



Minnesota Department of Natural Resources

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The Honorable Len Price
Senate Environment & Agriculture Budget Div.
235 Capitol, 75 Constitution Ave.
St. Paul, MN 55155

The Honorable Mark Holsten
House Environmental & Natural Resources
Finance Committee
381 State Office Building
St. Paul, MN 55155

Dear Senators and Representatives:

Attached is the Annual Report on Emergency Fire Fund Expenditures directed by Minnesota Laws of 2001, First Special Session, Chapter 2, Section 5, Sub. 4. This report provides information that helps the Administration and the Legislature to review and evaluate expenditures from the Emergency Fire Fund Direct and Open Appropriations.

The report applies information from a cost coding structure that was significantly modified for FY 2002. It has better information on the details of firefighting expenditures. This new structure enables us to report in more meaningful detail on firefighting activities for FY 2002.

Please feel free to contact Joe Kurcinka, Planning, Budgeting and Evaluation Director, at 651-296-4789, Olin Phillips, Fire Management Section Manager, at 651-296-5971, or me with any questions or concerns regarding this report.

Sincerely,

Allen Garber
Commissioner

2001 Minn. Laws First Spl.
Sess. Chap. 2 Sec. 5 Subd. 4

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Annual Report on Emergency Fire Fund Expenditures

FY 2002

Purpose

The purpose of this Report is to address the requirements of Minnesota Laws of 2001 First Special Session Chapter 2, Section 5 subd. 4 which states in part:

“By November 15, each year, the commissioner of natural resources shall submit a report to the chairs of the house of representatives way and means committee, the senate finance committee, the environment and agriculture budget division of the senate finance committee, and the house of representatives environment and natural resources finance committee, identifying all firefighting costs incurred and reimbursements received in the prior fiscal year.”

Funding Sources for Emergency Firefighting

Emergency Fire - Direct Appropriation: Laws of 2001 appropriated \$6,000,000 for FY 2002 for preparedness and suppression costs. The full appropriation was expended.
(First Special Session Chapter 2, Section 5 subd. 4)

Emergency Fire - Open Appropriation: Under the authority of this appropriation, the Division of Forestry requested and received \$9 million. Of this \$8,900,000 was expended; the unused amount of about \$100,000 cancelled to the General Fund. This includes costs of \$307,000 for responding to the Bypass Fire near Brainerd, of which a significant portion of these costs is expected to be reimbursed by the federal government in FY 2003. The Department has requested and been approved for a wildfire mitigation grant from the Federal Emergency Management Agency (FEMA). The exact dollar amount that will be granted is not known as of the date of this report.

(Laws of 2001 First Special Session Chapter 2, Section 5 subd. 4 further states in part that “If the appropriation for either year is insufficient to cover all costs of suppression, the amount necessary to pay for emergency firefighting expenses during the biennium is appropriated from the general fund.”)

Attachment 1 shows the costs from the Direct and Open fire appropriations by object of expenditure.

General Operations and Management: The division utilized about \$3 million of its general operations appropriation for fire suppression and preparedness. This is about 35% above the ten year average. A primary responsibility of field foresters is fire fighting. Regular hours spent on firefighting are charged to the general operations account. Overtime and other hours in excess of “base eight” are charged to the emergency fire accounts. In addition to “base eight” firefighting time, a number of other fire activities are charged to General Operations including: Minnesota Interagency Fire Center (MIFC) operations, fire cache operations, air support operations, fire prevention, burning permits and enforcement, and rural fire department assistance programs.

These changes improve our ability to sort out costs that occur during various levels of fire danger. We will be reviewing this coding system during FY 03 to better streamline it and reduce coding errors.

Attachment 2 shows the cost code structure developed and implemented for FY 2002.

Preparedness costs amounted to only 11% of the direct and open fire appropriations. Historically, preparedness has composed 25% or less of our fire fund expenditures. In FY 2002 preparedness costs amounted to 23% of the three funds that support fire (general operations, fire-direct, fire-open).

The second issue involves the funding arrangements. As stated above, the direct appropriation can be used for both suppression and preparedness and must be utilized before going to the open appropriation. Because the Minnesota fire season occurs both in the fall and in the spring, suppression costs may be incurred that use up the preparedness funds that are needed in the spring. This means that some preparedness costs hit the open appropriation in FY 2002. A technical remedy would be to back-code some preparedness costs from the open to the direct, and transfer an equal amount of suppression costs from the direct to the open, after the fact. This is an expensive and time consuming process.

Implementing Planning Levels and Identifying the Costs of Fire Suppression

An additional effort to clarify base costs for wildfire response was the development of criteria to guide the determination of fire planning (or readiness) levels.

Attachment 3 shows the criteria and planning levels that were used in FY 2002.

These planning levels are reviewed at a weekly conference call by fire managers from all the agencies that cooperate in Minnesota wildfire suppression efforts. Planning levels are set for each region of the state, and for the state as a whole. The planning level, combined with daily fire danger indices, establish the preparedness level needed to effectively respond to wildfires. About 80% of wildfires in the state occur during planning level 2. Major fires also can and do occur at this level.

In FY 2002 there were 258 days of possible wildfire. (i.e. at least one region at planning level 1 or higher). We experienced 240 days at statewide planning level 1 or higher, indicating a statewide potential for wildfire response. On 59 days, at least one region was at a higher level than the rest of the state due to local conditions. Of the possible wildfire days, 214 were at Planning Levels 1-2, and 26 days were at Planning Level 3 or higher.

Historically, for the four years that the planning level system has been in use, the average number of days at Planning Level 1 or higher is 213.

Attachment 4 shows the ten year fire expenditure history.

FY 2002 Fire Season

General Activity: In FY 2002, 1307 fires occurred burning 32,033 acres. Historically, the state experiences an average of about 1650 fires per year burning nearly 50,000 acres. However, weather patterns from year to year lead to highly variable numbers among the years.

# Fires By Cause				
	FY 2002	%	26 Yr. Ave.	%
Lightning	14	1.1	21	1.2
Campfires	46	3.5	35	2.1
Smoking	43	3.3	68	4.1
Debris Burning	511	39.1	634	38.4
Arson	393	30.1	500	30.3
Equipment Use	110	8.4	106	6.4
Railroad	65	5.0	81	4.9
Misc./Unknown	125	9.5	207	12.6
Total	1307		1652	

Fire Behavior and Danger Levels: Spring fire season started out slow in 2002. Grass fires were common but most were easily contained and did not spread significantly into wooded areas. Because of cool temperatures during most of April and early May, spring green-up occurred later than normal. By mid-May fuel moistures had reached very low levels. Warmer temperatures and high wind events during the latter part of May resulted in major fires in the Brainerd, Two Harbors, and Moose Lake areas.

June 2002 was one of the wettest months in Minnesota's history. Precipitation totals exceeded 10 inches in numerous communities of northwestern, north central, central, and southeastern Minnesota.

This effectively ended fire season over most of the State. However, the Arrowhead region remained in a drought condition. Campfires were banned in the BWCA and the blowdown area was in a tinderous condition. Fire crews in the Arrowhead Region were in a high state of readiness through most of the summer. The Tuesday Fire started on July 2nd in the Grand Marais Area, and required extended action and resources to suppress it.

The protection of homes and lives remains a major factor in fire suppression tactics and suppression costs. Housing development in the rural environment continues to present significant fire suppression problems. The division is hopeful that the federally funded Fire Wise program will help communities and individual homeowners to reduce the hazard of property damage from wildfires.

Major Incidents (these are mentioned because they are significant cost items):

The Doctor B. Fire near Nickerson (May 30, 2002) threatened 2 residences and thousands of acres of pine forest land. The fire was held to 134 acres, but dry conditions required that it be mopped up and monitored for several days after the initial run.

The North Shore Complex Fires, (also on May 30th) originated from lightning strikes in two remote

areas near the BWCA. The final size was 270 acres. Suppression was mostly by hand, with ground crews aided by helicopters, due to the remote locations and difficult access.

The Bypass Fire near Brainerd, (May 31, 2002) destroyed 2 homes, 1 commercial property and 5 outbuildings. This fire illustrates the danger, and the need for rapid and effective wildfire response. The fire started from an abandoned campfire and spread to 720 acres. In an effort to save over 60 more threatened homes, and dozens of commercial and outbuildings, air tankers, helicopters (including National Guard), ground crews and many cooperating fire departments were mobilized to suppress the fire. This fire was approved for federal assistance by FEMA and the federal government will reimburse a significant proportion of the direct costs.

In addition, two major incidents occurred early in FY 2003. The Tuesday Fire began on July 2nd and burned 450 acres, and the Pincherry Oil Spill occurred on July 4th. The division assisted the pipeline company to burn off the spilled fuel, thus averting a pollution disaster in the Mississippi River. These incidents will be reported in detail on next year's report. They are mentioned here because they occurred during an unusually late fire season that overlapped into the next fiscal year.

CL - 215 Aircraft

The division purchased two CL-215 aircraft in FY 2001. The cost for both aircraft was \$6,390,000. The purchase was financed by borrowing. Annual payments for the two aircraft are \$1,528,991 for five years.

The Canadian built CL-215 is especially suited for Minnesota in that it is a water scooping aircraft. The short turn around time for delivering water on a wildfire can be as little as 5 minutes. Whereas land based tankers, which have to return to an airport for reloading, can take 30 - 60 minutes or more to return. This short turn around time for the CL-215's has saved buildings and resources. An additional benefit to the State owning vs. renting these aircraft, is that they are available for the entire fire season. DNR would not have had rented air tankers in the state at the time of the Doctor B, Bypass and Tuesday fires. In FY 2002 these aircraft made 877 water drops, delivering 1.25 million gallons of water on 26 wildfires in Minnesota. During times of low fire danger, or frozen lakes, the air tankers may be temporarily sent to other states under cooperative contracts. FY 2002, reimbursement back to Minnesota for these federal mobilizations was \$479,064. This helps to offset the State's cost of the air tankers.

Attachment 5 is presented to illustrate that it is cheaper to own these aircraft than lease them.

Although land based air tankers may still be used in the state, recent catastrophic failures of several of these older aircraft while working in the western states underscore the importance of using sound aircraft for firefighting.

Attachments

Attachment 1 - Fire Expenditures by Object Category for Emergency Fire Direct and Open Appropriations

Attachment 2 - FY 2002 Cost Code Structure

Attachment 3 - Guideline for Statewide Planning Level Determination

Attachment 4 - Ten Year Expenditure History of Fire Fighting Costs.

Attachment 5 - Summary of costs for CL-215 Air Tankers

For further information, contact:

S. Olin Phillips, Fire Management Section Manager

DNR Division of Forestry

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11-13-02

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Attachment 1

Emergency Fire Direct and Open Appropriations Expenditures by Category FY 2002

Fund 100 Appropriation 320 - EMERGENCY FIRE - DIRECT

Salary Costs	1,163,951
Operating Costs	3,313,488
Debt Service	1,520,991
Total	<u>5,998,430</u>

Fund 100 Appropriation 321 - EMERGENCY FIRE - OPEN

Salary Costs	4,831,084
Operating Costs	4,039,367
Total	<u>8,870,451</u>

DIVISION OF FORESTRY
ACTIVITY CODES
 ISSUED FOR USE BEGINNING JULY 4, 2001

Forestry Activity	General Forestry		State Land Forestry		Cooperative Forestry		
	Regular Duties	Fire Standby	Trust Lands	All/Other Lands	County & Local	PFM Rural	Urban Forests
Excess Property Program	3101						
Rural Fire Department Program	3191						
Center for Excellence Program	3104						
Fire Prevention	3111						
Burning Permit System	3112						
Detection and Monitoring	3113						
Prescribed Burning	3114						
Fuels Management	3115						
Fire Weather, Behavior & Intelligence	3116						
Radio Systems	3119						
Fire Presuppression	Level 0 3121		Level 1 - 2 3122	Level 3 - 4 3123			
Fire Suppression - Direct	3131						
Fire Suppression - Indirect	Agency 3141		IMT 3142	MAC & EOC 3143			
Fire Interagency Assignment	3151						
MIFC Operations	Level 0 3161		Level 1 - 2 3162	Level 3 - 4 3163			
Fire Cache Operations	Level 0 3171		Level 1 - 2 3172	Level 3 - 4 3173			
Air Operations	Support 3181		Tankers 3182	Helitack 3183	SEATS 3185	CL215's 3186	
Law Enforcement & Public Safety	Fire 3201			Recreation 3203	Search 3205	Disaster 3206	
Insects & Disease Mgmt	3211	3218	3212	3213		3216	3217
Soil, Water or Air Related	3221		3222	3223		3226	
Cultural and Aesthetic	3231		3232	3233			
Forest Resource Assessment	3261	3268	3262	3263		3266	
Subsection Planning (SFRMP)	3271	3278					
Planning, Analysis & Review	3281	3288		3283		3286	
Timber Sale Preparation & Admin.		3308		3303	3305	3306	
Site Preparation & Reforestation		3328	3322	3323		3326	
Timber Stand Improvement			3332	3333		3336	
Fish & Wildlife Habitat		3348	3342	3343		3346	
Roads & Bridges		3358		3353	3355	3356	
Campgrounds & Day Use Areas		3368	3362	3363			
Trails, Waterways & Accesses	3371						
Land Leases & Permits		3388	3382	3383			
Land Ownership & Classification			3392	3393	3395		
Forest Nursery Operations	3401	3408					
Forest Tree Improvement	3411						
Utilization & Marketing	3421	3428					
Grant & Contract Assistance	3431				3435	3436	3437
Misc. Forestry Assistance, NEC	3441	3448			3445	3446	3447
PLT & School Forests	3451						
Community Forest Mgmt Assistance		3468					3467
Information & Education	9750						
Legislative Affairs	9507						

Forestry Activity	General Forestry		State Land Forestry		Cooperative Forestry		
	Regular Duties	Fire Standby	Trust Lands	All/Other Lands	County & Local	PFM Rural	Urban Forests
Training Given	965A						
Training Received	9659						
Fiscal & Personnel Management	9608						
Facilities, Fleet & Equipment	9854						
Information Systems (HW/SW)	9802						
General Office & Clerical	9501						
General Meetings & Reports	9513						
Program Supervision	9702						
Leave / Time Off	9655						
Misc. Payroll / Multi-Purpose Purchase	3999						
Error Override	9999						

DIVISION OF FORESTRY INSTRUCTIONS FOR PROJECT CODE NUMBERS ISSUED FOR USE BEGINNING JULY 4, 2001

Project Codes are required for reporting all time worked and all expenses incurred for fire protection and natural disasters. Project Codes are always eight (8) digit numbers which always begin with three (3) and end with zero (0) - e.g., 3xxxxxx0, where x denotes variable digits as explained below.

- For all Fire Protection Activity time or costs which are not directly related to a specific fire or natural disaster, use the following Project Code number:

3 r a n 9990 where "r a n" is the RAN (Region Area Number) for the RAN in which the work took place or where the costs were incurred.

- For State of Minnesota Fires that are less than 100 acres in size, and for fires which are fully controlled within one burning period, use the following Project Code number:

3 r a n 0000 where "r a n" is the RAN (Region Area Number) for the RAN in which the fire took place or where the work or costs were incurred.

- For State of Minnesota Fires that are 100 acres in size or larger, and for fires that are not fully controlled within one burning period, use the following Project Code format :

3 r a n f f f f 0 where "r a n" is the RAN (Region Area Number) for the Area in which the fire took place and "f f f f" is the Area Fire Number for the fire.

- For all Non-DNR fires and all natural disasters contact MIFC Dispatch for a project code. MIFC Project Code will use the following format:

3711 x x x 0 where "x x x" is the Statewide Incident Number assigned by MIFC to the fire or natural disaster.

- For all COMP TIME TAKEN when it was earned on a fire activity and is to be charged against one of the fire funds, use the following Project Code number:

3LEAVE00.

NOTE: Payroll and vendor payment entries into the statewide systems for the the Emergency Fire Fund, the Fire Open Appropriation, and the "Out-of-State" Fire Account absolutely require the entry of a Project Code. If a specific project code is unknown or unavailable at the time an entry must be made into the statewide systems, enter a default code of 30000000 and corrections will be made at a later time.

Attachment 3

A GUIDELINE FOR STATEWIDE PLANNING LEVEL DETERMINATION

	PLANNING LEVEL 0	PLANNING LEVEL I	PLANNING LEVEL II	PLANNING LEVEL III	PLANNING LEVEL IV
BI (Q) spring , pre-green, floating 5 day average	Not applicable	0-45	46-70	71-95	96+
BUI (after June 1 , floating 5 day average)	Not applicable	0-25	26-50	51-67	68+
ERC (Q) (alternate summer/fall indicator, after June 1, floating 5 day average)	Not applicable	0-15	16-29	30-36	37+
8-14 day Weather Forecast	Winter conditions, most of State snow covered, temps below freezing.	Normal conditions for season, adequate precip. expected	Less than normal precip. and RH, higher than normal temps forecast	Dry weather patterns persisting, no change forecast	Dry pattern intensifying. Unstable weather forecast leading to extreme fire behavior conditions.
MN Regional Planning Levels	All Regions/Agencies at P.L. 0	One or more Regions/Agencies at P.L. I	Two or more Regions/Agencies at P.L. II	Two or more Regions/Agencies at P.L. III	Two or more Regions/Agencies at P.L. IV
Eastern Area Planning Level	0-I	0-II	0-III	0-IV	0-IV
National Planning Level	0-II	0-III	0-IV	0-IV	0-IV
Fire Occurrence (Initial Attack)	Rare, infrequent fire occurrence	Fires reported in scattered Areas. Generally less than 10 fires/day Statewide.	Multiple Areas/Agencies reporting fires. 10 to 20 fires/day Statewide	Multiple Areas/Agencies reporting fires. 20 to 30 fires/day Statewide	Multiple Areas/Agencies reporting fires. 30+ fires/day Statewide.
Fire Occurrence (Escaped fires)	None	None	1-2 fires requiring extended attack Statewide (more than mop-up)	3-5 fires requiring extended attack Statewide	5+ fires requiring extended attack Statewide
Sociopolitical Considerations	Statewide or Regional events such as fishing opener or the Fourth of July; natural events such as floods or windstorms; other unexpected or unusual events that may have large scale impacts should be considered.				
Resource Availability	Normal complement of personnel.	No shortages expected.	Moderate demand for some in-state resource types expected	Shortage of certain in-state resource types	Most in-state resources committed. Out of State assistance necessary.
In-State Mobilization	None	Less than 5% of statewide resources assigned out of home unit.	Some short term movement occurring , 5-10% of statewide resources assigned out of home unit.	10-20% of statewide resources assigned out of home unit.	20%+ of statewide resources assigned out of home unit.
Out of State Mobilization	If out of State mobilization is occurring or anticipated to occur, an 'A' designator will be applied at the current Planning Level.				

Attachment 4

Department of Natural Resources, Division of Forestry Fire Program Ten Year Expenditure History

Nominal Dollars By Source of Funds	FY 1993	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000(b)	FY 2001(c)	FY 2002	10 Year Average
Forestry General	\$2,038,844	\$1,897,453	\$1,374,870	\$1,667,949	\$1,912,828	\$2,325,257	\$2,559,669	\$2,658,615	\$2,640,289	\$2,963,183	\$2,203,896
Emergency Fire-Direct	\$750,000	\$735,000	\$735,000	\$2,736,000	\$2,552,980	\$3,470,065	\$3,522,870	\$2,822,957	\$4,412,245	\$5,998,430	\$2,773,555
Cost Recovery(a)	\$271,365	\$276,260	\$281,132	\$155,105	\$283,494	\$269,728	\$486,253	\$777,690	\$952,255	n.a.	\$375,328
Emergency Fire-Open	\$2,923,186	\$2,361,526	\$3,122,822	\$1,347,211	\$2,981,529	\$4,554,168	\$2,945,915	\$7,768,174	\$9,435,941	\$8,870,452	\$4,631,092
Fire Program Total	\$5,983,395	\$5,270,239	\$5,513,824	\$5,906,265	\$7,730,831	\$10,619,219	\$9,514,707	\$14,027,436	\$17,440,730	\$17,832,065	\$9,983,871
Cost Recovery(a) Carlos Edge Fire-FEMA	\$271,365	\$276,260	\$281,132	\$155,105	\$283,494	\$269,728	\$486,253	\$777,690	\$952,255	\$391,698.00 \$1,731,477	\$414,498
Net Cost to State	\$5,712,030	\$4,993,979	\$5,232,692	\$5,751,160	\$7,447,337	\$10,349,490	\$9,028,454	\$13,249,746	\$16,488,475	\$15,708,890	\$9,396,225
Out of State Fire Costs/ Reimbursement	\$323,873	\$303,836	\$2,188,512	\$1,176,091	\$1,410,139	\$302,889	\$299,106	\$1,028,550	\$2,604,290	\$2,876,747	\$1,251,403

(a) Fire Cache Sales, Fire Cost Collections

(b) \$1.9mm Ne MN preparedness initiative (Blowdown)

© Purchase of CL-215's

Attachment 5

CL - 215 AIR TANKER OWNERSHIP vs. RENTAL COSTS FY 2002

State Owned (2 aircraft):

Availability Cost: (200 days for one and 216 days for the other)	\$1,481,792
Flight time cost: (269.3 hours)	\$ 559,592
Annual loan payment: (five year term)*	<u>\$1,528,991</u>
Ownership cost:	\$3,570,375**

Call When Needed (CWN) Rental Estimate (2 aircraft):

Availability Cost: (416 days)	\$2,415,400
Flight time Cost: (269.3 hours)	<u>\$1,357,157</u>
Estimated rental cost:	\$3,772,557

Result of Ownership vs CWN Aircraft:
(savings for the state) \$ 202,182

Due to a national shortage of conventional air tankers in the United States, Minnesota cannot be guaranteed an air tanker upon request; it would depend upon national availability.

The above numbers show there is a net savings to the state owning air tankers versus renting on a call when needed basis.

*The annual loan payment occurs for five years, but the expected life of the aircraft is 15 to 20 years. If these payments are expensed over a 15 year period, the annual capital cost becomes \$509,664.

**Reimbursements for Federal Mobilizations in FY 2002
(not included in total) were: \$ 479,064

Because the state owns the aircraft, they can be made available for Federal Mobilizations when they are not needed for state use. These reimbursements offset part of the costs of ownership. Reimbursements would not be available if the state simply rented the aircraft. Rented aircraft could be released to other users, and they would pay the costs directly to the aircraft owners. Such use would reduce the cost of rental if it occurred during the time the state would normally be renting the aircraft, but the effect on total rental cost is too speculative to include in this summary.