

Table 1.1: 1994 Long Term Water Supply Plan (Montgomery Watson / Dayton & Knight Ltd.) “Alternative A” Capital Works Recommendations

Item	Recommendation	Capital Project Name	Year Constructed	Status	Comments	2022 Master Plan Commentary
a1)	Rehabilitate three Upper Goldstream Reservoirs (Butchart, Lubbe and Goldstream Reservoirs)	Goldstream Dams Rehabilitation	1995	Completed	Capital project included Butchart Dam #1, 2 & 5, Lubbe Dams #1-4, Goldstream Dam and Japan Gulch Dam (not included in report recommendation)	Work was completed to improve reliability of this critical secondary source.
a2)	Connect Goldstream Reservoirs with a 600-750 mm transmission main to Kapoor Tunnel outlet for use during emergencies and tunnel maintenance	NA	Not completed	No action	No action since 1994. This pipeline is still an option and should be evaluated further to provide a secondary supply to RWS when Kapoor Tunnel is taken offline for inspection.	This is included as a recommendation of the 2022 Master Plan with connection to Japan Gulch.
a3)	Pilot test water filtration for Leech River/Sooke Lake Reservoir water integration	Leech River-Sooke Lake Reservoir Mixing Experiment	2008	Started (not completed)	Preliminary PowerPoint was completed by UVic but not in sufficient detail for planning of water treatment facilities. Further piloting is recommended as part of this Master Plan.	Recommendation of 2022 Master Plan. Blending will be assessed during the pilot program.
b)	Ozonation	UV Disinfection System Installed instead of ozonation	2004	Completed	Ultraviolet facility (alternative to ozonation) was constructed at Goldstream Disinfection Facility location, downstream of tunnel outlet adjacent to Japan Gulch Reservoir.	UV is a more cost-effective treatment for unfiltered source water than ozone. Once the final filtration process is selected the requirement for UV will be assessed.
c1)	Replacement of Humpback Reservoir with a smaller flood control facility	Deactivation of Humpback Dam	1999	Completed	Works included Humpback Dam stabilization berm and Humpback Reservoir overflow structure and channel along Kapoor Main (Humpback Dam and reservoir out of service)	NA
c2)	Decommission/remove Japan Gulch Dam	NA	Not completed	No action	Japan Gulch Dam rehabilitated in 1995 (refer to Item a1 above). Used to accept Goldstream River water during inspections and maintenance of Kapoor Tunnel.	Japan Gulch is critical reservoir for transfer of Goldstream water to RWS until Goldstream transmission main is constructed.

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d)	Connect Kapoor Tunnel to No. 1 and No. 3 Mains	Kapoor/Humpback Watermain	1996	Completed	Main No. 5 installed from Kapoor Tunnel outlet to Humpback Reservoir (included Humpback PCS)	NA
e)	Raise Sooke Lake Reservoir	Raising Sooke Lake Reservoir	2002	Completed	Dam raised to provide additional storage.	Raising of SLR has provided source reliability consistent with 2017 Strategic Plan.
f)	Langford to Sooke Community water main	New Supply Pipeline to Sooke (3 Phases)	2007-2009	Completed	Alternative alignment (Main No. 15) installed from Sooke Head Tank to the District of Sooke (includes SRRDF).	Recommendation to install this main included in 2022 Master Plan (subsequent to Filtration Plant construction)
g1)	Leech River diversion Stage 1 to north end of Sooke Lake Reservoir	NA	Not completed	No action	No action since 1994. Further investigation required to determine best method for diversion of Leech River water to Sooke Lake Reservoir.	Diversion will be reviewed further as part of hydrology study and reservoir operating rules for combined Leech /SLR supply. It may be possible to transfer Leech water through DGR to SLR.
g2)	Leech River diversion Stage 2 - Pressurize Leech Tunnel to increase hydraulic capacity	NA	Not completed	No action	No action since 1994. This will require further investigation pending investigation of direct diversion of Leech River or construction of dam on Leech River.	This will be explored in hydrology study see g1) commentary above. Leech River not required for 20 years.
h)	Plan phase 3 work in Victoria to increase supply to south Victoria, Oak Bay, and southeast Saanich	NA	Modeling completed	No action	No action since 1994.	Hydraulic modeling has been completed and upgrades to Main No. 3 are recommendation of 2022 Master Plan. See Section 6.1.3.
i)	Water filtration plant at Kapoor Tunnel inlet	NA	Not completed	No action	Refer to CRD IWS Report No. 279 -Compliance with Surface Water Treatment Rule for Filtration Avoidance. Installation of UV enables compliance with SWTR Filtration Avoidance for most criteria as well as IHA requirements.	Future water filtration recommended to improve resiliency and a potential site recommended as part of this 2022 Master Plan.

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j)	Progressively replace No. 1 Main with larger diameter steel system	Main No. 1 Replacement program	1994-2006	Completed	Entire Main No. 1 replaced in 12 phases	
k)	Deep Intake at northern basin of Sooke Lake Reservoir	NA	Not completed	No action	No action since 1994. Stantec report in 2021 studied this further.	Study completed to assess options.
l)	Second major transmission system from Sooke Lake Reservoir	NA	Not completed	No action	Alignment assumed to follow Sooke River to District of Sooke and loop back to the City of Langford. Partially completed (Main No. 15 installed)	An east west Juan De Fuca Water Services supply main is proposed to supply filtered water to Sooke after new plant is constructed. Overland "Jack Lake" alignment recommended in this Plan
m1)	Increase system storage volume - Sooke Community Tank	Sooke Community Water System Improvements	1998	Completed	JDFWD service improvements completed.	NA
m2)	Increase system storage volume - New Upper Mount Tolmie Tank	NA	Not completed	No action	No action since 1994. Not required.	Not required
m3)	Increase system storage volume - Haliburton Tank Expansion	NA	Not completed	No action	Haliburton Tank out of service since 2017	Not required.
m4)	Increase system storage volume - Smith Hill "Reservoir"	NA	Not completed	No action	No action since 1994.	Tank recommended at Smith Hill as part of this Master Plan.
n)	Diversion of Upper Goldstream Reservoirs to Sooke Lake Reservoir	NA	Not completed	No action	No action since 1994. Not necessary if pipeline from Goldstream to Japan Gulch is constructed. Diversion to Japan Gulch rather than Sooke Lake.	Goldstream Reservoirs will be diverted to recommended filtration plant site at Japan Gulch; transmission main included in 2022 Master Plan.