

# Report

Date	February 17, 2017	File: 8930-20 ANN
To	Council	
From	Darrell Frank, Municipal Forester	Endorsed:
Subject	2016 Annual Report	

## Harvesting

The 2016 budget was 20,000m<sup>3</sup>, generating \$1,560,000, with logging expenses of \$540,000. The actual accomplishment was 17,268m<sup>3</sup>, generating \$1,477,190, with logging costs of \$457,180. The average cut block size was 6.7 ha.

Accomplishments:				Budget
Logging Sales	\$1,477,190	17,268m <sup>3</sup>	\$85.54/m <sup>3</sup>	\$78/m <sup>3</sup>
Direct Logging	457, 180	17,268m <sup>3</sup>	\$26.48/m <sup>3</sup>	\$27/m <sup>3</sup>

**Firewood Permits Revenue: \$2,010 Budget: \$1,000**

The public purchased 59 cords of firewood and Cowichan Valley Alternative School purchased 24 cords.

**Lesser Vegetation Permits Revenue: \$540 Budget: \$500**

The public purchased nine permits for salal and zero permits for boughs.

**Planting Costs: \$55,896 Budget: \$70,000**

41.0 ha were planted with 44,172 seedlings. The Spring planting accomplished 38.4 ha, with 42,852 trees of initial planting, and the Fall planting did 1,320 seedlings on 2.6 ha. Seedling costs were \$1.27/tree.

Accomplishments:		
Douglas-fir	35,982	82%
Western Red Cedar	5,040	11%
Western White Pine	3,150	7%

**Fertilizer application was done at planting to 37,674 seedlings.**

The Municipality has planted 2,081,906 seedlings since the start of its intensive silviculture program in 1982, and harvested 1,717 ha.

## Surveys

Survival surveys were established in the 2016 plantations to monitor seedling survival rates by our summer student. The 2016 plantations has a survival rate of 93%. The 2015 plantations were revisited and they had a survival rate of 87% after two growing seasons.

Root rot surveys were conducted for 41.1 ha (six blocks) at a cost of \$2,707 or \$66/ha.

**Tree Protection**                      **Costs: \$10,891**                      **Budget: \$30,000**

Accomplishments:

Deer repellent, Plantskydd, was applied to the Douglas-fir and Western red cedar 2016 planting stock, prior to planting, at a cost of \$0.03/tree for treating the trees.

**Road Construction and Maintenance**                      **Costs: \$127,566**                      **Budget: \$230,000**

Accomplishments

Major road construction, improvements, and temporary roads	2.2 km
Road maintenance, post-harvesting cleanup	2.2 km
New culverts installed by North Cowichan	6
Quarries: rock developed	1,640 m <sup>3</sup>
Debuilt roads	100 m
Recovered rock from debuilt road	0 m <sup>3</sup>
Road grading	19.0 km
Snowplowing	0 km
Roadside brush cutting for roadside visibility improvements	28.0 km
Gate installation	0
Dust lay Mt. Prevost Rd and Grace Rd	2.4 km

**Site Preparation**                      **Costs: \$4,278**                      **Budget: \$12,000**

Accomplishments

Logging debris piles burned	34.6 ha
Logging debris piled for burning in 2017	12.4 ha

The Fall burning program consisted of 61 piles from six blocks. Burning results were poor to fair. Burning took place from October 13, to November 5.

Burning Costs:                      \$13.66/pile (\$833)

**Fire Protection**                      **Costs: \$18,057**                      **Budget: \$16,000**

The Municipal Forest Reserve gates were locked from July 28 to September 15. The Forest Reserve had one wildfire this year on May 8 on Mount Sicker and burned up 200m<sup>2</sup> of one-year-old plantation.

**Security and Vandalism**                      **Costs: \$18,296**                      **Budget: \$20,000**

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: 7,124**                      **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.

All harvesting areas incorporated single and group tree retention. Old growth Douglas-fir Western white pine, wildlife trees, and ten dominant or co-dominant trees were retained in all cut blocks.

This year's expenditures were for danger tree removal, trail signage, garbage cleanup, design improvements for Mount Tzouhalem parking lot, and a temporary trail built to access the new CVRD park at Stoney Hill.

**Watershed Analysis – Mount Sicker**                      **Costs: 0**                      **Budget: \$5,000**

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

## Silviculture

Contract crews completed the following:

### Accomplishments

	Ha	Budget \$	Costs	Cost /ha
Plantation Brushing - mechanical	66.4	20,000	28,139	424/ha
Plantation Brushing – hand pulling	35.9	12,000	14,840	413/ha
Tansy Ragwort				
Invasive species – Broom, Tansy Ragwort, and brush spp – Herbicides	12.2	20,000	5,745	471/ha
White Pine Pruning	65.4	12,000	15,822	242/ha
Tree caging installations (5040)	65.4	15,400	8,820	1.75/tree
Tree caging maintenance and cone	12.6	14,600	4,954	393/ha
	6,155			0.80/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	1,158	ha
Plantation Brushing	3,452	ha
Harvesting	1,720	ha

## Community Relations:

The Forestry Department took part in a Mount Prevost garbage cleanup with Cowichan Secondary School's Outdoor class on November 7. Eleven students and staff removed 170kg of garbage from Mount Prevost. The school also created a sign at the foot of Mount Prevost promoting keeping the mountain clean. 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.

The Forestry Department also hosted a one-day tour of the Municipal Forest Reserve by the Coastal Silviculture Summer Workshop, assisted in a tree planting by local scouts, and hosted a tour of the Municipal Forest Reserve.

## Recommendation

that the 2016 Annual Report be received for information

Attachment(s): 5

**Appendix A**

**2016 Harvesting Summary**

Block	Ha (Gross)	Treatment	Vol m <sup>3</sup> /ha	Total Vol m <sup>3</sup>	Net Profit \$/m <sup>3</sup>	Net Revenue	Net Revenue Per/Ha	Costs Stump to Dump \$/m <sup>3</sup>	Total Logging Costs	Gross Revenue	Gross Revenue Per m <sup>3</sup>	Gross Revenue Per Ha
M-630	6.0	?????	425	2,548	\$56.33	\$143,550	\$23,825	\$26.72	\$68,096	\$211,646	\$83	\$35,274
P-636	3.3	Patch Cut GTR/Hoe Forwarding	467	1,542	\$56.51	\$87,151	\$26,409	\$29.50	\$45,497	\$132,648	\$86	\$40,190
P-551	6.1	Patch Cut GTR/Hoe Forwarding	738	4,503	\$62.35	\$280,753	\$46,025	\$28.00	\$126,064	\$406,817	\$90	\$66,691
P-796	7.1	Patch Cut GTR/Hoe Forwarding	333	2,362	\$44.49	\$105,075	\$14,799	\$29.70	\$70,151	\$175,226	\$74	\$24,680
P-805	11.2	Patch Cut GTR/Hoe Forwarding	467	5,232	\$62.78	\$328,472	\$29,328	\$24.80	\$129,735	\$458,207	\$88	\$40,911
P-898RoW	0.5	Right-of-way clearing	445	223	\$57.42	\$12,786	\$25,572	\$30.00	\$6,680	\$19,466	\$87	\$38,932
Stoney Hill RoW	2.4	Right of way clearing	358	858	\$72.52	\$62,222	\$25,926	\$12.77	\$10,958	\$73,180	\$85	\$30,492
<b>Total</b>	<b>36.6</b>		<b>472</b>	<b>17,268</b>	<b>\$59.07</b>	<b>\$1,020,010</b>	<b>\$27,869</b>	<b>\$26.48</b>	<b>\$457,180</b>	<b>\$1,477,189</b>	<b>\$86</b>	<b>\$40,360</b>

GTR Green Tree Retention

Logging Costs per m<sup>3</sup> \$26.48

**Silviculture Systems Summary**

	Ha
Patch Cut GTR	36.60
Commercial Thinning	0.00
Individual Tree Harvesting	0.00
Seed Tree	0.00
<b>Total</b>	<b>36.60</b>

Average Cut Block Size (Ha)

6.7

**Conifer and Hardwood Component**

	Volume	Volume By Percent	Net Revenue	Revenue \$/M <sup>3</sup>	Revenue By %
Hardwoods	38	0.2%	\$1,706	\$45.50	0.17%
Conifer	17,231	99.8%	\$1,018,303	\$59.10	99.83%
<b>Total</b>	<b>17,268</b>	<b>100.0%</b>	<b>\$1,020,010</b>	<b>\$59.07</b>	<b>100.00%</b>

Appendix B

1987 To 2016 Harvesting Summary

Year	Ha	Volume m³	Volume/ha	Net Revenue	Net Revenue \$/m³
1987	83.4	13,159	208	\$204,772	\$15.58
1988	73.9	18,602	252	\$354,256	\$10.04
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	\$269,102	\$22.35
1993	55.2	14,907	270	\$542,821	\$36.42
1994	58.6	16,180	276	\$602,414	\$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	16,426	401	\$564,867	\$34.38
2000	35.9	13,378	373	\$564,778	\$42.22
2001	30.34	15,538	395	\$660,924	\$42.54
2002	39.9	13,660	348	\$560,631	\$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	\$762,562	\$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	\$38.05
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	17,266	472	\$1,020,010	\$50.07
<b>Total</b>	<b>1470.21</b>	<b>458,043</b>	<b>332</b>	<b>\$18,983,287</b>	<b>\$38.65</b>
<b>Average</b>	<b>49.0</b>	<b>18,266</b>	<b>332</b>	<b>\$288,776</b>	<b>\$38.65</b>

Summary 1987 to 2016 332 M³/ha \$12,830 /ha  
 Net Revenue from the MFR 1987 to 2015 \$3,713,902 \$7.61 \$/M³

**2016 Averages**  
**472 M³ / Ha**  
**\$27,775/ Ha Net Revenue**

**Proposed profit distribution for 2016**

208,098 to Forest Reserve Fund  
 \$62,438 to Forest Legacy Fund  
 \$123,656 to General Revenues  
 \$412,196 Total Profit

Forestry Program Profit

Year	Annual Profit	Profit \$/M³	Annual Forestry Profit Split As Follows:					Land Purchases	Acres
			General Revenues	Reserve Fund	Forest Legacy Fund	Scholarship Fund			
1987	-\$24,825	-\$1.89	\$0	-\$24,825	\$0	\$0	\$0	\$0	
1988	\$115,885	\$6.23	\$0	\$115,885	\$0	\$0	\$0	\$0	
1989	\$38,486	\$2.60	\$0	\$38,486	\$0	\$0	\$0	\$0	
1990	\$48,571	\$4.43	\$0	\$48,571	\$0	\$0	\$0	\$0	
1991	-\$12,370	-\$0.97	\$0	-\$12,370	\$0	\$0	\$0	\$0	
1992	\$67,231	\$5.20	\$45,000	\$22,231	\$0	\$0	\$0	\$0	
1993	\$272,278	\$18.27	\$240,000	\$32,278	\$0	\$0	\$0	\$0	
1994	\$275,880	\$17.07	\$250,000	\$25,880	\$0	\$0	\$0	\$0	
1995	\$755,771	\$37.24	\$489,230	\$33,313	\$62,308	\$0	\$140,020	35 acres	
1996	\$131,057	\$9.08	\$65,000	\$61,057	\$15,000	\$0	\$0	\$0	
1997	\$24,815	\$1.86	\$24,815	\$0	\$0	\$0	\$0	\$0	
1998	\$47,420	\$3.92	\$0	\$37,935	\$9,485	\$0	\$0	\$0	
1999	\$97,579	\$6.04	\$29,274	\$48,789	\$19,516	\$0	\$0	26 acres*	
2000	\$33,745	\$2.52	\$0	\$9,865	\$17,057	\$6,823	\$0	\$0	
2001	\$111,851	\$7.20	\$100,666	\$11,185	\$0	\$0	\$0	\$0	
2002	\$95,375	\$5.87	\$28,612	\$47,666	\$19,075	\$0	\$0	\$0	
2003	\$94,484	\$5.96	\$52,162	\$22,273	\$18,609	\$1,440	\$0	\$0	
2004	\$121,932	\$6.38	\$29,183	\$68,880	\$19,455	\$4,414	\$0	\$0	
2005	\$29,001	\$1.87	\$14,951	\$0	\$14,950	\$0	\$0	\$0	
2006	\$30,343	\$1.73	\$15,171	\$0	\$15,172	\$0	\$0	\$0	
2007	\$65,344	\$3.09	\$0	\$65,344	\$0	\$0	\$0	\$0	
2008	-\$20,393	-\$1.29	\$0	-\$20,393	\$0	\$0	\$0	\$0	
2009	-\$119,362	-\$6.24	\$0	-\$119,362	\$0	\$0	\$0	\$0	
2010	-\$137,400	-\$8.37	\$0	-\$137,400	\$0	\$0	\$0	\$0	
2011	-\$55,679	-\$3.14	\$0	-\$55,679	\$0	\$0	\$0	\$0	
2012	\$9,602	\$0.56	\$0	\$9,602	\$0	\$0	\$0	\$0	
2013	\$435,606	\$17.69	\$130,662	\$217,603	\$67,121	\$601	\$0	\$0	
2014	\$409,430	\$20.24	\$122,829	\$204,715	\$61,886	\$715	\$0	\$0	
2015	\$359,381	\$16.14	\$239,381	\$0	\$120,000	\$803	\$0	\$0	
2016	\$412,195	\$23.67	\$206,086	\$122,669	\$62,438	\$0	\$0	\$0	
<b>Total</b>	<b>\$5,713,902</b>	<b>\$7.61</b>	<b>\$2,982,618</b>	<b>\$572,371</b>	<b>\$601,338</b>	<b>\$7,973</b>	<b>\$140,820</b>	<b>61 Ac</b>	
<b>Average</b>	<b>\$123,767</b>	<b>\$7.61</b>	<b>\$69,784</b>	<b>\$29,079</b>	<b>\$20,061</b>	<b>\$298</b>	<b>\$4,667</b>		

- \* Note: the 2011 transfer from Forest Reserve Fund includes a \$10,000 to Public Works for the new Fire Truck, \$9,000 for the truck replacement fund
- \* Note: The contribution for 2001 to Forest Reserve Fund went into the Fire Fighting Contingency Fund
- \* Note: The Land Purchase of 26 acres done in 1999 was paid for by a transfer out of the Forestry Dept Reserve Act
- \* Note: Profit from 1995 includes \$47,000 carried forward to 95 for 5 yr plan unspent in 1995 to 96
- \* Note: Interest income from 2005 and on is not shown in revenues, to comply with the finance dept accounting practices. Interest income for 2005 and on was retained in the Forest Reserve and Scholarship funds respectively.

**Appendix C**  
**2016 Direct Employment Created from the Municipal Forestry Program**

Activity	Description	Accomplishments	Accomplishments / yr / person	Person years	Person days
Harvesting	Hoe-forwarding/ Log Salvage	17,288 m <sup>3</sup>	4,200	4.11	719.5
	Swing Yarder/High Lead	0 m <sup>3</sup>	3,000	0.00	0.0
	Trucking	463.3 Loads	880	0.53	115.8
			<b>Total</b>	<b>4.64</b>	<b>835.3</b>
Tree Planting	Planting Supervision and marking Root Rot areas	44,172 Trees	140,000	0.32	55.2
			<b>Total</b>	<b>0.35</b>	<b>62.0</b>
Road Construction, Road Maintenance, and Road Debuilding	Rubber-tired Backhoe, Gravel Truck, Brush cutter, Excavator, Cat, & Lowbed			0.41	89.5
	Grading, Snow Plowing, and Dust Lay			0.05	11.8
	Blasting			0.00	0.0
	Labour			0.00	0.0
			<b>Total</b>	<b>0.46</b>	<b>101.1</b>
Site Preparation	Excavator & Rubber Tired Backhoe Piling Slash Labour - burning			0.02	4.5
				0.01	2.5
			<b>Total</b>	<b>0.03</b>	<b>7.0</b>
Silviculture	Plantation Brushing - Mechanical	66.4 Ha		0.20	44.3
	Invasive Species - Herbicide	12.2 Ha		0.05	10.4
	Invasive Species - Manual	35.9 Ha		0.65	143.6
	Apply Deer Repellant on Seedlings	0 Ha		0.00	0.0
	Tree Caging and Maintenance	17.2 Ha		0.20	43.0
	White Pine Pruning	65.4 Ha		0.44	97.6
			<b>Total</b>	<b>1.54</b>	<b>338.9</b>
Engineering, Security, Surveying, Fire Fighting	Cut block layout, Silviculture Prescriptions, Safety, Wildlife & tree assessments			0.29	64.0
	Security			0.10	22.5
	Trail Maintenance, Construction & garbage cleanup			0.02	4.1
Job Creation	Land Assesments			0.00	0.0
				0.00	0.0
			<b>Total</b>	<b>0.41</b>	<b>90.6</b>
Staff Time	Two full time staff and 40% of secretary Summer student			2.40	528.0
				0.38	80.0
			<b>Total</b>	<b>2.76</b>	<b>608.0</b>
<b>Total</b>				<b>10.19</b>	<b>2042.9</b>
<i>Indirect Jobs — Applying a Multiplier effect of 2 times the number of direct jobs</i>				<b>20.38</b>	
<b>Total Direct and Indirect Jobs Managing the Municipal Forest</b>				<b>30.57</b>	

## APPENDIX D

## TOURS 2016

TOUR NO.	GROUP/CLUB	DATE	PARTICIPANTS	COSTS	STAFF TIME				Site Visits
					FORESTER	Hr	TECH	Hr	
1	Local News Eye	Jan 25/16	1	0	3	Hr	0	Hr	
2	Cowichan Secondary School	May 5/16	19	57	5		2		Mt Prevost sign installation & unveiling
3	North Cowichan/Duty Foreman	May 17/16	9	169	6		6		Maple Bay Fire Hall, Stoney Hill, Grace Rd, Maple and Richards
4	Community Forest AGM	May 26/27	5	0	14		0		Lake Cowichan, FAC members attended
5	Coastal Silviculture Work shop	June 16 and 17	73	0	14		14		Mt Richards and Maple Mt
6	Cowichan Secondary School	Nov. 7/16	11		3				Mount Prevost
7	Past FAC Chairman & Municipal Forester	May-01-06	2	3	3				Mount Prevost
8	Ministry of Forests	Oct. 18	23	0	6		0		Mt Prevost, Stoney Hill
9	Scouts Tree Planting	April-03-16	32	0	3				Grace Rd area planted 800 trees

**175      \$229      57      HR      22      HR**

**Or as Expressed in Days**

**8.1      Days      3.1      Days**

Municipal Forest Reserve outdoor events held in 2016:

Cowichan Challenge Triathlon,  
 Prevost Downhill Mountain Bike Race, Maple Maple Mt Bike Enduro Race,  
 Maple Mountain Cross Country Mt Bike Race, and  
 Three different Mt Bike Demo Days



## Appendix E

## Statement of Operation and Reserve Balances December 31, 2016

	2016		Year to Date	
		<u>Budget</u>	Jan 1 to Dec 31, 2016	
<b>Revenue</b>				
Log Sales	20,000m <sup>3</sup>	1,560,000	17,268m <sup>3</sup>	1,477,190
<b>Cost of Sales</b>				
Logging		540,000		457,180
Scaling		500		589
Contract Engineering		30,000		9,742
Road Construction		150,000		68,230
Road Maintenance		65,000		59,336
Road Deactivation		5,000		-
Site Preparation		12,000		4,278
Planting		70,000		55,896
Brushing and Weeding		20,000		28,139
Brushing and Herbicides		20,000		5,745
Pruning		12,000		15,822
Tree Protection		30,000		10,891
		<u>954,500</u>		<u>715,848</u>
Gross Margin	39%	605,500	52%	761,342
Other Revenue		15,400		19,071
Rentals (Cell Towers)		83,750		72,693
		<u>704,650</u>		<u>853,106</u>
<b>Expenses</b>				
Administration		404,140		338,665
Fire Protection		16,000		18,057
Security		20,000		18,296
Five year Development Plan		-		-
Watershed Analysis		2,000		-
Tours		1,000		78
Integrated Resource Mgmt		20,000		7,124
Community Wild Fire Protection		-		-
Forestry contractor		10,000		8,885
Juvenile Spacing		-		-
Recreation Roads Maintenance		10,000		-
Scholarships		2,400		1,800
Grants in Aid		7,800		6,914
Invasive Species Control		12,000		14,840
Breen Lake Dam		10,000		-
Vehicles		35,300		27,224
Fire Truck		4,000		6,421
		<u>554,640</u>		<u>448,304</u>
Net Income		150,010		404,802
Reserve Fund End of year 2016		1,549,883		1,399,410
Interest				16,742
*Capital Expenditures		(36,000)		0
***Forest Legacy Projects		N/A		(75,000)
Scholarship / Bursary		-2,400		
Total		<u>1,511,483</u>		<u>1,341,152</u>