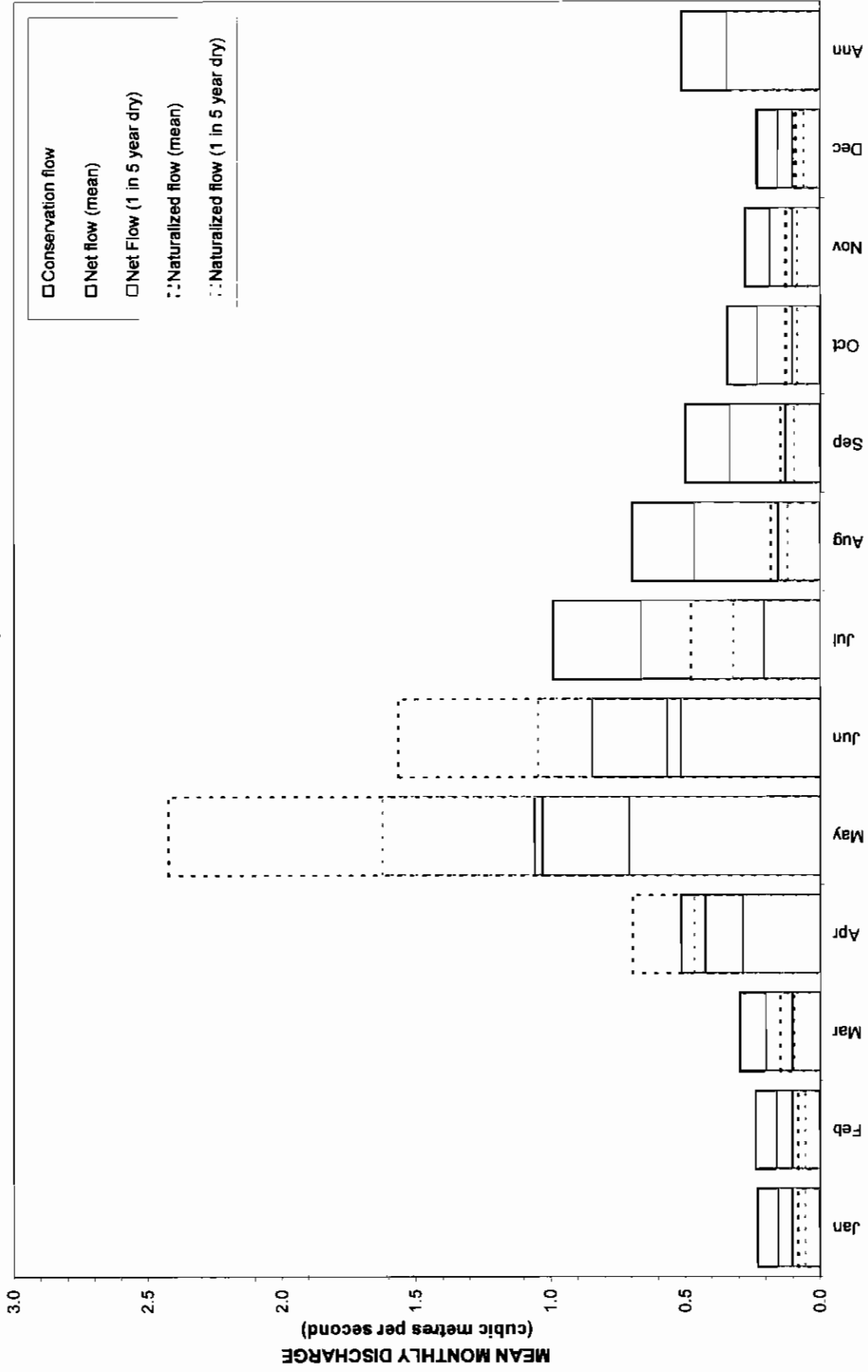
DATA:

Month	(1)	(2)	(11)	(12)	(13)
	Net flow	Naturalized flow	Conservation Flows	Net flow 1:5 yr dry	Naturalized flow 1:5 yr dry
	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)	(m ³ /s)
Jan	0.225	0.077	0.098	0.150	0.052
Feb	0.233	0.077	0.098	0.156	0.052
Mar	0.289	0.137	0.098	0.193	0.092
Apr	0.388	0.880	0.488	0.260	0.442
May	0.933	2.296	0.977	0.625	1.538
Jun	0.765	1.482	0.488	0.513	0.993
Jul	0.968	0.454	0.195	0.649	0.304
Aug	0.890	0.171	0.146	0.462	0.115
Sep	0.493	0.137	0.122	0.330	0.092
Oct	0.336	0.120	0.098	0.225	0.080
Nov	0.269	0.120	0.098	0.180	0.080
Dec	0.227	0.086	0.098	0.152	0.057
Annual	0.488	0.488		0.327	0.327

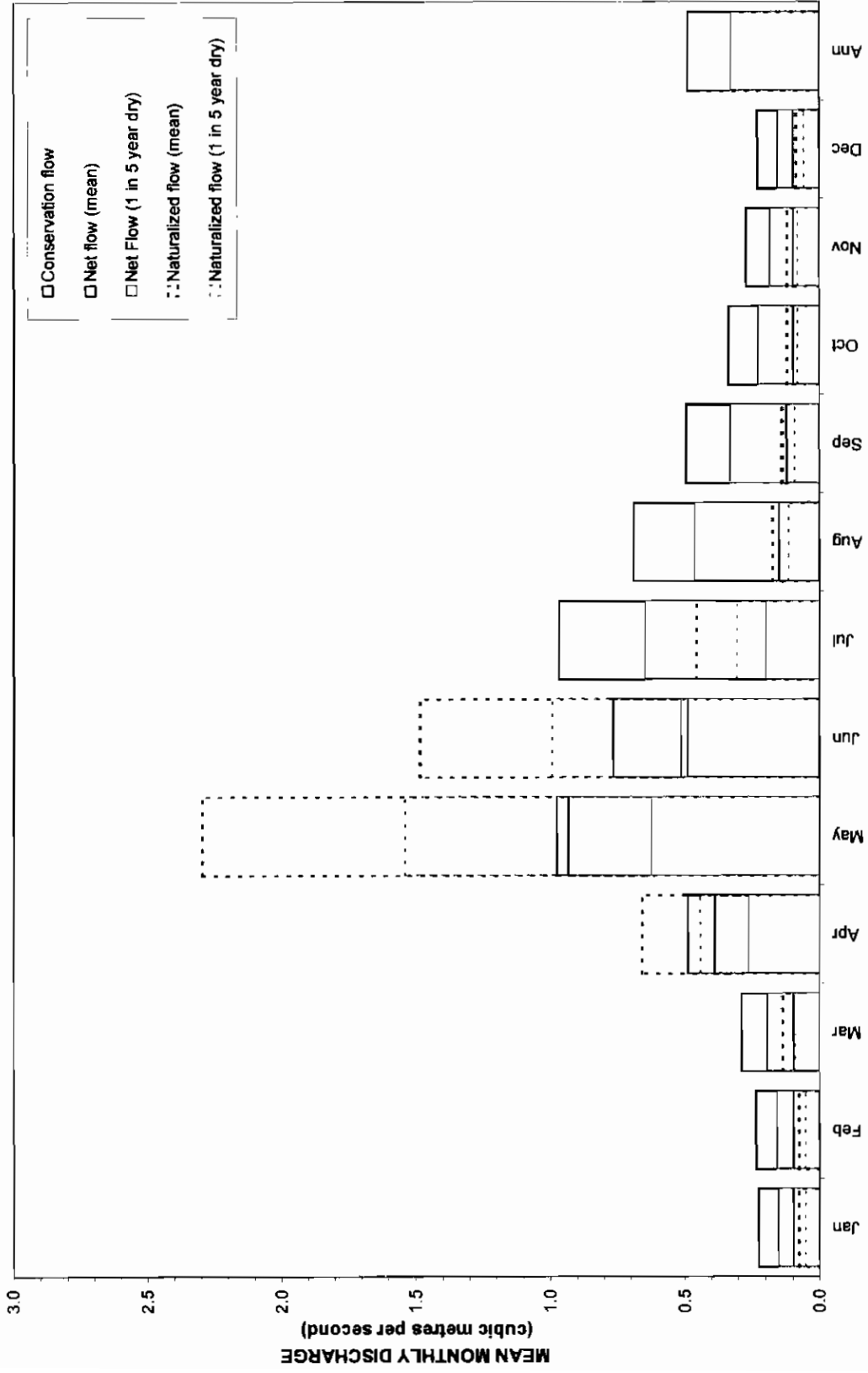
**PEACHLAND CREEK AT THE MOUTH
2003 - CURRENT CONDITIONS**



PEACHLAND CREEK ABOVE PDS8648 (DISTRICT OF PEACHLAND INTAKE)
2003 - CURRENT CONDITIONS



PEACHLAND CREEK BELOW CONFLUENCE WITH GREATA CREEK
2003 - CURRENT CONDITIONS



Appendix O

Performance Indicator Analysis

APPENDIX O: PERFORMANCE INDICATOR ANALYSIS–TECHNICAL RESULTS

O.1 INTRODUCTION TO SCENARIO OUTPUT

A summary of the performance indicator analysis (i.e., scenario outputs) is provided in Section 14.0. This appendix provides the details on the methods and results of the technical analysis. Detailed output of the scenario runs outlined in Section 13.0 (i.e., one for each of scenarios 1.1, 1.2, 2.1, and 2.2) is presented for each of the 14 points-of-interest in the TLU¹ (organized by stream) in Appendices I to M. In each of these Appendices the output consists of a tabular listing of the mean monthly and annual estimates of:

- (1) net flow;
- (2) naturalized flow²;
- (3) total licensed quantities (offstream and instream);
- (4) offstream licensed quantities;
- (5) instream licensed quantities;
- (6) estimated actual offstream use;
- (7) estimated actual or licenced monthly storage (either as a withdrawal into or a release from storage), and
- (8) conservation flows³.

Based on the tabular output presented in Appendices I to M, several specific comparisons outlined in Table O.1 can be made.

¹ For discussion purposes the points-of-interest (POIs) on Lambly, Powers, Trepanier and Powers Creeks have been referred to as either at “the mouth”, at “the middle (i.e., canyon) point-of-interest (POI)” or at “the upper (i.e., plateau) point-of-interest (POI)”. Only two points-of-interest (POIs) are located on McDougall Creek: “at the mouth” and “the upper POI”.

² The naturalized flow at a given point-of-interest in Scenarios 1.1 (2020) and 1.2 (2050) is assumed to be the same as the current (2003) estimated naturalized flow (i.e., no effect of climate change on natural hydrology). In Scenarios 2.1 (2020) and 2.2 (2050) the naturalized flow estimates account for climate change so they are different than current (2003) and Scenarios 1.1 and 1.2 conditions.

³ Conservation flows are based on current (2003) naturalized flows.

Table O.1 Comparison matrix.

	Net flow	Naturalized flow	Total licences	Offstream licences	Instream licences	Actual offstream use	Conservation flow
Net flow		#1	--	--	#2	--	#3
Naturalized flow			#4	#5	#6	#7a, b, c, d	--
Total licences				#8	#9	--	--
Offstream licences					--	#10a, b, c, d	--
Instream licences						--	#11
Actual offstream use							--
Conservation flow							

Notes:

1. Comparisons #1-6, #7a, #8, #9, #10a, and #11 are applicable to the base case (current conditions).
2. Comparisons #1-3, #7a-d, and #10a-d are applicable to scenarios 1.1 and 1.2.
3. Comparisons #1-6, #7a-d, and #10a-d are applicable to scenarios 2.1 and 2.2.

Scenario comparisons

For Scenarios 1.1 and 1.2, comparisons #1-3, #7a-d, and #10a-d were made. These same comparisons plus comparisons #4-6 were made under Scenarios 2.1 and 2.2. The relevance of these comparisons is discussed in Table O.2.

The following sections highlight the relevant comparisons identified in Table O.1 for each of the 14 points-of-interest under each of the four scenarios. Comparisons between the base case (i.e., current condition) and the future are made in the “Analysis” sections that follow the listing of these comparisons. Changes in net flow at the mouths of each of the five major creeks in the TLU (where the changes are most significant) under each of the four scenarios are highlighted in Tables O.3 and O.4.

Table O.2 Relevance of the comparisons under the base case (i.e., current condition) and future scenarios.

Comparisons			Relevance
#1	Naturalized flow	Net flow	The difference is an estimate of actual offstream use after withdrawals to or releases from storage are accounted for.
#2	Instream licences	Net flow	The comparison indicates whether and by how much there is sufficient net flow to satisfy instream licences.
#3	Conservation flow	Net flow	The comparison indicates how much of the requested or negotiated conservation flow can be met by the net flow
#4	Total licences	Naturalized flow	The difference is the absolute upper limit on how much additional surface water there is to license.
#5	Offstream licences	Naturalized flow	The comparison indicates how much of the naturalized flow is licensed for offstream use.
#6	Instream licences	Naturalized flow	The comparison indicates how much of the naturalized flow is licensed for instream use.
#7a	Actual offstream use	Naturalized flow	The comparison indicates how much of the natural flow is being withdrawn for offstream use
#7b	Actual offstream use (assuming a 10% reduction due to future conservation measures)	Naturalized flow	The comparison indicates how much of the natural flow is being withdrawn for offstream use assuming a 10% reduction due to future conservation measures.
#7c	Actual offstream use (assuming a 20% reduction due to future conservation measures)	Naturalized flow	The comparison indicates how much of the natural flow is being withdrawn for offstream use assuming a 20% reduction due to future conservation measures.
#7d	Actual offstream use (assuming a 30% reduction due to future conservation measures)	Naturalized flow	The comparison indicates how much of the natural flow is being withdrawn for offstream use assuming a 30% reduction due to future conservation measures.
#8	Offstream licences	Total licences	The comparison indicates the proportion of the total licensed amount that is licensed for offstream use
#9	Instream licences	Total licences	The comparison indicates the proportion of the total licensed amount that is licensed for instream use
#10a	Actual offstream use	Offstream licences	The difference indicates how much additional room there is to remove water from surface streams without the need for additional licensing.
#10b	Actual offstream use (assuming a 10% reduction due to future conservation measures)	Offstream licences	The difference indicates how much additional room there is to remove water from surface streams without the need for additional licensing assuming a 10% reduction in water use due to future conservation measures.
#10c	Actual offstream use (assuming a 20% reduction due to future conservation measures)	Offstream licences	The difference indicates how much additional room there is to remove water from surface streams without the need for additional licensing assuming a 20% reduction in water use due to future conservation measures.
#10d	Actual offstream use (assuming a 30% reduction due to future conservation measures)	Offstream licences	The difference indicates how much additional room there is to remove water from surface streams without the need for additional licensing assuming a 30% reduction in water use due to future conservation measures.
#11	Conservation flow	Instream licences	The comparison indicates how much of the requested or negotiated conservation flows are legally protected with licences.

Notes

- 1 Comparisons #1-6, #7a, #8, #9, #10a, and #11 are applicable to the base case (current conditions)
- 2 Comparisons #1-3, #7a-d, and #10a-d are applicable to scenarios 1.1 and 1.2.
- 3 Comparisons #1-6, #7a-d, and #10a-d are applicable to scenarios 2.1 and 2.2.

Table O.3 Estimates of current (2003) and projected (2020 and 2050) average August and annual net flows at the mouths of the five principal streams in the TLU assuming population change only (Scenarios 1.1 and 1.2).

Estimated net flow	Lambly Creek		McDougall Creek		Powers Creek		Trepanier Creek		Peachland Creek	
	August	Annual	August	Annual	August	Annual	August	Annual	August	Annual
2003	0.319	1.58	0.000	0.084	1.40	0.849	0.189	1.03	0.586	0.515
2020 (Scenario 1.1)	0.175	1.52	0.000	0.083	1.23	0.774	0.157	1.02	0.545	0.496
2050 (Scenario 1.2)	0.000	1.41	0.000	0.083	0.954	0.656	0.116	1.00	0.494	0.474

Notes: 1) all values in m³/s; 2) zero flow is indicated in bold.

Table O.4 Estimates of current (2003) and projected (2020 and 2050) average August and annual net flows at the mouths of the five principal streams in the TLU assuming population change and climate change (Scenarios 2.1 and 2.2).

Estimated net flow	Lambly Creek		McDougall Creek		Powers Creek		Trepanier Creek		Peachland Creek	
	August	Annual	August	Annual	August	Annual	August	Annual	August	Annual
2003	0.319	1.58	0.000	0.084	1.40	0.849	0.189	1.03	0.586	0.515
2020 (Scenario 2.1)	0.000	1.24	0.000	0.064	1.11	0.590	0.084	0.790	0.481	0.383
2050 (Scenario 2.2)	0.000	0.764	0.000	0.029	0.694	0.279	0.000	0.560	0.375	0.256

Notes: 1) all values in m³/s; 2) zero flow is indicated in bold.

O.2 SCENARIO 1.1: POPULATION GROWTH TO 2020

O.2.1 Lambly Creek

Tabular and graphical output of Scenario 1.1 for Lambly Creek is found in Appendix I and Figures 14.1 through 14.3, respectively. The following text summarizes the output and highlights key results.

Lambly Creek below confluence of Lambly and Terrace Creeks:

- Net flows in 2020 are projected to range from 0.301 m³/s in January to 6.51 m³/s in May. The annual net flow is estimated to be 1.45 m³/s;

- Annually, net flow is projected to be 5% less than naturalized flow. Net monthly flows are projected to be less than naturalized monthly flows only between April and August;
- Monthly conservation flows are projected to be met or exceeded by net flows all year;
- Annually, 4% of the naturalized flow is projected to be actually used offstream. On a monthly basis, actual offstream use will account for 1% (May) to 30% (August) of the naturalized flow. Assuming a 30% reduction in water use, 3% of the annual naturalized flow and 1% to 21% of the naturalized monthly flow will be used; and
- Annually, there is projected to be 0.030 m³/s not being utilized under existing licences. On a monthly basis, flow available for use without further licensing is projected to range from 0.010 m³/s between December and March to 0.070 m³/s in August. With a 30% reduction in water use, there is projected to be 0.050 m³/s of flow available for use without further licensing annually. Under the same 30% reduction of water use, flow available for use without further licensing is projected to range from 0.016 m³/s to 0.117 m³/s.

Lambly Creek above PD59106 (Lakeview Irrigation District weir):

- Net flows in 2020 are projected to range from 0.339 m³/s in January to 7.62 m³/s in May. The annual net flow is estimated to be 1.68 m³/s;
- Annually, net flow is projected to be 4% less than naturalized flow. Net monthly flows are projected to be less than naturalized flows only between April and August;
- Monthly conservation flows will be exceeded by net flows in all months except January and February. Net flow in these two winter months represent 97% and 99% of the conservation flow, respectively;
- Annually, 4% of the naturalized flow is projected to be actually used offstream. On a monthly basis, actual offstream use accounts for 1% (May) to 27% (August) of the naturalized flow. Assuming a 30% reduction in water use, 3% of the annual naturalized flow and less than 1% to 19% of the naturalized monthly flow will be used; and

- Annually, there will be 0.030 m³/s of flow not being utilized under existing licences. On a monthly basis, flow available for use without further licensing is projected to range from 0.010 m³/s between December and March to 0.070 m³/s in August. Assuming a 30% reduction in water use, there is projected to be 0.051 m³/s of flow available for use without further licensing annually. Under the same 30% reduction of water use, flow available for use without further licensing ranges from 0.016 m³/s to 0.118 m³/s.

Lambly Creek at the mouth:

- Net flows in 2020 are projected to range from 0.288 m³/s in January to 7.48 m³/s in May. The annual net flow is estimated to be 1.52 m³/s;
- Annually, net flow is projected to be 14% less than naturalized flow. Net monthly flows are projected to be less than naturalized flows in all months except March and November;
- Monthly conservation flows will only be met between March and July and in October and November;
- On an annual basis, 14% of the naturalized flow will actually be used offstream. On a monthly basis, actual offstream use accounts for 4% (May) to 93% (August) of the naturalized flow. With a 30% reduction in water use, 10% of the annual naturalized flow and 3% to 65% of the naturalized monthly flow will be used; and
- On an annual basis, 0.160 m³/s will not be utilized under existing licences. On a monthly basis, flow available for use without further licensing is projected to range from 0.006 m³/s in December, January and February to 0.461 m³/s in August. With a 30% reduction in water use, there is projected to be 0.236 m³/s of flow available for use without further licensing annually. Under the same 30% reduction of water use, flow available for use without further licensing ranges from 0.030 m³/s to 0.631 m³/s.

Analysis:

Based on Scenario 1.1 (2020 - population growth only) for Lambly Creek:

1. Annual net flows in 2020 are projected to be approximately 1% (at the middle and upper POIs) to 4% (at the mouth) lower than they are currently. On a monthly basis,

the reduction in flow will be relatively modest (<10%) at the middle and upper POIs, but at the mouth a reduction of 45% is expected in August;

2. In 2020, conservation flows will be met or exceeded at the middle and upper POIs in all months except January and February. However, in these months net flows will be 3% below the conservation flows. At the mouth, conservation flows will not be met between December and February and in August and September, which is no different from the current condition;
3. The amount of naturalized flow used offstream in 2020 is expected to be between 4% (at the middle POI) and 14% (at the mouth). This represents a 1% to 3% increase from current conditions; and
4. On an annual basis, flow licensed for offstream use that will not be utilized in 2020 is from 0.030 m³/s (middle and upper POIs) to 0.160 m³/s (at the mouth). This is less than the current situation where between 0.052 m³/s and 0.225 m³/s of licensed flow is not being utilized.

O.2.2 McDougall Creek

Tabular and graphical output of Scenario 1.1 for McDougall Creek are found in Appendix J and Figures 14.4 and 14.5, respectively. The following text summarizes the output and highlights key results.

McDougall Creek below PD59093:

- Net flows in 2020 are projected to range from 0.019 m³/s in January and February to 0.446 m³/s in May. The annual net flow is estimated to be 0.097 m³/s;
- On an annual basis, net flow is projected to be 16% less than naturalized flow. Net monthly flows are projected to be less than naturalized flows in all months – the most difference occurring between April and September;
- Conservation flows will not be met in the winter (December-February) and in late summer (August-September); and
- On an annual basis, 16% of the naturalized flow is licensed for offstream use, and assumed to be actually used. On a monthly basis, this quantity accounts for 1%

(between November and February) to 138% (in August) of the naturalized flow. With a 30% reduction in water use, 11% of the annual naturalized flow and 1% to 97% of the naturalized monthly flow would be used.

McDougall Creek at the mouth:

- Net flows in 2020 are projected to range from no flow in August to 0.433 m³/s in May. The annual net flow is estimated to be 0.083 m³/s;
- On an annual basis, net flow is projected to be 30% less than naturalized flow. Net monthly flows are projected to be less than naturalized flows in all months;
- Conservation flows will not be met in winter (December-February) and late summer and fall (August-October); and
- On an annual basis, 30% of the naturalized flow will be licensed for offstream use, and assumed to be actually used. On a monthly basis, this quantity accounts for 1% (in November) to 253% (in August) of the naturalized flow. With a 30% reduction in water use, 21% of the annual naturalized flow would be used. On a monthly basis, actual offstream use is projected to account for 1% to 177% of the naturalized flow.

Analysis:

Under Scenario 1.1 (2020 - population growth only) for McDougall Creek:

1. Annual net flows in 2020 are projected to be less than 1% lower at both POIs than they are currently. On a monthly basis, the reductions in flow are generally insignificant. Currently, at the mouth, no flow is expected in August. By 2020, this will remain unchanged;
2. Currently, conservation flows are not being met during the winter (December-February) and late summer (August-September) at both POIs⁴. No change in meeting the conservation flows is expected by 2020; and
3. The amount of naturalized flow used offstream in 2020 is expected to be between 16% (at the upper POI) and 30% (at the mouth). This represents no significant change from the current condition.

⁴ At the mouth of McDougall Creek, conservation flows will also not be met in October by 2020.

O.2.3 Powers Creek

Tabular and graphical output of Scenario 1.1 for Powers Creek are found in Appendix K and Figures 14.6 through 14.8, respectively. The following text summarizes the output and highlights key results.

Powers Creek below confluence with North Powers Creek:

- Net flows in 2020 are projected to range from 0.116 m³/s in January and February to 2.11 m³/s in July. The annual net flow is estimated to be 0.806 m³/s;
- On an annual basis, net flow is projected to be 14% more than naturalized flow contributions from Lambly Creek. However, net monthly flows are projected to be less than naturalized flows between April and June;
- Conservation flows will not be met between December and June: and
- On an annual basis, none of the naturalized flow at this point-of-interest is expected to be actually used offstream. This means that on an annual basis, there is projected to be 0.162 m³/s of flow not being utilized under existing licences. On a monthly basis, this quantity ranges from 0.012 m³/s between December and February to 0.454 m³/s in August.

Powers Creek above PD58825 (Westbank Irrigation District intake):

- Net flows in 2020 are projected to range from 0.146 m³/s in January and February to 2.56 m³/s in July. The annual net flow is estimated to be 0.989 m³/s;
- Annually, net flow is projected to be 11% more than naturalized flow due to diversion from Lambly Creek. However, net monthly flows are projected to be less than naturalized flows between April and June and in October, January and February;
- Conservation flows will not be met between December and February and in April; and
- On an annual basis, less than 1% of the naturalized flow is projected to be actually used offstream. This means that on an annual basis, there is projected to be 0.185 m³/s of flow not being utilized under existing licences. On a monthly basis, this

quantity ranges from 0.012 m³/s between December and February to 0.522 m³/s in August.

Powers Creek at the mouth:

- Net flows in 2020 are projected to range from 0.073 m³/s in February to 2.35 m³/s in May. The annual net flow is estimated to be 0.774 m³/s;
- On an annual basis, net flow is projected to be 16% less than naturalized flow. Net monthly flows are projected to be less than naturalized flows for all months except July, August and September;
- Monthly instream licenses will be exceeded by net flows for all months except January and February;
- Monthly conservation flows will be exceeded by net flows between May and September only;
- On an annual basis, 26% of the naturalized flow is expected to be actually used offstream. On a monthly basis, actual offstream use accounts for 8% (in May) to 178% (in August) of the naturalized flow. With a 30% reduction in water use, 18% of the annual naturalized flow and 6% to 124% of the monthly naturalized flow would be used; and
- On an annual basis, there is projected to be 0.024 m³/s not being utilized under existing licences. On a monthly basis, this quantity ranges from zero between October and April to 0.192 m³/s in August. With a 30% reduction in water use, there is projected to be 0.097 m³/s of flow available for use without further licensing annually. Under the same 30% reduction of water use, flow available for use without further licensing ranges from zero between November and March to 0.363 m³/s in August.

Analysis:

Based on Scenario 1.1 (2020 - population growth only) for Powers Creek:

1. Annual net flows in 2020 are projected to be approximately 0.0-0.1% (at the middle and upper POIs) to 9% (at the mouth) lower than they are currently. On a monthly

basis, the reduction in flow will be insignificant at the middle and upper POIs, but at the mouth a reduction of 35% is expected in October;

2. Monthly instream licenses at the mouth will not be met in January and February. This represents a change from the current condition where monthly instream licenses are met all year at the mouth;
3. Conservation flows will be met or exceeded at the middle and upper POIs between July and September only. At the mouth, conservation flows will be met or exceeded between May and September only. Currently, conservation flows are met during more months of the year;
4. The amount of annual naturalized flow used offstream in 2020 is expected to be between 0% (at the middle and upper POIs) and 26% (at the mouth). This represents a 0% to 8% increase from current conditions; and
5. On an annual basis, flow licensed for offstream use that will not be utilized in 2020 is from 0.024 m³/s (at the mouth) to 0.185 m³/s (at the middle POI). This is less than the current situation where between 0.098 m³/s and 0.185 m³/s of licensed flow is not being utilized at the mouth and middle POI, respectively.

O.2.4 Trepanier Creek

Tabular and graphical output of Scenario 1.1 for Trepanier Creek are found in Appendix L and Figures 14.9 through 14.11, respectively. The following text summarizes the output and highlights key results.

Trepanier Creek below confluence with McDonald Creek:

- Net flows in 2020 are projected to range from 0.095 m³/s in January to 5.12 m³/s in May. The annual net flow is estimated to be 0.863 m³/s;
- On an annual basis, net flow is projected to be equivalent to naturalized flow. However, net monthly flows are projected to be less than naturalized flows between April and June;
- Monthly conservation flows will be exceeded by net flows in May and June only;

- On an annual and monthly basis, none of the naturalized flow is projected to be actually used offstream. Therefore, on an annual basis, there is projected to be 0.020 m³/s of flow not being utilized under existing licences. On a monthly basis, flow available for use without further licensing is projected to range from zero between November and February to 0.058 m³/s in August.

Trepanier Creek above PD58726 (District of Peachland intake):

- Net flows in 2020 are projected to range from 0.116 m³/s in January to 6.18 m³/s in May. The annual net flow is estimated to be 1.06 m³/s;
- On an annual basis, net flow is projected to be 0.1% less than naturalized flow. Net monthly flows are projected to be less than naturalized flows between April and June and November and February;
- Monthly conservation flows will be exceeded by net flows between March and August;
- On an annual and monthly basis, less than 1% naturalized flow is projected to be actually used offstream. Therefore, on an annual basis, there is projected to be 0.020 m³/s of flow not being utilized under existing licences. On a monthly basis, flow available for use without further licensing is projected to range from zero between November and February to 0.058 m³/s in August.

Trepanier Creek at the mouth:

- Net flows in 2020 are projected to range from 0.098 m³/s in January to 6.31 m³/s in May. The annual net flow is estimated to be 1.02 m³/s;
- On an annual basis, net flow is projected to be 7% less than naturalized flow. Net monthly flows are projected to be less than naturalized flows for all months;
- Monthly conservation flows will be exceeded by net flows between April and July;
- On an annual basis, 6% of the naturalized flow is projected to be actually used offstream. On a monthly basis, actual offstream use accounts for 1% (in May) to 69% (in August) of the naturalized flow. With a 30% reduction in water use, 5% of

the annual naturalized flow and 1% to 48% of the monthly naturalized flow would be used; and

- On an annual basis, there is projected to be 0.068 m³/s of flow not being utilized under existing licences. On a monthly basis, this quantity is projected to range from 0.006 m³/s in February to 0.193 m³/s in August. With a 30% reduction in water use, there is projected to be 0.089 m³/s of flow available for use without further licensing annually. Under the same 30% reduction of water use, flow available for use without further licensing ranges from 0.013 m³/s in February to 0.247 m³/s in August.

Analysis:

Based on Scenario 1.1 (2020 - population growth only) for Trepanier Creek:

1. Annual net flows in 2020 are projected to be less than 1% lower than they are currently at all POIs. On a monthly basis, the reduction in flow will be insignificant at the middle and upper POIs, but at the mouth a reduction of 17% is expected in August.
2. At the upper POI, conservation flows will be met only in May and June. Currently the conservation flows are met between March and July at the upper POI. At the middle POI, conservation flows will only be met between March and August, which represents no change from the current situation. At the mouth, conservation flows will be met from April to July only, which represents no change from the current condition;
3. The amount of annual naturalized flow used offstream is expected to be between 0% and 6% in 2020. This represents a 0% to 1% increase from the current situation; and
4. On an annual basis, flow licensed for offstream use that will not be utilized in 2020 is from 0.020 m³/s (at the middle and upper POIs) to 0.068 m³/s (at the mouth). This is less than the current situation where between 0.020 m³/s and 0.080 m³/s of licensed flow is not being utilized.

O.2.5 Peachland Creek

Tabular and graphical output of Scenario 1.1 for Peachland Creek are found in Appendix M and Figure 14.12 through 14.14, respectively. The following text summarizes the output and highlights key results.

Peachland Creek below confluence with Greata Creek:

- Net flows in 2020 are projected to range from 0.225 m³/s in January to 0.933 m³/s in May. The annual net flow is estimated to be 0.488 m³/s;
- On an annual basis, net flow is projected to be similar to naturalized flow since there is no actual offstream water use above this point-of-interest. However, net monthly flows are projected to be less than naturalized flows between April and June due to the effects of storage;
- Monthly instream licenses are projected to be exceeded by net flows all year;
- Monthly conservation flows are projected to be exceeded by net flows for all months except April and May; and
- On an annual and monthly basis, none of the naturalized flow is projected to be actually used offstream. Therefore, on an annual basis there is projected to be 0.136 m³/s not being utilized under existing licences. On a monthly basis, this quantity is projected to range from 0.032 m³/s in December to 0.315 m³/s in August.

Peachland Creek above PD58648 (District of Peachland intake):

- Net flows in 2020 are projected to range from 0.229 m³/s in January to 1.06 m³/s in May. The annual net flow is estimated to be 0.515 m³/s;
- On an annual basis, net flow is projected to be equal to naturalized flow given that there is no actual offstream water use above this point-of-interest. However, net monthly flows are projected to be less than naturalized flows between April and June due to effect of storage;
- Monthly instream licenses are projected to be exceeded by net flows for all months;
- Monthly conservation flows are projected to be exceeded by net flows for all months except April; and

- On an annual and monthly basis, none of the naturalized flow is projected to be actually used offstream. Therefore, on an annual basis there is projected to be 0.136 m³/s not being utilized under existing licences. On a monthly basis, this quantity is projected to range from 0.032 m³/s in December to 0.315 m³/s in August.

Peachland Creek at the mouth:

- Net flows in 2020 are projected to range from 0.220 m³/s in January to 1.21 m³/s in May. The annual net flow is estimated to be 0.496 m³/s;
- On an annual basis, net flow is projected to be 13% less than naturalized flow. Net monthly flows are projected to be less than naturalized flows between April and June;
- Monthly instream licenses are projected to be exceeded by net flows for all months except between November and March;
- Monthly conservation flows are projected to be exceeded by net flows for all months except April;
- On an annual basis, 13% of the naturalized flow is projected to be actually used offstream. On a monthly basis, actual offstream use accounts for 4% to 87% of the naturalized flow. With a 30% reduction in water use, 9% of the annual naturalized flow and 3% to 61% of the monthly naturalized flow would be used; and
- On an annual basis, there is projected to be 0.173 m³/s not being utilized under existing licences. On a monthly basis, flow available for use without further licensing is projected to range from 0.022 m³/s in December to 0.452 m³/s in August. With a 30% reduction in water use, there is projected to be 0.195 m³/s of flow available for use without further licensing annually. Under the same 30% reduction of water use, flow available for use without further licensing ranges from 0.026 m³/s in December to 0.504 m³/s in August.

Analysis:

Based on Scenario 1.1 (2020 - population growth only) for Peachland Creek:

1. By 2020, the annual and monthly net flows will not be significantly different than they are currently at the middle and upper POIs. At the mouth, however, annual

flows are expected to drop by 4%, with reductions in all monthly flows from between 2% (in the winter) and 7% (in summer).

2. Monthly instream licenses will be met for all months at the middle and upper POIs. However, at the mouth instream licenses will not be met between November and March. This represents no change from current conditions.
3. Conservation flows will be met or exceeded at the middle and upper POIs for all months except April and May. At the mouth, conservation flows will be met or exceeded for all months except April. This represents no change from the current situation.
4. The amount of naturalized flow used offstream is expected to be between 0% (at the middle and upper POIs) and 13% (at the mouth). This represents a 0% to 3% increase from the current situation.
5. The volume of licensed flow for offstream use not expected to be utilized is between 0.136 m³/s and 0.173 m³/s. This is slightly less than the current situation where between 0.136 m³/s and 0.191 m³/s of licensed flow is not being utilized.

O.2.6 Scenario 1.1 Summary

Under Scenario 1.1 (2020 - population growth only) there will be little change in the annual flows and monthly hydrographs across the five principal streams. At the mid and upper elevation points-of-interest, changes in the annual flow as a result of population growth is less than 1%. Although the annual flow reductions are relatively greater at the mouths of the streams, these values remain modest with Powers Creek showing the greatest reduction (Lambly Creek 4%, McDougall Creek <1%, Powers Creek 9%, Trepanier Creek <1%, and Peachland Creek 4% reduction). On a monthly basis, no significant changes in flow are expected at the mid and upper elevation POIs. At the mouths, however, all monthly flows throughout the year (with the exception of McDougall Creek) are expected to drop. At Lambly Creek, the reduction in monthly flow will be up to 45% (in August), while in Powers Creek the reduction will be as high as 35% (in October). Trepanier and Peachland Creeks are expected to have monthly flow reductions up to 17% and 7%, respectively. Despite these flow reductions, all points-of-interest, other than McDougall Creek at the mouth, will remain

flowing in 2020 under average hydrologic conditions. (McDougall Creek is currently expected to dry up in August.) With the exception of Powers Creek, streamflows at the mouths of the principal streams in 2020 are expected to meet conservation flows during the same months of the year as they do currently. In Powers Creek, where conservation flows are currently not met in fall/winter (October-February) and in April, conservation flows in 2020 will also not be met in March. Finally, in 2020 it is expected that some quantity of licensed flow (for offstream use) at the mouths of all principal streams will remain unused.

If demand management approaches are implemented between now and 2020, these projected changes due to population growth will be smaller than outlined above. In particular, with a 10% demand reduction, conservation flows could still be met in March in Powers Creek. Water quality issues will intensify slightly. In some months flow reductions of 45% (Lambly Creek), 35% (Powers Creek), 17% (Trepanier Creek) and 7% (Peachland Creek) are predicted, but annual average flows will drop only slightly.

O.3 SCENARIO 1.2: POPULATION GROWTH TO 2050

O.3.1 Lambly Creek

Tabular and graphical output of Scenario 1.2 for Lambly Creek are found in Appendix I and Figures 14.15 through 14.17, respectively. The following text summarizes the output and highlights key results.

Lambly Creek below confluence of Lambly and Terrace Creeks:

- Net flows in 2050 are projected to range from 0.290 m³/s in January to 6.46 m³/s in May. The annual net flow by 2050 is estimated to be 1.41 m³/s;
- Annually, net flow is projected to be 7% less than naturalized flow in 2050. Net monthly flows are projected to be less than naturalized monthly flows between April and September only;
- Monthly conservation flows will be exceeded by net flows in all months except January, February, and August;

- Annually, 7% of the naturalized flow is expected to be actually used offstream. On a monthly basis, actual offstream use will account for 2% (in May) to 45% (in August) of the naturalized flow. Assuming a 30% reduction in water use, 5% of the annual naturalized and approximately 1% to 32% of the naturalized monthly flow will be used; and
- On an annual and monthly basis, actual offstream use is projected to exceed existing licenses for offstream use. However, assuming a 30% reduction in water use, there is projected to be 0.026 m³/s of flow available for use without further licensing annually. Under the same 30% reduction of water use, flow available for use without further licensing is projected to range from 0.008 m³/s (in December and January) to 0.061 m³/s (in August).

Lambly Creek above PD59106 (Lakeview Irrigation District weir):

- Net flows in 2050 are projected to range from 0.328 m³/s in January to 7.58 m³/s in May. The annual net flow by 2050 is estimated to be 1.65 m³/s;
- Annually, net flow is projected to be 6% less than naturalized flow. Net monthly flows are projected to be less than naturalized flows between April and September only;
- Monthly conservation flows will be exceeded by net flows in all months except January, February, and August;
- Annually, 6% of the naturalized flow will be actually used offstream. On a monthly basis, actual offstream use accounts for 2% (in May) to 40% (in August) of the naturalized flow. Assuming a 30% reduction in water use, 3% of the annual naturalized flow and less than 1% to 28% of the naturalized monthly flow will be used; and
- On an annual and monthly basis, actual offstream use will exceed existing licenses for offstream use. However, assuming a 30% reduction in water use, there will be 0.027 m³/s available for use without further licensing annually. Under the same 30% reduction of water use, flow available for use without further licensing is projected to range from 0.009 m³/s (between December and March) to 0.063 m³/s (in August).

Lambly Creek at the mouth:

- Net flows in 2050 are projected to range from 0.000 m³/s in August to 7.34 m³/s in May. The annual net flow by 2050 is estimated to be 1.41 m³/s;
- Annually, net flow will be 20% less than naturalized flow. Net monthly flows are projected to be less than naturalized flows all year, with no flow expected in August;
- Monthly conservation flows will be exceeded by net flows between March and July and in November;
- Annually, 20% of the naturalized flow is actually used offstream. On a monthly basis, actual offstream use accounts for 6% (in May) to 130% (in August) of the naturalized flow. With a 30% reduction in water use, 14% of the annual naturalized flow and 4% to 91% of the naturalized monthly flow will be used. This reduction in water use would prevent Lambly Creek from drying up in August; and
- Annually, 0.058 m³/s will not be utilized under existing licences. On a monthly basis, flow available for use without further licensing is projected to range from 0.006 m³/s to 0.234 m³/s (between April and October) to no available flow (between November and March). With a 30% reduction in water use, there is projected to be 0.165 m³/s of flow available for use without further licensing annually. Under the same 30% reduction of water use, flow available for use without further licensing is projected to range from 0.007 m³/s to 0.472 m³/s.

Analysis:

Based on Scenario 1.2 (2050 - population growth only) for Lambly Creek:

1. Annual net flows in 2050 are projected to be roughly 3% (at the middle and upper POIs) to 11% (at the mouth) lower than they are currently. On a monthly basis, the reductions in flow will be from 1% to 20% throughout the year at the middle and upper POIs. However, at the mouth the reduction in net flow will range from 3% (in May) to 100% (in August), which will result in no flow in August (Table 14.3);
2. Currently at the middle and upper POIs conservation flows are met all year. In 2050, conservation flows will not be met at the middle and upper POIs in January, February, and August. At the mouth, conservation flows are currently not met in

January, February, April, September and December. With reductions in net flow by 2050, October net flows will also meet conservation flows;

3. By 2050 the amount of annual naturalized flow used offstream will range from 6% (at the middle and upper POIs) and 20% (at the mouth). This represents a 3% to 9% increase from current conditions: and
4. Currently, there exists the possibility to use flow that is currently licensed but not used at all POIs on Lambly Creek. By 2050 all licensed flow for offstream use will actually be utilized at the middle and upper POIs. At the mouth, 0.058 m³/s of licenced flow will not be used annually. However, this masks the fact that all licensed flow for offstream use will be used during the winter (November to March).

O.3.2 McDougall Creek

Tabular and graphical output of Scenario 1.2 for McDougall Creek are found in Appendix J and Figures 14.18 and 14.19, respectively. The following text summarizes the output and highlights key results.

McDougall Creek below PD59093:

- Net flows in 2050 are projected to range from 0.019 m³/s in January and February to 0.445 m³/s in May. The annual net flow is estimated to be 0.097 m³/s;
- On an annual basis, net flow is projected to be 17% less than naturalized flow. Net monthly flows are projected to be less than naturalized flows all year;
- Conservation flows will not be met in winter (December-February) and late summer (August-September); and
- On an annual basis, 17% of the naturalized flow is licensed for offstream use and assumed to be actually used. On a monthly basis, this quantity will account for 1% (in November and December) to 139% (in August) of the naturalized flow. With a 30% reduction in water use, 12% of the annual naturalized flow and 1% to 98% of the naturalized monthly flow would be used.

McDougall Creek at the mouth:

- Net flows in 2050 are projected to range from 0.000 m³/s in August and September to 0.432 m³/s in May. The annual net flow is estimated to be 0.083 m³/s;
- Annually, net flow is projected to be 30% less than naturalized flow. Net monthly flows are projected to be less than naturalized flows all year;
- Conservation flows will not be met in winter (December-February) and late summer (August-October); and
- On an annual basis, 31% of the naturalized flow is licensed for offstream use, and assumed to be actually used. On a monthly basis, this quantity accounts for 2% (in November) to 256% (in August) of the naturalized flow. With a 30% reduction in water use, 21% of the annual naturalized flow and 2% to 179% of the monthly naturalized flow would be used.

Analysis:

Based on Scenario 1.2 (2050 - population growth only) for McDougall Creek:

1. Annual net flows in 2050 are projected to be roughly 1% or less at both POIs than they are currently. On a monthly basis, the reductions in flow at both POIs will be generally 1-3% or less all year. Currently, at the mouth there is estimated to be no flow in August. This will remain unchanged, and by 2050 no flows are also anticipated at the mouth in September;
2. Currently, conservation flows are not being met during the winter (December-February) and late summer (August-September) at both POIs⁵. No change in meeting the conservation flows is expected by 2050; and
3. The amount of naturalized flow used offstream in 2020 is expected to be between 17% (at the upper POI) and 31% (at the mouth). This represents a 1% change from the current condition.

⁵ At the mouth of McDougall Creek, conservation flows will also not be met in October by 2020.

O.3.3 Powers Creek

Tabular and graphical output of Scenario 1.2 for Powers Creek are found in Appendix K and Figures 14.20 through 14.22, respectively. The following text summarizes the output and highlights key results.

Powers Creek below confluence with North Powers Creek:

- Net flows in 2050 are projected to range from 0.116 m³/s in January and February to 2.11 m³/s in July. The annual net flow is estimated to be 0.806 m³/s;
- On an annual basis, net flow is projected to be 14% more than naturalized flow due to flow contributions from Lambly Creek. However, net monthly flows are projected to be less than naturalized flows between April and June;
- Conservation flows will be exceeded by net flows only between July and September;
- On an annual basis, none of the naturalized flow is projected to be actually used offstream. This means that on an annual basis there is projected to be 0.162 m³/s of flow not being utilized under existing licences. On a monthly basis, flow available for use without further licensing is projected to range from 0.012 m³/s from December to February to 0.454 m³/s in August.

Powers Creek above PD58825 (Westbank Irrigation District intake):

- Net flows in 2050 are projected to range from 0.145 m³/s in January and February to 2.56 m³/s in May. The annual net flow is estimated to be 0.989 m³/s;
- On an annual basis, net flow is projected to be 11% more than naturalized flow due to contributions from Lambly Creek. However, net monthly flows are projected to be less than naturalized flows between April and June and in October, January and February;
- Conservation flows will be exceeded by net flows between May and November and in March;
- On an annual basis, less than 1% of the naturalized flow is projected to be actually used offstream. This means that on an annual basis there is projected to be 0.185 m³/s of flow not being utilized under existing licences. On a monthly basis, flow

available for use without further licensing is projected to range from 0.012 m³/s from December to February to 0.522 m³/s in August.

Powers Creek at the mouth:

- Net flows in 2050 are projected to range from 0.034 m³/s in February to 2.18 m³/s in May. The annual net flow is estimated to be 0.656 m³/s;
- On an annual basis, net flow is projected to be 29% less than naturalized flow. Net monthly flows are projected to be less than naturalized flows for all months except between July and September;
- Monthly instream licenses are projected to be exceeded by net flows between March and September;
- Monthly conservation flows are projected to be exceeded by net flows between May and September;
- On an annual basis, 39% of the naturalized flow is projected to be actually used offstream. On a monthly basis, actual offstream use accounts for 12% (in May) to 263% (in August) of the naturalized flow. With a 30% reduction in water use, 27% of the annual naturalized flow would be used. On a monthly basis, actual offstream use is projected to account for 8% to 184% of the naturalized flow; and
- On both an annual and monthly basis, actual offstream use is projected to exceed existing licences by 2050. However, with a 30% reduction in water use, there is projected to be 0.015 m³/s of flow available for use without further licensing annually. Under the same 30% reduction of water use, flow available for use without further licensing is projected to range from zero between October and April to 0.172 m³/s in August.

Analysis:

Based on Scenario 1.2 (2050 - population growth only) for Powers Creek:

1. Annual net flows in 2020 are projected to be approximately 0.0-0.2% (at the middle and upper POIs) to 23% (at the mouth) lower than they are currently. On a monthly

basis, the reduction in flow will be insignificant at the middle and upper POIs, but at the mouth a reduction of 89% is expected in October;

2. Monthly instream licenses will not be met at the mouth between October and February. This represents a change from the current situation where monthly instream licenses are met all year at the mouth.
3. Conservation flows will be met or exceeded in the upper watershed between July and September only. At the mouth, conservation flows will be met or exceeded between May and September only. Currently, conservation flows are met during more months of the year.
4. The amount of annual naturalized flow used offstream in 2020 is expected to be between 0% (at the middle and upper POIs) and 39% (at the mouth). This represents a 0% to 21% increase from current conditions; and
5. At the mouth, all licensed flow for offstream purposes will be utilized by 2020, which means that additional licences will be needed by that time to satisfy offstream demands. This represents a change from current conditions where $0.132 \text{ m}^3/\text{s}$ is not being utilized annually. At the middle and upper POIs, $0.185 \text{ m}^3/\text{s}$ and $0.162 \text{ m}^3/\text{s}$ of licensed flow, respectively, will not be utilized by 2020 (which represents no change from current conditions).

O.3.4 Trepanier Creek

Tabular and graphical output of Scenario 1.2 for Trepanier Creek are found in Appendix L and Figures 14.23 through 14.25, respectively. The following text summarizes the output and highlights key results.

Trepanier Creek below confluence with McDonald Creek:

- Net flows in 2050 are projected to range from $0.095 \text{ m}^3/\text{s}$ in January to $5.13 \text{ m}^3/\text{s}$ in May. The annual net flow is estimated to be $0.863 \text{ m}^3/\text{s}$;
- On an annual basis, net flow is projected to be similar to naturalized flow. However, net monthly flows are projected to be less than naturalized flows between April and June;

- Monthly conservation flows are projected to be exceeded by net flows in May and June; and
- On an annual and monthly basis, none of the naturalized flow is projected to be actually used offstream. Therefore, on an annual basis there is projected to be 0.020 m³/s of flow not being utilized under existing licences. On a monthly basis, this quantity is projected to range from zero between November and February to 0.058 m³/s in August.

Trepanier Creek above PD58726 (District of Peachland intake)

- Net flows in 2050 are projected to range from 0.116 m³/s in January to 6.18 m³/s in May. The annual net flow is estimated to be 1.06 m³/s;
- On an annual basis, net flow is projected to be 0.1% less than naturalized flow. Net monthly flows are projected to be less than naturalized flows between April and June and November and February;
- Monthly conservation flows are projected to be exceeded by net flows between March and August;
- On an annual and monthly basis, less than 1% naturalized flow is projected to be actually used offstream. Therefore, on an annual basis, there is projected to be 0.020 m³/s of flow not being utilized under existing licences. On a monthly basis, this quantity is projected to range from zero between November and February to 0.058 m³/s in August.

Trepanier Creek at the mouth:

- Net flows in 2050 are projected to range from 0.090 m³/s in January to 6.30 m³/s in May. The annual net flow is estimated to be 1.00 m³/s;
- On an annual basis, net flow is projected to be 8% less than naturalized flow, while net monthly flows are projected to be less than naturalized flows all year;
- Monthly conservation flows are projected to be exceeded by net flows between April and July only;

- On an annual basis, 8% of the naturalized flow is projected to be actually used offstream. On a monthly basis, actual offstream use accounts for 1% to 85% of the naturalized flow. With a 30% reduction in water use, 6% of the annual naturalized flow and 1% to 59% of the monthly naturalized flow would be used; and
- On an annual basis, there is projected to be 0.053 m³/s of flow not being utilized under existing licences. On a monthly basis, this quantity is projected to range from zero between November to February to 0.158 m³/s in August. With a 30% reduction in water use, there is projected to be 0.080 m³/s of flow available for use without further licensing annually. Under the same 30% reduction of water use, flow available for use without further licensing ranges from 0.008 m³/s in February to 0.224 m³/s in August.

Analysis:

Based on Scenario 1.2 (2050 - population growth only) for Trepanier Creek:

1. In 2050, annual net flows are not projected to change significantly at the middle and upper POIs, and at the mouth annual net flow is projected to be only 3% lower than it is currently. On a monthly basis, the reduction in flow will be insignificant at the middle and upper POIs, but at the mouth reductions of up to 38% (in August) is expected;
2. At the upper POI, conservation flows will be met only in May and June. Currently the conservation flows are met between March and July at the upper POI. At the middle POI, conservation flows will only be met between March and August, which represents no change from the current situation. At the mouth, conservation flows will be met from April to July only, which also represents no change from the current condition;
3. The amount of annual naturalized flow used offstream is expected to be between 0% and 8%. This represents a 0% to 3% increase from the current situation; and
4. On an annual basis, the quantity of licensed flow for offstream use that is not expected to be utilized in 2050 is between 0.020 m³/s (at the middle and upper POIs) and 0.053 m³/s (at the mouth). This is less than the current situation where between 0.020 m³/s and 0.080 m³/s of licensed flow is not being utilized.

O.3.5 Peachland Creek

Tabular and graphical output of Scenario 1.2 for Peachland Creek are found in Appendix M and Figures 14.26 through 14.28, respectively. The following text summarizes the output and highlights key results.

Peachland Creek below confluence with Greata Creek:

- Net flows in 2050 are projected to range from 0.225 m³/s in January to 0.933 m³/s in May. The annual net flow is estimated to be 0.488 m³/s;
- On an annual basis, net flow is projected to be equal to naturalized flow. However, net monthly flows are projected to be less than naturalized flows between April and June;
- Monthly instream licenses are projected to be exceeded by net flows for all months;
- Monthly conservation flows are projected to be exceeded by net flows for all months except April and May;
- On an annual and monthly basis, none of the naturalized flow is projected to be actually used offstream. Therefore, on an annual basis there is projected to be 0.136 m³/s of flow not being utilized under existing licences. On a monthly basis, this quantity is projected to range from 0.032 m³/s in December to 0.315 m³/s in August.

Peachland Creek above PD58648 (District of Peachland intake):

- Net flows in 2050 are projected to range from 0.229 m³/s in January to 1.06 m³/s in May. The annual net flow is estimated to be 0.515 m³/s;
- On an annual basis, net flow is projected to be only 0.1% less than naturalized flow. Net monthly flows are projected to be less than naturalized flows between April and June;
- Monthly instream licenses are projected to be exceeded by net flows for all months;
- Monthly conservation flows are projected to be exceeded by net flows for all months except April;

- On an annual and monthly basis, none of the naturalized flow is projected to be actually used offstream. Therefore, on an annual basis there is projected to be 0.136 m³/s of flow not being utilized under existing licences. On a monthly basis, this quantity is projected to range from 0.032 m³/s in December to 0.315 m³/s in August.

Peachland Creek at the mouth:

- Net flows in 2050 are projected to range from 0.213 m³/s in January to 1.17 m³/s in May. The annual net flow is estimated to be 0.474 m³/s;
- On an annual basis, net flow is projected to be 17% less than naturalized flow. Net monthly flows are projected to be less than naturalized flows between April and June;
- Monthly instream licenses are projected to be exceeded by net flows for all months except between October and March;
- Monthly conservation flows are projected to be exceeded by net flows for all months except April;
- On an annual basis, 17% of the naturalized flow is projected to be actually used offstream. On a monthly basis, actual offstream use accounts for 5% to 113% of the naturalized flow. With a 30% reduction in water use, 12% of the annual naturalized flow and 4% to 79% of the monthly naturalized flow would be used; and
- On an annual basis, there is projected to be 0.151 m³/s of flow not being utilized under existing licences. On a monthly basis, this quantity will range from 0.016 m³/s in December to 0.401 m³/s in August. With a 30% reduction in water use, there is projected to be 0.180 m³/s of flow available for use without further licensing annually. Under the same 30% reduction of water use, monthly average flow available for use without further licensing ranges from 0.023 m³/s in December to 0.469 m³/s in August.

Analysis:

Based on Scenario 1.2 (2050 - population growth only) for Peachland Creek:

1. By 2050 no significant changes in the annual and monthly flows are anticipated for the upper and middle POIs. However, at the mouth a modest decrease of 8% is

expected in annual flows. Monthly flows at the mouth will all drop by 2050, ranging from 4% in winter to 16% in late summer.

2. Monthly instream licences will be met for all months at the middle and upper POIs. However, at the mouth instream licences will not be met between October and March. This represents a slight change from the current situation at the mouth where instream licences are also met in October.
3. Conservation flows will be met or exceeded at the middle and upper POIs for all months except April and May. At the mouth, conservation flows will be met or exceeded for all months except April. This represents no change from the current situation.
4. The amount of naturalized flow used offstream is expected to be from 0% (at the middle and upper POIs) to 17% (at the mouth). This represents a 0% to 7% increase from the current situation.
5. The licensed quantity for offstream use that is not expected to be utilized in 2050 is between 0.136 m³/s (at the middle and upper POIs) and 0.151 m³/s (at the mouth). This is slightly less than the current situation where between 0.136 m³/s and 0.191 m³/s of licensed flow is not being utilized.

O.3.6 Scenario 1.2 Summary

Under Scenario 1.2 (2050 - population growth only) there will be relatively modest changes in the annual flows and monthly hydrographs across the five principal streams, with the exception of Powers Creek, where changes are expected to be more significant. At points-of-interest above the mouths of the creeks, changes in the annual flow as a result of population growth is expected to be less than 3% in Lambly Creek and 1% in McDougall Creek. The remaining streams are not expected to have significant reductions in flow at the middle and upper POIs. The annual flow reductions are relatively greater at the mouths of the streams, however these values remain modest with Powers Creek showing the greatest reduction (Lambly Creek 11%, McDougall Creek 1%, Powers Creek 23%, Trepanier Creek 3%, and Peachland Creek 8%). On a monthly basis, no significant changes in flow are expected at the mid and upper POIs, with the exception of Lambly Creek where monthly flow reductions are

projected to reach 20% (in August). At the mouths of all principal streams monthly flows are expected to drop. In Lambly Creek, the reduction in monthly flow will be up to 100% in August, which will result in conditions of no flow (in August) under average hydrologic conditions. In McDougall Creek the late summer flow reduction by 2050 will result in conditions of no flow in September in addition to August (when it is currently expected to dry up). In Powers Creek monthly flow reductions will be as high as 89% (in October), while in Trepanier Creek the reduction will be up to 38% (in August). Peachland Creek is also expected to have monthly flow reductions up to 16% by 2050. Despite these flow reductions, all points-of-interest, other than McDougall Creek at the mouth and Lambly Creek at the mouth, will remain flowing by 2050 under average hydrologic conditions. With the exception of Lambly and Powers Creek, streamflows at the mouths of the principal streams in 2050 are expected to meet conservation flows during the same months of the year as they do currently. In Lambly Creek, where conservation flows are currently not met in winter (December-February) and late summer (August-September), in 2050 conservation flows will also not be met in October. In Powers Creek, where conservation flows are currently not met in fall/winter (October-February) and in April, conservation flows in 2050 will also not be met in March. Finally, by 2050 it is expected that some quantity of licensed flow (for offstream use) at the mouths of all principal streams (except for Powers Creek) will remain unused. This will also be true at the upper and middle POIs of the principal streams, except that licences on Lambly Creek (not Powers Creek) will be fully utilized by 2050. Additional licences will therefore be needed on Powers and Lambly Creeks.

If demand management approaches are implemented between now and 2050, these projected changes due to population growth will be smaller than outlined above. In particular, with a 10% demand reduction, McDougall Creek could be kept from drying up in September. Similarly, with a 10% reduction Lambly Creek (at the mouth) could be prevented from drying up in August. In addition, the 10% reduction would ensure that conservation flows are met in October, and offstream water use upstream of the middle POI on Lambly Creek is within current licensed quantities (thus additional licences would not be required). At Powers Creek, however, a 30% demand reduction would be necessary to ensure that offstream water use is within current licensed quantities. Unfortunately, even with a demand

reduction of 30%, conservation flows will not be met in March by 2050. Water quality issues will be exacerbated by the reduced flows. In some months flow reductions of 100% (Lambly Creek), 89% (Powers Creek), 38% (Trepanier Creek) and 16% (Peachland Creek) are predicted, but annual average flows will drop only modestly. Water quality objectives as a result of these reductions are expected to be met less often.

O.4 SCENARIO 2.1: POPULATION GROWTH AND CLIMATE CHANGE TO 2020

O.4.1 Lambly Creek

Tabular and graphical output of Scenario 2.1 for Lambly Creek are found in Appendix I and Figures 14.29 through 14.31, respectively. The following text summarizes the output and highlights key results.

Lambly Creek below confluence of Lambly and Terrace Creeks:

- Net flows in 2020 are projected to range from 0.271 m³/s in January to 5.31 m³/s in May. The annual net flow is estimated to be 1.22 m³/s;
- Annually, net flow is projected to be 9% less than naturalized flow (in 2020). Net monthly flows are projected to be less (by up to 34%) than naturalized flows from April to September;
- Conservation flows will not be met in winter (December-January) and late summer (August-September);
- Annually, up to 1.245 m³/s will remain unlicensed. On a monthly basis, unlicensed flows are projected to range from 0.204 m³/s in January to 5.845 m³/s in May;
- Annually, current licences for offstream use will represent 7% of the projected naturalized flow (for 2020). On a monthly basis, offstream licences are projected to account for approximately 2% to 51% of the naturalized flow;
- On an annual basis, 9% of the naturalized flow (in 2020) is projected to be actually used offstream. On a monthly basis, offstream use is projected account for 3% (in April and May) to 63% (in August) of the naturalized flow. Assuming a 30% reduction in water use, 6% of the annual naturalized flow and approximately 2% to 44% of the naturalized monthly flow will be used; and

- By 2020, annual and monthly offstream water use is projected to exceed existing licences. However, assuming a 30% reduction in water use, there is projected to be 0.013 m³/s of flow available for use without further licensing annually. On a monthly basis, the same 30% reduction of water use, will ensure that 0.004 m³/s (from December to February) to 0.031 m³/s (in August) is available for use without further licensing.

Lambly Creek above PD59106 (Lakeview Irrigation District weir):

- Net flows in 2020 are projected to range from 0.308 m³/s in January to 6.24 m³/s in May. The annual net flow is estimated to be 1.43 m³/s;
- Annually, net flow is projected to be 8% less than naturalized flow (in 2020). Net monthly flows are projected to be less than naturalized flows from April to September (by up to 29%);
- Conservation flows will not be met in winter (December-January) and late summer (August-September);
- Annually, up to 1.454 m³/s will remain unlicensed. On a monthly basis, unlicensed flows are projected to range from 0.240 m³/s in January to 6.782 m³/s in May;
- Annually, 6% of the projected naturalized flow (in 2020) is currently licensed for offstream use. On a monthly basis, offstream licences are projected to account for approximately 2% (in April and May) to 45% (in August) of the naturalized flow;
- On an annual basis, 8% of the naturalized flow (in 2020) will be actually used offstream. On a monthly basis, actual offstream use accounts for 3% (in April and May) to 55% (in August) of the naturalized flow. Assuming a 30% reduction in water use, 6% of the annual naturalized flow would be used. Under the same 30% reduction in water use, actual offstream use will account for approximately 2% to 38% of the naturalized monthly flow; and
- By 2020, annual and monthly offstream water use is projected to exceed existing licences. However, assuming a 30% reduction in water use, there is projected to be 0.014 m³/s of flow available for use without further licensing annually. On a monthly basis, the same 30% reduction of water use, will ensure that 0.004 m³/s (from

December to January) to 0.032 m³/s (in August) is available for use without further licensing.

Lambly Creek at the mouth:

- Net flows in 2020 are projected to range from 0.000 m³/s in August to 6.06 m³/s in May. The annual net flow is estimated to be 1.24 m³/s;
- Annually, net flow is projected to be 21% less than naturalized flow (in 2020). Net monthly flows will be less than naturalized flows in all months except for March and November. No flow is expected in August;
- Conservation flows will not be met in winter (December-January) and late summer (July-October);
- Annually, up to 1.155 m³/s will remain unlicensed. However, there will be no flow available above and beyond current licenses in August and September. In May, flows are projected to exceed current licenses by up to 6.782 m³/s.
- Annually, 26% of the projected naturalized flow (in 2020) is currently licensed for offstream use. On a monthly basis, current offstream licences are projected to account for approximately 8% (in April and May) to 197% (in August) of the naturalized flow;
- Annually, 21% of the naturalized flow (in 2020) will be actually used offstream. On a monthly basis, actual offstream use will account for as little as 6% (in May) to 141% (in August) and 102% (in September) of the naturalized flow. Assuming a 30% reduction in water use, 15% of the annual naturalized flow and 4% to 99% of the naturalized monthly flow will be used. This reduction in water use would prevent Lambly Creek from drying up in August; and
- By 2020, an annual flow of 0.086 m³/s will not be utilized under existing licences. On a monthly basis, flow available for use without further licensing will range from 0.027 m³/s to 0.293 m³/s (April-October) to zero flow between November and March. With a 30% reduction in water use, there is projected to be 0.185 m³/s of flow available for use without further licensing annually. Under the same 30% reduction of water use, flow available for use without further licensing is projected to range from 0.013 m³/s (in January) to 0.514 m³/s (in August).

Analysis:

Based on Scenario 2.1 (2020 - population growth and climate change) for Lambly Creek:

1. Annual net flows in 2020 are projected to be 16% (at the middle and upper POIs) to 21% (at the mouth) lower than they are currently. As a result of the effects of climate change and increased water use, by 2020 the monthly hydrographs at all POIs will be considerably different than they are currently. At the middle and upper POIs the changes in monthly hydrograph are similar and consist of increases in monthly flow between February and April (by up to 50%), and decreases throughout the remaining months of the year (ranging from roughly 11% in the winter to 45% in late summer). At the mouth of Lambly Creek, the increases in February through April flows are comparable to the upper POIs. However, given the relatively greater water use near the mouth, the decreases in winter (roughly 20%) and summer (up to 100%) flows are greater. This will result in no flow conditions in August at the mouth
2. In 2020, conservation flows will not be met in as many months as they are currently along Lambly Creek. At the middle and upper POIs, where conservation flows are currently met all year (with the exception of January at the middle POI), conservation flows by 2020 will not be met in the winter (December-January) and late summer (August-September). At the mouth, where the conservation flows are currently not met in January, February, August, September, and December, by 2020 conservation flows will also not be met in July and October. However, due to predicted increases in naturalized flows in February due to climate change, conservation flows will be met in February by 2020.
3. By 2020, unlicensed flows will range from 1.155 m³/s (at the mouth) to 1.454 m³/s (at the middle POI). These amounts are smaller than the current situation where flows exceed licences by between 1.356 m³/s and 1.651 m³/s.
4. Currently, 0.052 m³/s of offstream licences is not utilized at the middle and upper POIs. By 2020, however, that quantity of water will be reduced to zero. At the mouth, where 0.225 m³/s of licences is not utilized currently, by 2020 this quantity will be reduced to 0.086 m³/s.

O.4.2 McDougall Creek

Tabular and graphical output of Scenario 2.1 for McDougall Creek are found in Appendix J and Figures 14.32 and 14.33, respectively. The following text summarizes the output and highlights key results.

McDougall Creek below PD59093:

- Net flows in 2020 are projected to range from 0.016 m³/s in August to 0.354 m³/s in May. The annual net flow is estimated to be 0.081 m³/s;
- On an annual basis, net flow is projected to be 21% less than naturalized flow. Net monthly flows are projected to be less than naturalized flows all year (by up to 55%);
- Conservation flows will not be met in winter (December-January) and in late summer (August-September);
- On an annual basis, it is projected that up to 0.081 m³/s will remain unlicensed. On a monthly basis, unlicensed flows will range from zero in August and September to 0.424 m³/s in May;
- On an annual basis, 21% of the projected naturalized flow (in 2020) is licensed for offstream use. On a monthly basis, offstream licences are projected to account for approximately 1% (between November and February) to 186% (in August) of the naturalized flow; and
- On an annual basis, 21% of the naturalized flow is projected to be actually used offstream. On a monthly basis, actual offstream use accounts for 1% to 186% of the naturalized flow. Assuming a 30% reduction in water use, 15% of the annual naturalized flow and 1% to 130% of the naturalized monthly flow would be used.

McDougall Creek at the mouth:

- Net flows in 2020 are projected to range from 0.000 m³/s in August and September to 0.335 m³/s in May. The annual net flow is estimated to be 0.064 m³/s;

- On an annual basis, net flow is projected to be 39% less than naturalized flow (in 2020). Net monthly flows are projected to be less than naturalized flows for all months (by up to 213%);
- Conservation flows will not be met in winter (December-January) and in late summer (July-September);
- On an annual basis, it is projected that up to 0.064 m³/s of additional flow will remain unlicensed. On a monthly basis, this quantity is projected to range from zero between July and September to 0.405 m³/s in May; and
- On an annual basis, 39% of the projected naturalized flow is licensed and assumed to be actually used for offstream purposes. On a monthly basis, this quantity is projected to account for approximately 2% to 341% of the naturalized flow. Assuming a 30% reduction in water use by 2020, 27% of the annual naturalized flow and 1% to 239% of the naturalized monthly flow would be used.

Analysis:

Based on Scenario 2.1 (2020 - population growth and climate change) for McDougall Creek:

1. Annual net flows in 2020 are projected to be 16% (at the upper POI) to 23% (at the mouth) lower than they are currently. As a result of the effects of climate change and increased water use, by 2020 the monthly hydrographs at both POIs will be considerably different than they are currently. These changes will consist of increases in monthly flow between February and April (by up to 73%), and decreases throughout the remaining months of the year (ranging from roughly 6% in the winter to 100% in late summer). Although streamflows are expected to persist year-round at the upper POI, at the mouth of McDougall Creek no flow conditions are anticipated in August and September by 2020. Currently, no flow conditions are expected to occur in August only;
2. By 2020, conservation flows will not be met in winter (December-January) and late summer and fall (August-October). This situation will remain unchanged from current conditions;

3. By 2020, the quantity of additional annual flow remaining unlicensed will range from 0.064 m³/s (at the mouth) to 0.081 m³/s (at the upper POI). This is less than the current situation where between 0.084 m³/s and 0.097 m³/s remains unlicensed.
4. The amount of annual naturalized flow (in 2020) licensed for offstream use (all of which is assumed to be used) is expected to be between 21% (at the upper POI) and 39% (at the mouth). This represents a 5% to 9% increase from the current condition.

O.4.3 Powers Creek

Tabular and graphical output of Scenario 2.1 for Powers Creek are found in Appendix K and Figures 14.34 through 14.36, respectively. The following text summarizes the output and highlights key results.

Powers Creek below confluence with North Powers Creek:

- Net flows in 2020 are projected to range from 0.157 m³/s in October to 1.96 m³/s in July. The annual net flow is estimated to be 0.684 m³/s;
- On an annual basis, net flow is projected to be 17% more than naturalized flow (in 2020) due to contributions from Lambly Creek. However, net monthly flows are projected to be less than naturalized flows between April and June (by up to 70%);
- Monthly conservation flows are projected to be exceeded by net flows for all months except April and May;
- On an annual basis, it is projected that up to 0.425 m³/s will remain unlicensed. On a monthly basis, unlicensed flows are projected to range from zero in August and September to 2.083 m³/s in May;
- On an annual basis, 28% of the projected naturalized flow (in 2020) is licensed for offstream use. On a monthly basis, offstream licences are projected to account for approximately 4% to 221% of the naturalized flow; and
- On an annual basis, none of the naturalized flow is projected to be actually used offstream. This means that on an annual basis there is projected to be 0.162 m³/s of flow not being utilized under existing licences. On a monthly basis, this quantity is

projected to range from 0.012 m³/s between December and February to 0.454 m³/s in August.

Powers Creek above PD58825 (Westbank Irrigation District intake):

- Net flows in 2020 are projected to range from 0.197 m³/s in October to 2.09 m³/s in July. The annual net flow is estimated to be 0.835 m³/s;
- On an annual basis, net flow is projected to be 13% more than naturalized flow (in 2020) due to contributions from Lambly Creek. However, net monthly flows are projected to be less than naturalized flows between April and June and in October (by up to 56%);
- Monthly conservation flows are projected to be exceeded by net flows in all months except May;
- On an annual basis, it is projected that a maximum of 0.553 m³/s will remain unlicensed. On a monthly basis, this quantity is projected to range from zero in August and September to 2.650 m³/s in May;
- On an annual basis, 25% of the projected naturalized flow (in 2020) is licensed for offstream use. On a monthly basis, offstream licences are projected to account for approximately 3% to 203% of the naturalized flow; and
- On an annual basis, less than 1% of the naturalized flow is projected to be actually used offstream. This means that on an annual basis there is projected to be 0.185 m³/s of flow not being utilized under existing licences. On a monthly basis, this quantity will range from 0.012 m³/s from December to February to 0.522 m³/s in August.

Powers Creek at the mouth:

- Net flows in 2020 are projected to range from 0.043 m³/s in October to 1.49 m³/s in July. The annual net flow is estimated to be 0.590 m³/s;
- On an annual basis, net flow is projected to be 23% less than naturalized flow (in 2020). Net monthly flows are projected to be less than naturalized flows for all months except July to September (by up to 79%);

- Monthly instream licences will be exceeded by net flows in every month except October;
- Monthly conservation flows are projected to be exceeded by net flows in February and March and from July to September;
- On an annual basis, it is projected that a maximum of 0.408 m³/s will remain unlicensed. On a monthly basis, unlicensed flows are projected to range from zero between July and October to 2.524 m³/s in May;
- On an annual basis, 35% of the projected naturalized flow (in 2020) is licensed for offstream use. On a monthly basis, offstream licences are projected to account for approximately 3% to 287% of the naturalized flow;
- On an annual basis, 11% of the projected naturalized flow is licensed for instream use. On a monthly basis, instream licences are projected to account for approximately 3% (in May) to 41% (in October) of the naturalized flow;
- On an annual basis, 35% of the naturalized flow is projected to be actually used offstream. On a monthly basis, actual offstream use accounts for 13% to 236% of the naturalized flow. Assuming a 30% reduction in water use, 25% of the annual naturalized flow and 9% to 165% of the naturalized monthly flow would be used; and
- On an annual and monthly basis, actual offstream use is projected to exceed existing licences for offstream use. However, with a 30% reduction in water use, there is projected to be 0.081 m³/s of flow available for use without further licensing annually. Under the same 30% reduction of water use, flow available for use without further licensing is projected to range from 0.013 m³/s to 0.325 m³/s between the months of April and October to zero between November and March.

Analysis:

Based Scenario 2.1 (2020) - population growth and climate change) for Powers Creek:

1. Annual net flows in 2020 are projected to be 16% (at the middle and upper POI) to 30% (at the mouth) lower than they are currently. As a result of the effects of climate change and increased water use, by 2020 the monthly hydrographs all POIs will be considerably different than they are currently. These changes will consist of

increases in monthly flow between December and April (particularly in February where increases up to 220% are predicted at the mouth), and decreases throughout the remaining months of the year (up to 50% at the middle POI and up to 67% at the mouth). Despite these flow reductions, streamflows are expected to persist year-round at all POIs.

2. Monthly instream licences will be exceeded in every month except October. This represents a slight change from the current situation where monthly instream licences are exceeded for all months.
3. By 2020 at the middle and upper POIs conservation flows will be met during more months of the year. Currently conservation flows are not met between December and February, and in April (at the middle POI) or May (at the upper POI). In 2020, conservation flows will not be met only in May (at the middle POI) or April and May (at the upper POI). At the mouth conservation flows will not be met in one more month by 2020. Although February flows will meet conservation flows at the mouth by 2020, May and June flows will not.
4. The amount of flow that is not licensed is expected to be between 0.408 m³/s and 0.553 m³/s. This is smaller than the current situation where between 0.547 m³/s and 0.707 m³/s are not licensed.
5. The amount of naturalized flow (in 2020) licensed for offstream use is expected to be between 25% and 35%. This represents a 4% to 6% increase from the current situation.
6. The amount of naturalized flow (in 2020) licensed for instream use at the mouth is expected to be 11%. This represents a 2% increase from the current situation.
7. The amount of naturalized flow (in 2020) used offstream is expected to be between 0% and 35%. This represents a 0% to 17% increase from the current situation.
8. The volume of licensed flow for offstream use not expected to be utilized is between zero and 0.185 m³/s. This is less than the current situation where between 0.098 m³/s and 0.185 m³/s of licensed flow is not being utilized.

O.4.4 Trepanier Creek

Tabular and graphical output of Scenario 2.1 for Trepanier Creek are found in Appendix L and Figures 14.37 through 14.39, respectively. The following text summarizes the output and highlights key results.

Trepanier Creek below confluence with McDonald Creek:

- Net flows in 2020 are projected to range from 0.122 m³/s in October to 3.58 m³/s in May. The annual net flow is estimated to be 0.691 m³/s;
- On an annual basis, net flow is projected to be similar to naturalized flow. However, net monthly flows are projected to be less than naturalized flows between April and June (by up to 0.9%);
- Monthly conservation flows are projected to be exceeded by net flows between February and July only;
- On an annual basis, it is projected that a maximum of 0.671 m³/s will remain unlicensed. On a monthly basis, unlicensed flows are projected to range from 0.094 m³/s during September to 3.501 m³/s in May;
- On an annual basis, 3% of the projected naturalized flow (in 2020) is licensed for offstream use. On a monthly basis, offstream licences are projected to account for approximately 0% to 34% of the naturalized flow; and
- On an annual and monthly basis, none of the naturalized flow (in 2020) is projected to be actually used offstream. Therefore, on an annual basis there is projected to be 0.020 m³/s of flow not being utilized under existing licences. On a monthly basis, this quantity is projected to range from zero between November and February to 0.058 m³/s in August.

Trepanier Creek above PD58726 (District of Peachland intake):

- Net flows in 2020 are projected to range from 0.155 m³/s in October to 4.29 m³/s in May. The annual net flow is estimated to be 0.844 m³/s;

- On an annual basis, net flow is projected to be only 0.1% less than naturalized flow. Net monthly flows are projected to be less than naturalized flows between April and June and November and February;
- Monthly conservation flows are projected to be exceeded by net flows between February and July;
- On an annual basis, it is projected that a maximum of 0.824 m³/s will remain unlicensed. On a monthly basis, unlicensed flows are projected to range from 0.121 m³/s during September to 4.385 m³/s in May;
- On an annual basis, 2% of the projected naturalized flow (in 2020) is licensed for offstream use. On a monthly basis, offstream licences will account for approximately 0% to 29% of the naturalized flow;
- On an annual and monthly basis, less than 1% naturalized flow (in 2020) is projected to be actually used offstream. Therefore, on an annual basis, there is projected to be 0.020 m³/s of flow not being utilized under existing licences. On a monthly basis, this quantity is projected to range from zero between November and February to 0.058 m³/s in August.

Trepanier Creek at the mouth:

- Net flows in 2020 are projected to range from 0.079 m³/s in September to 4.35 m³/s in May. The annual net flow is estimated to be 0.790 m³/s;
- On an annual basis, net flow is projected to be 9% less than naturalized flow (in 2020). Net monthly flows are projected to be less than naturalized flows for all months;
- Monthly conservation flows will be exceeded by net flows between February and June;
- On an annual basis, it is projected that up to 0.729 m³/s will remain unlicensed. On a monthly basis, this quantity will range from zero during August and September to 4.396 m³/s in May;

- On an annual basis, 16% of the projected naturalized flow (in 2020) is licensed for offstream use. On a monthly basis, offstream licences are projected to account for approximately 4% to 178% of the naturalized flow;
- On an annual basis, 9% of the naturalized flow (in 2020) is projected to be actually used offstream. On a monthly basis, actual offstream use accounts for 2% to 97% of the naturalized flow. With a 30% reduction in water use, 7% of the annual naturalized flow and 1% to 68% of the monthly naturalized flow would be used; and
- On an annual basis, there is projected to be 0.061 m³/s of flow not being utilized under existing licences. On a monthly basis, this quantity is projected to range from 0.003 m³/s between December and February to 0.175 m³/s in August. With a 30% reduction in water use, there is projected to be 0.085 m³/s of flow available for use without further licensing annually. Under the same 30% reduction of water use, flow available for use without further licensing ranges from 0.010 m³/s in February to 0.238 m³/s in August.

Analysis:

Based on Scenario 2.1 (2020 - population growth and climate change) for Trepanier Creek:

1. Annual net flows in 2020 are projected to be 20% (at the middle and upper POI) to 24% (at the mouth) lower than they are currently. As a result of the effects of climate change and increased water use, by 2020 the monthly hydrographs all POIs will be considerably different than they are currently. These changes will consist of increases in monthly flow between December and April (particularly in February where increases up to 177% are predicted at the mouth), and decreases throughout the remaining months of the year (up to 30% at the upper and middle POI and up to 56% at the mouth). Despite these flow reductions, streamflows are expected to persist year-round at all POIs;
2. Currently, conservation flows at the mouth are not met between August and March, and at the middle and upper POIs, conservation flows are currently not met between August and February. However, by 2020 conservation flows at all POIs will be met in February and March.

3. The amount of unlicensed flow is expected to be between 0.671 m³/s and 0.824 m³/s. This is less than the current situation where between 0.844 m³/s and 1.035 m³/s is unlicensed.
4. The amount of naturalized flow (in 2020) licensed for offstream use is expected to be between 2% and 16%. This represents a 0% to 3% increase from the current situation.
5. The amount of naturalized flow (in 2020) actually used offstream is expected to be between 0% and 9%. This represents a 0% to 4% increase from the current situation.
6. The quantity of licensed flow for offstream use not expected to be utilized is between 0.020 m³/s and 0.061 m³/s. This is less than the current situation where between 0.020 m³/s and 0.080 m³/s of licensed flow is not being utilized.

O.4.5 Peachland Creek

Tabular and graphical output of Scenario 2.1 for Peachland Creek are found in Appendix M and Figures 14.40 through 14.42, respectively. The following text summarizes the output and highlights key results.

Peachland Creek below confluence with Greata Creek:

- Net flows in 2020 are projected to range from 0.245 m³/s in December to 0.866 m³/s in July. The annual net flow is estimated to be 0.402 m³/s;
- On an annual basis, net flow is projected to be equal to naturalized flow. However, net monthly flows are projected to be less than naturalized flows for all months except April to June (by up to 85% in May);
- Monthly instream licences are projected to be exceeded by net flows in every month;
- Monthly conservation flows are projected to be exceeded by net flows in every month except between April and June;
- On an annual basis, it is projected that a maximum of 0.181 m³/s will remain unlicensed. On a monthly basis, unlicensed flows are projected to range from zero between July and January to 1.323 m³/s in May;

- On an annual basis, 34% of the projected naturalized flow (in 2020) is licensed for offstream use. On a monthly basis, offstream licences are projected to account for approximately 13% to 220% of the naturalized flow;
- On an annual basis, 21% of the projected naturalized flow (in 2020) is licensed for instream use. On a monthly basis, offstream licences are projected to account for approximately 0% to 80% of the naturalized flow;
- On an annual and monthly basis, none of the naturalized flow is projected to be actually used offstream. Therefore, on an annual basis there is projected to be 0.136 m³/s of flow not being utilized under existing licences. On a monthly basis, this quantity is projected to range from 0.032 m³/s in December to 0.315 m³/s in August.

Peachland Creek above PD58648 (District of Peachland intake):

- Net flows in 2020 are projected to range from 0.251 m³/s in December to 0.885 m³/s in July. The annual net flow is estimated to be 0.424 m³/s;
- On an annual basis, net flow is projected to be only 0.1% less than naturalized flow. Net monthly flows are projected to be less than naturalized flows for all months except April to June (by up to 80% in May);
- Monthly instream licences are projected to be exceeded by net flows all year;
- Monthly conservation flows are projected to be exceeded by net flows in every month except between April and June;
- On an annual basis, it is projected that up to 0.203 m³/s will remain unlicensed. On a monthly basis, this quantity is projected to range from zero between July and October and between December and January to 1.412 m³/s in May;
- On an annual basis, 32% of the projected naturalized flow (in 2020) is licensed for offstream use. On a monthly basis, offstream licences are projected to account for approximately 12% to 209% of the naturalized flow;
- On an annual basis, 20% of the projected naturalized flow (in 2020) is licensed for instream use. On a monthly basis, offstream licences are projected to account for approximately 0% to 76% of the naturalized flow;

- On an annual and monthly basis, none of the naturalized flow (in 2020) is projected to be actually used offstream. Therefore, on an annual basis there is projected to be 0.136 m³/s of flow not being utilized under existing licences. On a monthly basis, this quantity is projected to range from 0.032 m³/s in December to 0.315 m³/s in August.

Peachland Creek at the mouth:

- Net flows in 2020 are projected to range from 0.244 m³/s in December to 0.723 m³/s in July. The annual net flow is estimated to be 0.383 m³/s;
- On an annual basis, net flow is projected to be 18% less than naturalized flow (in 2020). Net monthly flows are projected to be less than naturalized flows for all months except April to June (by up to 79.5% in May);
- Monthly instream licences are projected to be exceeded by net flows in every month except between October and January;
- Monthly conservation flows are projected to be exceeded by net flows in every month except between April and June;
- On an annual and monthly basis, it is projected that there will be no flow that is not under license.
- On an annual basis, 53% of the projected naturalized flow (in 2020) is licensed for offstream use. On a monthly basis, offstream licences are projected to account for approximately 17% to 378% of the naturalized flow;
- On an annual basis, 66% of the projected naturalized flow (in 2020) is licensed for instream use. On a monthly basis, offstream licences are projected to account for approximately 0% to 252% of the naturalized flow;
- On an annual basis, 18% of the naturalized flow is projected to be actually used offstream. On a monthly basis, actual offstream use accounts for 7% to 123% of the naturalized flow. With a 30% reduction in water use, 13% of the annual naturalized flow and 5% to 86% of the monthly naturalized flow would be used; and
- On an annual basis, there is projected to be 0.162 m³/s not being utilized under existing licences. On a monthly basis, this quantity is projected to range from 0.019

m³/s in December to 0.426 m³/s in August. With a 30% reduction in water use, there is projected to be 0.188 m³/s of flow available for use without further licensing annually. Under the same 30% reduction of water use, monthly flow available for use without further licensing ranges from 0.024 m³/s (in December) to 0.488 m³/s (in August).

Analysis:

Based on Scenario 2.1 (2020 - population growth and climate change) for Peachland Creek:

1. Annual net flows in 2020 are projected to be 18% (at the middle and upper POI) to 25% (at the mouth) lower than they are currently. As a result of the effects of climate change and increased water use, by 2020 the monthly hydrographs all POIs will be considerably different than they are currently. These changes will consist of increases in monthly flow between December and April (particularly in February where increases up to 60% are predicted at the mouth), and decreases throughout the remaining months of the year [with relatively modest (i.e., generally less than 10-20%) decreases between August and November and relatively greater reductions in May and June, by up to 74%]. Despite these flow reductions, streamflows are expected to persist year-round at all POIs;
2. Monthly instream licences will be met for all months at the middle and upper POIs. However, at the mouth instream licences will not be met between October and January by 2020. This represents a slight change from the current situation at the mouth where instream licences are not met between November and March.
3. Conservation flows will be met or exceeded at the middle and upper POIs for all months except between April and June. At the mouth, conservation flows will be met or exceeded for all months except between April and June. This represents a slight change from the current situation where conservation flows are met for all months except April and May.
4. The quantity of unlicensed flow is expected to be between zero (at the mouth) and 0.203 m³/s (at the middle POI). This is less than the current situation where between 0.012 m³/s and 0.294 m³/s remains unlicensed.

5. The percentage of naturalized flow (in 2020) licensed for offstream use is expected to be between 32% (at the middle POI) and 53% (at the mouth). This represents a 6% to 10% increase from the current situation.
6. The amount of naturalized flow (in 2020) licensed for instream use is expected to be between 20% (at the middle POI) and 66% (at the mouth). This represents a 4% to 11% increase from the current situation.
7. The amount of naturalized flow (in 2020) actually used offstream is expected to be between 0% (at the middle and upper POIs) and 18% (at the mouth). This represents a 0% to 8% increase from the current situation.
8. The licensed quantity for offstream use not expected to be utilized in 2020 is between 0.136 m³/s (at the middle and upper POIs) and 0.162 m³/s (at the mouth). This is less than the current situation where between 0.136 m³/s and 0.191 m³/s of licensed flow is not being utilized.

O.4.6 Scenario 2.1 Summary

Under Scenario 2.1 (2020 - population growth and climate change) there will be considerable changes in the annual flows and monthly hydrographs across the five principal streams. At points-of-interest above the mouths of the creeks, reductions in the annual flow as a result of population growth is expected to be 16% at Lambly, McDougall, and Powers Creeks, 18% at Peachland Creek, and 20% at Trepanier Creek. At the mouths of the principal streams these reductions will be somewhat greater (Lambly Creek 21%, McDougall Creek 23%, Powers Creek 30%, Trepanier Creek 24%, and Peachland Creek 25%). All POIs will experience changes in monthly flows throughout the year. Typically, flows will increase in the late winter and early spring (by up to 50% in Lambly Creek and up to 220% in Powers Creek) and will decrease the remainder of the year. Decreases of up to 100% are projected for Lambly Creek at the mouth resulting in no flow conditions for that creek in August. The same will occur in McDougall Creek with no flows also extending into September. In the remaining streams, reductions in monthly flow will be up to 74% (in Peachland Creek). Despite these flow reductions, all points-of-interest, other than McDougall Creek at the mouth and Lambly Creek at the mouth, will remain flowing by 2020 under average

hydrologic conditions. With the exception of McDougall Creek, streamflows at the mouths of the principal streams in 2020 are expected to meet conservation flows during the different months of the year as they do currently. In Lambly Creek, where conservation flows are currently not met in winter (December-February) and late summer (August-September), in 2020 conservation flows will also not be met in July and October. However, due to anticipated climate change impacts on late winter flows, February flows will meet conservation flows. In Powers Creek, where conservation flows are currently not met in fall/winter (October-February) and in April, conservation flows in 2020 will also not be met in May and June, but they will be met in February. In Trepanier Creek, conservation flows that are currently not met between August and March will not include February by 2020 (because of increased winter flows). In Peachland Creek by 2020 June will be added to the months when conservations flows are not met currently (April to May). Finally, by 2020 it is expected that some quantity of licensed flow (for offstream use) at the mouths of all principal streams (except for Powers Creek) will remain unused. This will also be true at the upper and middle POIs of the principal streams, except that licences on Lambly Creek (not Powers Creek) will be fully utilized by 2020. Therefore, additional licences will be needed on Powers and Lambly Creeks.

If demand management approaches are implemented between now and 2020, these projected changes due to population growth and climate change will be smaller than outlined above. In particular, with a 20% demand reduction the following issues could be prevented:

- Lambly Creek: zero flows at the mouth in August, not meeting conservation flows in July and October, and using more water than licensed above the middle POI; and
- McDougall Creek: zero flows extending into September.

On Powers Creek, a 10% reduction would prevent the requirement for more licences for offstream use and would mean that conservation flows could be met in June. However, in May conservation flows could not be met with even a 30% reduction. Similarly a 30% reduction in Peachland Creek would not prevent net flows from dropping below conservation flows in June. Water quality issues will be exacerbated by the reduced flows. In some months flow reductions of 100% are predicted, and annual average flows will drop

considerably. As a result of these reductions water quality objectives are expected to be met less often.

O.5 SCENARIO 2.2: POPULATION GROWTH AND CLIMATE CHANGE TO 2050

O.5.1 Lambly Creek

Tabular and graphical output of Scenario 2.2 for Lambly Creek are found in Appendix I and Figures 14.43 through 14.45, respectively. The following text summarizes the output and highlights key results.

Lambly Creek below confluence of Lambly and Terrace Creeks:

- Net flows in 2050 are projected to range from 0.085 m³/s in August to 3.45 m³/s in May. The annual net flow is estimated to be 0.891 m³/s;
- Annually, net flow is projected to be 16% less than naturalized flow (in 2050). Net monthly flows are projected to be greater than naturalized flows between October and March (by up to 21%), and less than naturalized flows between April and September (by up to 75%);
- Conservation flows will not be met in the winter (December-January), and late summer (June-October);
- Annually, up to 0.960 m³/s will remain unlicensed. On a monthly basis, unlicensed flows will range from 0.116 m³/s in August to 4.05 m³/s in May;
- On an annual basis, 9% of the projected naturalized flow is licensed for offstream use. On a monthly basis, offstream licences are projected to account for approximately 2% to 66% of the naturalized flow (in 2050);
- On an annual basis, 16% of the naturalized flow will actually be used offstream. On a monthly basis, actual offstream use will account for 4% (in April) to 113% (in August) of the naturalized flow (in 2050). Assuming a 30% reduction in water use, 11% of the annual naturalized flow and approximately 3% to 79% of the naturalized monthly flow would be used; and

- By 2050, actual offstream use is projected to exceed existing licences for offstream use. Even with a 30% reduction in water use, actual offstream use is projected to exceed existing licences for offstream use throughout the year.

Lambly Creek above P1059106 (Lakeview Irrigation District weir):

- Net flows in 2050 are projected to range from 0.137 m³/s in August to 4.10 m³/s in May. The annual net flow is estimated to be 1.06 m³/s;
- On an annual basis, net flow is projected to be 14% less than naturalized flow (in 2050). Net monthly flows are projected to be less than naturalized flows from April to September (by up to 65%) but greater between October and March (by up to 18%);
- Conservation flows will not be met in winter (December-January) and late summer (July to October);
- On an annual basis, it is projected that up to 1.12 m³/s will remain unlicensed. On a monthly basis, the unlicensed flows will range from 0.165 m³/s in August to 4.705 m³/s in May;
- On an annual basis, 8% of the projected naturalized flow (in 2050) is currently licensed for offstream use. On a monthly basis, offstream licences are projected to account for approximately 2% (in April) to 59% (in August) of the naturalized flow;
- On an annual basis, 14% of the naturalized flow (in 2050) will be actually used offstream. On a monthly basis, actual offstream use will account for 4% (in April) to 99% (in August) of the naturalized flow. Assuming a 30% reduction in water use, 10% of the annual naturalized flow and approximately 3% to 69% of the naturalized monthly flow would be used; and
- By 2050, actual offstream use is projected to exceed existing licences for offstream use. Even with a 30% reduction in water use, actual offstream use is projected to exceed existing licences for offstream use throughout the year.

Lambly Creek at the mouth:

- Net flows in 2050 are projected to range from zero flow in July, August and September to 3.76 m³/s in May. The annual net flow is estimated to be 0.764 m³/s;

- On an annual basis, net flow is projected to be 38% less than naturalized flow (in 2050). Net monthly flows are projected to be less than naturalized flows all year from 3% in March to 232% in August.;
- Conservation flows will not be met throughout much of the year (June-January);
- On an annual basis, up to 0.821 m³/s will remain unlicensed in 2050. On a monthly basis, no flow will be available over and above the licensed amounts between July and September. However, in the remainder of the year, some flow will remain above the licensed quantities (from 0.157 m³/s in December to 4.30 m³/s in May).
- On an annual basis, 34% of the projected naturalized flow (in 2050) is licensed for offstream use. On a monthly basis, offstream licences are projected to account for approximately 8% to 258% of the naturalized flow;
- On an annual basis, 38% of the naturalized flow is projected to be actually used offstream. On a monthly basis, actual offstream use will account for 10% to 265% of the naturalized flow. Assuming a 30% reduction in water use, 27% of the annual naturalized flow and approximately 7% to 185% of the naturalized monthly flow would be used; and
- On an annual and monthly basis, actual offstream use is projected to exceed existing licences for offstream use. However, with a 30% reduction in water use, there is projected to be 0.085 m³/s of flow available for use without further licensing annually. Under the same 30% reduction of water use, flow available for use without further licensing is projected to range from 0.025 m³/s to 0.293 m³/s between the months of April and October to no available flow between November and March.
- By 2050, actual offstream use is projected to exceed existing licences for offstream use. However, with a 30% reduction in water use, 0.085 m³/s would be available for use without further licensing annually. Under the same 30% reduction of water use, flow available for use without further licensing would range from 0.025 m³/s to 0.293 m³/s between the months of April and October. No under utilized licensed flow would however be available between November and March.

Analysis:

Based on Scenario 2.2 (2050 - population growth and climate change) for Lambly Creek:

1. Annual net flows in 2050 are projected to be roughly 38% (at the middle and upper POIs) to 52% (at the mouth) lower than they are currently. As a result of the effects of climate change and increased water use, by 2050 the monthly hydrographs at all POIs will be considerably different than they are currently. At the middle and upper POIs the changes in monthly hydrograph are similar and consist of increases in monthly flow between February and April (by up to 116%), and decreases throughout the remaining months of the year (ranging from roughly 23% in the winter to 84% in late summer). At the mouth of Lambly Creek, the increases in February through April flows are comparable to the upper POIs. However, given the relatively greater water use near the mouth, the decreases in winter (roughly 42%) and summer (up to 100%) flows are greater. This will result in no flow conditions in July, August and September at the mouth;
2. In 2020, conservation flows will not be met in as many months as they are currently along Lambly Creek. At the middle and upper POIs, where conservation flows are currently met all year (with the exception of January at the middle POI), conservation flows by 2050 will not be met in the winter (December-January) and late summer (July-October). At the upper POI, conservation flows will not be met in June as well. At the mouth, where the conservation flows are currently not met in January, February, August, September, and December, by 2050 conservation flows will also not be met in June, July, October, and November. However, due to predicted increases in naturalized flows in February due to climate change, conservation flows will be met in February by 2020.
3. By 2050, the quantity of unlicensed flow will range from 0.821 m³/s (at the mouth) to 1.124 m³/s (at the middle POI). This is less than under current conditions where between 1.356 m³/s and 1.651 m³/s exceeds licenses.
4. Currently, 0.052 m³/s of off-stream licences is not utilized at the middle and upper POIs, while 0.225 m³/s of licences is not utilized at the mouth. By 2050, however, actual offstream use is expected to exceed all existing licences.

O.5.2 McDougall II Creek

Tabular and graphical output of Scenario 2.2 for McDougall Creek are found in Appendix J and Figures 14.46 and 14.47, respectively. The following text summarizes the output and highlights key results.

McDougall Creek below PD59093:

- Net flows in 2050 are projected to range from 0.000 m³/s in August to 0.142 m³/s in June. The annual net flow is estimated to be 0.049 m³/s;
- On an annual basis, net flow is projected to be 34% less than naturalized flow (in 2050). Net monthly flows are projected to be less than naturalized flows for all months (by up to 108%);
- Conservation flows will not be met between April and October.
- On an annual basis, it is projected that up to 0.049 m³/s will remain unlicensed. On a monthly basis, unlicensed flows are projected to range from zero between July and September to 0.203 m³/s in May; and
- On an annual basis, 34% of the projected naturalized flow is licensed for offstream use (all of which is assumed to be used). On a monthly basis, this quantity is projected to account for approximately 1% (between November and February) to 286% (in August) of the naturalized flow. Assuming a 30% reduction in water use, 24% of the annual naturalized flow and approximately 1% to 201% of the naturalized monthly flow would be used.

McDougall Creek at the mouth:

- Net flows in 2050 are projected to range from 0.000 m³/s in July, August and September to 0.108 m³/s in June. The annual net flow is estimated to be 0.029 m³/s;
- Annually, net flow is projected to be 62% less than naturalized flow (in 2050). Net monthly flows are projected to be less than naturalized flows for all months (by up to 352%);
- Conservation flows will not be met between April and October.

- On an annual basis, up to 0.029 m³/s will remain unlicensed. On a monthly basis, this quantity is projected to range from no flow between July and September to 0.174 m³/s in May; and
- On an annual basis, 62% of the projected naturalized flow (in 2050) will be licensed for offstream use (all of which is assumed to be actually used). On a monthly basis, this quantity is projected to account for approximately 2% to 526% of the naturalized flow. Assuming a 30% reduction in water use, 44% of the annual naturalized flow and approximately 2% to 368% of the naturalized monthly flow would be used.

Analysis:

Based on Scenario 2.2 (2050 - population growth and climate change) for McDougall Creek:

1. Annual net flows in 2050 are projected to be 50% (at the upper POI) to 66% (at the mouth) lower than they are currently. As a result of the effects of climate change and increased water use, by 2050 the monthly hydrographs at both POIs will be considerably different than they are currently. These changes will consist of increases in monthly flow in winter (November-March) (by up to 61%), and decreases throughout the remaining months of the year (ranging from roughly 30% in the spring to 100% in late summer). Streamflows are not expected to persist year-round at either the upper POI or at the mouth of McDougall Creek. By 2050, no flow conditions are anticipated in July, August and September at the mouth and in August only at the upper POI. Currently, no flow conditions are expected to occur only in August and only at the mouth;
2. With the exception of June at the upper POI, by 2050 conservation flows will not be met between April and October at both POIs. Currently, with the exception of October at the upper POI, the conservation flows are not met in winter (December-January) and late summer (August-October);
3. By 2050, the quantity of annual flow that is not licensed will range from 0.029 m³/s (at the mouth) to 0.049 m³/s (at the upper POI). These values are smaller than the current situation, where between 0.084 m³/s and 0.097 m³/s remains unlicensed; and
4. The amount of annual naturalized flow (in 2050) licensed for offstream use (all of which is assumed to be used) is expected to be between 34% (at the upper POI) and

62% (at the mouth). This represents an 18% to 32% increase from the current condition.

O.5.3 Powers Creek

Tabular and graphical output of Scenario 2.2 for Powers Creek are found in Appendix K and Figures 14.48 through 14.50, respectively. The following text summarizes the output and highlights key results.

Powers Creek below confluence with North Powers Creek:

- Net flows in 2050 are projected to range from 0.000 m³/s in May to 1.85 m³/s in July. The annual net flow is estimated to be 0.567 m³/s;
- On an annual basis, net flow is projected to be 21% more than naturalized flow (in 2050) due to diversion from Lambly Creek. However, net monthly flows are projected to be less than naturalized flows between April and June (by up to 107%);
- Monthly conservation flows are projected to be exceeded by net flows for all months except April to June and October;
- On an annual basis, it is projected that a maximum of 0.308 m³/s will remain unlicensed. On a monthly basis, unlicensed flows are projected to range from zero between July and September to 1.272 m³/s in May;
- On an annual basis, 35% of the projected naturalized flow (in 2050) is licensed for offstream use. On a monthly basis, offstream licences are projected to account for approximately 3% to 270% of the naturalized flow;
- On an annual basis, none of the naturalized flow is projected to be actually used offstream. This means that on an annual basis there is projected to be 0.162 m³/s of flow available for use without further licensing. On a monthly basis, this quantity is projected to range from 0.012 m³/s from December to February to 0.454 m³/s in August.

Powers Creek above PD58825 (Westbank Irrigation District intake):

- Net flows in 2050 are projected to range from 0.167 m³/s in October to 1.95 m³/s in July. The annual net flow is estimated to be 0.687 m³/s;
- On an annual basis, net flow is projected to be 16% more than naturalized flow (in 2050) due to diversion from Lambly Creek. However, net monthly flows are projected to be less than naturalized flows between April and June and October and December (by up to 85%);
- Monthly conservation flows are projected to be exceeded by net flows for all months except April to June and October;
- On an annual basis, it is projected that a maximum of 0.405 m³/s will remain unlicensed. On a monthly basis, unlicensed flows are projected to range from zero between July and September to 1.629 m³/s in May;
- On an annual basis, 32% of the projected naturalized flow (in 2050) is licensed for offstream use. On a monthly basis, offstream licences are projected to account for approximately 3% to 24% of the naturalized flow;
- On an annual basis, less than 1% of the naturalized flow (in 2050) is projected to be actually used offstream. This means that on an annual basis there is projected to be 0.185 m³/s of flow available for use without further licensing. On a monthly basis, this quantity is projected to range from 0.012 m³/s from December to February to 0.522 m³/s in August.

Powers Creek at the mouth:

- Net flows in 2050 are projected to range from 0.000 m³/s in May and October to 0.986 m³/s in July. The annual net flow is estimated to be 0.279 m³/s;
- On an annual basis, net flow is projected to be 54% less than naturalized flow (in 2050). Net monthly flows are projected to be less than naturalized flows for all months except July to September (by up to 148%);
- Monthly instream licences are projected to be exceeded by net flows every month except May, June, October, and November;

- Monthly conservation flows are projected to be exceeded by net flows in February and March and from July to September;
- On an annual basis, it is projected that a maximum of 0.254 m³/s will remain unlicensed. On a monthly basis, this quantity is projected to range from zero between July and October to 1.468 m³/s in May;
- On an annual basis, 44% of the projected naturalized flow (in 2050) is licensed for offstream use. On a monthly basis, offstream licences are projected to account for approximately 3% to 353% of the naturalized flow;
- On an annual basis, 14% of the projected naturalized flow (in 2050) is licensed for instream use. On a monthly basis, offstream licences are projected to account for approximately 4% to 48% of the naturalized flow;
- On an annual basis, 70% of the naturalized flow is projected to be actually used offstream. On a monthly basis, actual offstream use accounts for 25% to 458% of the naturalized flow. Assuming a 30% reduction in water use, 49% of the annual naturalized flow would be used. Under the same 30% reduction in water use, actual offstream use is projected to account for approximately 17% to 321% of the naturalized monthly flow; and
- On an annual and monthly basis, actual offstream use is projected to exceed existing licenses for offstream use. Even with a 30% reduction in water use, actual offstream use is projected to exceed existing licences for offstream use.

Analysis:

Based on Scenario 2.2 (2050 - population growth and climate change) for Powers Creek:

1. Annual net flows in 2050 are projected to be 30% (at the middle and upper POI) to 67% (at the mouth) lower than they are currently. As a result of the effects of climate change and increased water use, by 2050 the monthly hydrographs all POIs will be considerably different than they are currently. At the middle and upper POIs, these differences will be most noticeable in May and June, when reductions of up to 100% are predicted, which will result in no flow conditions at the upper POI in May. At the mouth the monthly hydrograph changes will consist of increases in monthly flow

between January and March (particularly in February where increases up to 240% are predicted), and decreases throughout the remaining months of the year (up to 100% in May and October). This will mean that zero flows can be expected at the mouth in May and October, where currently there is an estimated 2.45 m³/s and 0.130 m³/s, respectively;

2. Flows will exceed instream licences at the mouth in every month except May, June, October, and November. This represents a significant change from the current situation where monthly flows exceed instream licences all year;
3. By 2050 at the middle and upper POIs conservation flows will met during the same number of months of the year, however, these months will be different. Currently conservation flows are not met between December and February, and in April (at the middle POI) or May (at the upper POI). In 2050, conservation flows will not be met between April and June and in October. At the mouth conservation flows will not be met in one more month by 2050. Although February flows will meet conservation flows at the mouth by 2050, May and June flows will not;
4. The amount of flow over and above licensed amounts is expected to be between 0.254 m³/s and 0.405 m³/s. These values are smaller than the current situation where between 0.547 m³/s and 0.707 m³/s remains unlicensed.
5. The amount of naturalized flow (in 2050) licensed for offstream use is expected to be between 32% and 44%. This represents an 11% to 15% increase from the current situation.
6. The amount of naturalized flow (in 2050) licensed for instream use at the mouth is expected to be 14%. This represents a 5% increase from the current situation.
7. The amount of naturalized flow used offstream is expected to be between 0% and 70%. This represents a 0% to 50% increase from the current situation.
8. The volume of licensed flow for offstream use not expected to be utilized is between zero and 0.185 m³/s. This is less than the current situation where between 0.098 m³/s and 0.185 m³/s of licensed flow is not being utilized.

O.5.4 Trepanier Creek

Tabular and graphical output of Scenario 2.2 for Trepanier Creek are found in Appendix L and Figures 14.51 through 14.53, respectively. The following text summarizes the output and highlights key results.

Trepanier Creek below confluence with McDonald Creek:

- Net flows in 2050 are projected to range from 0.104 m³/s in October to 2.33 m³/s in May. The annual net flow is estimated to be 0.530 m³/s;
- On an annual basis, net flow is projected to be similar to naturalized flow (in 2050). Net monthly flows are projected to be less than naturalized flows between April and June (by up to 1.3%);
- Monthly conservation flows are projected to be exceeded by net flows between January and March and in May and June;
- On an annual basis, it is projected that a maximum of 0.511 m³/s will remain unlicensed. On a monthly basis, this quantity is projected to range from 0.075 m³/s in September to 2.33 m³/s in May;
- On an annual basis, 4% of the projected naturalized flow (in 2050) is licensed for offstream use. On a monthly basis, offstream licences are projected to account for approximately 0% to 41% of the naturalized flow; and
- On an annual and monthly basis, none of the naturalized flow (in 2050) is projected to be actually used offstream. Therefore, on an annual basis there is projected to be 0.020 m³/s not being utilized under existing licences. On a monthly basis, this quantity is projected to range from zero between November and February to 0.058 m³/s in August.

Trepanier Creek above PD58726 (Point of Peachland intake):

- Net flows in 2050 are projected to range from 0.133 m³/s in October to 2.76 m³/s in May. The annual net flow is estimated to be 0.647 m³/s;

- On an annual basis, net flow is projected to be only 0.2% less than naturalized flow. Net monthly flows are projected to be less than naturalized flows between April and June and November and February;
- Monthly conservation flows will be exceeded by net flows between January and March and May and July;
- On an annual basis, it is projected that a maximum of 0.627 m³/s will remain unlicensed. On a monthly basis, this quantity is projected to range from 0.097 m³/s in September to 2.853 m³/s in May;
- On an annual basis, 3% of the projected naturalized flow (in 2050) is licensed for offstream use. On a monthly basis, offstream licences are projected to account for approximately 0% to 35% of the naturalized flow; and
- On an annual and monthly basis, less than 1% naturalized flow (in 2050) is projected to be actually used offstream. Therefore, on an annual basis there is projected to be 0.020 m³/s of flow not being utilized under existing licences. On a monthly basis, this quantity is projected to range from zero between November and February to 0.058 m³/s in August.

Trepanier Creek at the mouth:

- Net flows in 2050 are projected to range from no flow in August to 2.75 m³/s in May. The annual net flow is estimated to be 0.560 m³/s;
- On an annual basis, net flow is projected to be 16% less than naturalized flow (in 2050). Monthly flows are projected to be less than naturalized flows all year;
- Monthly conservation flows are projected to be exceeded by net flows for the months of February, March, May, and June;
- On an annual basis, it is projected that a maximum of 0.520 m³/s will remain unlicensed. On a monthly basis, this quantity is projected to range from zero during August and September to 2.144 m³/s in May;
- On an annual basis, 22% of the projected naturalized flow (in 2050) is licensed for offstream use. On a monthly basis, offstream licences are projected to account for approximately 6% to 22% of the naturalized flow;

- On an annual basis, 16% of the naturalized flow is projected to be actually used offstream. On a monthly basis, actual offstream use accounts for 3% to 156% of the naturalized flow. With a 30% reduction in water use, 11% of the annual naturalized flow and 2% to 109% of the naturalized flow would be used; and
- On an annual basis, there is projected to be 0.040 m³/s not being utilized under existing licences. On a monthly basis, this quantity will range from 0.012 m³/s to 0.125 m³/s between April and October to zero between November and March. With a 30% reduction in water use, there is projected to be 0.073 m³/s of flow available for use without further licensing annually. Under the same 30% reduction of water use, flow available for use without further licensing ranges from 0.004 m³/s in January and February to 0.208 m³/s in August.

Analysis:

Based on Scenario 2.2 (2050 - population growth and climate change) for Trepanier Creek:

1. Annual net flows in 2050 are projected to be 39% (at the middle and upper POI) to 46% (at the mouth) lower than they are currently. As a result of the effects of climate change and increased water use by 2050 the monthly hydrographs at all POIs will be considerably different than they are currently. At the middle and upper POIs, these differences will be most noticeable in May and June, when reductions of up to 55% are predicted in May. At the mouth the monthly hydrograph changes will consist of increases in monthly flow between December and March (particularly in February where increases up to 226% are predicted), and decreases throughout the remaining months of the year (by up to 70% in August). This will mean that zero flows can be expected at the mouth in April by 2050, where currently there is an estimated 0.189 m³/s on average;
2. By 2050 at the middle and upper POIs conservation flows will not be met during the same number of months of the year as they are currently, however, these months will be different. Currently conservation flows are not met between September and February at the middle POI and between August and February at the upper POI. In 2050, conservation flows will not be met in April and from August to December at the middle POI and in April and from July to December at the upper POI. At the mouth,

conservation flows will not be met in one more month by 2050. Although February and March flows will meet conservation flows at the mouth by 2050, April and July flows will not;

3. The annual average flow in excess of water licences is expected to be between 0.511 m³/s (at the upper POI) and 0.627 m³/s (at the middle POI) in 2050. These values are smaller than the current situation where between 0.844 m³/s and 1.035 m³/s exceeds licences;
4. The percentage of annual naturalized flow (in 2050) licensed for offstream use is expected to be between 3% (at the upper POI) and 22% (at the mouth). This represents a 1% to 9% increase from the current situation;
5. The amount of annual naturalized flow actually used offstream is expected to be between 0% (at the middle and upper POIs) and 16% (at the mouth). This represents a 0% to 11% increase from the current situation; and
6. The quantity of licensed flow for offstream use not expected to be utilized in 2050 is between 0.020 m³/s (at the middle and upper POIs) and 0.040 m³/s (at the mouth). This is less than the current situation where between 0.020 m³/s and 0.080 m³/s of licensed flow is not being utilized.

0.5.5 Peachland Creek

Tabular and graphical output of scenario 2.2 for Peachland Creek are found in Appendix M and Figures 14.14 through 14.17, respectively. The following text summarizes the output and highlights key results.

Peachland Creek, below confluence with Greata Creek:

- Net flows in 2050 are projected to range from no flow in May to 0.791 m³/s in July. The annual net flow is estimated to be 0.322 m³/s;
- On an annual basis, net flows are projected to be equal to naturalized flow. However, net monthly flows are projected to be less than naturalized flows for all months except April to June (by up to 130% in May);

- Monthly instream licences are projected to be exceeded by net flows in every month except May;
- Monthly conservation flows are projected to be exceeded by net flows in every month except between April and June;
- On an annual basis, it is projected that up to 0.101 m³/s will remain unlicensed. On a monthly basis, unlicensed flows are projected to range from zero between July and December to 0.765 m³/s in May;
- On an annual basis, 42% of the projected naturalized flow (in 2050) is licensed for offstream use. On a monthly basis, offstream licences are projected to account for approximately 15% to 269% of the naturalized flow;
- On an annual basis, 26% of the projected naturalized flow (in 2050) is licensed for instream use. On a monthly basis, instream licences are projected to account for approximately 0% to 92% of the naturalized flow; and
- On an annual and monthly basis, none of the naturalized flow is projected to be actually used offstream. Therefore, on an annual basis, there is projected to be 0.136 m³/s not being utilized under existing licences. On a monthly basis, this quantity is projected to range from 0.032 m³/s in December to 0.315 m³/s in August.

Peachland Creek above PD58618 (District of Peachland intake):

- Net flows in 2050 are projected to range from no flow in May to 0.805 m³/s in July. The annual net flow is estimated to be 0.339 m³/s;
- On an annual basis, net flow is projected to be only 0.1% less than naturalized flow. Net monthly flows are projected to be less than naturalized flows for all months except April to June (by up to 123% in May);
- Monthly instream licences are projected to be exceeded by net flows in every month except May;
- Monthly conservation flows are projected to be exceeded by net flows in every month except between April and June;

- On an annual basis, it is projected that up to 0.118 m³/s will remain unlicensed. On a monthly basis, this quantity is projected to range from zero between July and November to 0.823 m³/s in May;
- On an annual basis, 40% of the projected naturalized flow (in 2050) is licensed for offstream use. On a monthly basis, offstream licences are projected to account for approximately 14% to 256% of the naturalized flow;
- On an annual basis, 25% of the projected naturalized flow (in 2050) is licensed for instream use. On a monthly basis, instream licences are projected to account for approximately 0% to 88% of the naturalized flow;
- On an annual and monthly basis, none of the naturalized flow is projected to be actually used offstream. Therefore, on an annual basis there is projected to be 0.136 m³/s not being utilized under existing licences. On a monthly basis, flow available for use without further licensing is projected to range from 0.032 m³/s in December to 0.315 m³/s in August.

Peachland Creek at the month:

- Net flows in 2050 are projected to range from no flow in May and June to 0.560 m³/s in July. The annual net flow is estimated to be 0.256 m³/s;
- On an annual basis, net flow is projected to be 32% less than naturalized flow (in 2050). Net monthly flows are projected to be less than naturalized flows for all months except April to June (by up to 126% in May);
- Monthly instream licences are projected to be met or exceeded by net flows for the months of February to April and July and August;
- Monthly conservation flows are projected to be met or exceeded by net flows in every month except between April and June;
- On both an annual and a monthly basis, it is projected that there will be no flow in excess of licences;
- On an annual basis, 67% of the projected naturalized flow (in 2050) is licensed for offstream use. On a monthly basis, offstream licences are projected to account for approximately 15% to 465% of the naturalized flow;

- On an annual basis, 83% of the projected naturalized flow (in 2050) is licensed for instream use. On a monthly basis, instream licences are projected to account for approximately 0% to 290% of the naturalized flow;
- On an annual basis, 32% of the naturalized flow (in 2050) is projected to be actually used offstream. On a monthly basis, actual offstream use accounts for 10% to 205% of the naturalized flow. With a 30% reduction in water use, 22% of the annual naturalized flow would be used. On a monthly basis, actual offstream use is projected to account for 7% to 144% of the naturalized flow; and
- On an annual basis, there is projected to be 0.131 m³/s of flow not being utilized under existing licences. On a monthly basis, this quantity is projected to range from 0.011 m³/s in December to 0.355 m³/s in August. With a 30% reduction in water use, there is projected to be 0.167 m³/s of flow available for use without further licensing annually. Under the same 30% reduction of water use, flow available for use without further licensing ranges from 0.019 m³/s to 0.439 m³/s.

Analysis:

Based on Scenario 2.2 (2050 - population growth and climate change) for Peachland Creek:

1. Annual net flows in 2050 are projected to be 34% (at the middle and upper POI) to 50% (at the mouth) lower than they are currently. As a result of the effects of climate change and increased water use, by 2050 the monthly hydrographs all POIs will be considerably different than they are currently. At the middle and upper POIs, these differences will be most noticeable in May and June, when reductions of up to 100% are predicted in May. At the mouth the monthly hydrograph changes will consist of increases in monthly flow between December and March (particularly in February where increases up to 75% are predicted), and decreases throughout the remaining months of the year (by up to 100% in May and June). This will mean that zero flows can be expected at the mouth in May and June by 2050, where currently there is an estimated average flow of 1.23 m³/s and 0.917 m³/s, respectively;
2. Monthly instream licences will be met for all year at the middle and upper POIs except for May. This represents a slight change from the current situation in the where instream licences are met all year. At the mouth instream licences will not be

met between September and January and in May and June. This represents a change from the current situation at the mouth where instream licences are not met between November and March only;

3. Conservation flows will be met or exceeded at the middle and upper POIs all year except between April and June. At the mouth, conservation flows will be met or exceeded all year except between April and June. This represents a slight change from the current situation where conservation flows are met for all months except April and May.
4. The amount of flow in excess of licences is expected to be between zero (at the mouth) and $0.118 \text{ m}^3/\text{s}$ (at the middle POI). These values are smaller than the current situation where between $0.012 \text{ m}^3/\text{s}$ and $0.294 \text{ m}^3/\text{s}$ remains unlicensed;
5. The amount of annual naturalized flow (in 2050) licensed for offstream use is expected to be between 40% and 67%. This represents a 14% to 24% increase from the current situation;
6. The amount of annual naturalized flow (in 2050) licensed for instream use at the mouth is expected to range from 25% to 83%. This represents a 9% to 28% increase from the current situation;
7. The amount of annual naturalized flow (2050) used offstream is expected to be between 0% (at the middle and upper POIs) and 32% (at the mouth). This represents a 0% to 22% increase from the current situation; and
8. The quantity of offstream licences not expected to be utilized in 2050 is between $0.131 \text{ m}^3/\text{s}$ (at the mouth) and $0.136 \text{ m}^3/\text{s}$ (at the middle and upper POIs). This is less than the current situation where between $0.136 \text{ m}^3/\text{s}$ and $0.191 \text{ m}^3/\text{s}$ of licensed flow is not being utilized.

O.5.6 Scenario 2.2 Summary

Under Scenario 2.2 (2050 - population growth and climate change) there will be relatively large changes in the annual flows and monthly hydrographs across the five principal streams. At the mid and upper points-of-interest, reductions in annual flow as a result of population growth and climate change is expected to be 30% at Powers Creek, 34% at Peachland Creek,

38% and 39% at Lambly and Trepanier Creek, respectively, and 50% at McDougall Creek. At the mouths of the principal streams these reductions will be considerably greater (Lambly Creek 52%, McDougall Creek 66%, Powers Creek 67%, Trepanier Creek 46%, and Peachland Creek 50%). At all POI monthly average flows throughout the year will be significantly different by 2050. Typically, flows will increase in the winter and early spring, with the greatest increases generally occurring in February (by up to 240% in Powers Creek). Flows will generally decrease for all remaining months of the year. Decreases of up to 100% are projected in all principal streams for at least one month of the year. In Lambly Creek (at the mouth) this flow reduction will result in no flow conditions in July, August, and September. The same will occur at the mouth of McDougall Creek. In addition, no flows (in August only) will be extended to the upper POI on McDougall Creek. In Powers Creek no flow conditions are expected in May and October at the mouth and in May only at the upper POI. No flows are also expected at the mouth of Trepanier Creek in August and at all three POIs in Peachland Creek in May (and June at the mouth). Streamflows at the mouths of the principal streams in 2050 are expected to meet conservation flows during different months of the year than they do currently. In Lambly Creek, where conservation flows are currently not met in winter (December-February) and late summer (August-September), in 2050 conservation flows will also not be met in June, July, October and November. However, due to anticipated climate change impacts on late winter flows, February flows will meet conservation flows. In McDougall Creek, conservation flows currently are not met in winter (December-February) and late summer/fall (August-October). By 2050, conservation flows will not be met throughout spring, summer and into fall (April to October). In Powers Creek, where conservation flows are currently not met in fall/winter (October-February) and in April, conservation flows in 2050 will also not be met in May and June, but they will be met in February. In Trepanier Creek, conservation flows that are currently not met between August and March will add April to the list, but exclude February by 2050. In Peachland Creek by 2050 June will be added to the months when conservation flows are not met currently (April to May). Finally, conservation flows on an annual basis by 2050 licences for offstream use on Lambly Creek (at all POIs) and Powers Creek (at the mouth) are expected to be fully utilized, implying that additional licences will be required.

If demand management approaches are implemented between now and 2050, these projected changes due to population growth and climate change will be smaller than outlined above. However, the result of demand reductions varies across the TLU as outlined below:

Lambly Creek

In order to prevent zero flow conditions at the mouth in July and September, demand reductions of 20% and 30% are required, respectively. Unfortunately zero flows are expected in August even with a 30% demand reduction. A 30% demand reduction also would not prevent net flows from dropping below conservation flows in June, July, October, and November. However, a 20% demand reduction would prevent the need for increasing the quantity of annual licences.

McDougall Creek

At the mouth, zero flows are expected in July and September by 2050. This can be prevented in July with a 20% demand reduction but cannot be prevented in September with a 30% reduction. Zero flow conditions for the upper POI could be prevented with a 10% reduction. Conservation flows will be met between April and October. In all months but June, a 30% demand reduction would prevent net flows from dropping below conservation flows. In June, conservation flows could be met with a 20% demand reduction.

Powers Creek

With a 30% demand reduction it would not be possible to prevent zero flow conditions in May (at the mouth and upper POI) and October (at the mouth). In addition, a 30% demand reduction will not prevent net flows from dropping below conservation flow levels in May and June. However, a 30% demand reduction would prevent actual water use from exceeding the current annual licensed quantity, preventing the need to issue more licences.

Trepanier Creek

A 10% demand reduction would prevent zero flow conditions at the mouth in August. However, a 20% reduction will not prevent net flows from dropping below conservation flow levels in April.

Peachland Creek

In Peachland Creek zero flow conditions are forecast for May (at the mouth, middle and upper POIs) and in June (at the mouth). A 30% demand reduction would prevent zero flows in June but not in May. In addition, a 50% demand reduction would mean that conservation flows would be met in June.

Water quality issues will be exacerbated by the reduced flows. In some months flow reductions of 100% are predicted, and annual average flows will drop greatly. As a result of these reductions will likely have significant implications for the ability of each of the TLU creeks to meet water quality objectives by 2050.

O.6 OVERALL SUMMARY OF SCENARIOS

The preceding analysis of streamflow in the five principal streams of the TLU is based on average hydrologic conditions, and assuming that all of the additional water demands in 2020 and 2050 are satisfied from surface flows. The following identifies the overall results of the four scenario runs. Summary tables of net flows at the mouths of each of the five principal streams under the four scenarios are provided in Figures 14.57 through 14.61.

- Assuming population change only by 2020 (Scenario 1.1) there will be little change in the annual and monthly streamflows across the five principal streams in the TLU. Flows in individual months will be reduced up to 17% in Trepanier Creek, 35% in Powers Creek, and 45% in McDougall Creek. However, at all points-of-interest, other than McDougall Creek at the mouth, the principal streams will remain flowing (under average hydrologic conditions McDougall Creek is currently expected to dry up in August.) With the exception of Powers Creek, streamflows at the mouths of the principal streams in 2020 are expected to meet conservation flows during the same months of the year as they currently. Also by 2020 it is expected that some quantity of licensed flow (for stream use) at the mouths of all principal streams will remain unused and water quality issues will intensify;

- Assuming population change only, by 2050 (Scenario 1.2) modest changes in the annual flows and monthly hydrographs across the five principal streams will become evident, with the exception of Powers Creek, where changes will be more significant. The reduction in annual average flow is relatively greater at the mouths of the streams, however, these values remain modest, with Powers Creek showing the greatest reduction at 8%. At the mouths of all principal streams monthly flows are expected to drop throughout the year, with individual monthly reductions of up to 100%. In Lambly Creek, this reduction will result in zero flow conditions in August. In McDougall Creek the late summer flow reduction by 2050 will result in zero flow conditions in September as well as August (at present in August McDougall Creek dries up in an average year). All other points-of-interest should remain flowing by 2050. With the exception of Lambly and Powers Creek, streamflows at the mouths of the principal streams in 2050 are expected to meet conservation flows during the same months of the year as they do currently. Also by 2050 it is expected that some quantity of licensed flow (for instream use) at the mouths of all principal streams (except for Powers Creek) will remain unused;
- Assuming population change accompanied by climate change, by 2020 (Scenario 2.1) considerable changes in annual flows and monthly hydrographs across the five principal streams should become evident. Annual flows will be reduced on average by 17% at the mid and upper POIs and by 25% at the mouths of the creeks. Changes to the annual hydrograph will involve increases in late winter and early spring flows and decreases throughout the remainder of the year, particularly in late summer. Despite the flow reductions, all points-of-interest, other than McDougall Creek at the mouth (in August and September) and Lambly Creek at the mouth (in August), should remain flowing by 2020 under average hydrologic conditions. By 2020, conservation flows will be met during different and slightly more months of the year than they are currently. Interestingly, anticipated increases of winter streamflows due to climate change will mean that February conservation flows that are not met currently will be met in 2020. Also by 2020, it is expected that some quantity of licensed flow (for offstream use) at the mouths of all principal

streams (except for Powers Creek) will remain unused. The large reductions in both monthly and annual flows will have implications for water quality in all creeks; and

- Assuming population change is accompanied by climate change, by 2050 (Scenario 2.2) relatively large changes in the annual flows and monthly hydrographs across the five principal streams are anticipated. Annual flows will be reduced on average by 38% at the middle and upper POIs and by 56% at the mouths of the creeks. Changes to the annual hydrograph will include increases in the winter and early spring flows (with the greatest increases occurring in February) and decreases in flow for the remainder of the year (particularly in late summer). These flow reductions should result in zero flow conditions in all principal streams (at one or more POIs) for at least one month of the year. The changes to the annual hydrograph also mean that conservation flows will be met less often in 2050 than they are currently. Generally, the months during which conservation flows (at the mouths) are not met will extend throughout the summer as opposed to being limited to winter and late summer months, as at present. Also, due to anticipated climate change impacts on late winter flows, February flows will meet conservation flows (that are not met currently). Finally, on an annual basis by 2050 additional licences for offstream use on Lambly and Powers Creeks will be required to satisfy demands. Water quality will be significantly impacted.

In summary, assuming population change only (Scenarios 1.1 and 1.2) by 2020 relatively small changes in streamflow are anticipated, which will generally increase existing water resource pressures. The only notable threshold that will be crossed is that conservation flows will be met slightly less often in Powers Creek. By 2050, further reductions in streamflows should be noticed throughout all principal streams of the TLU, resulting in zero flow conditions in Lambly Creek and McDougall Creek for at least one month of the year and resulting in conservation flows being met even less often in Lambly and Powers Creeks. The situation is different if the effects of climate change are introduced (Scenarios 2.1 and 2.2). By 2020, considerable changes in streamflows are expected throughout all principal streams. The changes include not only decreases in flow (particularly in late summer) but also include increases in late winter and early spring flows. The late summer flow reductions will result

in zero flow conditions in McDougall Creek and Lambly Creek. By 2020, conservation flows at the mouths of all principal streams will be negatively affected. Also by 2020, it is expected that all licences (for offstream use) on Powers Creek will be fully utilized. By 2050, relatively large changes in flows are expected as average annual flows are reduced on average by 56% (at the mouths of the creeks), causing zero flow conditions in all principal streams (at one or more POIs) for at least one month of the year. The changes to the annual hydrograph also mean that conservation flows will be met even less often than in 2020 (and less often than they are met at present). Finally, by 2050 it is expected that all licences for offstream use on Lambly and Powers Creeks will be fully utilized. These changes will be reduced if the additional water needed to meet future demands is obtained from groundwater or Okanagan Lake.

Demand reductions through adoption of conservation measures can significantly mitigate the flow reductions that are likely to occur in future, and their associated environmental impacts. The following summarizes the predicted effects that demand management would have on the issues identified in Section 14.0:

- If climate change were assumed not to occur, water use will increase by 41% by 2020 and 91% by 2050. If the maximum effectiveness of demand-side measures is about 50%, then it is possible that demand measures alone could prevent changes in streamflow up to 2020. Supply augmentation would not be needed until after 2020. Conservation effectiveness of less than 41% (by 2020) will result in streamflow reductions, but relatively modest demand reductions could prevent flows from dropping below important thresholds (e.g., conservation flows), and from dropping to a point when zero flows occur. In particular, with a 10% demand reduction, conservation flows in Powers Creek could still be met in March by 2020. By 2050, a similar 10% demand reduction would prevent Lambly and McDougall Creeks from drying up in August and September, respectively. It would also mean that conservation flows would be met on Lambly Creek in October and additional licences would not be required in the upper portion of the watershed. In Powers Creek, a 10% demand reduction would reduce the need for additional water licences, but would not be sufficient to prevent March flows from dropping below conservation levels and

- If likely climate changes are accounted for, water use is predicted to increase by 55% by 2020 and 128% by 2050 compared with current conditions. In this case, even maximum demand management effectiveness (about 50%) will not be able to delay implementation of supply augmentation measures beyond 2020, and streamflows will be further reduced unless additional supplies are sought. Significant supply augmentation will be needed by 2050. Tributary flows will be further altered unless these alternate supplies are sought from groundwater or Okanagan Lake. However, demand reductions can still be effective at preventing flows from dropping below important thresholds at certain times of the year and locations. By 2020, a 10% demand reduction would prevent the need for additional licences (for offstream use) and prevent flows from dropping below conservation flow levels (in June) in Powers Creek. By 2050, a 10% demand reduction could prevent zero flow conditions in McDougall Creek (at the upper POI) and in Trepanier Creek (at the mouth). If 20% demand reductions were achieved, by 2020 potential zero flow conditions, July and October flow conditions below conservation levels, and a demand greater than total licences on Lambly Creek could be prevented. In addition, zero flow conditions could be prevented in McDougall Creek in September. By 2050, a 20% demand reduction would prevent zero flows occurring in Lambly Creek and McDougall Creek in July. A similar reduction would prevent flows in McDougall Creek from dropping below conservation levels in June and prevent the need to issue additional licences for offstream water use in Lambly Creek. If 30% demand reductions were achieved, further mitigation of water management issues could be achieved. This includes preventing zero flows at the mouth of Lambly Creek in September and at the mouth of Peachland Creek in July and preventing the need to issue more licences on Powers Creek.