

Black Mountain Irrigation District 2007 Capital Plan Update



Capital Plan Objectives

- Ensure sufficient Water Quantity
- Promote efficient / responsible water use
- Improved Water Quality (safety) to meet IHA Regulations
- Develop an Economic Plan that sets out rates for adequate capital in order to achieve quantity and quality objectives
- Sufficient documentation for MCS, IHA





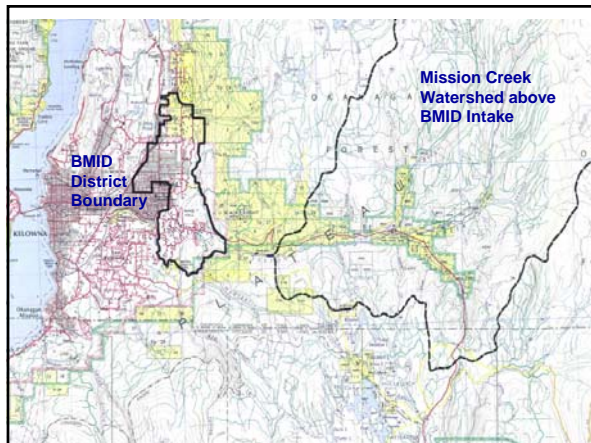
BMID Today

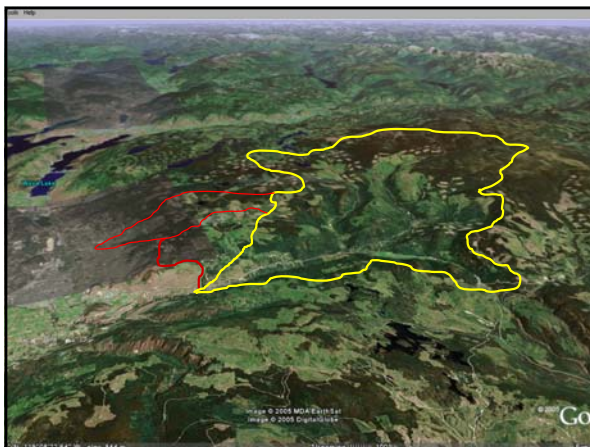
- 7,826 Domestic Connections
4,980 Single Family Residential Connections
Water Service to 21,000 people
- 860 Irrigation Connections
4,120 acres of Irrigation (Grade A)
1,220 acres of Irrigation (Grade C not-in-use)
2,025 acres of Dry land (Grade D)
- Good Water Quality, Treated during spring and early summer. WQA on Scotty Creek source
- Improvement District, Full Cost Pricing

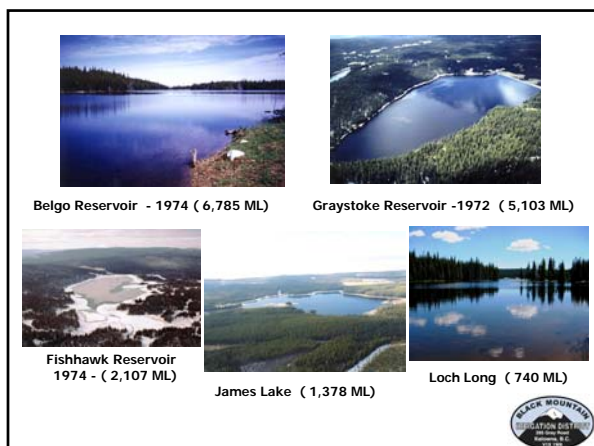


BMID Water Supply System





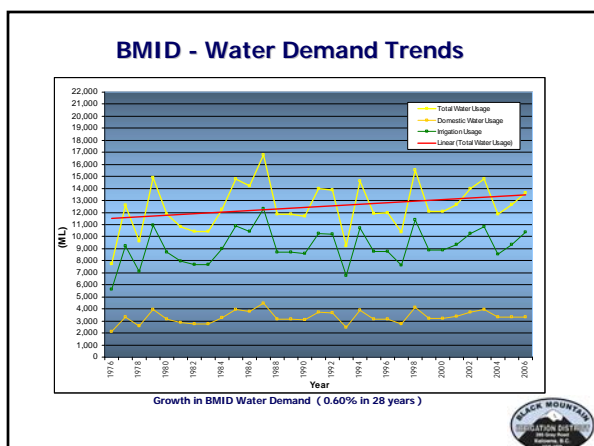




Existing Water Supply

- 90% from Mission Creek, 10% from Scotty Creek and Groundwater Wells
- Potential Future Groundwater source
- Annual average usage 13,700 ML/year
- Max. Day usage 151 ML/day (30,000 USgpm), enough for indoor water for 300,000 persons
- Socio-economic balance between agriculture and domestic customers

BLACK MOUNTAIN
MISSION DISTRICT
100 Years of
Service, 80
Miles



2007 BMID Capital Plan Update

- Conforms with 2005 KJWC Service Plan
- Reflects Kelowna OCP
- Apportions project costs between existing users and new development
- Projects are funded through only existing tax and toll rates and/or development charges (CECs)

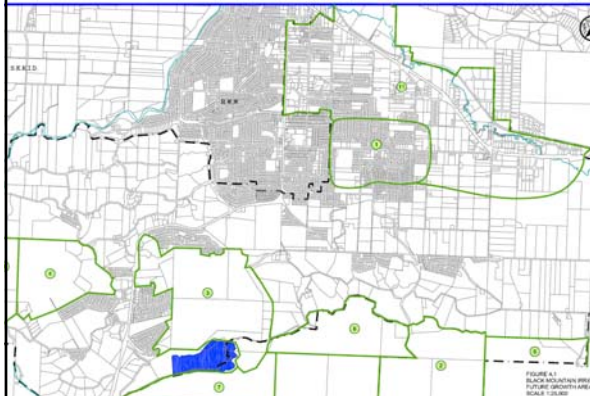


BMID - Water Quality Plan

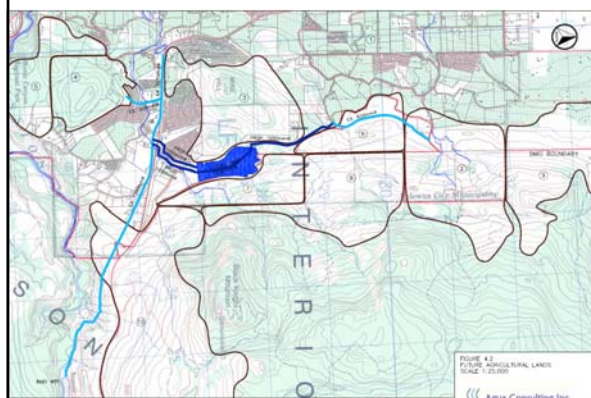
1. Upgraded monitoring capability at Mission Creek source
2. Eliminate Scotty Creek as drinking water source
3. Watershed control program 2008-09
4. Black Mountain Reservoir to allow off-line storage of best quality water from Mission Creek
5. Enhanced disinfection at Black Mountain Reservoir
6. Security high quality storage at Loch Long and other reservoir sites



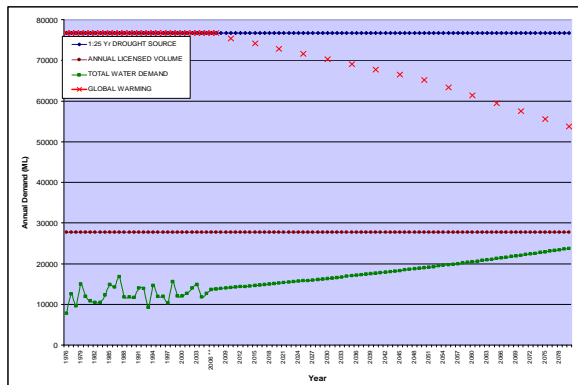
Future Growth Areas



Future Agricultural Areas



BMID Water Demand Forecast (75 yrs projecting 0.75% annually demand increase)



#	Year	PROJECT NAME	Current Users	CEC Project	New Demand	Renewal	TOTAL
1	2007	CAPITAL WORKS PLAN / WATER SYSTEM ASSESSMENT	\$ 9,375	\$ 28,125	\$ -	\$ -	\$ 37,500
2	2007	AGRICULTURAL METERING PROGRAM	\$ 423,140	\$ -	\$ -	\$ -	\$ 423,140
4.1	2007	WEIR MEASUREMENT ON SPILLWAYS	\$ 18,975	\$ -	\$ -	\$ -	\$ 18,975
4.2	2007	MISSION CREEK FLOW MONITORING AND CONTROLS	\$ 12,850	\$ -	\$ -	\$ -	\$ 12,850
5.1	2007	EXISTING METER CHANGE-OUTS	\$ -	\$ -	\$ -	\$ 62,305	\$ 62,305
5	2008	SCADA SYSTEM UPGRADE	\$ -	\$ -	\$ -	\$ 114,463	\$ 114,463
7	2008	DECOMMISSION WELLS 1, 2 AND 3	\$ 28,463	\$ -	\$ -	\$ -	\$ 28,463
8	2008	PVP IN BLACKFOOT POLE	\$ 18,445	\$ 65,780	\$ -	\$ -	\$ 82,225
9	2008	SCOTTY CREEK SYSTEM SEPARATION	\$ 424,155	\$ -	\$ -	\$ -	\$ 424,155
10	2008	FRANKLIN / RESERVOIR TO SHAWANO	\$ -	\$ 2,796,081	\$ -	\$ -	\$ 2,796,081
5.2	2009	AUTOMATED TRUCK METER HEAD SYSTEM	\$ 62,305	\$ -	\$ -	\$ -	\$ 62,305
6	2009	WELL No. 4 Phase 5 - Chlorination	\$ 75,900	\$ -	\$ -	\$ -	\$ 75,900
11	2009	SEACROFT ROAD AREA REVENUE	\$ -	\$ -	\$ -	\$ 348,645	\$ 348,645
12	2009	BLACK MOUNTAIN SUBDIVISION	\$ (8,205,780)	\$ -	\$ -	\$ -	\$ (8,205,780)
13	2009	TIC WATER QUALITY MONITORING STATION	\$ 16,538	\$ -	\$ -	\$ 11,025	\$ 27,563
15	2009	BLACK MOUNTAIN RESERVOIR - UV FACILITY	\$ 7,328,575	\$ 7,328,575	\$ -	\$ -	\$ 14,657,150
16	2009	BLACK MOUNTAIN RESERVOIR - GRABDOWN PIPE	\$ 2,205,869	\$ 2,205,869	\$ -	\$ -	\$ 4,411,738
21	2009	WATER TREATMENT SERVICE - W OFFICE	\$ 56,925	\$ -	\$ -	\$ -	\$ 56,925
17	2010	BLACK MOUNTAIN RESERVOIR - UV FACILITY	\$ 2,568,375	\$ 862,125	\$ -	\$ -	\$ 3,430,500
22	2011	HALL FALL WATER STATIONS	\$ 188,750	\$ -	\$ -	\$ -	\$ 188,750
23	2011	WELL HEAD PROTECTION (THREE WELLS)	\$ 75,900	\$ -	\$ -	\$ -	\$ 75,900
25	2011	PVP 1 REFORMULATION	\$ 250,475	\$ -	\$ -	\$ 508,520	\$ 759,000
20	2012	CORNER ROAD AREA - SYSTEM SEPARATION	\$ 404,484	\$ -	\$ -	\$ -	\$ 404,484
26	2012	PVP 2 REFORMULATION	\$ 250,475	\$ -	\$ -	\$ 508,520	\$ 759,000
14	2013	LOCH LONG - TRANSFER AND RAISING OF DAM	\$ -	\$ 1,802,820	\$ -	\$ -	\$ 1,802,820
21	2013	PVP 3 REFORMULATION	\$ -	\$ -	\$ -	\$ 158,125	\$ 158,125
18.1	2014	RELEASE CONTROLS ON GRAYSTONE RESERVOIR	\$ 75,900	\$ 75,900	\$ -	\$ -	\$ 151,800
18.2	2014	RELEASE CONTROLS ON BELLOD RESERVOIR	\$ 75,900	\$ 75,900	\$ -	\$ -	\$ 151,800
18.3	2014	RELEASE CONTROLS ON FISH HARBOR RESERVOIR	\$ 75,900	\$ 75,900	\$ -	\$ -	\$ 151,800
20	2015	MTP - CLAMPER FLOW CALIBRATION	\$ 118,800	\$ -	\$ -	\$ -	\$ 118,800
28	2015	DISTRICT OFFICE AT 100 BELLOD ROAD	\$ 408,750	\$ -	\$ -	\$ -	\$ 408,750
24	2016	MISSION CREEK (CRESCENT LAKES) RESERVOIR	\$ -	\$ 1,179,454	\$ -	\$ -	\$ 1,179,454
27	2016	EMERGENCY OPERATORS	\$ 231,000	\$ -	\$ -	\$ -	\$ 231,000
28	2017	DOMESTIC METERING PROGRAM	\$ 1,618,925	\$ -	\$ -	\$ -	\$ 1,618,925
30	2018	FINANCED WATER TREATMENT	\$ 624,100	\$ 562,275	\$ -	\$ -	\$ 1,186,375
32	2019	MARION ROAD WELL - REDEVELOPMENT	\$ -	\$ 126,500	\$ -	\$ 126,500	\$ 253,000
33	2020	BARTLING UP SYSTEM RESERVOIR	\$ 233,000	\$ -	\$ -	\$ -	\$ 233,000
34	2021	BALDING CREEK FLOCCULATORS	\$ 188,750	\$ -	\$ -	\$ -	\$ 188,750
36	2027	YELLOWHAWK CREEK CROSSING TO CAMPION	\$ -	\$ 144,716	\$ -	\$ -	\$ 144,716
37	2027	RAISING OF FISH HARBOR DAM	\$ -	\$ 4,245,467	\$ -	\$ -	\$ 4,245,467
38	2027	TEASDALE ROAD WATERMAIN	\$ 49,896	\$ -	\$ -	\$ -	\$ 49,896
39	2027	HIGHWAY 67 - WATERMAIN WEST SIDE	\$ -	\$ 62,470	\$ -	\$ 157,410	\$ 219,880
40	2027	MISSION CREEK STORAGE SITES	\$ -	\$ 12,545,000	\$ -	\$ -	\$ 12,545,000
41	2027	WELL MOUNTAIN DEVELOPMENT AREA	\$ -	\$ -	\$ -	\$ -	\$ -
42	2027	KIRSCHNER MOUNTAIN ESTATES	\$ -	\$ -	\$ -	\$ -	\$ -
43	2027	FOUNDER RANCH DEVELOPMENT	\$ -	\$ -	\$ -	\$ -	\$ -
TOTAL \$			\$ 10,068,502	\$ 38,931,956	\$ 157,410	\$ 1,138,143	\$ 54,029,411

Water Project Cost Evaluation

	PROJECT	ML / Diverted	Project Cost	\$ / ML
n/a	Groundwater Development **	1200	\$ 275,000	\$ 229
9	Scotty Creek System Separation	1730	\$ 424,155	\$ 245
2	Agricultural Meters	1256	\$ 423,140	\$ 337
24	Mission Lake Reservoir	2280	\$ 1,179,454	\$ 517
20	Cornish / Morrison Road Separation	750	\$ 404,484	\$ 539
18	SCADA	400	\$ 227,700	\$ 569
14	Loch Long Reservoir	1850	\$ 1,502,820	\$ 812
36	Fish Hawk Reservoir - Raising	4680	\$ 4,245,467	\$ 907
39	Loch Oiche	1110	\$ 1,135,000	\$ 1,023
39	Murray Meadows Reservoir	2880	\$ 4,325,000	\$ 1,502
39	Site 3 Reservoir	2712	\$ 5,660,000	\$ 2,087
28	Domestic Metering	750	\$ 1,618,925	\$ 2,159
15	Black Mountain Reservoir	4600	\$ 12,904,650	\$ 2,805
39	Loch Lost Reservoir	435	\$ 1,425,000	\$ 3,276

** (reference GEID New Airport Well 2)

[illegible]

Capital Plan Summary

- CEC increase from \$3250 to \$4500 per SF equivalent
- Rate increase for agriculture and domestic of 14% in 2008
- 43 projects prioritized
- Largest project is Black Mountain Reservoir
- Safer water through UV Disinfection at Reservoir
- Feed agricultural lands to the east and north



Global Warming Considerations

Facts to consider in the whole scenario of global warming are:

- Air temperature will be warmer, it will hold more water;
- Expect more intense storm cells and increased frequency;
- Increased potential for flooding;
- Storage may mitigation of potential flooding damage;
- Snow packs will be reduced although total precipitation may not change;
- Agricultural lands at higher elevations may become more viable with warmer temperatures;
- Increased excess drought and excess moisture cycles should be expected.
- Drought plans and bylaws are key to enable adaptation

Ultimately, ADAPTATION is the key to managing the impacts from global warming.



Community Resilience/Sustainability

Issues to Consider:

- Food has become a smaller % of our expenditures
- Affluent society is less self-sufficient
- Sustainability? What did our grandparents do?
- How do we secure enough water for growing food !
- ALR makes land secured for agriculture. How do we support the growers ?
- Quality of Life issues

Securing water for food production is part of making our communities more sustainable



Questions? For more information....

- The Capital Plan and more information on the District is available at our website at:
www.bmid.ca
- Contact: Bob Hrasko, P.Eng.
Administrator
Phone 765-5169