

Report

Date February 26, 2018

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To Council

From Shaun Mason, Municipal Forester

Endorsed:

Subject 2017 Annual Report

Harvesting

The 2017 budget was 20,000m³, generating \$1,560,000, with logging expenses of \$540,000. The actual accomplishment was 10,585m³, generating \$1,151,781, with logging costs of \$318,697. The average cut block size was 7 ha.

<u>Accomplishments:</u>				<u>Budget</u>
Logging Sales	\$1,151,781	10,585m ³	\$108.81/m ³	\$78/m ³
Direct Logging	\$318,697	10,585m ³	\$30.10/m ³	\$27/m ³

Firewood Permits Revenue: \$2,150 Budget: \$1,000

The public purchased 59 cords of firewood and Cowichan Valley Alternative School purchased 30 cords.

Lesser Vegetation Permits Revenue: \$60 Budget: \$500

The public purchased one permit for salal and zero permits for boughs.

Planting Costs: \$72,735 Budget: \$64,000

In Spring 2017, 46 ha were planted with 48,888 seedlings. The total planting costs were \$1.18/tree. Seedling costs were \$0.37/tree and planting was \$0.81/tree.

<u>Accomplishments:</u>		
Douglas-fir	36,828	75%
Western White Pine	7,640	16%
Western Red Cedar	4,420	9%

Tea-bag fertilizer application at time of planting = 32,800 seedlings.

Plantskydd (deer repellent) was applied to the Douglas-fir and Western Red Cedar prior to planting, at a cost of \$0.03/tree.

The Municipality has planted 2,130,794 seedlings since the start of its intensive silviculture program in 1982, and harvested 1,763 ha.

Tree Protection **Costs:** **\$47,939*** **Budget:** **\$34,000**

Tree protection includes cone installation, removal, maintenance and plantskydd application.

*Higher cost is due to installing cones along the Stoney Hill right-of-way that were not planned for.

Surveys

Our summer student established survival surveys in the 2017 plantations to monitor seedling survival rates. The 2017 plantations had a survival rate of 99%. The 2015 plantations that were re-visited had a survival rate of 64% after two growing seasons.

Root rot surveys were conducted for 15.8 ha (two blocks) at a cost of \$2,165 or \$137/ha.

Road Construction and Maintenance **Costs:** **\$190,199** **Budget:** **\$215,000**

Accomplishments

Major road construction, improvements, and temporary roads	1.4	km
Road maintenance, post-harvesting cleanup	4.0	km
New culverts installed by North Cowichan	8	
Quarries: rock developed	1600	m ³
Debuilt roads	0	m
Recovered rock from debuilt road	0	m ³
Road grading	24	km
Snowplowing	0	km
Roadside brush cutting for roadside visibility improvements	37	km
Gate installation	0	
Dust lay Mt. Prevost Rd and Grace Rd	2.4	km

Site Preparation **Costs:** **\$665** **Budget:** **\$12,000**

The fall burning program consisted of 33 piles from four blocks. Burning results were fair to good. Burning took place from November 15-17, 2017.

Burning Costs: \$20/pile

Fire Protection **Costs:** **\$14,164** **Budget:** **\$16,000**

The Municipal Forest Reserve gates were locked from June 22 to September 19. There were no fires in 2017. Patrols were started May 20 and ended October 15, 2017.

Security and Vandalism **Costs:** **\$9,388** **Budget:** **\$15,000**

Costs for the year included opening and closing the Mount Tzouhalem, Kaspa Road parking lot daily. Additional costs included gate repairs, restricting 4x4 access, patrols, and new locks.

Integrated Resource Management **Costs:** **\$3,770** **Budget:** **\$20,000**

Integrated Resource Management: the term is used to describe the management of the Municipal Forest Reserve for other uses, including recreation, wildlife, viewsapes, and biodiversity.

Watershed Analysis – Mount Sicker **Costs:** **\$0** **Budget:** **\$2,000**

No major road building or logging activity in the watershed therefore no water monitoring was done.

Silviculture

Contract crews completed the following:

Accomplishments

	<u>Ha</u>	<u>Budget \$</u>	<u>Costs \$</u>	<u>Cost /ha</u>
Plantation Brushing - mechanical	37	20,000	17,874	483/ha
Plantation Brushing – hand pulling Tansy Ragwort	18.2	16,000	4,035	222/ha
Invasive species – Broom, Tansy Ragwort, and brush spp – Herbicides	11.6	20,000	8,007	690/ha
White Pine Pruning	68	12,000	9,701	143/ha
Tree caging installations (9623)		15,750	16,840	1.75/tree
Tree caging maintenance and cone	44.4	5,800	5,230	118/ha
				1.16/cage

Plantation Brushing

*Manual Treatment: is carried out as required on a spot basis. The treatments are done where the plantations have been established with evenly distributed potential crop trees. Cutting is done where the competing vegetation will impact the growth of crop trees.

**Herbicide Treatment: is carried out where we have had problems getting a conifer plantation established. Competing vegetation, such as broom, has grown aggressively and spread through the cut block. The herbicide treatments will allow fill planting to get these areas back to restocked and healthy young stands of conifers.

With the addition of this year's activities, the Municipality has completed the following activities since 1982:

Juvenile Spacing	2,206	ha
Pruning	1,102	ha
White Pine Pruning	1,226	ha
Plantation Brushing	3,489	ha
Harvesting	1,741	ha

Community Relations:

The Forestry Department took part in a Mount Prevost garbage cleanup with Cowichan Secondary School's Outdoor class. Eleven students and staff removed 250kg of garbage from Mount Prevost. Other highlights included the use of the Municipal Forest Reserve for the Cowichan Challenge Triathlon, the Prevost Downhill Mountain Bike Race, Maple Mountain Enduro Bike Race, Maple Mountain Cross Country Bike Race, and bike demonstrations on Maple Mountain by Cowichan Cycles, Experience Cycle, and Cycle Therapy.

Other:

The Forestry Department contributed \$25,000 towards Lidar imagery and updated Ortho photos for the Forest Reserve.

Recommendation

That the 2017 Annual Report be received for information

Attachments: 4

Appendix A

2017 Harvesting Summary

Block	Ha (Gross)	Treatment	Vol m ³ /ha	Total Vol m ³	Net Profit \$/m ³	Net Revenue	Net Revenue Per/ha	Costs Stump to Dump \$/m ³	Total Logging Costs	Gross Revenue	Gross Revenue Per m ³	Gross Revenue Per Ha
P-898	8.6	Patch Cut GTR/Hoe Forwarding	433	3,726	\$72.78	\$271,182	\$31,533	\$29.94	\$111,565	\$382,747	\$103	\$44,505
P-122A	7.2	Patch Cut GTR/Hoe Forwarding	461	3,319	\$81.54	\$270,646	\$37,590	\$30.98	\$102,809	\$373,455	\$113	\$51,869
P-122B	5.1	Patch Cut GTR/Hoe Forwarding	528	2,691	\$86.70	\$233,300	\$45,745	\$30.45	\$81,935	\$315,235	\$117	\$61,811
P119 RoW	0.9	Right of way clearing	651	586	\$78.49	\$45,995	\$51,106	\$37.79	\$22,144	\$68,139	\$116	\$75,710
Maple Mt Salvage		Log salvage		263	\$41.52	\$10,920		\$59.21	\$15,571	\$26,491	\$101	
Total	21.8		486	10,585	\$78.61	\$832,043	\$38,167	\$30.11	\$318,697	\$1,151,781	\$109	\$52,834

GTR Green Tree Retention

Logging Costs per m³ \$31.10

Silviculture Systems Summary

	Ha
Patch Cut GTR	20.90
Commercial Thinning	0.00
Individual Tree Harvesting	0.00
Seed Tree	0.00
Total	20.90

Average Cut Block Size (Ha)

7.0

Conifer and Hardwood Component

	Volume	Volume By Percent	Net Revenue	Revenue \$/M ³	Revenue By %
Hardwoods	35	0.3%	\$1,352	\$38.63	0.16%
Conifer	10,550	99.7%	\$830,691	\$78.74	99.84%
Total	10,585	100.0%	\$832,043	\$78.61	100.00%

Appendix B

1987 To 2017 Harvesting Summary

Year	Ha	Volume m ³	Volume/Ha	Net Revenue	Net Revenue \$/m ³
1987	63.4	13,159	208	\$204,772	\$15.56
1988	73.9	18,602	252	\$354,256	\$19.04
1989	43.2	14,798	343	\$272,913	\$18.44
1990	36.1	10,969	304	\$254,831	\$23.23
1991	32.2	12,740	396	\$271,217	\$21.29
1992	63.3	12,935	204	\$289,102	\$22.35
1993	55.2	14,907	270	\$542,821	\$36.42
1994	58.6	16,160	276	\$692,414	\$42.85
1995	78	21,556	276	\$1,205,329	\$55.92
1996	48.7	14,427	296	\$639,017	\$44.29
1997	32.3	13,371	414	\$625,437	\$46.78
1998	30.2	12,085	400	\$444,933	\$36.82
1999	41	16,428	401	\$564,867	\$34.38
2000	35.9	13,378	373	\$564,778	\$42.22
2001	39.34	15,538	395	\$660,924	\$42.54
2002	39.9	13,880	348	\$580,631	\$41.83
2003	49.2	15,841	322	\$661,089	\$41.73
2004	64.47	19,126	297	\$773,940	\$40.47
2005	54.6	16,018	293	\$672,876	\$42.01
2006	53.4	17,518	328	\$792,562	\$45.24
2007	65.6	21,153	322	\$804,375	\$38.03
2008	39.5	13,703	347	\$619,866	\$45.24
2009	46.5	14,296	307	\$439,936	\$30.77
2010	42.1	16,418	390	\$451,287	\$27.49
2011	45.5	17,775	391	\$664,170	\$37.37
2012	42.7	17,142	401	\$618,045	\$36.05
2013	60.4	24,355	403	\$1,110,159	\$45.58
2014	51.7	20,226	391	\$1,063,196	\$52.57
2015	46.7	22,271	477	\$1,003,533	\$45.06
2016	36.6	17,268	472	\$1,020,010	\$59.07
2017	21.8	10,585	486	\$832,043	\$78.61
Total	1492.01	498,628	334	\$19,695,330	\$39.50
Average	49.7	16,085	323	\$656,511	\$40.82

Forestry Program Profit

Annual Profit	Profit \$/m ³	Annual Forestry Profit Split As Follows:					
		General Revenues	Reserve Fund	Forest Legacy Fund	Scholarship Fund	Land Purchases	Acres
-\$24,825	-\$1.89	\$0	-\$24,825	\$0			
\$115,885	\$6.23	\$0	\$115,885	\$0			
\$38,486	\$2.60	\$0	\$38,486	\$0			
\$48,571	\$4.43	\$0	\$48,571	\$0			
-\$12,370	-\$0.97	\$0	-\$12,370	\$0			
\$67,231	\$5.20	\$45,000	\$22,231	\$0			
\$272,276	\$18.27	\$240,000	\$32,276	\$0			
\$275,880	\$17.07	\$250,000	\$25,880	\$0			
\$755,771	\$37.24	\$489,230	\$33,313	\$92,308		\$140,920	35 acres
\$131,057	\$9.08	\$65,000	\$51,057	\$15,000			
\$24,815	\$1.86	\$24,815	\$0	\$0			
\$47,420	\$3.92	\$0	\$37,935	\$9,485			
\$97,579	\$6.04	\$29,274	\$48,789	\$19,516			
\$33,745	\$2.52	\$9,865	\$17,057	\$6,823			
\$111,851	\$7.20	\$100,666	\$11,185	\$0			
\$95,375	\$6.87	\$28,612	\$47,688	\$19,075			
\$94,484	\$5.96	\$52,162	\$22,273	\$18,609	\$1,440		
\$121,932	\$6.38	\$29,183	\$68,880	\$19,455	\$4,414		
\$29,901	\$1.87	\$14,951	\$0	\$14,950	\$0		
\$30,343	\$1.73	\$15,171	\$0	\$15,172	\$0		
\$65,344	\$3.09	\$0	\$65,344	\$0	\$0		
-\$20,393	-\$1.29	\$0	-\$20,393	\$0	\$0		
-\$119,382	-\$6.24	\$0	-\$119,382	\$0	\$0		
-\$137,409	-\$8.37	\$0	-\$137,409	\$0	\$0		
-\$55,879	-\$3.14	\$0	-\$55,879	\$0	\$0		
\$9,602	\$0.56	\$0	\$9,602	\$0	\$0		
\$435,606	\$17.89	\$130,682	\$217,803	\$87,121	\$601		
\$409,430	\$20.24	\$122,829	\$204,715	\$81,886	\$715		
\$359,381	\$16.14	\$239,381	\$0	\$120,000	\$803		
\$412,195	\$23.87	\$206,098	\$123,659	\$82,438	\$0		
\$130,165	\$12.30	\$39,049	\$65,082	\$26,033	\$0		
\$3,844,067	\$7.71	\$2,131,968	\$937,453	\$627,871	\$7,973	\$140,920	61 Ac
\$128,136	\$7.97	\$71,066	\$31,248	\$20,929	\$266	\$4,697	

Summary 1987 to 2017 334 M³/Ha
 Net Revenue from the MFR 1987 to 2017

\$13,201 /Ha
 \$3,844,067 \$7.71 \$/M³

Proposed profit distribution for 2017

- \$65,082 to Forest Reserve Fund
- \$26,033 to Forest Legacy Fund
- \$39,049 to General Revenues

2017 Average
486 M³ / Ha

\$130,165 Total Profit

Appendix C

2017 Direct Employment Created from the Municipal Forestry Program

Activity	Description	Accomplishments	Accomplishments / yr / person	Person years	Person days
Harvesting	Hoe-forwarding/ Log Salvage	10,585 m ³	4,200	2.52	441.0
	Swing Yarder/High Lead	0 m ³	3,000	0.00	0.0
	Trucking	274 Loads	880	0.31	68.5
	Total			2.83	509.5
Tree Planting	Planting Supervision and marking Root Rot areas	48,888 Trees	140,000	0.35	61.1
				0.03	6.8
Total				0.38	67.9
Road Construction, Road Maintenance, and Road Debuilding	Rubber-tired Backhoe, Gravel Truck, Brush cutter, Excavator, Cat, & Lowbed Grading, Snow Plowing, and Dust Lay Blasting Labour			0.41	89.5
				0.05	11.6
				0.00	0.0
				0.00	0.0
Total				0.46	101.1
Site Preparation	Excavator & Rubber Tired Backhoe Piling Slash Labour - burning			0.02	4.5
				0.01	2.5
				Total	0.03
Silviculture	Plantation Brushing - Mechanical Invasive Species - Herbicide Invasive Species - Manual Apply Deer Repellant on Seedlings Tree Caging and Maintenance White Pine Pruning	37 Ha 11.6 Ha 18.2 Ha 0 Ha 54.0 Ha 68.0 Ha		0.11	24.7
				0.05	9.9
				0.33	72.8
				0.00	0.0
				0.61	135.0
				0.46	101.5
Total				1.56	343.9
Engineering, Security, Surveying, Fire Fighting	Cut block layout, Silviculture Precscriptions, Safety, Wildlife & tree assessments Security Trail Maintenance, Construction & garbage cleanup Land Assesments			0.29	64.0
				0.10	22.5
				0.02	4.1
				0.00	0.0
Total				0.41	90.6
Staff Time	Two full time staff and 40% of secretary Summer student			2.40	528.0
				0.36	80.0
Total				2.76	608.0
Total				8.44	1728.0

Indirect Jobs — Applying a Multiplier effect of 2 times the number of direct jobs **16.88**

Total Direct and Indirect Jobs Managing the Municipal Forest **25.32**

Appendix D

Statement of Operation and Reserve Balances December 31, 2017

	2017		Year to Date	
	Budget		Jan 1 to Dec 31, 2017	
Revenue				
Log Sales	20,000m ³	1,560,000	10,585m ³	1,151,781
Cost of Sales				
Logging		540,000		318,697
Scaling		1,000		-
Contract Engineering		30,000		18,705
Road Construction		150,000		97,617
Road Maintenance		65,000		92,582
Road Deactivation		5,000		-
Site Preparation		12,000		122
Planting		64,000		72,735
Brushing and Weeding		20,000		17,874
Brushing and Herbicides		20,000		8,007
Pruning		12,000		9,701
Tree Protection		34,000		47,939
		<u>953,000</u>		<u>683,979</u>
Gross Margin	39%	607,000	41%	467,802
Other Revenue		15,400		11,625
Rentals (Cell Towers)		<u>85,500</u>		<u>86,658</u>
		707,900		566,085
Expenses				
Administration		416,000		334,759
Fire Protection		16,000		14,164
Security		15,000		9,388
Five year Development Plan		-		-
Watershed Analysis		2,000		-
Tours		1,000		127
Integrated Resource Mgmt		20,000		3,770
Community Wild Fire Protection		10,000		-
Forestry contractor		10,000		3,312
Juvenile Spacing		-		-
Recreation Roads Maintenance		10,000		884
Scholarships		2,400		3,600
Grants in Aid		8,000		3,890
Invasive Species Control		16,000		4,035
Breen Lake Dam		10,000		-
Vehicles		35,300		31,176
Fire Truck		4,000		1,813
Lidar		<u>25,000</u>		<u>25,000</u>
		<u>600,700</u>		<u>435,918</u>
Net Income		107,200		130,167
Reserve Fund End of year 2017		1,411,705		1,463,903
Interest				
*Capital Expenditures		(36,000)		0
***Forest Legacy Projects		N/A		N/A
Scholarship / Bursary		<u>(2,400)</u>		
Total		<u>1,373,305</u>		<u>1,463,903</u>