

Annual Report on Emergency Firefighting Expenditures

Fiscal Year 2018

01/15/2019



Halma Fire – Kittson County

Minnesota Department of Natural Resources

Division of Forestry

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As requested by *Minnesota Statute*, section 3.197: This report cost approximately \$4,500 to prepare, including staff time, printing and mailing expenses.

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Executive Summary

The Minnesota Department of Natural Resources (DNR) expended a total of \$23,426,494 from the General Fund in FY '18 for wildfire protection and emergency response. This includes \$16,487,420 from the Emergency Firefighting Open Appropriation.

General weather and precipitation patterns, in addition to actual fire occurrence, affect the total expenditures for fire preparedness (prevention and presuppression) and suppression. In order to minimize the number of fires and respond quickly to extinguish fires, a combination of prevention, preparedness, and suppression activities is required. Resources must be ready for deployment to meet fire potential, even if no fires occur.

In FY2018, 824 wildfires occurred, burning 11,986 acres. This is significantly below the 20-year annual average of 1,230 fires burning about 30,313 acres.

These lower-than-average numbers may be attributed to the weather, which has the largest impact on fire activity. Calendar year 2017 ended nearly normal, and a cold and wet April delayed the start of the fire season. However, May's unseasonably warm and dry conditions contributed to a very active month of fire response. Throughout the summer, most of Minnesota experienced above-average rainfall. However, rain generally missed the northwestern quarter of the state, leaving it drier than normal. The fall season brought cooler temperatures and rain that kept fuels damp, but the Northwest remained in drought conditions.

The Minnesota Incident Command System (MNICS) did not mobilize teams within the state this year. The DNR, however, did actively mobilize resources to out-of-state incidents throughout FY2018. These requests for out-of-state assistance are supported through mutual aid agreements, with costs reimbursed to the State of Minnesota. Responding to out-of-state mutual aid requests reduces the costs of maintaining DNR's response capacity, offers important training opportunities, and ensures Minnesota will have access to mutual aid from elsewhere, if needed.

In FY2018, the DNR Division of Forestry used a mix of ground and aerial resources to suppress fires. The ground fleet had 210 firefighting engines and 49 tracked vehicles designed to access off-road and remote areas. A mix of aircraft procured under Exclusive Use and Call-When-Needed contracts, aircraft owned/operated by the DNR, and aircraft obtained through interagency and partnership agreements were used to control and suppress wildfires during the fiscal year. Tactical firefighting aircraft responded to 290 requests on 117 wildfires.

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Purpose

This report addresses the requirements of Minnesota Laws 2011, First Special Session chapter 2, article 1, section 4, subdivision 4, which states in part:

“By January 15 of each year, the commissioner of natural resources shall submit a report to the chairs and ranking minority members of the house and senate committees and divisions having jurisdiction over environment and natural resources finance, identifying all firefighting costs incurred and reimbursements received in the prior fiscal year.”

State Funding for Emergency Firefighting

Funding Authorized

Emergency Firefighting Direct Appropriation: Laws 2017, chapter 93, section 3 appropriated \$7,145,000 the first year and \$7,145,000 the second year for prevention, presuppression, and suppression costs of emergency firefighting and other costs incurred under *Minnesota Statutes*, section 88.12.

Emergency Firefighting Open Appropriation: Laws 2017, chapter 93, section 3 further state “the amount necessary to pay for presuppression and suppression costs during the biennium is appropriated from the general fund.”

Operating Adjustment

After the initial appropriation, the Department of Natural Resources (DNR) later received an Agency Operating Adjustment with instructions to distribute the funds accordingly. The DNR notified the legislature of that distribution on August 15, 2017, by submitting the Agency Operating Adjustment Distribution.

The adjustment was applied to several funds, including the Direct Appropriation for Firefighting. With the adjustment in place, the Emergency Firefighting Direct Appropriation in Laws 2017, chapter 93, was changed to:

\$7,357,000 the first year and \$7,521,000 the second year for prevention, presuppression, and suppression costs of emergency firefighting and other costs incurred under Minnesota Statutes, section 88.12. The amount necessary to pay for presuppression and suppression costs during the biennium is appropriated from the general fund. Given the rider amounts above, the totals reflect an operating adjustment increase of \$212,000 in the first year and \$376,000 in the second year.

Expenditures

During Fiscal Year 2018 (FY2018), the DNR expended \$6,939,074 from the Direct Appropriation and \$16,487,420 under the Open Appropriation authority.

Attachment 1, Emergency Fire Direct and Open Appropriations, shows state firefighting expenditures by salary and operating costs.

Reimbursements to the General Fund

Payments and Collections

The DNR receives payments for certain fire-related activities. These include payments for supplies sold to local government units (e.g., fire departments) from the Interagency Fire Cache (cache sales authorized under Minnesota Statutes, section 88.065) and collections from responsible parties for starting illegal or negligent fires (fire cost collections mandated under Minnesota Statutes, section 88.75). These receipts are deposited directly into the general fund and are not used by the DNR.

FY2018 Receipts

- Cache Sales \$150,610
- Fire Cost Collections \$253,866

Special Revenue Fund

This is a temporary use of the state emergency firefighting appropriations and is included for complete disclosure. The DNR provides firefighters and aircraft to assist federal partners within Minnesota, mobilizes firefighters for out-of-state assistance with national wildfire emergencies, and assists Great Lakes Forest Fire Compact (Compact) partners. These costs are initially charged to the Emergency Fire Special Revenue Fund and invoiced for reimbursement as soon as practical. During FY2018 the DNR expended \$4,588,888 of reimbursable costs for national mobilizations and Compact support. The federal government reimburses federal costs and Compact partners (adjoining states and Canadian provinces) reimburse their costs as well.

The Special Revenue Fund may be reimbursed for more than actual costs from out-of-state deployments. The revenue is generated by out-of-state mobilizations of equipment, such as wildland fire engines, and includes a portion of the fixed costs associated with this equipment. The emergency firefighting appropriation pays for fixed costs. Reimbursement revenue in excess of actual cost is periodically transferred to the general fund.

Reimbursements to the General Fund in FY2018

- Cache Sales \$ 150,610
- Fire Cost Collections \$ 253,866
- Special Revenue Fund \$ 1,222,269

Total \$ 1,626,745 Planning and Readiness

Weather and rain patterns, as well as actual fire occurrence, affect wildfire preparedness and response costs. Before fire season starts, the DNR trains firefighters, maintains and secures equipment, establishes contracts for aerial detection and suppression, supports rural fire departments in securing equipment, and engages in fire prevention efforts. Together, all of these efforts encompass preparedness activities.

To guide its level of readiness from week to week, the DNR uses a tiered system to determine potential wildfire risks and establish fire-planning levels.

Attachment 2, A Guideline for Statewide Planning Level Determination, shows the criteria and planning levels currently in use.

These planning level guidelines are reviewed and determined at bi-weekly conference calls with fire managers from all agencies that cooperate to suppress Minnesota's wildfires. The planning level, in combination with daily fire danger indices, establishes the preparedness level necessary to effectively respond to wildfires. Historically, about 80 percent of the state's wildfires happen during Planning Level III. Major fires can and do occur at Level III.

Fiscal year 2018 had 198 days of possible wildfire danger (i.e. at least one DNR Region at Planning Level II or higher). Of those possible wildfire days, 141 were at Planning Level II, 49 were at Planning Level III, eight were at Planning Level IV, and none were at Planning Level V.

Fire Suppression and Presuppression

The success of the DNR's fire suppression strategy is largely due to aggressive initial attack. The goal is to keep fires small. Once a fire escapes initial attack, costs and damages increase significantly.

Preparedness (prevention and presuppression) and suppression activities work together to reduce wildfire damages. Presuppression encompasses actions taken before a fire starts in order to ensure more effective suppression.

These activities include overall planning, recruitment, and training of personnel; procurement of firefighting equipment and

contracts; and maintenance of equipment and supplies. Suppression costs include activities that directly support and enable the DNR to suppress wildfires, including the prepositioning of resources. As fire danger and fire occurrence increase, the resources that must be positioned for immediate response also increase. Presuppression costs were approximately 44 percent, or \$10,337,170, of the Direct and Open fire appropriations in FY2018. Suppression costs were approximately 54 percent, or \$12,631,206, of the direct and open fire appropriations in FY2018.



Firewood Fire - Clearwater County

The DNR cost-coding structure provides accountability for fire expenditures. The fiscal system tracks expenditures by both the type of activity and location (down to the administrative Area level).

Attachment 3, FY2018 State Fire Cost Summary, shows the percentages of fire expenditures allocated to prevention, presuppression, and suppression activities.

Attachment 4, Ten-Year Expenditure History – State Firefighting Costs, shows the 10-year fire expenditure history.

Fire Occurrence and Causes

In FY2018, Minnesota experienced 824 wildfires that burned 11,986 acres. This is significantly below the 20-year annual average of 1,230 fires that burn about 30,313 acres. Although the majority of fires occurred in the north, the DNR responded to wildfires throughout the state. The current mix of aircraft, continued partnerships, and attention to wildfire preparedness helped keep the fires small and allowed most to be controlled within 24 hours

Number of Fires by Cause

	FY 2018	%	20-Year Average	%
Debris Burning	345	42 %	433	35%
Incendiary / Arson	146	18%	354	29%
Misc. / Unknown*	157	19%	165	13%
Equipment Use	113	14%	131	11%
Campfires	37	4%	50	4%
Lightning	5	1%	20	2%
Smoking	11	1%	31	2%
Railroad	10	1%	48	4%
Total	824	100%	1230	100%

*Misc./Unknown includes items that usually do not account for a major percentage on their own such as electric fences, powerlines, fireworks, fires started within a structure, prescribed fires, other sources like hot ashes, spontaneous combustion, and cause unknown

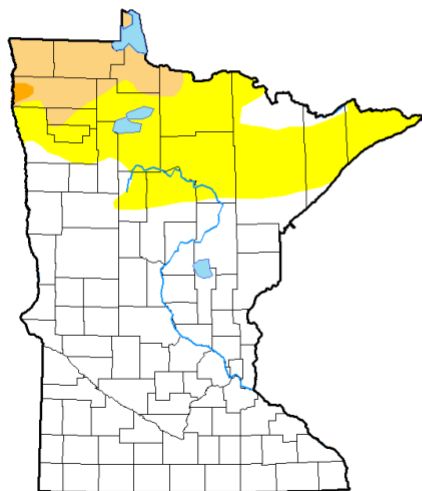
Attachment 5, Minnesota Fires and Acres Burned, and Attachment 6, FY2018 Number of Wildfires by Cause graphically illustrate fire history and causes.

Weather Summary

The weather in 2017 ended nearly normal, with a wet October and a dry early winter. Mid-winter and early spring snow, especially from April 13-16, caused the 2018 spring fire season to begin on a wet note. Cold April temperatures (the third coldest on record) delayed the normal start of the fire season. Fire activity picked up rapidly in May, as the statewide temperature averaged 60.8 degrees F (the fourth warmest on record). April and May rainfall averaged 2.70 inches, which is far drier than normal.

Throughout the summer, varied rain events crossed the state but rain generally missed the northern quarter of the state, leaving this area with drier than normal conditions. The fall season brought cooler temperatures and rain that kept the fuels damp, but the Northwest remained in drought.

U.S. Drought Monitor Minnesota



September 25, 2018
(Released Thursday, Sep. 27, 2018)
Valid 8 a.m. EDT

	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	67.05	32.95	8.31	0.27	0.00	0.00
Last Week 09-18-2018	67.05	32.95	8.31	0.27	0.00	0.00
3 Months Ago 06-26-2018	88.32	11.68	0.13	0.00	0.00	0.00
Start of Calendar Year 01-01-2018	87.26	12.74	1.37	0.00	0.00	0.00
Start of Water Year 09-16-2017	82.66	17.34	3.90	0.11	0.00	0.00
One Year Ago 09-26-2017	82.66	17.34	3.90	0.11	0.00	0.00

Intensity:
 D0 Abnormally Dry D3 Extreme Drought
 D1 Moderate Drought D4 Exceptional Drought
 D2 Severe Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

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<http://droughtmonitor.unl.edu/>

References: BOULAY, P. (N.D.). CLIMATE JOURNAL. RETRIEVED SEPTEMBER 28, 2018, FROM [HTTPS://WWW.DNR.STATE.MN.US/CLIMATE/JOURNAL/INDEX.HTML](https://www.dnr.state.mn.us/climate/journal/index.html) STATE CLIMATOLOGY OFFICE - DNR DIVISION OF ECOLOGICAL AND WATER RESOURCES, ST. PAUL

Fire Response

Cooperative Fire Response

In-state fire preparedness for response was about average throughout the fiscal year, so the Minnesota Incident Command System (MNICS) did not mobilize any teams. However, the DNR actively mobilized resources to out-of-state incidents throughout FY2018. In May 2018, national fire activity dramatically increased, resulting in a critical shortage of firefighting resources nationally. The DNR and other MNICS agencies actively mobilized crews, aircraft, and overhead personnel to aid several western states and Canada in fire suppression efforts. These requests are supported through mutual aid agreements, with all costs reimbursed to the state.



Interagency Fire Crew

The DNR sent 104 agency employees to assist with out-of-state firefighting efforts in FY2018. This included work on fires in California, Arizona, Washington, Colorado, Idaho, Montana, Wyoming, Utah, and Oregon. The DNR also sent 23 firefighters to Ontario, Canada to support suppression efforts in the province's busiest wildfire season in years. Responding to out-of-state mutual aid requests reduces the costs of maintaining DNR's response capacity and helps to ensure Minnesota will have access to mutual aid from elsewhere when needed.

In addition to aiding firefighting efforts, the DNR works with agency partners to provide wildland fire training for firefighters. These trainings provide an opportunity to experience firefighting in diverse conditions throughout North America, gain valuable skills, and secure qualifications needed for fighting wildfires in Minnesota. They also build important relationships that prove critical when responding to Minnesota incidents.

Interagency All-Hazard Response

FY2018 was generally quiet for all-hazard incidents and response in Minnesota. Local agencies and Forestry Geographical Areas responded without the need for outside resources. However, the DNR did mobilize two people to Texas to assist with Hurricane Harvey response. These individuals filled positions on a Wisconsin Incident Management Team (IMT) so that team could deploy to help flood victims.

The DNR has an agreement with the Department of Health to activate a MNICS IMT to manage the receiving and distribution sites for the Strategic National Stockpile (SNS). The Center for Disease Control maintains the SNS, which consists of pharmaceutical and medical supplies that would be brought to the state for use during a public health emergency (e.g. terrorist attack, flu outbreak, or earthquake). In June, MNICS team members participated in a training exercise to evaluate staff and resource preparedness in a public health emergency. This training identified ways to improve the IMT response in the event of activation. A full-scale exercise is proposed for calendar year 2020.

No MNICS Incident Management Teams were activated for all-hazard response in FY2018.

In-state Wildfire Response

In FY2018, the DNR responded to 824 wildfires, which burned 11,986 acres in Minnesota. This is considerably less than the 20-year annual average of 1,230 fires that burn 30,313 acres.

The DNR responded to wildfires throughout the state. The current mix of aircraft, continued partnerships, and attention to wildfire preparedness helped keep the fires small and allowed most to be controlled within 24 hours.

In FY2018, the percentage of fires caused by arson (17.7 percent) remained below the 20-year average (29 percent). The DNR continued to emphasize early detection and use of the Forest Watch system, which employs video surveillance and computer monitoring to detect fires. To further reduce the number of preventable wildfires, the DNR is creating a prevention campaign focused on equipment-caused fires.

Firefighting Fleet

The DNR maintains a fleet of firefighting engines and tracked vehicles. Engines are medium-to-large sized pickup trucks, customized for wildland firefighting. They are deployed for firefighting on mostly dry, upland sites.

Tracked vehicles are custom-built firefighting units driven by two endless metal belts, or tracks. Transported on trailers to fire locations, these vehicles fight fires on wet sites or those with difficult accessibility. The DNR uses two basic models of tracked vehicles: the J-5 and the Muskeg.

Engines

Many forestry areas use heavy duty, half-ton trucks. These units cost less (both base and operating rates) than larger-sized engines, yet work well as maneuverable initial attack units when equipped with water tanks and pumps. The most common fire vehicle is a one-ton pickup; these trucks haul 300 gallons water. Service-body pickups are 1¼ or 1½ ton pickups, fitted with storage compartments for an assortment of firefighting equipment. The fleet did not expand in 2018. The DNR will replace seven trucks in 2019.



A Service Body engine towing a J-5 tracked vehicle

2018 Engine Fleet

Type	Size	Number
T7	½ ton HD	38
T6	1 ton	113
T6 – Service Body	1 ¼ ton	28
T6 – Service Body	1 ½ ton	17
T4	3 ton	14
Total Engines		210

Tracked Vehicles

The DNR fleet of 48 tracked vehicles is quickly aging. Maintenance of these machines is becoming costly and time consuming as parts become harder to find. The DNR has 12 J-5s in active status that were manufactured in 1988. The newest J-5s were manufactured in 2008. The tracked vehicle fleet needs to be modernized.

In 2018, the DNR contracted to manufacture and deliver three new J5-style tracked vehicles. Experienced operators are testing their use and operation. If the DNR deems the units suitable for firefighting in Minnesota, several J5s will be ordered each year until the small tracked-vehicle fleet is modernized.

A similar situation exists in the Muskeg fleet. All of the Muskegs were manufactured between 1993 - 2006. DNR Management Resources (MR) will begin developing a Request for Proposals for Muskeg replacements in early 2019. After completing a bid process, contracting for units will follow with delivery of the first units as early as 2020. These initial units will then be field tested for suitability prior to modernizing the Muskegs.

2018 Tracked Vehicle Fleet

Type	Model	Number
CT	Cross Tracker	3
LT-5	Lite Tech	3
J-5	Bombardier	14
J-5	Camoplast	21
Muskeg	Bombardier	7
Muskeg	Camoplast	1
Total Tracked Vehicles		49

Firefighting Aircraft

The DNR uses several types of aircraft to provide tactical aerial firefighting support and intelligence to ground firefighters. In FY2018, the DNR responded with tactical firefighting aircraft to 290 requests on 117 wildfires. A mix of aircraft procured under Exclusive Use and Call-When-Needed contracts, aircraft owned/operated by the DNR, and aircraft obtained through interagency and partnership agreements were used.

The DNR owns and operates two light, fixed-wing airplanes for aerial supervision on fires, fire detection, transportation, logistical and administrative support, and aerial photography. They include a Cessna 310 and a Quest Kodiak.

In FY2018, the DNR used Exclusive Use contracts to ensure the availability of four Fire Boss airtankers (800-gallon, single-engine, water-scooping airplanes); two Single Engine Air Tankers (SEATs, ground-based airtankers on wheels); eight helicopters with water buckets; two light airplanes used for aerial supervision; and 15 light airplanes used for fire detection and tactical intelligence. Additionally, Call-When-Needed contracts (short-term contracts used as wildfire conditions warrant) were used to procure five additional helicopters with water buckets, one Fire Boss airtanker, one SEAT, and two light airplanes for aerial supervision.

Interagency partnerships continued to be a key part of the DNR's aerial firefighting program. The Red Lake Agency, with assistance from the Bureau of Indian Affairs (BIA), provided one helicopter, one Fire Boss, and one SEAT in Bemidji. The U.S. Forest Service (USFS) provided seven helicopters and three float planes

(Beavers) in Ely; two CL-415s and three Large Air Tankers that operated out of Brainerd, Bemidji, and Hibbing air tanker bases; and aerial detection aircraft used within their jurisdiction. The DNR, BIA, and USFS partnered to contract an additional call-when-needed helicopter and an additional SEAT was secured through the State of Colorado.

The DNR also obtains firefighting aircraft, when needed, from a variety of other sources, including: helicopters from the Minnesota Army National Guard (five Blackhawks with 660 gallon water buckets and two Chinooks with 2,000 gallon water buckets); two helicopters from the Minnesota State Patrol; and CL-215s and/or CL-415s and aerial supervision aircraft from the Provinces of Ontario and Manitoba.

Rural Fire Department Support

The DNR's Rural Fire Program objectives are to obtain low-cost equipment, manage cost-share grants, and provide technical expertise for Minnesota fire departments. The DNR Rural Fire Program staff also works with Minnesota fire departments to develop best practices to prevent the spread of aquatic invasive species. For more information visit the [Rural Fire web page](#).

Federal Excess Property Program

In FY2018, the Firefighter Federal Property program (FFP) obtained \$12.5 million in equipment and supplies, which it distributed to 410 Minnesota communities and four state agencies. Highlighted items include medical supplies and equipment such as tourniquets, bandages, defibrillators, and portable generators. Rolling stock included items such as a Chevy Tahoe, Freightliner chassis, and ATVs.

Many rural fire departments in Minnesota could not afford this equipment if not for the FFP program.



Federal Surplus Property Converted for Use by Randal Fire Department

State Surplus Engines

The state-funded Rural Fire Program used federal dollars to purchase ten one-ton trucks from the state fleet program at a reduced price. This approach avoids auction and selling costs and passes the savings onto fire departments. Although these trucks have met the criteria for replacement by fleet managers, they still have service life and can be used as grass trucks to extinguish small fires. The demand by rural fire departments for these units exceeds their availability.



State Surplus Engine - Lake Henry Fire Department

50:50 Grants

The Volunteer Fire Assistance (VFA) grant program received 381 applications in FY2018, and awarded 181 grants to Minnesota communities for fire-related projects. Minnesota fire departments that protect communities with 10,000 or fewer people may participate in the VFA grant program. A total of \$426,805 in federal and state grants provide cost-share assistance for radios and pagers, personal protective gear, water movement equipment, and wildland firefighting safety items.

This year's grant cycle included an additional \$8,000 in fireworks sales tax funding, which allowed the program to award three extra grants to rural communities.

Training

The DNR recognizes the importance of maintaining a broad base of firefighters trained to respond to incidents as they arise. With the cooperation of MNICS and GLFFC, the DNR offers more than 35 classes each year to member agencies and affiliates. Courses range from basic firefighting to advanced leadership. These classes reach more than 1,000 students each year.

2018 Wildfire Academy



Students at the 2018 Fire Academy receive instruction on the use, deployment, and tactics of engines on wildland fires

The 2018 Wildfire Academy was held June 4-8, 2018, at Itasca Community College in Grand Rapids. The Academy offered 33 classes to 850 students. Participants included staff from Minnesota DNR; Wisconsin DNR; Michigan DNR; Iowa DNR; National Park Service-Wisconsin; USFS – Minnesota (both national forests), Wisconsin, Michigan, New York, Missouri; U.S. Fish & Wildlife – South Dakota and Nebraska; and the Bureau of Indian Affairs. Students also came from the Conservation Corps of Minnesota and Iowa, Nature Conservancy, Minnesota Department of Transportation, and numerous Minnesota fire departments.

Fire Prevention

The DNR has long recognized the importance of providing a consistent fire prevention message to Minnesota residents. Providing timely fire weather information and safety tips to residents helps them avoid burning that could have catastrophic results. Minnesota uses a variety of methods to reach residents, including news releases, tweets, Facebook postings, events, workshops, classroom visits, and parades. Each of these is designed to reach a different audience with timely information.

Prevention Activities

In addition to participating in local parades and county fairs, and speaking with community groups, DNR prevention staff also coordinate activities for Governor's Fire Prevention Day at the Minnesota State Fair. With record-setting fair attendance for the second year in a row (2.05 million), prevention staff and volunteers distributed approximately 5,000 pieces of wildfire prevention materials and talked to an estimated 15,000 visitors on this single day.

On the third week in April, the state observes Wildfire Prevention Week. This



Visitors received fire prevention information at the Minnesota State Fair

year, in addition to traditional radio and print ads, DNR implemented a focused social media communication plan. In coordination with the MNICS information officer, DNR produced daily messages, primarily via Facebook and Twitter, to communicate timely and current information on wildfire conditions. Initial analytics indicate these efforts reached a new and varied audience.

Firewise Program

The state's Firewise Program helps Minnesota communities prepare for wildfires and avoid potential damage. The program assists with fire assessment and planning, resulting in a Community Wildfire Protection Plan. When implemented, these plans reduce fire risk by eliminating known hazards or problems. The plan provides the community with areas on which to focus their fire prevention efforts. Firewise USA recently recognized Itasca County for its fire prevention efforts as part of the Firewise Program.

The Minnesota Firewise Program also supports individual home risk evaluations.

Building upon a successful Living with Fire workshop in Ely, DNR produced two videos to extend the Firewise message to other communities. These 5-to-7-minute videos show what homeowners can do to protect their property from fire. The videos include information about fire ecology, living in a fire environment, fuel reduction, and a brief overview of the 2012 Highway 1 Fire that threatened Ely. Both videos can be viewed on the [DNR YouTube channel](#).

Fire Wardens and Burning Permits

The volunteer Township Fire Wardens continue to assist DNR by issuing non-electronic burning permits to local residents. The volunteer Fire Warden program currently has 3,700 dedicated volunteers who provide more than 22,000 hours of service each year. The DNR continues to enlist new fire wardens as some retire, close a business, or pass away.

DNR's online burning permits system received several enhancements in FY2018 to make it more responsive to the public and internal users. In the coming fiscal year, the system upgrades will allow tracking locations of live structural fire training and make it easier to issue permits to fire department training officers. These enhancements will help external partners, such as the Minnesota Pollution Control Agency, with reporting.

Attachment 1

Emergency Fire Direct and Open Appropriations	
State Expenditures by Category	
FY2018	
Direct Appropriation	\$ 6,939,074
Open Appropriation	\$ 16,487,420
Total Expenditures	\$ 23,426,494
Salary Costs	\$ 12,668,643
Operating Costs	\$ 10,757,851
Total Expenditures *	\$ 23,426,494

* Actual Expenditures as of 10/08/2018

Attachment 2

A GUIDELINE FOR STATEWIDE WILDFIRE PLANNING LEVEL DETERMINATION					
	PLANNING LEVEL I	PLANNING LEVEL II	PLANNING LEVEL III	PLANNING LEVEL IV	PLANNING LEVEL V
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 DNR Regional Planning Levels	All DNR Regions/Agencies at P.L. I	One or more DNR Regions/Agencies at P.L. II	Two or more DNR Regions/Agencies at P.L. III	Two or more DNR Regions/Agencies at P.L. IV	Two or more DNR Regions/Agencies at P.L. V
Eastern Area Planning Level	I	I - II	I - III	I - IV	I - IV
National Planning Level	I - II	I - III	I - IV	I - V	I - V
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 (with active fire)	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.				

- Once Planning Level III has been reached in the spring, preparedness will not drop below that level until May 31 or later.
- Terms used above, which are calculated daily from weather and fuel measurements:
 - BI (Q) = **Burning Index**, fuel model Q: A measure of fire danger based on the probability of ignition and fire spread in a specified forest type.
 - BUI = **Build Up Index**: An indication of the dryness of larger-sized woody fuels, which becomes a significant factor during a drought.
 - ERC (Q) = **Energy Release Component**, fuel model Q: A measure of the expected heat release from a fire, which will be experienced by firefighters on the fire line

Attachment 3

FY2018 - State Fire Cost Summary			
By Type of Activity and Appropriation			
	Emergency Firefighting Direct	Emergency Firefighting Open	Total Open and Direct Combined
Fire Prevention	6.6%	0%	2.0%
Fire Presuppression	35.9%	47.6%	44.1%
Fire Suppression	57.5%	52.4%	53.9%
Total	100%	100%	100%

Fire Prevention activities include public information and education, fire permitting, and operation of the Township Fire Warden system, as well as advice and assistance to communities and homeowners about protecting their property in the event of a wildfire (Firewise).

State Fire Prevention activities are supplemented by annual grants from the U.S. Forest Service as follows:

- State Fire Assistance – approximately \$590,000 (supports fire prevention and readiness).
- Volunteer Fire Assistance – approximately \$300,000 federal support and \$8,000 state support through sales tax on fireworks (supports Rural Fire Department readiness).
- Cooperative Fire Assistance – approximately \$150,000 (Wildfire Risk Reduction grants support Firewise – Community Fire Protection activities).

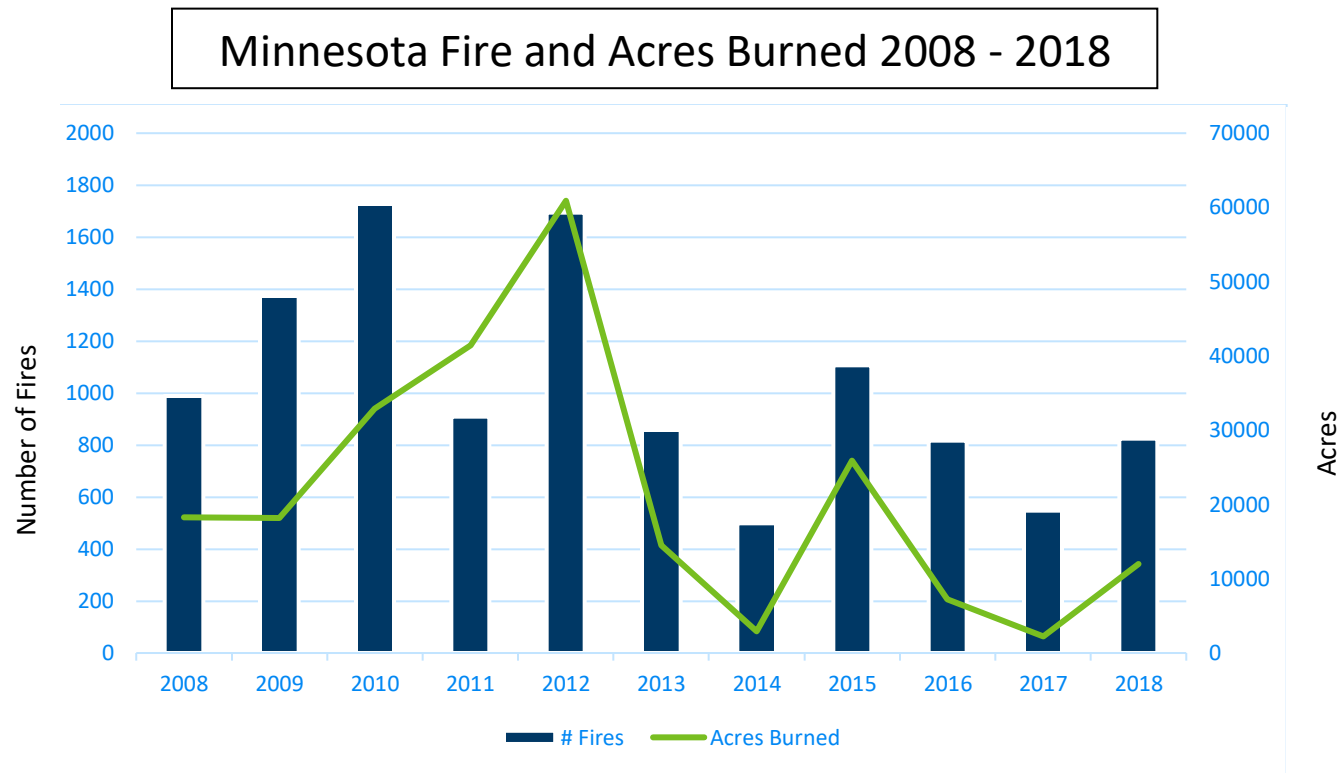
Fire Presuppression includes activities undertaken before a fire happens to ensure more effective suppression. These activities include: overall planning; recruitment and training of personnel; procurement of firefighting equipment and contracts; and maintenance of equipment and supplies.

Fire Suppression includes direct action to suppress wildfires and other activities that support and enable the DNR to suppress wildfires, including the prepositioning of firefighting resources.

Attachment 4

[illegible]

Attachment 5



Wildfires by Cause

