FLAT TOP COMPLEX

Wildfire Operations Documentation Report

FINAL REPORT FROM THE WILDFIRE OPERATIONS DOCUMENTATION GROUP

May 2012

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Notes:

The numbers in this report were based on information available at the time the report was prepared and may be subject to change.

Subsequent to the completion of this report, the wildfire management program in the former department of Sustainable Resource Development was transferred to the department of Agriculture and Forestry.

Acknowledgements

The Wildfire Operations Documentation Group would like to thank Sustainable Resource Development staff and those individuals who provided detailed documentation, data, on-site interviews, field work, and reconnaissance assistance. These elements significantly contributed to the development of this report.

EXECUTIVE SUMMARY

The 2011 wildfire season in central Alberta developed quickly in early May following snowmelt. Within days, 189 wildfires ignited across the province. Strong, sustained winds from the southeast created wildfire suppression challenges. When Alberta's initial attack and sustained attack resources were fully committed, additional national and international resources were requested.

The Lesser Slave Area, one of the 11 Sustainable Resource Development regional areas (10 of which are in the Forest Protection Area), was the most active in terms of wildfire activity, with 52 wildfires and over 23 communities and locations (e.g., camps, worksites, parks, and wildfire lookouts) threatened. Three of these wildfires were managed as the Flat Top Complex:

1. SWF-056
2. SWF-065
3. SWF-082 (did not result in any structure loss)

SWF-056 and SWF-065 were responsible for the combined loss of over 500 structures (including 484 single-family dwellings, 7 multi-family residences, and 19 non-residential buildings) in the Town of Slave Lake and in the nearby communities of Canyon Creek, Widewater, and Poplar Estates. The majority of damage at the community level occurred within 31 hours of ignition of the two wildfires.

May 14, 2011 (SWF-056)

At 13:25 (all times are Mountain Daylight Time unless otherwise specified), wildfire SWF-056 was discovered burning in a recently harvested cutblock about 25 kilometres southeast of the south shore communities (Widewater, Canyon Creek, and Wagner) adjacent to Lesser Slave Lake. By 13:37, SWF-056 (as well as SWF-057 near Red Earth) was well displaying aggressive wildfire behaviour. Initial attack was unable to contain the wildfire during the afternoon and evening of May 14 because of high winds and spotting. At 19:49 substantial wildfire growth on SWF-056 and SWF-057 was evident, along with the establishment of SWF-065. Dozers worked on the eastern flank of SWF-056 until 24:00 when erratic wildfire behaviour created unsafe work conditions.

May 14, 2011 (SWF-065)

Wildfire SWF-065 was detected at 17:50 on May 14, burning in mature black spruce, approximately eight kilometres southeast of the Town of Slave Lake. Initial attack began at 18:06. The wildfire crowned almost immediately under the influence of strong southeast winds and spread quickly to the northwest, spotting into Poplar Estates within an hour after ignition. SWF-065 remained active throughout the night, with the Lesser Slave Regional Fire Service (Municipal Fire Department) and Sustainable Resource Development crews working to contain the wildfire. Safety conditions were compromised because of strong winds, unpredictable wildfire behaviour, and large amounts of anthropogenic fuels (combustibles such as structures, machinery associated with petroleum products, haystacks, scrap piles,

vehicles, fuel tanks, holiday trailers, flammable landscaping materials, rubber tires, and wood piles).

May 15, 2011 (SWF-056, SWF-065, and SWF-082)

Firefighters worked through the night on SWF-065. At approximately 06:30, the Operations Section Chief, Planning Section Chief, and Heavy Equipment Group Supervisor conducted an assessment of SWF-056 and SWF-065. The Incident Commander, Wildfire Operations Officer, and Lesser Slave Regional Fire Service Fire Chief (Municipal Fire Chief) assessed the wildfires by 07:00. The perimeter of SWF-056 was long and spotty, and the wildfire was becoming active in a few spots. Dozer groups worked at the rear of the wildfire (with air support) until 14:30 when it was declared that conditions were unsafe because of erratic wildfire behaviour. Ground suppression operations were subsequently suspended.

Firefighting response on SWF-065 was focused close to the black spruce fuel type that led into the Town of Slave Lake. There were concerns that westerly winds would create a wide fire front. Firefighting crews on the ground successfully completed burnout activities in the fine flashy fuels near the west end of Poplar Estates.

By 08:00, the Incident Management Team had met with the Municipal District Chief Administrative Officer regarding the wildfire status and discussed shared responsibilities. During the Incident Management Team meeting, assignments were finalized, weather updates obtained, resource orders submitted, an Incident Command Post identified, and highway closures initiated. The Fire Department worked on an evacuation plan for the south shore communities.

A second reconnaissance flight over SWF-065 occurred at 09:15 with the Operations Section Chief, Heavy Equipment Group Supervisor, and a local retired wildfire expert on board. Three helicopters were instructed to bucket on all open flames and smoke at the head of the wildfire before working the east end. After assessing SWF-065, they headed to SWF-056 (09:35), along with the Fire Department, to assess structural protection needs and limitations in Widewater, Canyon Creek, and Osland Estates. Fire Department members, along with the Structural Protection Specialist (under contract to Sustainable Resource Development), Incident Commander, and Operations Section Chief then developed structural protection strategies.

At 12:36, as wildfire behaviour intensified and wind velocity increased, the evacuation of south shore communities was initiated. A reconnaissance flight of SWF-056 (with the Aerial Ignition Specialist and the Operations Section Chief on board) was conducted before 13:25 to assess aerial ignition opportunities. Limited options for aerial ignition were identified. Long-term retardant was requested for SWF-056 and applied; however, effectiveness was marginal. By 13:49, Bird Dog 130 was sent from SWF-065 to SWF-056 to assist with operations. SWF-056 and SWF-065 showed significant growth in a short period of time, between 14:18 and 14:26.

Another reconnaissance flight of both SWF-056 and SWF-065 at 14:37 revealed that SWF-056 had an extensive fire front and was approximately 12 kilometres from Highway 2. SWF-065 was active along Highway 2 and airtankers were working the area (Figure 1). Active flame on the north perimeter was threatening black spruce. Sustained, strong winds generated an increase in wildfire intensity. Two distinct fingers of SWF-065 (north and south) developed and began moving northwest towards the Town of Slave Lake. The south finger, spreading in a narrow line along Highway 2, developed more slowly as a result of heavy airtanker activity. Air support was grounded at approximately 16:00 and the airtanker base was closed due to dangerous wind conditions. The south finger then spread quickly through harvesting residue (slash) and black spruce. Substantial growth and column development was evident on all wildfires in the area.

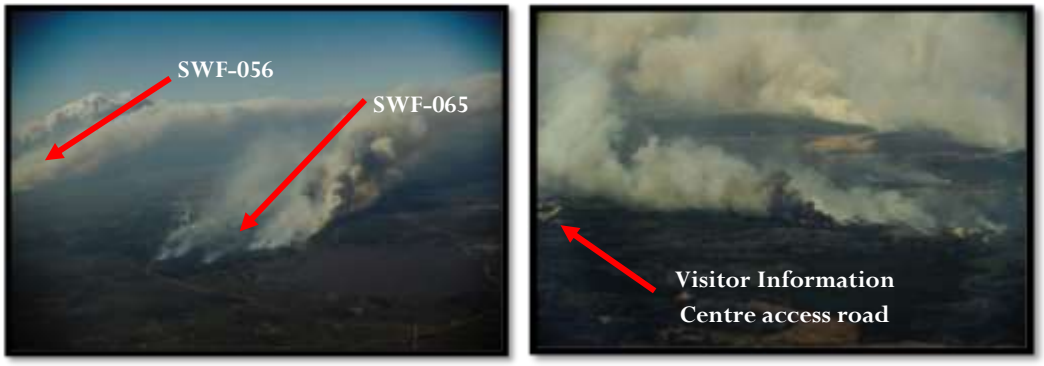

Figure 1 – (left) SWF-056 in the background and SWF-065 in the foreground illustrating extreme wildfire behaviour on the north finger and initiation of a crown fire in black spruce along Highway 2 on May 15 at 15:53. (right) The separation of the strongly wind-driven south and north fingers of SWF-065 at 15:57 on May 15.

SWF-082 was detected by Sustainable Resource Development at 15:52.

SWF-065 reached the Visitor Information Centre adjacent to Highway 2 (two kilometres from the Town of Slave Lake) by 16:35. By 17:20, extremely high winds and downwind spotting resulted in the wildfire approaching the Town of Slave Lake as evacuations were underway. At approximately 17:25, extreme short-range spotting began igniting structures in the Town of Slave Lake before the wildfire reached Highway 88 (Figure 2).

Several factors contributed to the complexity of the wildfire situation of the Flat Top Complex and influenced the events of May 14 and 15 including the following key themes:

- Communications
- Resourcing
- Initial attack
- Wildfire environment
- Air operations
- Preparedness planning
- Airtanker base operations

Figure 2 – SWF-065 approaches Highway 88 and extreme short-range spotting ignites multiple structures in the Town of Slave Lake.

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FLAT TOP COMPLEX DOCUMENTATION PROCESS

The Flat Top Complex prompted Sustainable Resource Development to establish a Documentation and Technical Support Group to review and document wildfire science behaviour and operations. As well, the Minister of Sustainable Resource Development appointed a four-person independent committee called the Flat Top Complex Wildfire Review Committee. The documentation reports prepared by the Documentation and Technical Support Group were submitted to the Flat Top Complex Wildfire Review Committee to assist them in providing recommendations to the Minister regarding improvements to the department's wildfire management program.

The Documentation and Technical Support Group (Appendix A) focused on two aspects of the wildfires managed through the Flat Top Complex:

1. Wildfire science components related to the influence of fuels, weather, and topography on wildfire behaviour.
2. Operational chronology including wildfire preparedness planning, detection, initial attack, sustained attack, and resources.

The documentation process included on-site interviews, review of all relevant operational logs and records, field work on forest fuel consumption, development of a data library, on-site reconnaissance of burned area and wildfire impacts, and reconstruction of fire weather and danger conditions, as well as subsequent wildfire behaviour.

FLAT TOP COMPLEX OPERATIONS

Detection Overview

Lookouts within the Flat Top Complex area included Flat Top, Marten Mountain, Meridian, House Mountain, and Deer Mountain (Figure 3).

Wildfire SWF-056 was discovered at 13:25 on May 14, burning in a recently harvested cutblock, southeast of the south shore communities (Widewater, Canyon Creek, and Wagner) adjacent to Slave Lake. Wildfire SWF-065 was discovered by Marten Mountain Lookout at 17:50. The Lookout initially observed medium-grey smoke that was drifting high. SWF-082 was discovered at 15:50 on May 15 by Marten Mountain Lookout. The Lookout initially observed a light grey, low drifting smoke column.

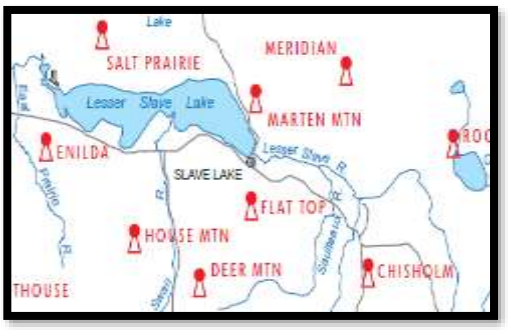


Figure 3 - Lookouts within the Flat Top Complex area.

Initial Response Overview

SWF-056

Initial attack resources were unable to contain SWF-056 during the afternoon and evening of May 14 because of high winds and spotting. As wildfire intensity increased, airtankers started laying retardant drops ahead of the wildfire on the ridge top. Before that strategy could be fully executed, SWF-065 started (17:50) and airtankers were diverted to the new wildfire. SWF-065 was assessed as a higher priority because of its threat to Poplar Estates and the Town of Slave Lake.

Bulldozers (referred to from here on as dozers) worked on the eastern flank until 24:00 when erratic wildfire behaviour created unsafe work conditions. The wildfire remained active throughout the night. On the morning of May 15 dozer guard construction continued. Reconnaissance flights were completed to reassess the wildfire, assess structural protection, and develop an evacuation plan for the south shore communities.

The summary of total airtanker drops and volumes on SWF-056 for May 14 and 15 is provided in Table 1. For additional timeline information, refer to Appendix B.

Date	Group #	Type	Start	Total Drops
May 14	8	Convair 580	14:53	4
May 14	4	Electra L-188	14:58	3
May 14	3	CL-215	16:25	10
May 15	2	Convair 580	12:04	5
May 15	7	Electra L-188	12:25	1
May 15	BC A/T	Electra L-188	13:16	1
Total Drops for May 14 (17) and 15 (7)				**24**

	Water	Retardant	Total
Volume (litres) May 14	54,550	65,915	120,465
Volume (litres) May 15	0	62,505	62,505
Total Volume for May 14 and 15	**54,550**	**128,420**	**182,970**

Table 1 – Total airtanker drops and volumes for May 14 and 15 (SWF-056).

SWF-065

The airtankers assigned to this wildfire focused on flanking action and working the head of the wildfire until late in the evening of May 14. The Airtractors and CL-215 airtankers were available and able to quickly deliver water (Lesser Slave Lake was five minutes from the wildfire and provided a source for CL-215 water pickup) during the morning of May 15.

Ground resources from Sustainable Resource Development worked with the Fire Department to protect structures. They moved from acreage to acreage, attempting to stop the spread of the wildfire. The Fire Chief indicated that an additional 10 homes were saved through the night of May 14 into the early morning hours of May 15 using this tactic.

Helicopters were assigned strategically to support wildfire suppression operations on May 14 and 15 until the end of the first burning period. Dozer groups that were dispatched early in the morning of May 15 worked on building a dozer guard until the winds and wildfire behaviour created unsafe conditions.

The summary of total airtanker drops and volumes on SWF-065 for May 14 and 15 is provided in Table 2. For additional timeline information, refer to Appendix C.

Date	Group #	Type	Start	Total Drops
May 14	3	CL-215	18:05	20
May 14	4	Electra L-188	19:15	1
May 14	BC A/T	Convair 580	19:25	3
May 14	9	Airtractor 802 - Amphibian	19:30	48
May 14	7	Electra L-188	19:32	1
May 14	8	Convair 580	19:55	2
May 15	3	CL-215	09:56	26
May 15	9	Airtractor 802- Amphibian	10:15	56
May 15	6	Electra L-188	13:23	12
May 15	7	Electra L-188	14:25	1
May 15	8	Convair 580	14:32	1
May 15	BC A/T	Electra L-188	14:36	1
May 15	2	Convair 580	15:59	1
May 15	BC A/T	Convair 580	16:00	1
May 15	BC A/T	Convair 580	16:02	1
Total Drops for May 14 (75) and 15 (100)				**175**

	Water	Retardant	Total
Volume (litres) May 14	227,036	62,505	289,541
Volume (litres) May 15	279,478	98,803	378,281
Total Volume for May 14 and 15	**506,514**	**161,308**	**667,822**

Table 2 – Total airtanker drops and volumes on SWF-065 on May 14 and 15.

SWF-082

A Helitack (HAC) crew assessed SWF-082 and noted it was 30 hectares in size. No airtankers were available for initial attack because they were committed to higher priority wildfires that threatened human life and communities.

On May 16, the Heavy Equipment Group Supervisor arranged to send one dozer group to SWF-082 (three dozers, a back hoe, and a water truck). The group advanced to within approximately two kilometres of the wildfire but had to turn around because smoke was blocking access to the rear of the wildfire and extreme winds were creating unsafe conditions.

The Level 1 Incident Management Team in the area was directed to take over SWF-082 on May 17 at 13:30. Wildfire suppression action resumed on May 18.

SWF-056 INITIAL RESPONSE CHRONOLOGY

May 14 **13:00** Group 3 (a CL-215 and a CL-215T) was scheduled to arrive at Slave Lake Airtanker Base and be wildfire-ready for initial attack response for the Lesser Slave Area. The Bird Dog (a fixed-wing aircraft involved in the coordination of aerial

firefighting) arrived as planned, but the airtankers were grounded by weather at Abbotsford, British Columbia.

13:25 The Group 3 Air Attack Officer and Bird Dog pilot (135) were conducting a familiarization flight (training session without airtankers) when they detected smoke in the distance near the area of the old ski hill south of the Town of Slave Lake. The wildfire was burning in a cutblock that was in the Flat Top Lookout's blind area which had prevented the Lookout observer from immediately detecting it.

13:30 Because of heavy radio traffic, the Air Attack Officer provided an assessment of the wildfire (noted as SWF-056) to the Slave Lake Fire Centre five minutes later (Appendix D). The Air Attack Officer also requested an investigator.

13:38 The Group 3 Air Attack Officer notified the Slave Lake Fire Centre that the wildfire was 0.2 hectares in size and behaving at an "Intensity Class 2", with flames that were six feet (1.8 metres) high, and it was moving uphill in a cutblock where there was no water for pumps. Two minutes later, the Air Attack Officer radioed that there was a water source to the east. The Air Attack Officer continued to fly over the area looking for other water sources and tactical opportunities until HAC 7 arrived.

Figure 4 – Bird Dog fly over on SWF-056 at 13:50 on May 14, 2011.

13:46 HAC 7 from Loon River (two members plus an additional member from HAC 2 who acted as Leader) was extinguishing a wildfire in the Swan Hills area (SWF-055) when the team received a dispatch to proceed to SWF-056 (Figure 4). They departed the wildfire by helicopter G-TIA (A-star).

Figure 5 – SWF-056 beginning to spot at 14:06 on May 14.

14:09 HAC 7 arrived over the wildfire. The Group 3 Air Attack Officer estimated that the wildfire was between 0.3 and 0.4 hectares (Figure 5). The Air Attack Officer indicated that "the HAC 7 helicopter was able to begin bucketing right out of the back end". The Group 3 Air Attack Officer also mentioned that "once G-TIA was on-site, they looked like they had a handle on things".

14:10 Helicopter G-TIA was over the wildfire. The Group 3 Air Attack Officer needed to return to the Slave Lake Airtanker Base to join the airtanker group which arrived

from Abbotsford. The Air Attack Officer confirmed with the Slave Lake Fire Centre that airtankers were required.

14:13 The Wildfire Operations Officer (WOO) in helicopter G-SII and the Group 8 Air Attack Officer (Bird Dog 132) were in conversation about SWF-057 near Red Earth. Slave Lake Fire Centre made a formal request to the Provincial Forest Fire Centre for more airtankers.

Figure 6 – SWF-056 at 14:13. Note the wildfire bent over by wind. Head Fire Intensity Class 5–6, surface fire and spotting 20–30 metres was observed.

14:16 Group 8 (one Conair) was diverted to SWF-056 (Figure 6).

14:17 Requests to the Provincial Forest Fire Centre for additional airtanker groups exceeded available provincial resources.

14:23 The HAC 7 Leader assessed the wildfire and called the Slave Lake Fire Centre on a cell phone while still in flight aboard helicopter G-TIA (there was no cell phone coverage on the ground and radio channels were congested) to advise them that the wildfire was close to a small road in the cutblock, was approximately 0.5 hectares, and was spreading rapidly. The HAC Leader requested two more helicopters, two dozer groups, two airtanker groups, and two eight-person Firetack crews. The Slave Lake Fire Centre advised that they would send what they could. The HAC 7 crew landed and the Leader decided to have the pilot hook up the bucket and begin actioning the wildfire using water from a small river immediately to the south of the wildfire. The river was shallow, preventing the helicopter from getting a full bucket. While the helicopter was bucketing, the crew set up a water pump in a small slough close to the wildfire. They ran out 100 feet (30 metres) of 1½ inch hose adapted down to 500 feet (152 metres) of ⅝ inch hose and nozzle. The wildfire behaviour was starting to pick up, and at one point the crew had to back away from the wildfire. Helicopter G-TIA delivered about five bucket drops. A-star 350B (F-DKH) delivered one bucket drop.

14:27 The Slave Lake Fire Centre contacted the Group 4 Air Attack Officer (Bird Dog 55 who was on SWF-057 with two airtankers) with instructions to release one airtanker (Electra L-188) to the Group 8 Air Attack Officer working on SWF-056, then take the other airtanker to a smoke called in by House Mountain Lookout. At this time, the Slave Lake Fire Centre determined that SWF-056 was the highest priority.

14:30 The Heavy Equipment Group Supervisor was dispatched to coordinate dozer operations on SWF-056.

14:37 The HAC Leader reassessed the wildfire and estimated the size to be approximately four hectares.

14:49 The Provincial Forest Fire Centre asked Saskatchewan for additional airtanker assistance. Saskatchewan was unable to provide assistance because of their own wildfire activity.

Figure 7 – Electra L-188.

14:53 Airtankers from Group 8 (Convair 580) arrived over the wildfire and completed four drops (Table 1).

14:58 Airtankers from Group 4 (Electra L-188) arrived over the wildfire and completed three drops (Figure 7).

15:00 (approximately) Helicopter G-TIA and the HAC Leader returned to the Slave Lake Airtanker Base for fuel.

15:30 The HAC 7 Leader returned to SWF-056 after fuelling helicopter G-TIA at the Slave Lake Airtanker Base and conducted another assessment. The wildfire was running up the hill. A fourth HAC member joined the crew. The Heavy Equipment Group Supervisor conducted a reconnaissance by helicopter to determine a strategy for dozer guard construction.

16:25 The Lesser Slave Area Wildfire Operations Officer flew over SWF-056 in helicopter F-SII (EC120B) to assess the wildfire. The Wildfire Operations Officer reported that the flank wildfire activity had died down and torching was half-way up the hill. The Wildfire Operations Officer confirmed that heavy equipment was required. Each airtanker from Group 3 (CL-215s) did three practice drops before heading to SWF-056. The Group 3 Air Attack Officer turned over the two CL-215s (Figure 8) to the Group 4 Air Attack Officer and moved to a higher altitude to remain clear of the airtanker drops and take over airspace control. The Group 3 Air Attack Officer indicated that the airtanker drops had to take place at a higher elevation (above ground) than normal because of the terrain and poor visibility from smoke. Consequently, the coverage of retardant was somewhat thinner (normally airtanker drops occur between 100 and 125 feet (30 and 38 metres) above ground to achieve optimum coverage area and thickness). The Group 4 Air Attack Officer estimated drops occurred no lower than 250 feet (76 metres) above the ground. The drops (Appendix E) were not holding the wildfire. The wildfire was about 10 to 15 hectares and was beginning to develop grey smoke.

Figure 8 – CL-215s.

17:53 The strategy on SWF-056 was to lay airtanker drops ahead of the wildfire on the ridge top. Before that strategy could be fully executed, Groups 3 and 8 were diverted to a new wildfire (SWF-065 which started at 17:50). Group 4 was taking on fuel at the Slave Lake Airtanker Base before flying to SWF-056, when they also received direction from the Slave Lake Fire Centre to proceed to SWF-065. SWF-065 was assessed as a higher priority because of its threat to Poplar Estates and the Town of Slave Lake.

16:34 SWF-056 was estimated at 30 hectares.

18:00 SWF-056 spread out of the cutblock and into the trees.

18:12 Helicopter G-TIA departed SWF-056 for SWF-065.

17:00 One dozer group (three dozers complete with backhoe, nodwell water tanker, and a Dozer Boss) began to work close to the ignition point.

19:30 The dozers began to build a dozer guard from the rear of the wildfire, along the east flank heading in a north-northwesterly direction to provide a fuel break between the wildfire and the Town of Slave Lake.

21:30 (approximately) The HAC Leader estimated the wildfire to be approximately 1 kilometre long and well beyond their control capability and subsequently departed the wildfire using helicopter F-DKH.

24:00 The dozer group worked on the eastern flank until 24:00 when erratic wildfire behaviour created unsafe work conditions.

May 15 06:00 Two dozer groups were assigned to the wildfire. One dozer group left from the staging area for the wildfire. It worked along the east flank to try to prevent the wildfire from reaching the Town of Slave Lake when predominant west winds returned.

06:30 The Operations Section Chief filed a request for heavy helicopters and a portable mixing site.

07:00 A second dozer group followed behind the first dozer group working along the east flank. A Strike Team Leader and Structural Protection Coordinator were working with crews in the areas of Widewater and Canyon Creek setting up sprinklers around homes. The Operations Section Chief conducted a reconnaissance of both SWF-056 and SWF-065 with the Planning Section Chief and Heavy Equipment Group Supervisor. The Operations Section Chief noted that SWF-056 was long and spotty. There was concern that, if the wind changed directions (from the west), the east flank of SWF-056 would become a very large head and travel in the direction of the Town of Slave Lake.

09:35 After assessing SWF-065, the Operations Section Chief, Heavy Equipment Group Supervisor, and a local retired wildfire expert headed to SWF-056 with the Fire Department to assess structural protection needs and limitations.

11:10 Fire Department members, along with the Structural Protection Specialist (under contract to Sustainable Resource Development), Incident Commander, and Operations Section Chief, developed structural protection strategies.

For further chronological details, refer to Appendix B. Refer to the section "SWF-056 Sustained Attack Chronology" for further chronological details from May 15 at 11:10 onwards (transition from initial attack to sustained attack).

SWF-065 INITIAL RESPONSE CHRONOLOGY

May 14 12:16 to 14:00 Multiple wildfires were starting throughout the Lesser Slave Area. Other wildfires in the province also required airtanker resources (Appendices F, G, and H).

17:50 Sustainable Resource Development's Flat Top Lookout detected a smoke and reported it immediately to the Slave Lake Fire Centre. A cross-bearing from Marten Mountain Lookout was also taken. This smoke was recorded as SWF-065. The detection message (Appendix I) noted medium-grey smoke, drifting high with the base not visible. At the same time, the Wildfire Operations Officer was conducting an assessment on another wildfire (SWF-057) to determine the potential for the wildfire to run into the Town of Red Earth. It took approximately fifty minutes for the Wildfire Operations Officer to fly to SWF-065 because of extremely strong headwinds.

17:51 The Air Attack Officer for Group 3 spotted SWF-065 while working on SWF-056 (to the west) 12 kilometres away. The wildfire was emitting a black smoke column and was approximately 8 kilometres southeast of the Town of Slave Lake. After reporting the wildfire, the Air Attack Officer departed from SWF-056 to investigate SWF-065 (Figure 9).

Figure 9 – SWF-065 on May 14 at 17:55.

17:55 The Lesser Slave Regional Fire Service (Fire Department) received a 911 dispatch from Sustainable Resource Development's Industry Liaison Officer, on behalf of the Duty Officer.

17:56 The Air Attack Officer reported SWF-065 was five hectares, required immediate attention, and the RCMP was needed for evacuation because the wildfire was 0.5 miles (0.8 kilometres) from Poplar Estates. The first action on SWF-

065 was conducted on the ground by the Fire Department after receiving the 911 dispatch. Sustainable Resource Development had initially asked the Fire Department to deploy sprinkler kits to two areas to the south of Lesser Slave Lake that were in the immediate path of SWF-056. A call regarding another fire near the airport prompted the Fire Department to send the last remaining crew at Hall 1. Only the Fire Chief and a junior firefighter remained at Hall 1. While in the truck bay, the Fire Chief and junior firefighter noticed a huge column of smoke to the east, near Mitsue. They took the last truck (a third-line pumper with a volume of approximately 1,900 litres (500 gallons) of water) and headed to the Mitsue area. The firefighters at the airport were diverted from that call and also headed to the smoke column. The Fire Chief and junior firefighter arrived first and sprayed down what they could. The winds were strong, and the wildfire was pushing into Poplar Estates.

18:00 The HAC 1 Leader (both the Leader and crew were on days off) was contacted by the Slave Lake Fire Centre to respond to SWF-065. The HAC 1 Leader went to the HAC base at the Slave Lake airport and picked up a wildland fire engine with a 300-gallon (1,100-litre) water tank.

18:01 After further assessment, the Air Attack Officer requested all available airtankers and the intermediate helicopter (G-TIA) that was bucketing on SWF-056.

18:05 to 18:06 The first airtanker drops (Appendix J) were made by two CL-215s (Table 2) from Group 3. The Duty Officer pulled all airtankers working on SWF-056 and diverted them to SWF-065. The airtankers focused on flanking action and working the head of the wildfire until late in the evening. A 911 phone call indicated that a powerline was down.

18:08 The Duty Officer was advised that SWF-057 near Red Earth was burning up to Highway 88, which resulted in the RCMP closing the highway.

Figure 10 – First fly over looking north on SWF-065 on May 14 at 18:13.

18:11 Firefighters headed to the flanks of SWF-065 for indirect attack, but were only there for a short period of time because of the extreme wildfire behaviour. They returned to Poplar Estates to start evacuating the area. The Fire Department, RCMP, and Peace Officers conducted the evacuation. After the residents had been evacuated, the firefighting resumed. According to the Fire Chief, it was not possible get ahead of the fire, so resources

were redirected. One pumper truck in the area caught fire and burned. The Fire Chief estimated the wildfire was well over five hectares and burning in poplar, spruce, and dry grass when efforts were suspended (Figure 10).

18:18 The Group 3 Air Attack Officer reported that the wildfire had crossed the pipeline.

18:30 Wabasca HAC 5 (three members) and the Leader of HAC 2 were rerouted from a wildfire they were about to action at Trout Lake. They landed and were on standby at the hanger of a local helicopter company. The Lesser Slave Area Heavy Equipment Group Supervisor was called into the Slave Lake Fire Centre to discuss the need to start setting up dozer groups that had been on standby that day and to coordinate dozer guard construction on SWF-065.

18:40 The Widewater Volunteer Fire Department was at the scene, working near a lease road and wellsite when the HAC 1 Leader arrived.

18:43 The Group 3 Air Attack Officer advised the Slave Lake Fire Centre not to send additional airtankers to SWF-065 because air congestion and aircraft safety were a concern.

Figure 11 – Fire department during response.

18:45 The HAC 1 Leader returned to SWF-065 and advised the Captain of the Widewater Volunteer Fire Department to exit the site and proceed to work on the west Mitsue Road because the wildfire was becoming too erratic. The HAC 1 Leader then returned to Poplar Estates, connected with the Fire Chief, and established a Unified Command between them. The HAC 1 Leader tracked the wildfire on the ground via roads, assisted the Fire Department (Figure 11) in working on structure protection in yards, and recommended evacuation of Poplar Estates, Sawridge Reserve, Old Slave Lake Highway, and Devonshire.

18:58 While flying over the wildfire (providing assessments and guidance to the HAC 1 Incident Commander), the Wildfire Operations Officer reported that the east side was Intensity Class 4 and that structures were on fire. A full crown fire was running towards the Slave River in Poplar Estates. The head of the wildfire could not be seen because of thick smoke that was being pushed towards the ground by the intense wind. Spot fires were occurring, and residents were leaving in their vehicles. Six or seven structures had already been lost in Poplar Estates. The Wildfire Operations Officer predicted that, if conditions did not change, the wildfire would burn north of the Town of Slave Lake. The Wildfire Operations Officer advised the RCMP (through the Incident Commander) to initiate evacuation of the Sawridge

Truck Stop and the houses behind it that would be threatened. The Wildfire Operations Officer did not request further airtanker resources for SWF-065 because the airspace was already congested (safety issue). The Operations Officer returned to the Town of Slave Lake to discuss tactical strategies with the Area Forestry Program Manager.

19:00 to 19:30 A total of 13 water trucks were deployed on SWF-065. Their role was to support the HAC crews and the Fire Department in the protection of structures and suppression of fire. All water trucks remained on the wildfire through the initial attack period. The Group 7 Air Attack Officer led in the Group 4 airtanker (one Electra) and then an airtanker from British Columbia (one Convair). The Group 8 Air Attack Officer led in Group 9 airtankers (four AT802s).

19:32 The Group 7 airtanker (one Electra) performed one drop.

19:45 One of the Division Supervisors went to the Slave Lake Fire Centre to provide assistance. The Division Supervisor met the Fire Chief and Duty Officer who were discussing the potential to do a back burn to help create a fuel break. The Division Supervisor then went to the Fire Hall with the Fire Chief and one HAC crew. After reassessing the plan for a back burn, they decided that resources should action the fire in Poplar Estates with a focus on protecting structures.

19:55 The Group 7 Air Attack Officer led in Group 8 airtankers (two Convairs) for a total of two drops.

20:00 to 21:30 HACs 2, 5, and 7 completed a briefing at the Slave Lake Fire Hall with Fire Department representatives before meeting with the other HAC crews on the wildfire:

- HAC 1 – three members and HAC 1 Leader (Incident Commander) with 100-gallon (379 litres) municipal wildland pumper truck.
- HAC 2 – three members.
- HAC 5 – three members.
- HAC 7 – three members.

The HAC 1 Leader assisted the Fire Department and RCMP with evacuation of Poplar Estates. Resources were allocated along Poplar Lane Road, with the Fire Department working the north side and Sustainable Resource Development working the south; HAC crew members worked with the Fire Chief to extinguish spot fires. They had hand tools, Wajax bags, drip torches, and Mark III pumps with 1½ inch hose to take water from water trucks.

22:00 The Heavy Equipment Group Supervisor coordinated the dispatch of four dozers (complete with Dozer Boss) to conduct dozer guard construction (to burn out from) along the south side of Highway 88 up to a private property located close to the intersection of Highway 2 and Highway 88.

22:55 to 23:00 A request for the immediate dispatch of an Aerial Ignition Specialist (with an intermediate B2 helicopter) to the Lesser Slave Area was initiated. These resources were to report to the Slave Lake Fire Centre for assignment (by 08:00, May 15). The Aerial Ignition Specialist was assigned to MWF-007 in the Fort McMurray Area when redeployed to the higher priority wildfire in the Lesser Slave Area.

23:00 The Division Supervisor commenced firefighting around the houses in the Poplar Estates area using a Wajax bag and a shovel. The Division Supervisor filled the Wajax bag from the fire trucks or water trucks using a quad (four-wheel all-terrain vehicle) for transportation or walking in when areas were not accessible by quad. HAC 1 and HAC 2 crews were in the vicinity with one-ton engines and pump and hose running off trucks. The provincial Duty Officer indicated the province was very busy with extensive wildfire activity. Three Incident Management Teams were deployed and requests were made to the Canadian Interagency Forest Fire Centre for crews and Strike Team Leaders.

24:00 Surface fire and spot fires were actioned. The HAC crews started a burnout from the ditch along the east side of Birch Road (south to north) up to a wet muskeg, trying to tie into the railway tracks from the old highway. They ran three strips; the first strip five feet from the ditch, then two more strips totalling 30 feet. They were supported by a contracted vehicle with an approximately 13,000-litre (3500-gallon) water tank (Figure 12).

Figure 12 – Water truck.

May 15 **00:01 to 07:00** The wildfire burned through the residential area of Poplar Estates during the night. The HAC 1 Leader continued to assess the wildfire and noticed a spot fire 2 hectares in size, east of the Visitor Information Centre. It was actioned with water trucks, local firefighters from town, and the 12 HAC crew members. After securing water trucks between 02:00 and 03:00, the Heavy Equipment Group Supervisor went to the wildfire and directed the dozers that had finished building guard along Highway 88 to go to the southeast corner of the perimeter. The smoke had been too thick and dangerous to attempt guard construction in the area any earlier that morning or on the previous night (May 14). The HAC crews continued working on a burnout along Birch Road until 05:00. The small burnout was ineffective in preventing further spread, so the HAC 2 Leader wanted to conduct a larger burnout. Because of high-velocity winds, the HAC 2 Leader was concerned that sparks would cross Birch Road, ignite fuels, and run into the Town of Slave

Lake. Helicopters were working the wildfire at various times, and structural protection continued with the Fire Department and wildfire crews.

07:00 The Operations Section Chief conducted a reconnaissance of both SWF-056 and SWF-065 with the Planning Section Chief and the Heavy Equipment Group Supervisor.

The Operations Section Chief noted that SWF-056 was long and spotty during the reconnaissance and was concerned that a change in wind direction (from the west) would cause the east flank of SWF-056 to become a very large head and travel in the direction of the Town of Slave Lake.

Also during the reconnaissance, the Operations Section Chief estimated SWF-065 to be 1,200 hectares, with about 700 hectares of active fire (smouldering, smoking, and some visible flame). A great deal of green (unburned) vegetation was seen within the wildfire perimeter. The main concern was the black spruce that led into the Town of Slave Lake. The Wildfire Operations Officer also conducted an early morning assessment of SWF-065.

08:00 The HAC crew was relocated to work along Highway 2 and then went to Birch Road to help the Fire Department.

08:30 The Division Supervisor actioned fires around houses and carried out a small back burn. The Aerial Ignition Specialist left the Fort McMurray Area with the helitorch and flew to the Slave Lake Airtanker Base for assignment. An Aerial Ignition Specialist trainee travelled to Slave Lake by vehicle, towing the ignition equipment trailer.

09:05 The following weather was noted by the Operations Section Chief that morning:

- Temperature 20 °C.
- Low relative humidity 15%.
- Winds southeast at 30 to 40 kilometres per hour.

09:15 The Operations Section Chief commenced a reconnaissance of SWF-065 with the Heavy Equipment Group Supervisor and a local retired wildfire expert. The expert noted that Sustainable Resource Development appeared to have the wildfire under control unless very strong, erratic winds occurred in the afternoon. The Operations Section Chief noted three intermediate helicopters working the head of the wildfire, indicated that it looked good, and reinforced the assignment to knock down any open flame. After assessing SWF-065, they returned to SWF-056 for another reconnaissance.

10:00 Fire Department crews returned to the Slave Lake Fire Hall. Half the crews went home to rest and returned within hours. The other crews remained at the Fire

Hall. Sustainable Resource Development crews were able to eat and obtain additional gear while others rested. The crews then went back to work the fire in Poplar Estates and surrounding areas.

For further chronological details, refer to Appendix C. Refer to the section "SWF-065 Sustained Attack Chronology" for further chronological details from May 15 at 10:00 onwards (transition from initial attack to sustained attack).

SWF-082 INITIAL RESPONSE CHRONOLOGY

May 15 **15:00** The HAC 2 Leader had a three-hour rest period after working on SWF-065 the previous night and most of the morning then joined HAC 5 on initial attack.

Figure 13 – SWF-082 on the afternoon of May 15.

15:50 A new wildfire (SWF-082) was discovered by Marten Mountain Lookout and was reported to the Slave Lake Fire Centre (Appendix K). Initial observation included a light-grey, low, drifting smoke column with a small base (Figure 13).

16:36 The HAC crew arrived at SWF-082 in helicopter G-RHK and conducted a wildfire assessment.

16:47 The HAC crew relayed to the Slave Lake Fire Centre that the wildfire was 30 hectares in size and beyond resource capability. The observer at Marten Mountain Lookout was evacuated. At one point it appeared that the wildfire might threaten the Marten Beach Subdivision and ground crews at a well site, but a subsequent reassessment by the Wildfire Operations Officer confirmed these values were not at risk.

17:30 The HAC crew returned to Slave Lake to assist with SWF-065, which was igniting structures in the Town of Slave Lake.

For further chronological details, refer to Appendix L. Refer to the section "SWF-082 Strategy and Tactics Chronology" for further chronological details from May 15 at 17:30 onwards.

Sustained Attack Overview

Sustained attacks occurred on both SWF-056 and SWF-065 after the initial attacks were unsuccessful due to high winds and spotting. A Type 1 Incident Management Team was requested by the Lesser Slave Area's Wildfire Operations Officer at 16:28 on Saturday, May 14, and it arrived later that same evening. The Incident Commander was provided with updates on SWF-056 and SWF-065 from the Wildfire Operations Officer (via email, cell phone, and voicemail) while travelling to the Slave Lake Fire Centre.

The Incident Commander was the first to arrive at 20:35. On arrival, the Incident Commander received a briefing, commenced organizational planning (no operation plans had been prepared for the suppression that occurred up until the Incident Management Team arrived), arranged flight assessments for the next morning, and briefed the Incident Management Team members as they arrived:

- Operations Section Chief – dispatched from Grande Prairie at 18:50.
- Planning Section Chief – dispatched from Calgary at 18:30.
- Finance Section Chief – dispatched from Whitecourt at 20:30.
- Logistic Section Chief – dispatched from Edson at 18:50.

The Incident Management Team was informed that SWF-056 and SWF-065 were active, and that SWF-065 was the priority wildfire because of the fire activity at Poplar Estates. Contact numbers for the Heavy Equipment Group Supervisor, Communications Officer, Industry Liaison, Municipal District Manager, Fire Department Deputy Chief, Duty Officer, and Wildfire Operations Officer were obtained. The Incident Commander identified the resources that were available, and then assisted the Wildfire Operations Officer in strategic planning for all wildfires in the Lesser Slave Area. At 23:11 on May 14, the Incident Commander, Operations Section Chief, Finance Section Chief, and Planning Section Chief met to discuss the wildfires. Branch Directors were assigned to each of the wildfires under the direction of the Operations Section Chief. Wildfire crews and equipment resources were assigned based on the highest priorities and were moved among the three wildfires by the Operations Section Chief.

The Incident Management Team was accountable to the Forestry Program Manager of the Lesser Slave Area. Its primary mandate was to manage the Flat Top Complex according to the approved Wildfire Management Plan or Wildfire Analysis Strategy (WAS; Appendix M). The Letter of Direction (Appendix N) signed by the Incident Commander and the Forestry Program Manager provided the authority for the Incident Commander to effectively manage the Flat Top Complex. The Letter of Direction identified the following significant values and priorities:

1. Human life
2. Communities
3. Highway 2
4. Infrastructure

At 07:00 on May 15, the Incident Commander carried out a reconnaissance flight over SWF-056 and SWF-065 with the Wildfire Operations Officer and Fire Chief to conduct a tactical assessment. Both wildfires were exhibiting low-intensity wildfire behaviour. The Incident Commander's focus was the south and north perimeters of SWF-065. At 07:50 the Incident Commander met with the Lesser Slave Area's Wildfire Information Officer for a briefing. At 08:00 the Incident Commander met with the Municipal District Chief Administrative Officer and discussed responsibilities shared between Sustainable Resource Development and the Fire Department. It was established that the Incident Management Team's wildfire responsibilities were outside the Town of Slave Lake and that the Incident Management Team's role was to concentrate on forest fuels. At 08:45 the entire Incident Management Team met to review assignments. At 09:00 the WASs for SWF-056 and SWF-065 were completed for May 15 (Appendix M; summarized in Tables 3 and 4).

At 10:00 the Incident Commander indicated that, at the time, the incident was being primarily handled by aerial resources. At 10:30 a meeting was held with the Municipal District No. 124 Representative, the Planning Section Chief, and the Operations Section Chief to establish a structure protection plan for SWF-056. The Incident Commander indicated that it would take time to set up structural protection. At approximately 12:30 the Incident Management Team's Aerial Ignition Unit arrived and was assigned to SWF-056 with direction from the Incident Commander to begin constructing a burnout plan.

The Slave Lake Fire Centre was initially used as the Incident Command Post. On May 16, the Incident Management Team moved to a new site located at the HAC base near the end of the airstrip close to Lesser Slave Lake.

SWF-056

Wildfire Size	Observed Wildfire Behaviour	Current Weather	Fuels	Values	Weather Forecast
700 hectares	20% candling 40% surface 40% smouldering	Wind southeast, 20 km/hr Temperature 10 °C Relative humidity 25% Precipitation nil	Mixedwood fuel type Several cutovers in front of head Wildfire burning downhill towards communities of Widewater and Canyon Creek D1 leafless aspen and C2 patches on north side of wildfire	Human life, communities Potential of run into communities of Widewater and Canyon Creek Infrastructure: power lines, communication towers, infrastructure for town	Strong southeast winds 30–40 km/hr (winds all day) Next day winds southeast 20 km/hr in the morning becoming light in the afternoon

Estimated Wildfire Size	Objectives	Strategies	Current Resources	Resources Required to Meet Objectives	Other Comments
24 hrs: 1,100 hectares 48 hrs: 2,200 hectares 72 hrs: 4,000 hectares	Keep the head of the wildfire down using airtankers Dozer guard on rear moving dozers into flanks Identify burnout points to take head out from making any runs towards communities	Option 1: Contain head, prevent wildfire getting up and running towards communities of Widewater and Canyon Creek	Option 1: Helicopters: 1 intermediate and 1 heavy Airtankers: 1 group of skimmers and 1 land-based airtanker Other: 2 dozer groups	Helicopters: 3 medium and 1 heavy Airtankers: 2 groups of skimmers and 2 land-based airtankers Crews: 10 Type 1 HAC and 10 Type 1 Firetack Other: 4 dozer groups and 2 water tenders Additional: require structural protection crews to set up	Area: best suited at time to protect communities of Widewater and Canyon Creek May have to revert to another option based on wind and wildfire behaviour Provincial Forest Fire Centre: full suppression priority

Table 3 - Wildfire Analysis and Strategy (WAS) for SWF-056 at 09:00 on May 15

SWF-065					
Wildfire Size	**Observed Wildfire Behaviour**	**Current Weather**	**Fuels**	**Values**	**Weather Forecast**
700 hectares	10% candling 40% surface 50% smouldering	Wind southeast 20 km/hr Temperature 10 °C Relative humidity 25% Precipitation nil	Mixedwood and black spruce Fuel at head is C2 and continuous to southeast side of the Town of Slave Lake Terrain is flat with good access through wildfire	Life, community Potential to run into southeast side of Slave Lake Town Infrastructure: power lines, communication towers, infrastructure for town	Strong southeast winds today 30–40 km/hr (winds all day) Next day winds southeast 20 km/hr in morning, becoming light in the afternoon

Estimated Wildfire Size	**Objectives**	**Strategies**	**Current Resources**	**Resources Required to Meet Objectives**	**Other Comments**
24 hrs: 700 hectares 48 hrs: 800 hectares 72 hrs: 900 hectares	Secure structures near head (north end) of wildfire with structural teams and Sustainable Resource Development crews Suppress all fire on north side in black spruce Work on flanks of wildfire	Option 1: Contain head; prevent wildfire from taking hold in the black spruce between wildfire and town structures Direct action with airtanker, helicopters and ground crews Option 2: Burn out black spruce at head of wildfire if direct suppression becomes impossible Defensive structural tactics for homes southeast of the Town of Slave Lake	Option 1: Helicopters: 2 intermediate and 1 medium Airtankers: 1 group of skimmers and 1 landbased Other: 3 dozer groups Additional: Fire Department crews Option 2: Helicopters: 3 medium and 1 heavy Airtankers: 1 group of skimmers and 1 land-based airtanker Crews: 10 Type 1 HAC and 5 Type 1 Firetack Additional: require Fire Department crews to continue structure protection Retardant operation for helicopters	Not identified	Area: high possibility of success at this time with option 1 Provincial Forest Fire Centre: full suppression priority

Table 4 – Wildfire Analysis and Strategy (WAS) for SWF-065 at 09:00 on May 15

SWF-056 SUSTAINED ATTACK CHRONOLOGY

A chronology of events was based on information provided by three individuals assigned to SWF-056:

- Operations Section Chief.
- Group 2 Air Attack Officer.
- Heavy Equipment Group Supervisor.

May 15 **11:17** The Operations Section Chief was concerned about the wildfire behaviour and the direction it was heading and recommended evacuation of the south shore communities (Widewater and Canyon Creek area).

11:20 Group 2, with one Convair, departed from Lac La Biche.

11:30 An Operations Branch Director was assigned to the wildfire. While en route to SWF-056 and approaching SWF-065 (Figure 14), the Group 2 Air Attack Officer noted that SWF-065 and SWF-056 were exhibiting more intense wildfire behaviour.

The Air Attack Officer also noticed what appeared to be two columns burning in a northwesterly direction on SWF-065. The columns were not strictly parallel to each other suggesting possible variation in wind direction or fuel types at each site. The appearance of fire activity was more noticeable on the left (south) flank of SWF-065 while the right flank of that wildfire remained quiet.

11:52 When the Group 2 Air Attack Officer arrived at SWF-056 (Figure 15), the wildfire behaviour was mostly a rigorous surface fire in the grass understory of the mixedwood stand towards the mid-section and head of the wildfire with intermittent crown fire in the patches of conifer.

11:57 The Group 2 Air Attack Officer noted part of the wildfire perimeter was spotty and discontinuous along the flank (Figure 16) moving towards the head (right). They were unable to access the head or the left flank because of low-lying smoke.

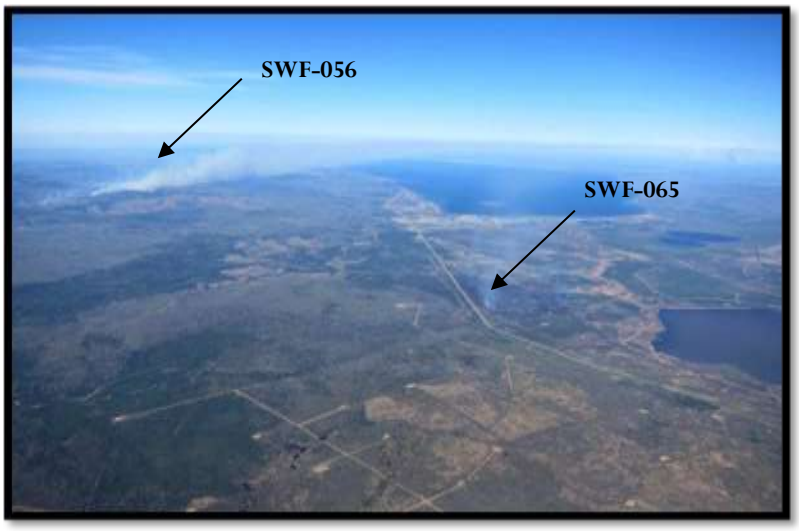


Figure 14 – View of SWF-056 and SWF-065 when the Group 2 Air Attack Officer was en route to SWF-056.

Figure 15 – SWF-056 looking west-northwest at 11:52 on May 15.

Figure 16 – Right flank of SWF-056 looking southwest at 11:57 on May 15.

Group 2 Air Attack Officer tactics on arrival

The wildfire was aligned in a south-southeast to north-northwest direction. Group 2 was advised that an Electra out of Whitecourt was available to assist, as well as Group 7 (another Electra from Loon River), and Bird Dog 054. The Group 2 Air Attack Officer noticed the beginnings of a breach in the dozer guard upslope on the right flank as time progressed. The Air Attack Officer contacted the Operations Section Chief who was flying over the area in a helicopter. The Operations Section Chief requested that the dozers leave the rear where they were working because of the breach in the line and increased wildfire behaviour. By this time, the Group 2 Air Attack Officer had also received the Group 7 airtanker out of Loon River. The Group 2 Air Attack Officer passed the following strategy to the Operations Section Chief:

> *"Because of the lack of continuous fire front at SWF-056, it is deemed that any attempt at line-building would be ineffective. The strategy is therefore two-fold:*
>
> - *Start by injecting higher RH values to the right flank in order to induce the wildfire to make a left-turn away from the Town of Slave Lake (which was located seven nautical miles to the east) using direct attack (loads placed directly on the wildfire edge, rather than in the green unburned vegetation).*
>
> - *To advance to the head of the wildfire with airtanker loads and prospectively prevent forward spread by reducing the Head Fire Intensity and momentum. (Group 2 Air Attack Officer)"*
>
> -- Group 2 Air Attack Officer

This was never achieved because three airtankers were diverted to a new start in Faust during action on SWF-056; also three airtankers were insufficient to achieve the second goal, given the time of day (approaching 13:00 with peak burning conditions and resource allocation). In addition, the Air Attack Officer from Group 2 offered airtankers to SWF-065 when increased wildfire behaviour was observed.

12:04 The first drop on SWF-056 that morning (Figure 17) commenced with the Group 2 Convair and the last drop was at 13:16 before the Convair had to divert to SWF-065. Four drops were made for a total of 31,820 litres. The Operations Branch Director from SWF-065 and the Operations Section Chief lifted off from Slave Lake Airport to conduct an aerial reconnaissance flight of SWF-056. The assessment revealed active surface fire with torching in individual or groups of trees, moving to the northwest (Figures 18 and 19). The head of the wildfire was located about 1 mile (1.6 kilometres) south of Mooney Creek.

Figure 17– First load of retardant on SWF-056 at 12:04 on May 15 from a Convair.

12:25 The only drop by Group 7 was made with an Electra and totalled 11,365 litres. Other groups completed their drops shortly afterwards (Figure 20). Group 7 was then diverted to a wildfire near the community of Faust. The Group 2 Air Attack Officer's strategy was to progress northwest, working along the right flank. Strong turbulence was present as a result of mechanical lift from the rolling hills, daytime heating, and the prevailing winds from the southeast.

Figure 18 – An independent spot fire on SWF-056 looking to the southeast from the left shoulder (top of the left flank near the head of the wildfire). This image was taken at 12:21 on May 15.

Figure 19 – Operations Branch Director and Operations Section Chief continuing an assessment on May 15 (time stamp in photograph is not daylight savings time, correct time is 12:37 Mountain Daylight Time).

13:15 The Group 2 Air Attack Officer indicated that the wildfire had crested a hill to the northwest. There was no longer a solid fire perimeter. Rather, a collection of spot fires were growing independently, with several areas of unburned fuel within. The winds were steady at approximately 60 kilometres per hour, the length-to-breadth ratio was approximately 6:1 at that time, and the approximate size was 1,000 hectares. Rates of spread in the cutblocks to the rear (south-southeast) were approximately five metres per minute and the Air Attack Officer saw the dozer guard

beginning to fail (by about 12:30). At the right flank, in the grass fuel understory, rates of spread were estimated to be between 5 and 10 metres per minute. Towards the head, spread rates were not clear due to low-lying horizontal smoke drift and the lack of an organized wildfire front at the time. The main concern was multiple spot fires at the head. Bird Dog 130 and the airtankers actioned the right flank of SWF-056 with the intention of steering the wildfire to the west, away from the Town of Slave Lake.

Figure 20 – An example of an airtanker drop on SWF-056.

13:16 The Electra from British Columbia made one drop (11,365 litres) on the wildfire before having to head back to its base in British Columbia. According to the Group 2 Air Attack Officer, cutblocks at the rear of the wildfire were sustaining high-intensity surface fire activity. These areas were being worked by dozers building guard on the right flank, up the hill, towards the treed area. On the left (west) flank at the rear, retardant lines were visible from the night before (Figure 21).

Figure 21 – The tail of the wildfire looking northwest. Note the retardant lines from the day before still holding the west flank, visible in this image on the left.

13:25 The Operations Section Chief carried out a reconnaissance flight with the Aerial Ignition Specialist and indicated that the wildfire suppression options were very limited.

Figure 22 – Looking southwest to the rear of the wildfire along the flank at 13:44 where five CV-580 loads and two Electra loads were placed between 12:04 and 13:37. Seven long-term airtanker loads were applied to the right flank between 12:04 and 13:16 (May 15).

13:45 The Group 2 Air Attack Officer noticed another increase in wildfire behaviour coinciding with the wind and mid-day burning conditions on SWF-065 when two columns were forming to the east of where the Air Attack Officer was working on SWF-056 (Figure 22). With no air attack over SWF-065 (airtankers had returned to the airtanker base for fuel), the Operations Section Chief agreed it would be best for

the Group 2 Air Attack Officer to divert from SWF-056 and proceed to SWF-065 immediately.

13:50 The Group 2 Air Attack Officer departed SWF-056 for SWF-065 with the last remaining airtanker. No other airtankers actioned SWF-056 that day because of higher priorities (SWF-065 and new wildfire starts), weather challenges, and extreme wildfire behaviour. Helicopter bucketing continued on SWF-056.

14:30 For safety reasons (very erratic wildfire behaviour and lack of air support to provide safety lookout) dozer guard construction was stopped and the dozer groups were removed from the fireline (Figures 23 and 24).

Figure 23 - East flank of wildfire looking southeast at 16:21 on May 15.

14:37 The Operations Section Chief noted the head of SWF-056 was large and 12 kilometres from Highway 2.

14:53 Duty Officer logs noted Group 3 and Group 9 could not fly because of extreme weather.

16:33 Bucketing on spot fires was not effective (Figures 25, 26, and 27).

17:15 The Duty Officer log noted the highway near Widewater was being shut down.

17:20 The Operations Section Chief advised the Incident Commander that the Town of Slave Lake should be evacuated because of extreme wildfire behaviour on SWF-065.

19:30 The wildfire approached Highway 2 and spotted into Widewater and Canyon Creek (Figure 28).

Figure 24 – East flank looking west towards the head of the wildfire at 16:21 on May 15.

Figure 25 - Looking southeast from Osland Estates at 16:24 on May 15.

Figure 26 – Looking southeast from Osland Estates at a spot fire between the main wildfire (1.5 kilometres ahead) and Osland Estates (16:25 on May 15).

Figure 27 – Spot fire between the head of the fire and Osland Estates at 16:39 on May 15.

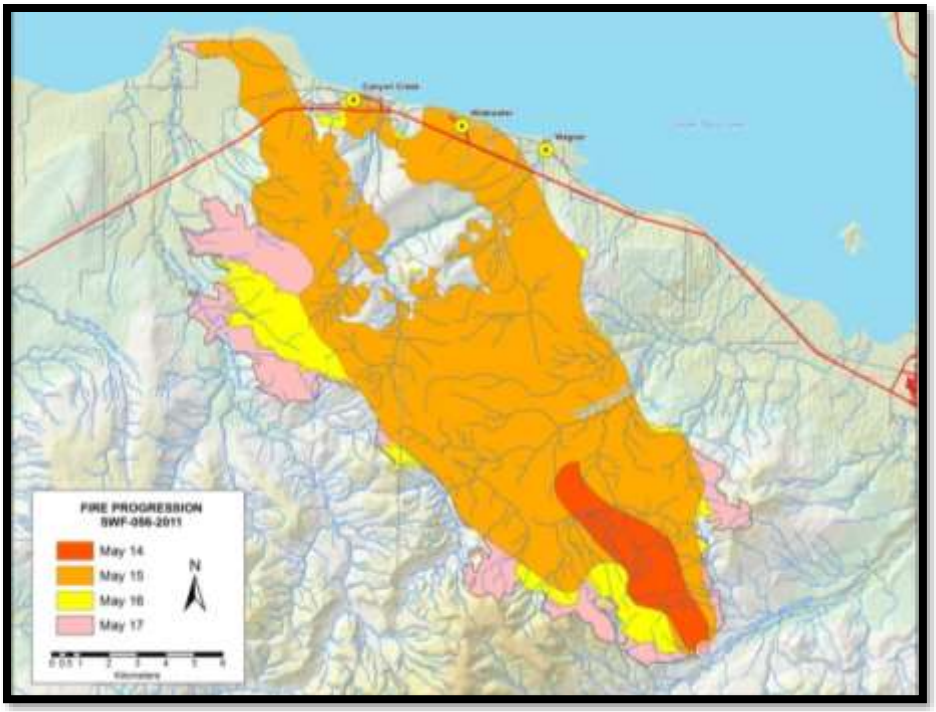


Figure 28 – Wildfire progression on SWF-056 from May 14 to 17. The major wildfire run occurred on May 15 and breached Highway 2 into Widewater and Canyon Creek.

SWF-056 Summary of Sustained Attack Response on May 15

Table 5 provides a summary of the strategies and tactics (including challenges) of the Incident Management Team on May 15. Details for May 16 to 22 are also included. SWF-056 was declared as "Being Held"[1] on May 23 and "Under Control"[2] on May 28. The wildfire was "Extinguished"[3] on July 28.

[1] Sufficient resources are currently committed and sufficient action has been taken, such that the fire is not likely to spread beyond existent or predetermined boundaries under prevailing and forecasted weather and fire behaviour conditions.
[2] The wildfire has sufficient action and the entire fire perimeter is secured from further spread.
[3] This designation indicates a wildfire has been completely extinguished.

SWF-065

General Control Objectives	Strategy and Tactics	Results Achieved	Challenges
May 15 Slow down head of wildfire using airtankers Dozer guard on rear, moving dozers into flanks Identify burnout points to prevent the head from making runs towards communities Protection of human life	06:30 two heavy helicopters ordered plus portable chemical retardant mixing site 07:00 reconnaissance flight with Operations Section Chief and Planning Section Chief to look at SWF-065 (identifying west side of Poplar Estates as main priority for containment of SWF-065) and SWF-056 (identifying long east side flank and north flanks as having the most potential to threaten south shore communities with present southeast winds and, if a wind shift occurred, the Town of Slave Lake) Commencement of structural protection in south shore communities, organized by Operations Section Chief and Structural Protection Coordinator Goal being to save as many structures as possible with Fire Department resources Airtanker group assigned to slow down the advance of the fire head so it would not impact communities during peak burning period	Early evacuation of south shore communities (recommendation given by Operations Section Chief to Municipal Representative at 12:37) Structural Protection Coordinator began structural protection in the south shore area	Unsuccessful in slowing the head of the wildfire, airtanker group unable to slow progress because of extreme wildfire behaviour and winds encountered throughout the burning period
May 16 Airtankers and helicopters with buckets to work flanks and head when operations can be done safely Reassess dozer opportunities, redeploy where guard can be cut safely Continue to look at south shore structural protection and critical spots that require attention	Continue to move structural protection teams into south shore supported by helicopter bucketing operations (north of Highway 2) Airtankers to work targets south of Highway 2 identified by Operations Section Chief and Air Attack Officers Branch Director assigned to directing helicopter bucketing in south shore Ignition Specialist to assess potential burnout locations	No new losses of structures Minimal spread or growth of wildfire throughout day Structure protection completed in Bayer Estates Successful burnout operations completed in evening by Aerial Ignition Specialist on southeast section of wildfire	No challenges noted with tactics established for the day
May 17 Airtankers and helicopters with buckets to work flanks and head of wildfire Complete the dozer guard for planned burnout operations (east side) South shore structural protection to continue setup on-site	Five dozer groups working tight line along east flank, Branch Director as safety observer Aerial Ignition Specialist to look for opportunities for fuel removal along the dozer guard in the afternoon Helicopters and buckets to knock down any fire threatening structures along south shore Helicopters with buckets and airtankers to be used to knock down any flare ups throughout the day (as advised by Branch Director) Supply air transportation to wildfire investigators. Ensure Team has communications with 20-person British Columbia crew	No additional structures lost along south shore Good progress on east flank with dozers Minimal spread	East flank dozer guard not complete No ground support to work with helicopters with buckets to extinguish wildfire along guard

May 18 Airtankers and helicopters with buckets to work flanks and head when operations can be done safely Reassess dozer opportunities, redeploy where a dozer guard can be cut safely Continue to look at south shore structural protection, critical spots requiring attention	Support 20-person British Columbia crew working the south shore area with helicopters with buckets, and water haulers, in conjunction with structural firefighters Support 20-person British Columbia crew working east flank with airtankers, helicopters with buckets, and water haulers Five dozer groups working tight line along east flank, Branch Director as safety observer in the air Aerial Ignition Specialist to look for opportunities for fuel removal along east flank dozer guard Long-term retardant will be used by airtankers in southwest corner where it is too hilly to establish a dozer guard, as directed by Branch Director Helicopters with buckets to be used to knock down any flame near perimeter, as directed by the Branch Director Heavy helicopters to work Assineau River excursion, good turn around, bucket out of river Structural Protection Coordinator along with structural firefighters to assess and establish structural protection at Bayer Estates	No additional structures lost along south shore 90% of east flank completed Minimal spread, some creeping Retardant pit location identified	Did not complete a dozer guard on east flank, large timber Limited availability of firefighting crews
After May 18, there was no significant growth in the wildfire perimeter. Strategies were to mop up and extinguish the wildfire. No impediments were encountered.			
May 19 Continued work on hot spots between structures north of Highway 2. Crews to work with water carriers and dozers on east flank.			
May 20 Start to secure west perimeter with seven dozer groups (two from the north and five working north to south from mid-flank). Worked east flank with all-terrain engines and ground crews securing perimeter. Helicopter bucketing operations to support ground crews.			
May 21 Crews secure west perimeter working with all-terrain engines. Two 20-member units and helicopters with buckets, secure J12 to N4 and bucketing operations only from E8 to M3, dozer guard operations securing E8 to M3 with seven dozer groups.			
May 22 Division A: (F12–I12): 10 firefighters to work north of Highway 2 in fine fuels to locate and extinguish all hot spots. Division A: F12–I12: 10 firefighters work south Highway 2 to extinguish 10 metres into perimeter. Division B: 20 personnel to set up two high-volume agricultural pumps and lay 5 kilometres of aluminum pipe (H6 area). Division C: 40 firefighters to work from J11 to M3.			
Note, the letter/number references indicate specific locations within each Division (A, B, and C) of an operational plan for the wildfire			

Table 5 – Incident Management Team objectives, strategies, and challenges for SWF-056

SWF-065 SUSTAINED ATTACK CHRONOLOGY

Initial attack was unsuccessful during the afternoon and evening of May 14 because of high winds, spotting, and activity through the night. The Fire Department and Sustainable Resource Development crews worked to contain the fire under marginal safety conditions created by strong winds, unpredictable wildfire behaviour, and large amounts of

anthropogenic fuels. This chronology of events was based on information provided by four individuals assigned to SWF-065:

- Operations Section Chief.
- Operations Branch Director (mainly on the ground but also in the air).
- Group 2 Air Attack Officer.
- Group 6 Air Attack Officer.

May 15 **10:15** The Operations Branch Director had been assigned to SWF-065 on the morning of May 15 by the Duty Officer for the Lesser Slave Area. After a briefing with the Operations Section Chief, the Operations Branch Director's role was to take command of resources working the wildfire in a "sustained attack" mode. The first task was to begin identifying the placement of structural resources on SWF-065. Group 3 airtankers had arrived on the wildfire at 09:56 to begin a successive volley of water drops from two CL-215 airtankers and four AT802s (Figure 29). The airtankers did not undertake operations earlier in the morning because targets were difficult to sight. In addition, early start limitations would have affected the pilot's ability to work later in the day when more intense wildfire activity was anticipated (Duty Officers determine the previous night whether early morning operations are required based on wildfire risk, potential for new ignitions, and provincial wildfire loads. If early morning operations are required, skimmer airtankers are utilized.).

Figure 29 - Airtractor 802 F.

10:50 The Operations Branch Director met with the Fire Chief on-site at Poplar Estates and received a briefing. The briefing included the following observations of the Operations Branch Director that were noted regarding a reconnaissance flight over the Poplar Estates area:

- Range Road 54.
  - Division Supervisor and seven water trucks had worked all night on the wildfire.
- Gullion Road, south of Poplar Lane Road.
  - Fire Department with two engines and one water tender.
  - Wildfire behaviour at this site was quiet with the exception of a flare-up to the southwest of the pumper near some trees they were going to action.
- Mitsue Creek.
  - Dozer group lowboy trailers (no dozers).
- Mitsue Creek area.
  - HAC 1 worked throughout the night.
- Mitsue Road and north.

- Dozer Boss and dozer group worked throughout the night.

The dozer group indicated they had finished putting in guard on the northeast corner and were loading up. Overall, the wildfire was a smouldering surface fire with very little open flame. The Operations Branch Director then plotted the locations of the resources situated on the wildfire on a map and returned to the Slave Lake Fire Centre to brief the Incident Management Team. Dozer guard construction maps are provided in Appendix 0.

11:55 The Aerial Ignition Specialist landed at Slave Lake Airport and advised the Slave Lake Fire Centre that the global positioning system (GPS) modem for tracking the helicopter was not working. The aircraft was subsequently declared unserviceable and a second helicopter would be assigned. The Aerial Ignition Specialist received a briefing.

12:00 The Division Supervisor, who was with the water trucks on Highway 2, drove into Mitsue to make sure all responders were out of the fire area. The RCMP controlled public access. At least 12 Sustainable Resource Development and Fire Department firefighters were at the fire at that time.

12:04 The Operations Branch Director and Operations Section Chief conducted an aerial reconnaissance flight of SWF-056 before heading to SWF-065 for an assessment (Figures 30 and 31).

Figure 30 – Aerial view of Poplar Estates (SWF-065) during the Operations Branch Director's reconnaissance on May 15 (time stamp in photograph is not daylight savings time, time corrected to 12:59 Mountain Daylight Time).

12:30 Three dozer groups, complete with a water truck, backhoe, and Dozer Boss continued building guard from their morning location at the rear of the wildfire. One

dozer group was also still working in Poplar Estates. A dozer guard was constructed until the wind became too strong to allow the dozer groups to continue working safely. The wildfire spotted across the dozer guard later that day. The water trucks assigned to the dozer group were, in addition to other water trucks, supporting HAC crews and Fire Department pumpers.

12:43 After conducting an assessment and supporting evacuation needs on SWF-056, the Operations Branch Director brought the Operations Section Chief back to the Slave Lake Fire Centre.

12:47 The Operations Branch Director flew back to SWF-065 and updated the wildfire map with the general location of the fire perimiter and ground resources. The Operations Branch Director was concerned about a large patch of coniferous trees to the northeast of a dozer group working near a pipeline. The large patch had a surface fire that the Operations Branch Director felt was going to intensify and reach the crowns. A dozer boss was requested to assess the situation for the possibility of building a dozer guard around it.

Figure 31 – Aerial view of Poplar Estates (SWF-065) during the Operation Branch Director's reconnaissance on May 15 ((time stamp in photograph is not daylight savings time, time corrected to 13:03 Mountain Daylight Time).

13:07 The Operations Branch Director departed the wildfire for the Slave Lake Fire Centre to brief the Incident Management Team and return the Operations Section Chief's helicopter. Wildfire behaviour at that time was a smouldering surface fire.

13:45 The Operations Branch Director drove back to SWF-065 where the dozers were offloaded and noticed a significant change in the wildfire behaviour, including vigorous surface fire, torching, and candling of black spruce. Winds were beginning

to gust. The Operations Branch Director noted there appeared to be two independent heads (Figure 32) on the wildfire (south and north):

- The south head of the wildfire was running along Highway 2.
- The north head of the wildfire was proceeding towards Devonshire Beach in boreal spruce.
- The unburned fuel within the preceding night's wildfire perimeter was now being consumed.

The Operations Branch Director could not locate the dozers that were dispatched to work the conifer patch and was concerned for their safety. The Operations Branch Director contacted the Dozer Boss who followed the dozer guard into heavy smoke to try to locate the dozers. At the same time, the Operations Branch Director contacted the Air Attack Officer overhead for assistance in locating the dozers in order to get them to safety. The Air Attack Officer was not able to locate them in the heavy smoke and returned to continue air attack operations. The Dozer Boss eventually located both the first and second dozers and led them out to safety.

The Group 2 Air Attack Officer (working on SWF-056 with two Electras) who had been monitoring wildfire behaviour and the communications channels for SWF-065 from a vantage point on SWF-056, also noticed an increase in wildfire intensity and the formation of two columns over SWF-065. Airtankers over SWF-065 had to leave the wildfire (at approximately 13:35) and return to the airtanker base for fuel. The Operations Section Chief diverted Group 2 from SWF-056 to SWF-065 because it was a higher priority. During this time, there was a very high volume of radio communications because of several new wildfire starts (coinciding with the time of day and the approach of the peak burning period).

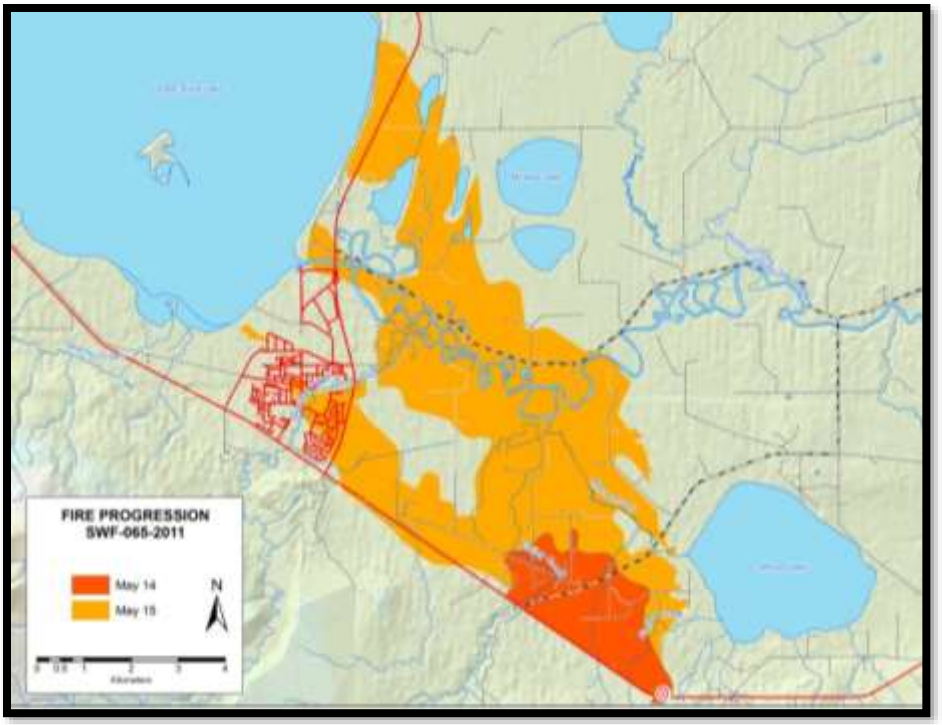


Figure 32 – SWF-065 progression map for May 14 and 15 illustrating the separation of the south and north fingers.

13:51 The Group 2 Air Attack Officer observed the following wildfire behaviour and resources on arrival at SWF-065:

- There were two areas of increased intensity (the right and left flanks were growing independently and were both spreading to the west).
- There was no clear perimeter on the wildfire, rather it consisted of a collection of spot fires of varying sizes (including burning structures), and there were several areas of unburned fuel inside the perimeter.
- The south flank was burning in grass, conifer, and mixedwood fuels, was organizing into intermittent crown fire along Highway 2, and was about to impact several homes.
- The north flank was burning in heavier timber, predominantly coniferous trees, and was developing from an intermittent crown fire to a more developed crown fire, with higher rates of spread, but was not located in the vicinity of any structures at that time.
- Three intermediate helicopters were supporting structure protection along the west side, adjacent to Highway 2.
- Ground crews including the Operations Branch Director, Division Supervisor, HAC crew, and municipal fire trucks were in the area.

Figure 33 – Flank of SWF-065 showing spot fires in a field near Mitsue Road on May 15 (time stamp in photograph is not daylight savings time, time corrected to 14:06 Mountain Daylight Time).

Figure 34 - Heavy smoke by Mitsue Road towards Highway 2 (time stamp in photograph is not daylight savings time, time corrected to 14:08 Mountain

14:09 After addressing the concerns about the safety of the dozers, the Operations Branch Director drove through a heavy smoke column blowing across Highway 2 (Figures 33 and 34), to Mitsue Road and noted the following:

- Fire Department trucks to the north had blocked the highway.
- A smoke column was visible to the north.
- The majority of the flare-up came from the east side of Mitsue Road, which then spotted across the road.
- Weather observations:
  - Winds estimated steady at 40 kilometres per hour with gusts
  - Temperature 17 °C

- Low relative humidity and clear skies

14:11 The Operations Branch Director drove back to Highway 2 on Mitsue Road (Figure 35).The Fire Department had vacated the Poplar Estates area and were on Highway 2, several kilometres east of Mitsue Road. The Operations Branch Director discovered that the Division Supervisor had also reached Highway 2 safely. Highway 2 was shut down around that time.

Figure 35 – The head of the wildfire crossing the highway on the east side of Highway 2 at Mistue Road. Spot fires were already across the road. Group 2 was overhead (time stamp in photograph is not daylight savings time, time corrected to

14:12 The Group 2 Air Attack Officer contacted the Slave Lake Fire Centre and requested "everything they could send." The Operations Branch Director had requested an assessment from the Group 2 Air Attack Officer overhead. The Operations Branch Director was concerned that the northern flank would reach the stand of black spruce to the west and make a run for the Town of Slave Lake. The Air Attack Officer assessed both the north flank and south flank, where the Division Supervisor was working along the highway. In consideration of the resources available, the Air Attack Officer decided containment of the south flank was the most feasible objective, given its reduced wildfire behaviour compared with the north flank. In addition, the Air Attack Officer chose to work the south flank because it was bearing directly down on several homes (consistent with the top provincial priorities of human life and community) while the flank to the north was at least 1.5 miles (2.4 kilometres) east of one homestead and was heading for swampy areas for the next mile (1.6 kilometres) or so. Both the Operations Branch Director and the Division Supervisor agreed with the Air Attack Officer's assessment. The Air Attack Officer then commenced the first run with the Electra. Direct attack methods were employed. Loads were dropped directly on the wildfire at maximum coverage levels in an attempt to knock the heat out of the wildfire, to reduce spotting, and to slow or halt wildfire spread.

14:14 The first Electra drop was made (Figure 36).

Figure 36 – After the first drop by the Electra. Highway 2 is in the foreground.

Figure 37 – Additional Electra load going in along Highway 2 (14:25).

14:25 An additional Electra load was applied (Figure 37). The Air Attack Officer flying over the wildfire continued to work along Highway 2 in the black spruce, but high-velocity winds were an issue. The airtanker drop was only effective for a short period of time, after which the wildfire began to crown again and continued its run. The Operations Branch Director drove back into Poplar Estates via Mitsue Road to observe the situation in the interior of the wildfire perimeter. On the south side, the wildfire was running between Highway 2 and the houses located in black spruce and fine fuels. Fuels that had not burned the previous day or night were now being consumed. The Operations Branch Director drove close to Highway 2 and Mitsue

and noted a house that was unburned as a result of green grass in the yard and around the home. However, most of the nearby fuel was on fire, including a shed (Figure 38).

Figure 38 – Burning shed to the northwest of an unburned house (time stamp in photograph is not daylight savings time, time corrected to 14:25 Mountain Daylight Time on May 15).

The Operations Branch Director contacted the Fire Department to inform them of the situation. Their response was that it was unsafe in that area. The Operations Branch Director drove back to Highway 2 and confirmed that all residents had been evacuated. The Fire Department departed from east of Mitsue and returned to the Slave Lake Fire Hall. The Division Supervisor assigned water trucks to wet down the ditch on the south side of Highway 2 to help prevent the wildfire from breaching the highway.

14:30 The Slave Lake Fire Centre deployed Group 8's Convair CV-580 (Figure 39), as well as two additional Electras (for a total of four airtankers) during the next hour of operations. The Group 8 Air Attack Officer entered the stack of aircraft from above to observe tactics in anticipation of taking over the wildfire from the Group 2 Air Attack Officer, who was nearing the end of a fuel cycle and had to return to the airtanker base.

Figure 39 – Convair CV-58.

14:37 Reconnaissance flights over both SWF-056 and SWF-065 continued.

14:48 After six retardant loads were applied during the direct attack, the wildfire behaviour on the south flank was reduced to approximately Intensity Class 3.

Flames had dropped out of the crown, and it was now a surface fire. Meanwhile, the north flank continued to burn with no suppression action.

14:50 The Group 2 Air Attack Officer turned the wildfire over to the Group 8 Air Attack Officer, notified both Operations Branch Directors (SWF-056 and SWF-065), and made the following tactical remarks to the Division Supervisor:

- Knocked the south flank down with six heavy loads using direct attack (transitioned from fire in the crowns to a surface fire).
- Recommended immediate action on the north flank and on the independent spot fires that were ahead of the south flank area that needed to be attended to (further to the west).
- Advised of continuing gains in intensity on the north flank while the south flank's intensity had been temporarily reduced by the retardant drops (Figure 40).

Figure 40 – Aerial view of Poplar Estates and Highway 2. Retardant lines are evident.

The Operations Branch Director had driven back into Poplar Estates to assess houses along Poplar Lane and Highway 2. The Operations Branch Director discovered a haystack on fire upwind, several metres from a corral with cow and calf pairs standing in straw. With the help of HAC 1, who was just returning to the wildfire, the cows were moved from the pen to an adjacent green pasture. The straw in the pen caught fire just after the cows were moved. The surface fire south of the corral was now intense, with torching of ladder fuels. Three Sustainable Resource Development water trucks joined the Operations Branch Director and HAC 1 to commence structure protection around the house.

14:55 The Operations Section Chief flew overhead and contacted the Group 2 Air Attack Officer to express concern about the potential for the wildfire to enter the black spruce on the north flank. The Air Attack Officer agreed, passed the same concern on to the Group 8 Air Attack Officer and explained that they had focused on the south flank during the past hour because of the values-at-risk and the higher likelihood of success. The Group 2 Air Attack Officer then contacted the Operations Branch Director on the north flank before departing and stated that the north flank would be the next priority. Soon after, because of extreme and turbulent winds, airtanker action became intermittent.

15:00 The Group 2 Air Attack Officer arrived at the Slave Lake Airtanker Base and was informed by pilots on the ground that winds had reached 104 kilometres per hour.

Note: It was stated by the Group 2 Air Attack Officer that the wildfire was without airtanker action from approximately 13:20 to 14:05 and SWF-065 was transitioning from Intensity Class 3/4 to Intensity Class 5/6. Group 3 airtankers had to return to the Slave Lake Airtanker Base for fuel. High-velocity winds were creating large waves on Lesser Slave Lake, and the amphibious aircraft could not continue skimming operations. This situation forced the Group 3 Air Attack Officer to terminate any further suppression action for safety reasons after soliciting input from the airtanker pilots. Because of the high number of aircraft and the fuelling logistics, there was a backlog of airtankers at the airtanker base. Some airtankers flew to the airstrip in Whitecourt for refuelling (approximately 200 kilometres away). The airtanker base placed a priority on refuelling the heavy retardant–based aircraft, such as the Electras (also fuelling at that time) and the Convair 580s.

15:10 The Operations Branch Director left HAC 1 and proceeded west, to the vicinity of the house from where the cattle had been removed (Figure 41) and noted the following:

- The house to the north, along with a quonset hut, was now threatened by a surface fire.
- The Fire Department arrived and one pumper was assigned to the quonset hut and the other to the house south west of the location where part of the HAC crew was working.
- The second Fire Department pumper left the area.
- The opinion of the Dozer Boss on a strategy for dozer assignments was sought.
    - There were no securable anchor points in the area and the dozers would be at risk
    - Fire was everywhere and safety was a concern, given the speed and unpredictable nature of the wildfire

Figure 41 – Smoke in the area of the corrals and house (time stamp in photograph is not daylight savings time, time corrected to 15:18 Mountain Daylight Time on May 15).

15:15 The Group 6 Air Attack Officer with two Electras was requested to relieve the Group 8 Air Attack Officer because he was almost out of fuel.

15:25 Group 6 arrived over the wildfire at the same time the Airtanker Group from British Columbia arrived with two Convairs. Briefings were held with all three Air Attack Officers in the air, and control was turned over to the Group 6 Air Attack Officer. The Air Attack Officer realized that flying conditions were extremely difficult in the intense winds, and safety was a concern. With three airtankers overhead waiting to be unloaded, the Air Attack Officers decided to continue suppression action. The Aerial Ignition Specialist was asked to assess the south and east areas of SWF-065.

15:34 The Aerial Ignition Specialist left the airport with forty-five minutes of fuel on board to reduce weight to help maximize the safety margin in wind conditions. They remained hovering for nearly forty minutes because the number of airtankers dropping retardant loads was causing extreme airspace congestion over the wildfire. The Aerial Ignition Specialist had to leave for refuelling without assessing the areas and did not lift off again until 17:05.

The Group 6 Air Attack Officer noticed that wildfire activity had picked up dramatically in a clump of black spruce closer to Highway 2, and the wildfire was putting up a substantial and quickly darkening smoke column. This clump led to additional stands of black spruce candling, and eventually a solid crown fire developed in the black spruce and burned into the Town of Slave Lake. The Air Attack Officer decided that this was the highest priority at the time and conversed

with the crews on the ground (Operations Branch Director and HAC 1) confirming this would be the target for the airtankers.

15:58 All three Convair airtankers were instructed to drop retardant, starting from the south side of the black spruce clump. The strategy was to lay retardant directly ahead of the flame front. All airtankers had instructions to return to the Slave Lake Airtanker Base for reloading after their drop. The British Columbia Air Attack Officer also returned to the Slave Lake Airtanker Base with the airtankers for refuelling. Airtankers continued to drop their loads along Highway 2 just north of the location where the Operations Branch Director and the HAC crew were working to protect structures. The Operations Branch Director drove to the next site downwind (west) to assess a structure in the path of the wildfire. The following events occurred:

- The Air Attack Officer contacted the Operations Branch Director about a structure located near trees to the west.
- The Operations Branch Director drove back upwind to assess houses east of the corrals.
- The Operations Branch Director requested to meet with the Dozer Boss.
- The Operations Branch Director requested that the HAC crew split up and bring a water tender to the area east of the corrals where two homes were surrounded by surface fire and where a quonset hut to the north was also threatened.
- The Operations Branch Director requested assistance from the Fire Department who responded by re-entering Poplar Estates with two pumpers that were nearby.
- Some of the HAC crew worked with a water truck to protect a house.
- The other HAC crew members worked to protect a house further east where fuels were burning behind the house (Figures 42 and 43).

The Group 6 Air Attack Officer stated that the retardant was not holding the wildfire. Spotting was visible beyond the retardant line resulting from the combination of gusty wind conditions and increasing wildfire intensity. It was evident that SWF-065 was a wind-driven wildfire. The column continued to grow and lean over on the trees.

Figure 42 – Intense wildfire behaviour behind a house HAC members were working to save (time stamp in photograph is not daylight savings time, time corrected to 16:06 Mountain Daylight Time on May 15).

Figure 43 – Alternate view of fuels fully engulfed in flame behind a house HAC members were working to save (time stamp in photograph is not daylight savings time, time corrected to 16:06 Mountain Daylight Time on May 15).

16:15 The Slave Lake Airtanker Base lost power and the runway was deemed too smoky for aircraft to take off or land. The Operations Section Chief asked the Operations Branch Director to assess a new wildfire to the north once a helicopter was available at the Slave Lake Fire Centre. Upon departure for the Slave Lake Fire Centre, the Operations Branch Director turned control of the wildfire back to the HAC Leader and advised the Air Attack Officer of the change of command with instructions to maintain contact with the HAC 1 Leader.

16:20 (approximately) While waiting for airtankers to return from refuelling in Whitecourt,, assessment and planning for operational opportunities continued. The Group 6 Air Attack Officer requested the Aerial Ignition Specialist return to assess burnout opportunities, including the use of the water diversion ditch south of Highway 88.

16:30 The Operations Branch Director returned to the Slave Lake Fire Centre and briefed the Incident Management Team as follows (before heading to assess a new wildfire):

- Resources on wildfire.
  - HAC crew with three water trucks
  - Division Supervisor with two water trucks
  - Fire Department Pumper
  - Two dozer groups at the Sawridge Truck Stop
  - One Electra airtanker group
- Wildfire behaviour.

  - Intense surface fire
  - Intermittent crown fire to complete crown fire burning in black spruce
- Estimated weather.
  - Temperature 17 °C
  - Relative humidity 25%
  - Southeast wind at 40 kilometres per hour, gusting to 80 kilometres per hour
- Observations and predictions.
  - Airtankers not holding black spruce on Highway 2
  - Delayed turnaround time for airtanker drops resulting from aircraft fuel demand and airspace congestion
  - Wildfire was being knocked down but got back up quickly
  - Dozer guard on Highway 88 not holding the wildfire

16:30 The Provincial Forest Fire Centre sent out a broadcast message that the Slave Lake Airtanker Base was non-operational. Structure protection commenced at the Slave Lake Airtanker Base. Hose lines were deployed to commence spraying buildings.

16:35 The Aerial Ignition Specialist requested clearance into the area before setting down quickly around Flat Top Lookout to setup the torch for operation. The Aerial Ignition Specialist was then planning to perform an assessment to determine options.

16:40 The Group 6 Air Attack Officer observed spotting in the grass along the diversion ditch, no longer making it a viable area for the Aerial Ignition Specialist to use the torch to safely burn out from.

17:05 The smoke column was down on the trees in front of the head of the wildfire. Poor visibility made it impossible to see the advancing flame front. The smoke column was bearing down on the Town of Slave Lake at ground level. The Aerial Ignition Specialist lifted off from the Slave Lake Airport and proceeded to the wildfire flying into the area at as low an altitude as possible to assess alternative options. Power lines, extreme wind speed, turbulence, and trees created safety concerns. The Aerial Ignition Specialist noted that the smoke was horizontal to the ground, and the wind was so strong that there were no opportunities to burn out any forest fuels ahead of the wildfire. The Aerial Ignition Specialist concluded that there was no place to work without compromising safety because the winds were too extreme, and any fire added to the ground would have likely breached the highway and any natural fuel breaks. After completing the assessment and concluding that no torch options would be effective, the Aerial Ignition Specialist gave the airspace back to the airtankers and bucketing helicopters. The Group 6 Air Attack Officer recommended evacuation based on current wildfire behaviour conditions. The Group 6 Air Attack Officer noted that they had overheard on the radio that smoke was quickly becoming an issue at Slave Lake Airport (Figure 44),

and they were in the process of trying to get all aircraft currently at the airtanker base to another base location.

Figure 44 – Smoke at the Slave Lake Airport.

17:00 Airtankers departed from the Slave Lake Airtanker Base because of falling ash and debris from the wildfire and wind. One Airtractor-802 aircraft was unserviceable so it could not leave the airstrip. It was loaded with water to prevent it from being pushed over by the wind.

17:09 HAC 1 reconsidered a backfire from Highway 88, but the head of the wildfire was already spotting across the west side of the highway.

17:14 HAC 1 left the Highway 88 area to assist with evacuating the Town of Slave Lake, as directed by the Fire Chief.

17:35 The Group 6 Air Attack Officer observed flames in the grass and trees on both sides of Highway 88. Spotting was occurring in the town site.

17:40 The Group 6 Air Attack Officer received a call that Airtanker 489 (Electra) was inbound for the wildfire and that Airtanker 484 would be shortly behind. They considered the possibility of working on the east edge of town; however, because of wind, smoke, and poor visibility, that tactic was ruled out.

17:50 (approximately) A spot fire on the south side of Highway 2 and east of the weigh scale was observed. The Group 6 Air Attack Officer planned to use the Electra to drop retardant adjacent to the fire front and the highway to limit fire spread in a lateral or forward direction. Retardant was applied in a box shape around the spot fire.

17:55 A drop was made by an Electra from the northeast to the southwest, starting adjacent to the highway and extending into the trees. During the drop by the first Electra, slippage was felt in the airtanker (because of extreme winds), pulling it down below drop height. A message was passed to the second airtanker not to use flaps during its run. The first airtanker then returned to Whitecourt.

19:00 The Heavy Equipment Group Supervisor was asked by the Fire Chief to bring the dozer groups to fight fire in town. The Heavy Equipment Group Supervisor attempted to conduct an aerial assessment but, because of turbulent winds and safety concerns, had to land.

21:00 The Division Supervisor continued working on the fire.

22:30 Sustainable Resource Development staff at the Slave Lake Fire Centre vacated the building as a result of information received about the potential threat that large industrial propane tanks located several blocks away could explode. Staff returned one hour later, once it had been clarified that there was no threat.

Summary of Sustained Attack Response on SWF-065 May 15

Ground resources focused on protecting structures by moving from acreage to acreage, controlling the spread before additional homes were consumed by the wildfire. Additional water trucks were added, and three helicopters assisted ground crews in protecting structures and suppressing the spot fire at the west end of the main fire.

Because of the number of roads, scattered residences and infrastructure, additional anthropogenic fuels, and limited water resources, nighttime firefighting operations in Poplar Estates was complicated. Personnel were not able to follow the lookouts, anchor points, communications, escape routes, and safety zones (LACES) safety procedure.

The focus on structural protection of evacuated residences in Poplar Estates at night diverted resources from the wildfire perimeter. Spotting from SWF-065 into Poplar Estates created multiple fire locations within the wildfire perimeter that affected many structures. The structures created many fire heads that needed to be dealt with to prevent the wildfire from spreading to other structures. Several residential sites had materials on their properties, such as tires, lumber, automobiles, and machine parts that created wicking and added to the complexity of dealing with the wildfire spread. The ground resources focused mainly on structural protection in Poplar Estates until the wildfire behaviour became too extreme and erratic to continue. The ground resources moved to Highway 2 where they focused on preventing any spot fires to the south of the highway.

Dozer groups that had been dispatched early in the morning of May 15 constructed a dozer guard near the rear and at the east end of the wildfire perimeter until the winds and extreme wildfire behaviour created unsafe conditions. The dozers then moved to safe areas. Dozers also completed a dozer guard on the east side of Highway 88 during the early morning hours of May 15.

The airtankers concentrated on flanking action along the south side and across the head as the wildfire gained momentum during the afternoon of May 15. The Air Attack Officers were aware of the structures in the wildfire area and concentrated on placing loads in an attempt to slow down the wildfire. They did not intentionally drop retardant on any structures; however, high winds caused retardant drops to drift and cover some structures and vehicles.

The Aerial Ignition Specialist assessed the wildfire for backfiring opportunities as it approached Highway 88. The column was down on the trees in front of the head, and poor visibility made it impossible to see the advancing flame front. The Aerial Ignition Specialist flew into the area at as low an altitude as possible. Power lines, extreme wind speed, turbulence, visibility, and trees created safety concerns. There was no opportunity to safely burn any forest fuels ahead of the wildfire.

Table 6 provides a summary of the strategies and tactics (including challenges) of the Incident Management Team on May 15. Details for May 16 to May 22 are also included. SWF-065 was declared as "Being Held" on May 22 and "Under Control" on May 23. The wildfire was "Extinguished" on July 28.

SWF-065

General Control Objectives	Strategy And Tactics	Results Achieved	Challenges
May 15 Secure structures near the head (north end) of the wildfire with structural teams and Sustainable Resource Development crews Suppress all fire on north side in black spruce Work on flanks of wildfire	Extinguish all hotspots on west side of Poplar Estates Branch Director appointed with 10 municipal firefighters and one three-person HAC crew for ground suppression Ground priorities were to work the west side of Poplar Estates Dozer group working on areas safe for guard construction on east side with Heavy Equipment Group Supervisor Helicopters (medium and intermediate) with buckets working targets on the wildfire As airtankers became available they were assigned to work (Electras/802s /CL215s) on targets established by Operations Section Chief and Air Attack Officers Ground water tenders at the wildfire working with Fire Department ground crews	No loss of life Limited numbers of new structures lost in Poplar Estates	Major wind event that developed in the afternoon and early evening affected achieving containment of wildfires Airtanker refuelling logistics at the Slave Lake Airtanker Base Refuelling required at other bases (Whitecourt) Limited number of ground resources able to action wildfire

May 16 Airtankers and helicopters with buckets to work on flanks and head of wildfire when operations could be done safely Reassess dozer opportunities, redeploy where guard could be constructed safely Assess spots to control near homes not burned on north side and Poplar Estates	Assigned two dozer groups on excursion south of Highway 2 Helicopters bucketing, commencing start of day on priority target identified on first flight reconnaissance and throughout the day by Operations Section Chief and Branch Director Airtankers actioning north side of wildfire to limit spread	Minimal perimeter growth by the end of the day No structures lost	Limited ground resources restricted containment line production
May 17 Airtankers and helicopters with buckets to work flanks and head of wildfire Complete a dozer guard south side of highway	Any area starting to blow-up to be hit with helicopters bucketing and airtankers, as directed by Branch Director One dozer group along with a HAC crew to complete guard and extinguish spot fires Maintain structural protection, remove where not required	No additional structures lost No additional spread Dozer guard completed	Limited ground support to extinguish excursion and begin process of extinguishing perimeter Difficulty in acquiring dozers and operators because of wildfire outbreaks
May 18 Airtankers and bucket ship to work on flanks and head when operations could be done safely Assess spots to control near un-burnt homes on north side and Poplar Estates	Put 20-person British Columbia crew into excursion south of Highway 2 (crews have own transport) to complete extinguishment Heavy Equipment Group Supervisor to coordinate dozer group on east perimeter Branch Director to monitor structures in Poplar Estates to ensure no additional structures lost	Good progress with crews on excursion south of Highway 2, should be extinguished by May 19 Dozer group still working, tying in east perimeter No additional structures lost	Limited ground crews working on east perimeter

	Airtankers and helicopters with buckets to action any flare-ups occurring near perimeter, as directed by Branch Director	No spread in wildfire perimeter	
After May 18, there was no significant growth in the wildfire perimeter. Strategies were to mop up and extinguish the wildfire. No challenges were encountered.			
May 19 Crews to move to the west flank after the north side of the road in Division A was completed. Additional crews were moved in to secure the south perimeter during the day.			
May 20 Crews in the southeast corner to extinguish hot spots proceeding westward. Bucketing operations to support ground crews. Set up sprinkler system north–south parallel to the community.			
May 21 Continue to provide bucket action and ground crew support. Crews to extinguish hot spots along the road with engine.			
May 22 Helicopter bucket action and ground crews to extinguish all hot spots on north and south perimeter with the goal of becoming Being Held (BH). Ten firefighters and engines to work to extinguish all hot spots.			

Table 6 – Incident Management Team's incident objectives, strategies, and challenges for SWF-065

SWF-082 STRATEGIES AND TACTICS CHRONOLOGY

SWF-082 (Figure 45) was discovered at 15:52 on May 15; however, sustained attack was not initiated until May 18 because of limited resources and higher priorities in the Lesser Slave Area. The Operations Branch Director who was assigned to SWF-065 on May 16 was also assigned to this wildfire and continued to monitor it until sustained action was initiated.

Suppression crews for SWF-082 had been requested by the Incident Commander on May 15. They arrived on May 17 and began work on May 18. According to the Wildfire Operations Officer, the wildfire was contained by dozer guards prior to any crews working on the ground. Heavy equipment and aircraft worked the wildfire from May 16 onward.

Figure 45 – Wildfire perimeter for SWF-082 on May 17.

Summary of Sustained Attack Response on May 15

Table 7 provides a summary of the Incident Management Team's strategies and tactics (including challenges) on May 15. Details for May 16 to May 22 were also included. SWF-082 was declared as "Being Held" on May 20 and "Under Control" on May 22. The wildfire was "Extinguished" on June 12.

SWF-082

General Control Objectives	Strategy and Tactics	Results Achieved	Challenges
May 15 Wildfire not actioned because of lack of resources and wildfires with higher priority			
May 16 This wildfire was added to the Flat Top Complex Monitor and limit wildfire growth	Establish a dozer guard around perimeter (once dozers had completed wildland portions of SWF-065 they were to move to this wildfire) Branch Director was assigned to SWF-065 and SWF-082, Branch Director monitored both wildfires and kept flare-ups down with helicopter bucketing and airtanker missions	Minimal spread of wildfire Helicopter bucketing was effective Dozer group began to establish guard late in the day	Limited ground resources restricted containment line production

May 17 Airtankers and helicopters with buckets to work flanks and head of the wildfire Commence dozer guard	Knock down any smoke that starts to flare up using helicopters with buckets and airtankers, as directed by Branch Director Once dozers complete guard on excursion on SWF-065 they are to move to SWF-082 and start a dozer guard	Minimal spread, creeping fire Dozers moved to SWF-082	Limited ground crews to begin extinguishment
May 18 Start dozer guard construction 40-person British Columbia crew to start laying hose, extinguishing perimeter of wildfire Knock down any flare-ups with airtankers and helicopters with buckets, as directed by Branch Director	Three dozer groups to start working on guard, Heavy Equipment Group Supervisor has helicopter to co-ordinate Good road access into SWF-082, British Columbia crews given directions and would head up at 08:00 Branch Director to direct air operations as required	70% of dozer guard completed Good progress with hose lay and extinguishment of wildfire No significant spread, some creeping	None
After May 18, there was no significant growth in the wildfire perimeter. Strategies were to mop up and extinguish the wildfire. No challenges were encountered.			
May 19 Dozer guard expected to be completed by early morning. 20-member British Columbia crew and helicopters with buckets continued to work on hot spots.			
May 20 Crews secured the entire perimeter.			
May 21 One 20-member crew secured the entire perimeter with bladders, helicopters with buckets, and pumps.			
May 22 One 20-member crew secured the entire perimeter with bladders and pumps.			

Table 7 – Incident objectives, strategies, and challenges of the Incident Management Team for SWF-082

FLAT TOP COMPLEX SUMMARY

Prior to the Flat Top Complex, the most recent wildfire events impacting communities in western Canada included the 2003 Kelowna wildfire. This wildfire resulted in the evacuation of over 27,000 people, the destruction of 239 homes, and losses estimated at $700 million.

The 2011 Flat Top Complex wildfire events resulted in the second largest interagency wildfire response, largest insurance disaster (estimated at $700 million), fastest large-scale evacuation of a community (utilizing texting and internet social media for communication), and widespread community impacts. Specifically, two of the Flat Top Complex wildfires (SWF-056 and SWF-065) were responsible for the loss of approximately 372 structures (including six apartment complexes and seven commercial properties) in the Town of Slave Lake and the nearby communities of Canyon Creek, Widewater, and Poplar Estates. The majority of the damage at the community level occurred within 31 hours of ignition of the two wildfires.

Sustained winds and gusts played a major role in the extreme wildfire behaviour. Previous records of sustained winds occurred on May 26, 2008 (19 kilometres per hour), May 27, 2008 (33 kilometres per hour), and May 28, 2008 (31 kilometres per hour). Sustained wind speeds in 2011 exceeded these values on four of five consecutive days:

- May 11, 2011 (39 kilometres per hour).
- May 12, 2011 (34 kilometres per hour).
- May 13, 2011 (9 kilometres per hour).
- May 14, 2011 (47 kilometres per hour).
- May 15, 2011 (58 kilometres per hour).

The strongest wind gust recorded during the Flat Top Complex wildfire event was 114 kilometres per hour at the Deer Mountain Lookout on May 15.

Figure 46 – Smoke columns from the Lesser Slave Area wildfires.

Resources were fully committed and/or limited because of the magnitude of wildfires throughout Alberta; 189 wildfires were actioned across the province, some of which threatened human life in communities, camps, work sites, and provincial campgrounds. Catastrophic wildfires were burning concurrently in Arizona, New Mexico, and eventually Texas. Mutual aid opportunities quickly became limited in North America.

Despite the extreme wind event on May 14 and 15, challenging firefighting conditions (including heavy radio congestion), and the heavy wildfire load (Figure 46), Sustainable

Resource Development was successful in containing 35 of the 52 wildfires that occurred over the two-day period in the Lesser Slave Area (62.5% containment of new wildfire starts on May 14 and 78.9% on May 15). Resources were limited but were used effectively to achieve containment of these wildfires. A summary of wildfire growth for the three fires in the Flat Top Complex is provided in Table 8.

Wildfire Number	Date	Time	Status	Size (ha)
SWF-056 Flat Top Complex	May 14	13:40	OC	0.2
	May 14	14:40	OC	4.0
	May 14	16:34	OC	30.0
	May 14	18:00	OC	300.0
	May 15	09:02	OC	1,100.0
	May 15	15:19	OC	15,000.0
	May 19	16:00	OC	18,190.0
	May 22	10:00	OC	18,939.0
	May 23	14:51	BH	18,939.0
	May 23	19:00	BH	16,864.0
	May 28	17:00	UC	16,856.5
	July 28	15:07	EX	16,856.5
SWF-065 Flat Top Complex	May 14	18:01	OC	5.0
	May 14	18:50	OC	40.0
	May 14	19:28	OC	80.0
	May 14	19:29	OC	180.0
	May 14	21:00	OC	200.0
	May 15	07:00	OC	2,000.0
	May 19	16:00	OC	4,551.0
	May 22	10:00	OC	4,559.0
	May 22	18:10	BH	4,559.0
	May 23	15:45	UC	4,706.8
	July 28	15:07	EX	4,706.8
SWF-082 Flat Top Complex	May 15	16:36	OC	30.0
	May 17	09:30	OC	440.0
	May 20	09:00	BH	209.0
	May 22	10:50	UC	425.6
	June 12	16:00	EX	425.6

Table 8 – Wildfire status for the Flat Top Complex (OC = out of control[4]; BH = being held); UC = under control; E = extinguished). Final fire sizes (as of date of extinguishment) are highlighted in grey.

The Flat Top Complex suppression operations included the following:

- 34 helicopters.
- 10 fixed-wing aircraft.
- 15 airtankers.
- 66 pieces of heavy equipment:
  - 33 dozers
  - 17 all-terrain vehicle water tanks (skidders and nodwells)
  - 11 excavators

[4] A wildfire is identified as "out of control" when the wildfire is not responding to suppression action such that the perimeter spread is not being contained.

  - 2 feller bunchers
  - 3 skidders
- 15 water trucks.
- 8 wildfire crews (48 individual members in total) from Alberta.
- 11 crews (220 individual members in total) from British Columbia.

Factors Relevant to the Flat Top Complex

Several factors affected firefighting efforts for the Flat Top Complex on May 14 and 15 including communications, initial attack, resourcing, preparedness planning, air operations, wildfire environment (fuels, weather, and topography), and airtanker base operations. These factors are summarized in the following. A review of wildfire training available in Alberta through the Hinton Training Centre is provided in Appendix P.

Communications

- Radio channels were extremely busy due to operations on SWF-056, SWF-065, and the Slave Lake Fire Centre causing congestion and delays in radio transmissions.
- Cell phone service was down or congested, making it difficult for local industry to talk with the Industry Liaison Officer. Land lines were then used for communication; however, many Industry representatives were in the field without access to land lines.
- Sustainable Resource Development staff and contractors driving unmarked vehicles encountered delays passing through road block checkpoints while en route to the fire line during sustained attack.
- Media communication (radio broadcast messaging) to inform residents of the need to evacuate was not possible because of power outages and the destruction of the radio station by fire.

Resourcing

Wildfire load

- From May 11 to 15, 189 wildfires were actioned provincially which required committed resources. Some of the significant wildfires included the Fox Creek wildfire, the Chisholm wildfire, the Rocky Mountain House multi-wildfire situation, and the Richardson wildfire north of Fort McMurray. In addition, many smaller fires were prioritizes for initial attack (as per the new start policy). During this time period, Lesser Slave Area actioned 52 wildfires. The Lesser Slave Area resources were at maximum operational capacity as a result of the need to action numerous high priority wildfires.

Wildland–urban interface

- Escaped wildfires were affecting human life in communities, camps, work sites, and provincial campgrounds throughout the province. The areas most affected included the following:

  - Calgary area — Morley Reserve
  - Edson area — Lodgepole
  - Fort McMurray area— Fort MacKay, oilsands camps, Richardson Backcountry
  - High Level area — Fox Lake
  - Lac La Biche area — Janvier, Chisholm, Long Island Lake
  - Peace River area — Cadotte Lake
  - Rocky Mountain House — Crimson Lake Provincial Park
  - Whitecourt area — Pass Creek and Carson Lake Provincial Park
- High priority wildfires (based on hazard levels, wildfire behaviour, and values-at-risk) contributed to wildfire load and affected resource availability. SWF-056 and SWF-065 had threatened several communities and eventually destroyed or damaged a number of structures.
- Communities in the Lesser Slave Area at risk (not listed in order of priority) included the following:
  - Communities of Canyon Creek and Widewater — SWF-056
  - Town of Red Earth, industry camps, other facilities, and Whitefish Lookout (evacuation required) — SWF-057
  - Town of Slave Lake and surrounding community — SWF-065
  - Community of Faust — SWF-074
  - Otter Lakes Lookout — SWF-075
  - East Prairie/Enilda rural area — SWF-077
  - Community of Gift Lake — SWF-080
  - Community of Wabasca — SWF-081
  - Town of Red Earth (evacuation required) — SWF-086
  - House Mountain Area (oilfield infrastructure threatened) — 10 wildfires
- Priorities on May 15 were affected by values-at-risk, wildfire load, and significant wildfire behaviour changes throughout the day. Priorities on May 15 included public and responder safety, structure protection, and communication issues.

Manpower and heavy equipment

- The significant provincial and Lesser Slave Area wildfire load contributed to a shortage of firefighter resources for the Lesser Slave Area, in particular the Flat Top Complex. Wildfire crews from British Columbia were ordered by the Provincial Forest Fire Centre through the Canadian Interagency Forest Fire Centre. These crews arrived on the fire line three days after they were ordered.
- Some contractors were not able to provide crews when requested because their contracts had not yet been signed. Some of the contractors had the capacity to assemble crews but because the contracts had not been signed earlier, not all of them had transportation available as this is specified when the contracts are signed.
- Timely replacements for the Incident Commander, HAC crews, Division Supervisor, Heavy Equipment Group Supervisor, and others in initial attack positions were not available because of full resource commitments.

- Helitack (HAC) crews were not immediately available for initial attack on new starts because of commitments on other wildfires.
- Resources were diverted to help with evacuations: HAC crew and RCMP in the evacuation of Poplar Estates, Sawridge Reserve, homes along the old Slave Lake Highway, and Devonshire.
- Sustainable Resource Development staff at the Slave Lake Fire Centre vacated the premises at approximately 22:30 on May 15 because incorrect information had been received about a threat that large industrial propane tanks located several blocks away could explode. Staff retreated to a gravel pit 15 kilometres east of town. Staff returned about one hour later after they were advised there was no threat.
- Approximately 23 Sustainable Resource Development staff lost their homes to SWF-065 during the early evening of May 15. Some of these staff left work to take care of family emergencies.
- The Flat Top Complex wildfires started on a weekend early in the fire season, which contributed to the difficulties in locating additional heavy equipment to meet initial attack and escaped wildfire demands. Many contractors (not on standby) had their cell phones turned off on May 15, causing delays in organizing additional heavy equipment.

Incident Command System

- The Incident Management Team received some information on SWF-056 and SWF-065 prior to arriving at the Slave Lake Fire Centre. Further orientation on the wildfire was provided upon arrival at the Slave Lake Fire Centre. The Incident Management Team did some organizational planning and arranged for flight assessments for the next morning. No operation plans had been prepared for the suppression that had occurred prior to the arrival of the Incident Management Team.
- The Unified Command and a wildland–urban interface branch were not formally integrated between the Sustainable Resource Development Slave Lake Fire Centre and the Fire Department during the sustained attack period for the Flat Top Complex. The Incident Management Team took part in briefing the Fire Departments and integrated operational support for the structural firefighting after May 18. However, the Fire Department was not included on the Incident Management Team organizational charts as a “Branch” during the May 16 to 31 period. In addition, the Fire Departments working on structural firefighting outside the Town of Slave Lake functioned under the Municipal Emergency Operations Centre rather than as a Branch of the Incident Management Team after May 15.
- Few Sustainable Resource Development members on initial attack for both SWF-056 and SWF065 had received the S-215 wildland fire course (a course designed to assist structure and wildland firefighters who will be making tactical decisions when confronting wildfires that threaten life, property, and improvements in the wildland–urban interface).

Attack

- Limited airtanker support was available to action SWF-056 while it was in the cutblock. Airtankers were committed to other wildfire assignments. The first to become available was the Group 8 Convair. It dropped on the wildfire at 14:53, one hour and twenty-three minutes after the time the wildfire was reported at 13:30.

Initial Attack on SWF-065

- Airtanker effectiveness on SWF-056 was reduced by the heavy smoke column obscuring the head of the wildfire, erratic wildfire behaviour, and spotting well ahead of the fire front.
- Airtankers were diverted from SWF-056 to SWF-065 because homes were threatened.
- Helicopters were fully committed and at times were not available for additional wildfire assessments.
- Limited wildfire crews and dozer groups were available to resource SWF-056. The HAC crews throughout the Lesser Slave Area were committed to other wildfire assignments at the start of this wildfire. HAC 7 was diverted from SWF-055 and actioned SWF-056 at 14:09, thirty-nine minutes after the wildfire was reported.
- Airtanker effectiveness on SWF-065 was reduced by the heavy smoke column obscuring the head of the fire, structures in the path of the wildfire, erratic wildfire behaviour, and spotting well ahead of the fire front.
- Boggy ground conditions prevented dozers from building additional guard on the west side of the wildfire.
- Dozer groups were restricted from constructing dozer guards on private land along Highway 88.

Initial Attack: Nighttime Operations

- Because of the number of roads, scattered residences and infrastructure, additional anthropogenic fuels, and limited water resources, nighttime firefighting operations in Poplar Estates were complicated. Personnel were not able to follow the lookouts, anchor points, communications, escape routes, safety zones (LACES) safety procedure.
- Nighttime operations (refer to Appendix Q) did not allow for an aerial observation lookout for dozer operations during extreme burning conditions.
- The focus on structural protection of the evacuated residences in Poplar Estates at night resulted in reduced priority being placed on the wildfire perimeter. SWF-065 spotting in Poplar Estates created multiple locations throughout the fire perimeter that affected many structures. The structures created many fire heads that needed to be dealt with to prevent the fire from spreading to other structures and homes. Several residential sites had materials on their property, such as tires, lumber, automobile and machine parts that created wicking and added to the complexity of dealing with the wildfire spread.

Wildfire Environment

Fuel

- Extreme wildfire behaviour conditions were a result of several factors:
  - Low moisture in fine fuels immediately after the snow was gone.
  - Continuous fine flashy fuels in the cutblock and dead Balsam fir in the mixedwood fuel type (on SWF-056).
  - Continuous fine flashy fuels and black spruce (on SWF-065).
  - Linear fire spread patterns following fine fuels on driveways, fence lines, and railway right-of-ways.
  - Flashy fuels and debris piles on private land adjacent to Highway 2 (SWF-065).

Weather

- Extreme winds associated with low, wind-driven smoke columns contributed to extreme short-range spotting (less than 800 metres) and long-range spotting (more than 800 metres) on both SWF-056 and SWF-065.
- Sustained, extremely high wind speeds combined with low relative humidity values quickly created receptive fuels and high-intensity crown fires developed.

Topography

- Terrain conditions (and poor visibility from smoke) restricted airtankers from making drops at altitudes lower than 250 feet above the ground. The wildfire spotted over the retardant loads (SWF-056).
- The Venturi effect (funnelling of winds based on topographic influence) accelerated wind velocities on SWF-065.
- Upslope conditions prevailed from the origin of the wildfire to the top of Grizzly Ridge (SWF-056). The smoke column directly followed the slope, obscuring the head of the fire (SWF-056).

Air Operations

- High winds on Lesser Slave Lake produced significant waves that stopped skimmer aircraft from utilizing the lake as a water source.
- Extreme winds created unsafe conditions for airtankers, helicopters, initial attack crews, sustained attack crews, and dozer groups (SWF-056 and SWF-065).
- Extreme winds prevented the Air Attack Officers from using their Forward Looking Infrared (FLIR) cameras on May 15. Turbulent winds had a drastic effect on the FLIR images because the gimble was badly buffeted. The winds also made it extremely difficult to keep the camera focused on a particular target. The time available for the Air Attack Officer to capture video was also affected by the significant number of priorities dealing with the wildfires.
- Airspace congestion prevented the Aerial Ignition Specialist from initially assessing and conducting torch operations.

- The proximity of the wildfires to the Slave Lake Airport and the sheer number of aircraft deployed on the wildfire led to congested airspace resulting in stacking of aircraft in the air and delays in getting the retardant on the ground.
- There was no FLIR system installed on Bird Dog 135 because this was a substituted aircraft for the start of the contract. The assigned Bird Dog 113, which had the FLIR system installed, was unavailable for the start of the contract because of maintenance delays.
- There were no helitorches on standby in the Lesser Slave Area for initial attack, requiring a torch to be deployed from Fort McMurray Area. The Aerial Ignition Specialist did not arrive until 11:55 on May 15.
- The Geographic Positioning System (GPS) was not working and was declared unserviceable when the Aerial Ignition Specialist landed at the Slave Lake Airport on May 15 at 11:55. A second helicopter was assigned and ready by 15:00. The airspace was too congested with airtankers so the Aerial Ignition Specialist did not attempt a reconnaissance flight until 15:34. A second reconnaissance flight, with the torch, was conducted at 17:05, but the heavy smoke, power lines, extreme winds, and erratic wildfire behaviour provided no safe opportunities to use the helitorch.

Preparedness Planning

- The *Municipal District of Lesser Slave River No. 124 Wildland–Urban Interface Plan* is a comprehensive Wildland–Urban Interface Plan developed for the area of Municipal District No. 124 within the Lesser Slave and Lac La Biche Areas. The plan, developed in 1999, is a broad overview that includes a basic risk assessment but does not include specific wildfire mitigation strategies or a large-scale FireSmart Community Plan for the Town of Slave Lake.

Airtanker Base Operations

Loading Pump

- On May 14, between 16:30 and 17:00, a retardant loading pump malfunctioned because of an electrical problem. The pump was unserviceable for approximately one hour while it was repaired. The pump was switched to manual mode, which increased the time it took to load airtankers with retardant.

Aircraft Fuel Demand

- The fuel truck used to transport aircraft fuel had difficulty keeping up with the fuelling demands of the airtankers working out of Slave Lake Airport on May 14 and 15, causing delay in terms of turnaround time. Aircraft had to wait in line while the fuel truck loaded each airtanker and also while the fuel truck was refilled when empty. Normally, with just a single group or two (staggered) flying to and from a wildfire this would not be a problem; however, the close proximity of the wildfire to the airport and quick turnaround times, affected refuelling operations.

- Fuel transport was limited and waiting time was lengthy, prompting airtankers to fly to the Whitecourt Airtanker Base for fuel.

Lack of Water Pressure

- At 08:00 on May 15, the pressure at the water supply outlet feeding the retardant mixing operations was extremely low. This was due, in part, to the Fire Department's demand on the fire hydrant system and a power outage at a water treatment plant resulting from downed power lines.

Extreme Wind

- Extremely strong winds, gusting to over 100 kilometres per hour at the Slave Lake Airtanker Base on May 15, made aircraft landings and takeoffs extremely difficult and dangerous.
- Debris was flying through the air causing significant safety hazards. An aircraft hangar further down the airstrip had blown down. A light aircraft had been tipped up on its nose because of the winds. Trees were snapping off along the airtanker base fence line located next to the treed area to the north.
- The wing on one airtanker, which the person loading had to stand under while loading it with retardant, made contact with the loader's head several times when extreme winds rocked the plane up and down.
- The strong winds were pushing noxious aircraft fumes into the loading pit located downwind where another loader person was working, making the situation very hazardous.
- Extreme winds and heavy smoke forced the shutdown of the airtanker base for safety reasons. Air attack operations were suspended at approximately 16:00 on May 15.

Thick Smoke

- Thick, dark smoke from SWF-065 enveloped the airtanker base during the early evening of May 15, creating visibility and safety issues.

THREE FLAT TOP COMPLEX–RELATED ROLES

Interagency Cooperation

Emergency response associated with the Flat Top Complex involved municipal, provincial (27 Alberta Fire Departments provided assistance), interprovincial and federal agencies over the course of the fire emergency.

On a national level, the British Columbia Wildfire Management Branch, Ontario Aviation, Forest Fire and Emergency Services, Northwest Territories Environment and Natural Resources, and Yukon Wildland Fire Management provided personnel and equipment to Sustainable Resource Development under the Canadian Interagency Mutual Aid Resource Sharing (MARS) Agreement. Sustainable Resource Development's Provincial Forest Fire Centre initiated the requests from May 14 to 18.

On May 14, as wildfires were detected in the Lesser Slave Area, Sustainable Resource Development commenced initial attack efforts. Working within the parameters outlined in the *Annual Mutual Aid Fire Control Plan — 2011*, the Fire Department also responded to new wildfire starts. During the afternoon, initial attack efforts on SWF-056 and SWF-065 were unsuccessful. SWF-065 quickly became the priority wildfire and evacuations of subdivisions east of the Town of Slave Lake occurred. Protection of structures and structural firefighting activities were then part of the overall suppression activities on SWF-065. Suppression resources from SWF-056 and SWF-060 were reassigned to SWF-065. At this point, agencies involved in the on-scene activities included Sustainable Resource Development, the Town of Slave Lake and Municipal District No. 124 (Fire Department), RCMP (Figure 47), and Alberta Transportation.

Figure 47 – RCMP on scene.

On May 15, SWF-065 burned into the Town of Slave Lake and SWF-056 burned through the communities of Widewater and Canyon Creek. Residents were being evacuated from their homes. The Emergency Operations Centres in High Prairie and Slave Lake were activated on May 16. Alberta Emergency Management Agency (AEMA) also became involved in the emergency response.

<u>Lesser Slave Regional Fire Service (Fire Department)</u>

The Lesser Slave Regional Fire Service (Fire Department) is a regional integrated and multi-jurisdictional Volunteer Fire Department, operated under one administration and command. Hall 1 is the primary and central Hall located in the Town of Slave Lake. It hosts 33 volunteer firefighters, a full-time Fire Chief and Deputy Chief, a ladder truck, two pumper trucks, a wildland interface pumper, a heavy rescue unit, a hazmat trailer, and three light response units. Hall 2 in Widewater operates with a pumper truck and has a dozen volunteer

firefighters. Hall 3 in Smith has nearly a dozen volunteers manning a pumper unit and a wildland unit. Hall 4 in Flatbush has a dozen firefighters, a pumper truck, and a tanker unit.

The Fire Department was the primary agency responsible for fighting structural fires resulting from the Flat Top Complex in the acreages and subdivisions, as well as in the Town of Slave Lake.

Sustainable Resource Development was the primary agency responsible for wildfire detection and extinguishment of wildfires within the Flat Top Complex. Sustainable Resource Development and the local Fire Department worked together throughout the initial stages of the fire emergency (Appendix R). Coordinated activities included initial attack on wildfires and structure protection. Wildfire suppression equipment (i.e., sprinkler systems) from the Sustainable Resource Development warehouse in the Town of Slave Lake was made available to the Fire Department. Sprinkler system deployment and fire suppression of the buildings were the primary activities conducted to protect structures. A common radio frequency allowed both agencies to communicate and coordinate activities.

Community Evacuations

The Fire Department and the RCMP were the primary agencies involved in the evacuation of residents during the fire emergency. Sustainable Resource Development was involved to the extent of notification of the need to evacuate residents east of Slave Lake, the communities of Widewater and Canyon Creek, and the Town of Slave Lake. Some Sustainable Resource Development staff also assisted with evacuation activities on May 14 and 15.

On May 14, Bird Dog 135 initiated the call to evacuate Poplar Estates shortly after arriving at the fire scene on SWF-065. On May 15, the Incident Management Team assigned to the Flat Top Complex initiated the call to evacuate the south shore communities in the path of SWF-056. Communities evacuated included Wagner, Widewater, Canyon Creek, and Assineau. Also on May 15, an evacuation notice from Sustainable Resource Development for the Town of Slave Lake was delayed by the loss of power and the destruction of the radio station by fire (power outages and the inability to use media hampered efforts to advise residents of the need to evacuate). SWF-065 was burning across Highways 2 and 88 at the same time as residents were trying to leave the Town of Slave Lake, which added to the problem of evacuating residents. To the west, SWF-056 was also burning across Highway 2. When all road access was cut off by fire, evacuees were directed to locations such as large parking lots and ball fields within the town (Figure 48).

Figure 48 – Walmart parking lot.

Security and Access Control

The RCMP, Peace Officers, and Fish and Wildlife Officers were involved in security of the evacuated areas and controlling access on the roadways leading into and out of the affected communities.

Road blocks and security procedures were in place early in the emergency situation. Sustainable Resource Development staff and contractors driving unmarked vehicles initially encountered some difficulty passing through checkpoints while en route to the fire line during sustained attack. To deal with this issue, Sustainable Resource Development initially utilized an emergency vehicle pass. On or about May 18, the RCMP began issuing its own vehicle passes.

Training, prevention, and suppression

The Fire Department and Sustainable Resource Development's Lesser Slave Area staff have had a strong relationship since the 1990s. They have been involved with wildfire prevention activities, hazard reduction burns, cross training, and actioning wildfires jointly within the Municipal District No. 124 portion of the Lesser Slave Area. The extreme wildfire season in 1998 (specifically the Mitsue wildfire) was a trigger for the Fire Department and Sustainable Resource Development to increase cross-training. Several Sustainable Resource Development employees are also volunteer members of the Fire Department.

Sustainable Resource Development Lesser Slave Area trains and assists the Fire Department with wildfires, floods, emergencies, and traffic control. The agencies ensure that all aspects of wildland firefighter training are covered each spring for Fire Department volunteers.

Cross-training examples includ the following:

- Every year, spring hazard reduction burns (as well as some fall hazard reduction burns) are conducted jointly.
- The Fire Department and Sustainable Resource Development Lesser Slave Area have mutually actioned wildfires within the Town of Slave Lake, Municipal District No. 124, and within the Forest Protection Area (from one-tree lightning strikes to escaped wildfires) and have set up sprinklers together (e.g., during the Chisholm, Mitsue, and Flat Top Complex wildfires).
- Wildfire Prevention Week is held annually in October. Sustainable Resource Development Lesser Slave Area has participated in the annual Open House Session at the Fire Hall for the past five years, answering questions and displaying a HAC truck, wildfire gear, and the FireSmart trailer for the public to view.
- In early spring, in-house "Boot Camp Training" with Sustainable Resource Development Lesser Slave Area HAC staff is conducted and Fire Department members are invited to participate.
    - The training objective is to provide the participants with a refresher on all aspects of wildland firefighting, strategies, tactics and safety.
    - The RCMP has participated in the camps to increase the awareness of meth labs and "grow ops" that may be on the landscape.

  - The Fire Department did not participate in the 2011 spring training.
- Sustainable Resource Development Lesser Slave Area staff have attended sessions with the Fire Department at the Live Burn Centre.
- In April 2010, a simulated emergency aircraft/vehicle scenario was conducted at the Lesser Slave Area's HAC Base with involvement from the HAC crews and the Fire Department.
- In 2009, pilots contracted by Sustainable Resource Development briefed the Fire Department on the various aircraft used by Sustainable Resource Development and best practices for firefighting and recovery.
  - The Fire Department has participated in other downed aircraft scenarios. If Sustainable Resource Development Lesser Slave Area needs to respond to a downed aircraft, the Fire Department can assist.
- All Fire Department members have ICS I-100 (Introduction to Incident Command System) training.
- Some of the agency representatives have received S-215 (Fire Operations in the Wildland–Urban Interface) training.
- Joint sprinkler training has been done since 2006.
- Since 2005, the Fire Department has had a junior firefighting program for youth, ages 14 to 17.
  - The program covers all aspects of wildfire and structure training.
  - Sustainable Resource Development Lesser Slave Area introduces the youth to airtankers, helicopters (through an orientation flight), a Lookout indoctrination course, wildfire behaviour, etc.
  - Some of the participants in this program have become Volunteer Fire Department members.
  - Sustainable Resource Development Lesser Slave Area has been involved with the program since its inception. One of their HAC members has completed the program.
- The Fire Chief has been a certified Basic Wildland Fire Suppression Instructor since September 27, 2002 and took training at the Hinton Training Centre.

Communications

The Slave Lake Fire Centre has an Area Public Information Education and Outreach Program (PIEOP) Information Officer, whose key role is to prepare and provide wildfire management information to the public, using various communication tools. During the wildfire season, this Information Officer organizes weekly wildfire hazard updates (via electronic mail out) during low and moderate risk. If the wildfire hazard is high or extreme, the updates are sent out daily or several times a day as the wildfire situation changes.

The Slave Lake Fire Centre wildfire hazard updates include information such as:

- Current wildfire danger rating.
- Wildfire status.

  - Wildfire size, location, key stories.
  - Links to active wildfire maps locally and provincially.
  - List of definitions for wildfire status and other terms used in the updates.
  - Media interviews.
  - Facebook and Twitter links at http://wildfire.alberta.ca/ (2011 marked the first year social media was set up as an information distribution tool for wildfire information in Alberta). Social media was used extensively during the Flat Top Complex (Figure 49).
- Fire restrictions (e.g., fire bans, fire permits, closures).
- Forecasted weather with links to morning and afternoon forecasts and forecast zones.
- Wildfire prevention notices.
- Information Officer contact information for the Lesser Slave Area.

Figure 49 – Sustainable resource development website illustrating wildfire features.

All Lesser Slave Area wildfire situation updates were sent to the Provincial Wildfire Information Officer and posted on Facebook and Twitter. Information from the Lesser Slave Area included brief notes about the wildfires, maps, pictures, and the wildfire update electronic mail-outs to 623 stakeholders.

Electronic Mail-Out List to Stakeholders

- Oil and Gas, Forestry, and Utility Companies.
- Town of Slave Lake.
- Town of High Prairie.
- Municipalities.
  - Municipal District No. 124 Lesser Slave River
  - Municipal District of Big Lakes
  - Municipal District of Opportunity
- Alberta Health Services.
- Provincial Forest Fire Centre Wildfire Information Officer.
- Multiple employees of Sustainable Resource Development and other departments.
- Open Camps.
- Northland School Division.
- High Prairie School Division.
- Local Member of the Legislative Assembly.
- Mayor of Slave Lake and High Prairie.
- Newcap Radio 92.7 Lake FM.
- Newspapers.

  - *Fever* in Wabasca
  - *Scope* of Slave Lake
  - *Lakeside Leader* in Slave Lake
- Local cable TV Information Channel.
- First Nations.
  - Sawridge Band
  - Bigstone Band

Three wildfire hazard updates using the electronic mail-out system were sent by the Information Officer on May 14. These were also displayed immediately on the Sustainable Resource Development website under the "Wildfire Status" link and Facebook. Updates highlighted the following information from May 13 to 16:

- Fire weather advisory warning (May 13 at 19:37).
- Fire weather advisory warning (May 14 at 15:46).
- Fire weather advisory warning (May 14 at 18:11).
- Poplar Estates being evacuated (May 14 at 18:37).
- Email to local cable network to televise the update on the information channel (May 14 at 19:24).
- Wildfire information trailer dispatched from Whitecourt, plus Wildfire Information Officers dispatched from the Provincial Forest Fire Centre (May 14 at 21:32).
- Fire weather advisory warning (May 14 at 21:00).
- Road closures on Highway 88 south of Red Earth to Junction 750, Highway 2, east of Slave Lake to Mitsue, and Highway 88 from Highway 2 to 754 (May 14 at 21:42).
- Fire weather advisory warning (May 14 at 21:00).
- Fire weather advisory warning (May 14 at 22:44).
- Update on road closures (May 15 at 00:06).
- Flight set up for Newcap Radio 92.7 Lake FM (May 15 at 13:18).
- Fire update (May 16 at 14:15).

The Lesser Slave Area Information Officer was in constant contact with the public, giving updates via phone, text, and email. The local cable television network also received updates from the Information Officer for the afternoon of May 15 and posted them on the community information channel. The Information Officer arranged a flight for local, provincial, and national media in the area.

On May 14 and 15, Newcap Radio 92.7 Lake FM was instrumental in delivering continuous information and updates to the public on the wildfire situation and evacuations. The Information Officer called the local radio station on Saturday May 14 at approximately 17:00 and relayed eight wildfire updates. On May 15, the Information Officer relayed approximately 15 wildfire updates. The Wildfire Information Officer also maintained contact with Newcap Radio 92.7 Lake FM staff through the High Prairie FM Radio Station after the Newcap Radio station was destroyed by wildfire on May 15.

Facebook and Twitter provided social networking capability for the public to receive real-time updates during the wildfire emergency. This social networking capability led to the public being continually informed and played a key role in the safe evacuation of the Town of Slave Lake and the south shore communities on May 15. Power was lost at the Slave Lake Fire Centre around 17:30, but the Information Officer was able to maintain updates via Facebook and Twitter (approximately 6,000 entries were made from May 14 at 16:53 to May 16 at 14:56).

The Information Officer provided wildfire updates at the Slave Lake Evacuation Centre on May 14 at 22:00 and May 15 at 08:00 and 13:00. The Information Officer and other communication staff were evacuated from the Slave Lake Fire Centre at approximately 22:30 on May 15 and headed to Edmonton, via Athabasca, as requested by the Provincial Forest Fire Centre to provide communications support. The Lesser Slave Area PIEOP Information Officers stayed in Athabasca for one or two days and provided wildfire updates to the evacuees sent there.

Social media summary

During the course of the Flat Top Complex, the Provincial Wildfire Information Officer conducted more than 200 media interviews. More than 25 news releases were distributed by the Government of Alberta. On May 12, high hazard advertising was purchased for the Slave Lake Area based on the extreme wildfire hazard and forecast weather. A total of 12 radio spots per day were purchased on all radio stations operating in that area. The advertisements were scheduled to run throughout the weekend. As wildfires developed and the fire ban was enacted, additional advertising was purchased in all affected areas. The number of users on the Facebook site grew exponentially throughout the wildfire event. Initially the site had 100 active users which grew to more than 50,000 users. The number of users of the Twitter site also grew beyond expectation (more than 800 active users following the Flat Top Complex). Both types of media were useful as direct links to media reporters and the public.

Number of Radio Calls Taken By The Slave Lake Fire Centre

- May 14 – 1,399
- May 15 – 1,780
- May 16 – 1,475
- May 17 – 1,320

Industry Liaison

Background

Forestry, oil and gas, and utility industries are key stakeholders within the Lesser Slave Area. Given the economic value of commercial timber, oil wells, pipelines, power lines, and other resources and infrastructure, companies want to have as much information as possible about a wildfire as it progresses. They also want to have the opportunity to provide input into

suppression actions. Sustainable Resource Development has met these needs with Industry Liaison Officers who live and work in forest areas and who, under contract, provide daily, hourly, or more frequent updates on wildfire progress.

The process for maintaining liaison with local industries is initiated by an invitation from the Area Manager through the Industry Liaison Officer to have companies submit a Detailed Wildfire Plan. Based on all plans submitted, a master list of industry contact names and phone numbers is then compiled. This list is used to contact industry representatives regarding pertinent information in the event of a wildfire occurrence.

Procedure for Wildfire Threat Response and Information Update to Industry

The criteria established for alerting industry to imminent danger from a wildfire are the following:

- A new wildfire shows the potential to escape control.
- A wildfire grows beyond 4 hectares in size.
- A wildfire is located within a 5-kilometre radius of an industry interest.

The Industry Liaison Officer may access an on-line system (Geographic Land Information Management Planning System (GLIMPS)) to establish which industries have interests in the immediate vicinity of the wildfire, including work camps and active work areas, such as timber harvesting, planting, oil and gas production, and utility distribution. Once industries have been identified, the Industry Liaison Officer contacts them by phone. Industry contacts are then kept updated via email. The Lesser Slave Area's Duty Officer advises the Industry Liaison Officer when an evacuation of industry personnel in the area of the wildfire becomes necessary. The Industry Liaison Officer will advise industry contacts by phone. Pertinent information, such as winds, wildfire spread rate, direction, and behaviour, is also provided to oil and gas industries to enable them to make decisions regarding the need to shut down oil wells, pipelines, and production facilities. Further information and updates are sent out via email. During the Flat Top Complex wildfire events, the Industry Liaison Officer provided such information to industry stakeholders.

Summary of Industry Liaison Duties

The following summarizes the duties of an Industry Liaison Officer based on a contractual agreement:

- Act as a single point of contact between Sustainable Resource Development and industry personnel in the Lesser Slave Area:
  - As requested, brief industry on wildfire danger rating, ignition risk, weather, and wildfire status
- Brief industry on resources committed through the use of the Pre-suppression Preparedness System to deal with the potential of new wildfire starts.
- Debrief industry personnel involved on wildfires.
- Identify and address concerns from industry.

- Set up a system to maintain an industry resource inventory (equipment and staff) and communicate this inventory to the Lesser Slave Area as requested.
- Establish a communications strategy between Sustainable Resource Development and industry:
  - Work with industry to establish and identify key contact people
  - Identify a means of and schedule for communication
  - Communicate Sustainable Resource Development's policy and standards
- Coordinate industry wildfire training.
- Establish, with each industry, additional road access to aid rapid movement of heavy equipment to a wildfire.
- Conduct safety inspections and determine the condition of industry equipment.
- Provide services of Industry Liaison Officer to local authorities, such as municipal districts, counties, and towns.

The Industry Liaison Officer also works closely with the Lesser Slave Area's Information Officer for the purposes of exchanging information and providing updates to both industry and the general public.

Liaison on the Flat Top Complex

The Industry Liaison Officer maintained an open link via email, land line telephone, cell phone, and face-to-face contact throughout the Flat Top Complex wildfire event. A number of emails were fielded from industry pertaining to the following:

- Issuing fire weather advisories and wildfire updates on a regular basis and keeping industry informed of the wildfire status.
- Locating commercial businesses to warn them of encroachment of wildfire on their camps and/or facilities and the need to take required measures.
- Assuring industry that their workers in the field were either safe or required evacuation.
- Arranging with Incident Management Teams to permit industries to enter a wildfire area and assess damage to infrastructure and resulting implications.
- Warning of highway closures.
- Alerting industry when cell phone service was down or congested and affirming the need to use a land line for contact.
- Ascertaining with forest industry which log decks were at risk of being consumed by wildfire.
- Providing situational updates on wildfire locations in reference to the Town of Slave Lake.
- Providing alerts and evacuation information.
- Responding to concerns from some stakeholders regarding the status of their homes.
- Ascertaining the status of new wildfires reported to Industry Liaison Officer by industry.

- Turning over of a portion of the Lesser Slave Area to other supporting Areas.

The Lesser Slave Area Industry Liaison Officer played a crucial role in preventing injury and loss of life of industry workers and the public located in the vicinity of wildfires in the Flat Top Complex. Because of prompt relaying of information to industry during the course of events, environmental disaster was likely avoided. Oil and gas companies responded by shutting down well sites, pipelines, and production facilities.

The Industry Liaison Officer also played a crucial role in working with industry to quickly assist them in gaining access to the burned areas to assess damage, repair downed power lines, and re-establish oil and gas production and product flow.

WILDFIRE MANAGEMENT CONTEXT

Canadian Wildfire Management Trends

Over the past century, Canada has developed sophisticated wildfire management programs that attempt to balance the natural role of wildfire with the need to protect human life and property along with recreational and commercial forest values. While these programs have been successful at reducing negative impacts, extreme wildfire danger conditions and multiple ignitions can still result in out-of-control wildfires. Over the past two decades, Canadian wildfire activity has averaged approximately 7,900 wildfires and 2.2 million hectares burned annually. Roughly 50% of the area burned occurs in areas of northern Canada (with the exception of Alberta) where wildfires may be monitored rather than suppressed when not threatening communities. Alberta's strategic approach to wildfire preparedness is a high state of readiness, which means being prepared to respond promptly to all wildfires and threat of wildfires in order to minimize losses.

Nationally 47% of wildfires are human caused, accounting for 7% of the area burned, while 50% percent of wildfires are lightning caused, accounting for 81% of the area burned. The cause for the remaining 3% is unknown.

In recent years, Canadian wildfire agencies have recognized that future wildfire management effectiveness will likely be compromised as personnel and equipment deal with wildfire activity and adverse impacts that are forecast to increase significantly. The Canadian Wildland Fire Strategy was developed in 2005 largely in response to the Kelowna wildfire of 2003. This wildfire burned hundreds of homes within Kelowna and raised concerns about Canada's capacity to address future wildfire regimes. The Canadian Wildland Fire Strategy called for a multi-government approach to sharing future wildfire management risks in Canada, stressing that emerging issues, such as longer and more severe wildfire seasons, rising wildfire management costs, climate change, forest health issues, an expanding wildland–urban interface, and aging infrastructure, will result in increasingly severe impacts of wildfire across Canada.

In Canada, wildfire management programs are associated with high risk, complexity, and potential for serious negative outcomes. Operational complexity, ecological significance, and social, economic, and political risk continue to increase, which challenges wildfire management programs. A comprehensive, multi-faceted wildfire management program is fundamental to public safety and fiscal responsibility.

Sound and efficient wildland fire policy based on historical performance, lessons learned, and current realities should guide management decisions and actions. It is useful to study the historical aspects of wildfire management as a means of understanding current policy origins and future challenges that will be introduced by the impact of climate change, aging forests, and continuous development in forest environments. Figures 50 and 51 reflect current and

future wildfire management complexity trends in relation to approaches that support the success of wildfire management operations.

Figure 50 illustrates the change in wildfire management complexity over time in relation to operational capability, progression of decision support systems, and wildfire science improvements. Figure 51 extrapolates these trends over the next 50–60 years. In both figures it is important to note that operational capability remains relatively stable compared with the strong upward trend in future decision support systems and wildfire science.

Concern over the ability of wildfire management agencies to deal effectively with emerging and future wildfire management issues is not limited to Canada. In the United States, federal wildfire suppression expenditures are rising steadily and averaged US$1.5 billion annually over the past decade, with an annual average area burned of 2.8 million hectares (approaching 4 million hectares in significant years) over the same period (Figure 52). A significant increase in larger and more severe wildfires has been noted. To address these issues, wildfire management agencies in the United States developed a National Cohesive Wildland Fire Management Strategy with a number of goals similar to those outlined in the Canadian Wildland Fire Strategy. These include creating wildfire-adapted communities, restoring and maintaining resilient landscapes, and responding to wildfires through increased co-operation with all levels of government.

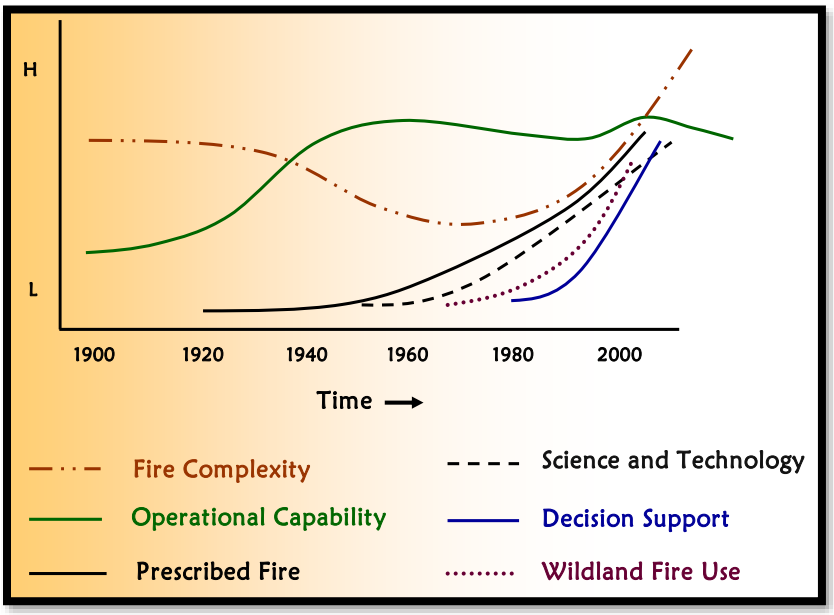


Figure 50 – Wildfire complexity trend relative to elements that contribute to wildfire management success.

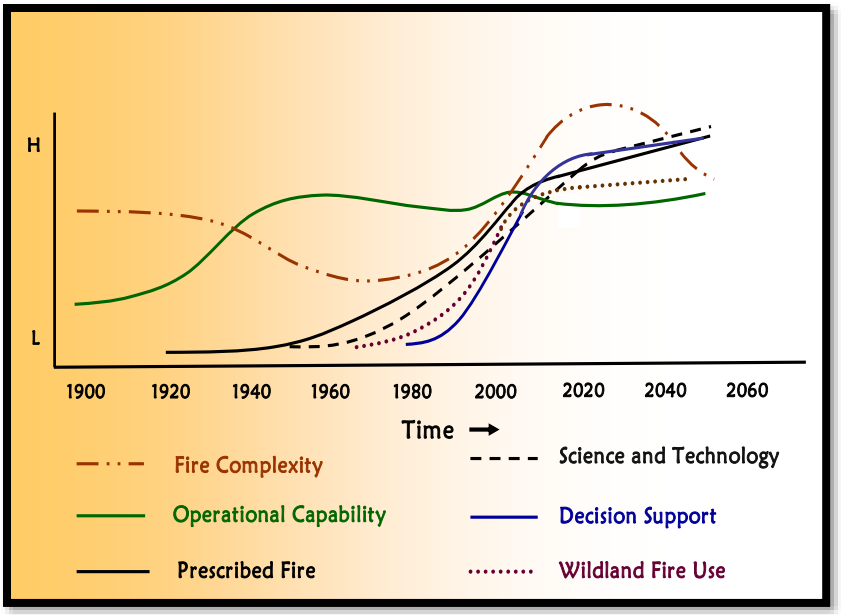


Figure 51 – Wildfire complexity trend and wildfire management elements extrapolated into the future.

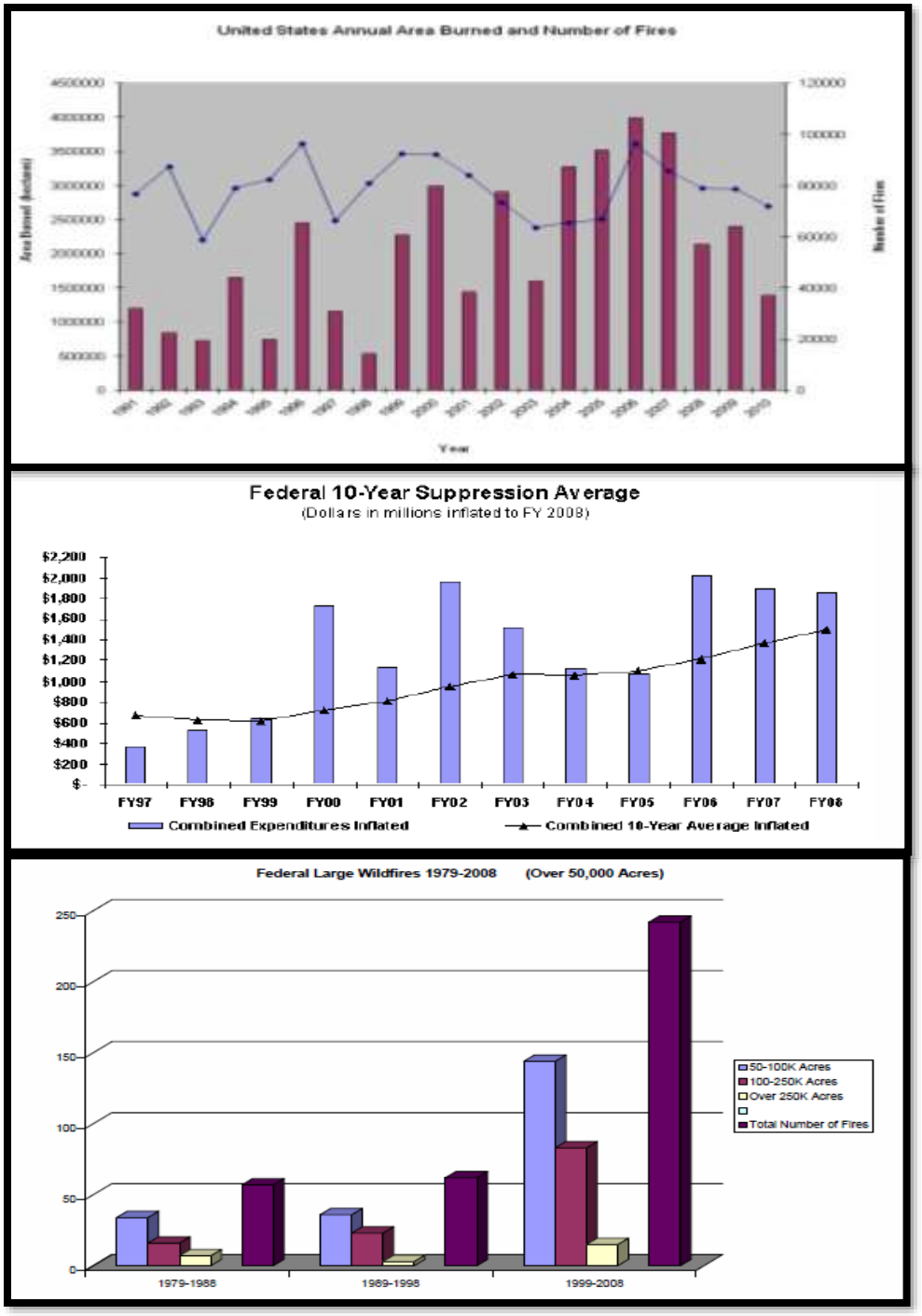


Figure 52 – Recent trends in area burned, large wildfire activity, and suppression cost trends in the United States (federal only).

The number of wildfires and area burned in Canada after 1920 is shown in Figure 53. In general, average annual wildfire activity has increased steadily from about 6,000 fires per year in the 1930 to 1960 period to approximately 9,000 fires per year over the past three decades. The average annual area burned is also generally increasing, and there is great

interannual variability. Area burned totals fluctuate from under half a million hectares to more than seven million hectares in extreme years.

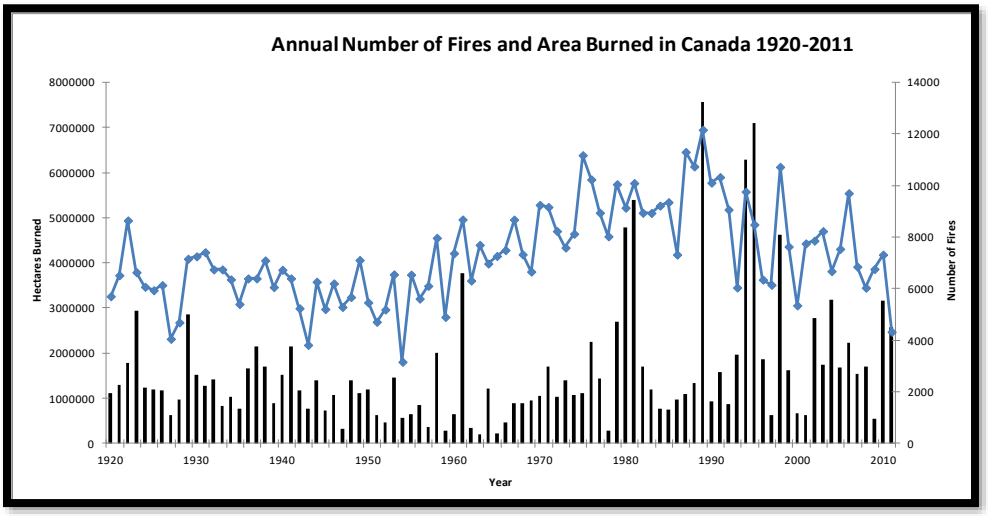


Figure 53 – Area burned and number of wildfires in Canada from 1920 to 2011 (2011 statistics not yet final).

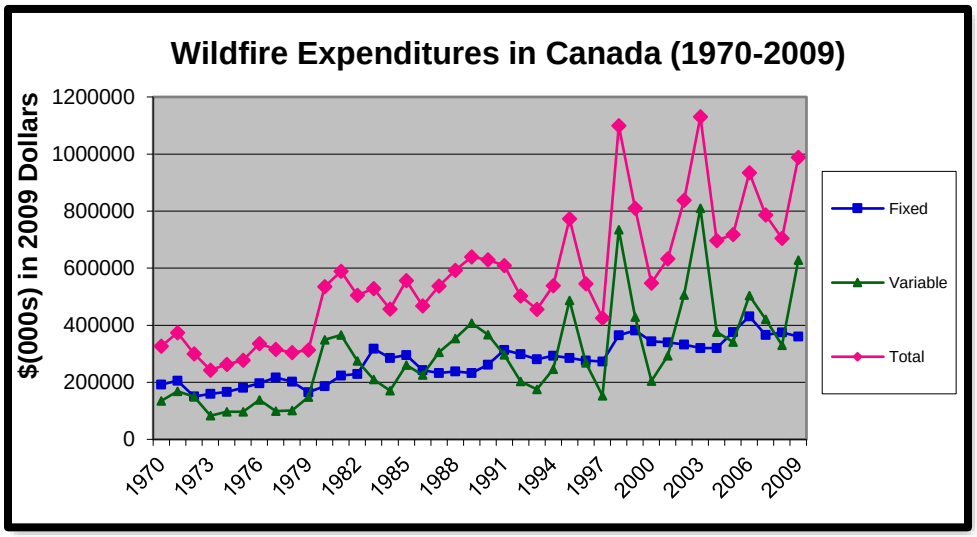


Figure 54 – Annual wildfire expenditures in Canada from 1970 to 2009.

A graph of Canadian wildfire expenditures after 1970 shows that national costs have risen steadily and are approaching an average of $1 billion annually (Figure 54). In addition, variable costs (those associated with actual suppression operations) are rising more quickly than fixed costs (wildfire program base costs) and appear to have varied widely in recent years. A similar trend is occurring in Alberta (Figure 55) and continued into the 2011 wildfire season. Both fixed and variable wildfire expenditures have increased dramatically in Alberta and British Columbia since the late 1990s. Much of the rapid rise in costs nationally has been driven by the steeply rising expenditures in the two most western provinces.

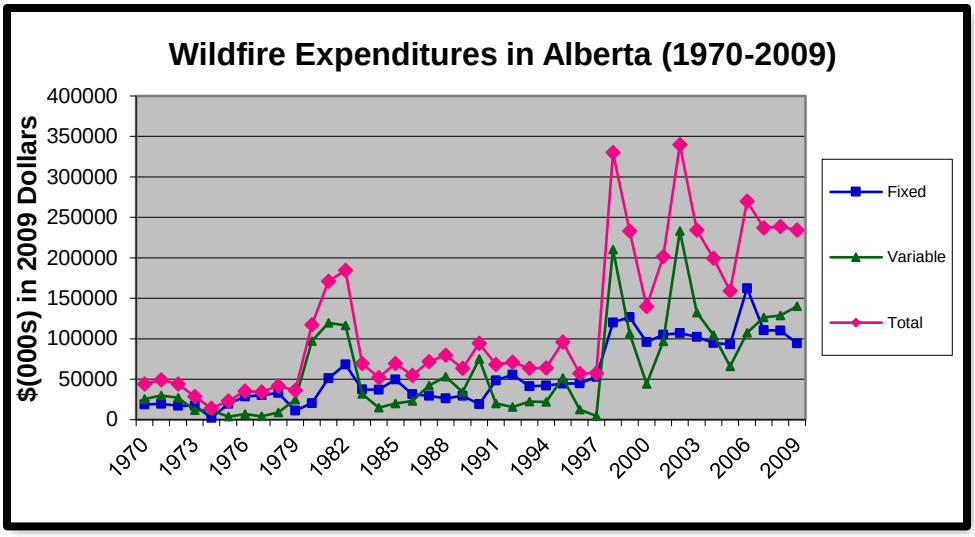


Figure 55 – Annual fixed, variable, and total wildfire costs for Alberta after 1970.

Previous Alberta Wildfire Reviews

In 1998 and 2001, significant wildfire events in Alberta prompted Sustainable Resource Development to complete internal and external reviews that contributed to enhancements to the department's wildfire management program.

The 1998 KPMG Alberta Fire Review of the Virginia Hills wildfire primarily involved the forest industry because most of the area burned was on provincial Forest Management Areas.

In the KPMG Report, 56 recommendations were made related to the following:

- Organizational capability.
- Pre-suppression and preparedness.
- Strategies and tactics.
- Roles, relationships, and communication.
- Logistics and support.
- Level of protection in Alberta.
- Level of funding appropriate for Alberta.
- Integration of forest management and landscape management.
- Organization and structure.
- Relationship with Aboriginal stakeholders.
- Reducing industry impacts on fire hazard and risk.
- Mutual aid resource sharing agreements and Alberta's strategic reserve of firefighters.
- Environmental factors — climate change and fire regime.
- Aircraft management.

In 2001, the Chisholm wildfire affected the community of Chisholm prompting another review. Recommendations addressed the following:

- Communications.
- Unified planning and action (interagency coordination).
- Community protection.
- Pre-suppression planning and suppression for existing and anticipated extreme wildfire conditions.

In 2009 the department developed a strategic plan that incorporated the findings from these reviews and addressed wildfire management challenges and opportunities.

Alberta's Wildfire Management Program

FOREST PROTECTION AREA

Sustainable Resource Development engages in wildfire management (prevention, detection, and suppression) within the Forest Protection Area (Figure 56), according to the *Forest and Prairie Protection Act* and associated regulations. The department also provides wildfire management support to municipalities outside the Forest Protection Area. The Forest Protection Area includes approximately 60% (39 million hectares) of the province's land base.

INCIDENT COMMAND SYSTEM

The Incident Command System allows for a wildland–urban interface branch to accommodate all involved agencies and jurisdictions. A wildland–urban interface branch, however, was not formally integrated between Sustainable Resource Development and the Fire Departments during the sustained attack period for the Flat Top Complex. The Sustainable Resource Development Incident Management Team took part in briefing the Fire Departments and integrated operational support for the structural firefighting after May 18. However, the Fire Departments were not included on the Incident Management Team's organizational charts as a "Branch" during the May 16 to 31 period. The Fire Departments working on structural firefighting outside the Town of Slave Lake functioned under the Emergency Operations Centre rather than as a Branch of the Incident Management Team after May 15.

DETECTION

Alberta has a fixed detection system consisting of 128 active Lookouts strategically located throughout the Forest Protection Area, including 20 in the Lesser Slave Area (Appendix S). Lookouts are operated from early to mid-April, based on spring wildfire hazard, and closed in early fall when hazard conditions have abated.

Other detection sources include aerial patrols by contracted aircraft, helicopter patrols, Bird Dog aircraft, and public reporting using 310-FIRE (3473). Each detection message requires a wildfire resource response to investigate and take initial action if required.

INITIAL ATTACK

The goal of Sustainable Resource Development's initial attack program is to take action on wildfires before they reach 2.0 hectares in size and contain wildfires by the end of the first burning period (by 10:00 the day following detection, per the Pre-suppression Preparedness System; PPS). Wildfire suppression operations are considered to be in an "initial attack" mode from the start of the wildfire until the end of the first burning period.

Figure 56 – Forest protection area of Alberta and associated Sustainable Resource Development area boundaries and Fire Centres.

Initial attack crews in Alberta are categorized as either Type 1 Rappel (RAP) or Type 1 Helitack (HAC). Sustainable Resource Development also has Firetack crews (eight-person sustained action crews) that may be used for initial attack. The RAP crews are highly trained, physically fit crews with the ability to rappel to the ground from a hovering helicopter. Their medium helicopter can sling a 300-gallon (1,136-litre) bucket to drop water on the wildfire while crew members are engaged in wildfire suppression on the ground.

The HAC crews operate in much the same way but without rappel capability. Each HAC crew is normally assigned a helicopter in the intermediate category, which comes with a 100 to 120-gallon (379–454-litre) bucket. Some HAC crews also have an "Engine" (a pumper truck with a capacity of approximately 300–500 gallons (1,136–1,893 litres)). In addition, Emergency Type 2 Sustained Action crews are utilized for support on extended-period wildfires (wildfires that go beyond the first burning period).

The RAP and HAC crews are hired on a seasonal basis and move throughout the province (Appendix T) as required, based on wildfire hazard and risk. With provincial guidance, Area Duty Officers determine the best allocation of resources within their Areas based on anticipated conditions of the wildfire environment (fuels, weather, and topography).

Heavy equipment, such as dozers, back hoes, water trucks, and tracked vehicles with tanks, may also be used for initial attack. Heavy equipment is put into groups, each with a Dozer Boss for supervision and direction.

Airtankers are another component of Alberta's initial attack system. One or more airtankers form an airtanker group. The airtankers are divided into nine groups as part of a provincial fleet, which can be dispatched to any location in the province to action wildfires. Airtankers are used primarily for initial attack to keep the wildfire from spreading. Ground resources are brought in to extinguish the wildfire. In Alberta, six different types of airtankers are used (Airtractor amphibian 802s, Airtractor wheeled 802s, Electra L-188, Convair 580, CL-215s, and CL-215Ts). Fire base locations in the Lesser Slave Area are provided in Appendix U.

PRE-SUPPRESSION PREPAREDNESS SYSTEM (PPS)

Alberta has developed a PPS to evaluate options for informed decisions, achieve management objectives, and measure performance with respect to wildfire (Appendix V). The PPS is used to guide Duty Officers in assessing the wildfire danger and risk in order to provide the most effective initial attack response. The main objective of the PPS is to minimize the potential for large wildfire losses through an efficient and cost-effective initial attack strategy.

Alberta's PPS consists of two components:

1. A deployment procedure for the allocation of committed initial attack resources based on values-at-risk, priorities, wildfire behaviour potential, fuel types and analysis of coverage area.
2. A procedure to determine Sustainable Resource Development's man-up levels and subsequent resource commitments based on wildfire danger.

As the wildfire danger increases, additional suppression resources are committed and strategically placed to reduce response times for initial attack on wildfire ignitions. When the wildfire danger decreases, suppression resource levels and response times are adjusted accordingly. Resources are moved to areas with higher needs.

The PPS utilizes the Spatial Fire Management System (SFMS) as a decision support tool to calculate predicted wildfire behaviour and resource requirements. It is built on an ArcView platform and uses the Canadian Forest Fire Danger Rating System (Appendix W) to predict wildfire behaviour and wildfire danger. A detailed, scientific approach to preparedness planning is provided by the SFMS. Management parameters such as policies, Standard Operating Procedures (SOPs) as well as local knowledge of Sustainable Resource Development's wildfire management activities are also used to develop the final outputs in the daily PPS Plan.

Sustainable Resource Development has two performance measures related to the PPS Plan:

1. Initiate wildfire suppression action before the wildfire exceeds 2.0 hectares.
2. Contain wildfire spread by 10:00 (first burning period) the day following detection.

If the wildfire has not been contained within the first burning period, a Wildfire Analysis Strategy must be completed to determine resources required to contain the wildfire within a predetermined time frame. To achieve these performance measures, guidelines for initial attack coverage based on the predicted mean Head Fire Intensity (HFI) were developed (Table 9). Support resources are optional in HFI Class 3 but must be added in HFI Classes 4 to 6.

Mean Head Fire Intensity Class	Coverage
Mean HFI Class 1	No coverage required
Mean HFI Class 2 to 4	80% coverage required
Mean HFI Class 5 and 6	> 80% coverage required In addition, areas with high values at risk require coverage by two initial attack resources

Table 9 – Initial attack coverage based on mean Head Fire Intensity (HFI) Class

ESCAPED WILDFIRE SUPPORT RESOURCE GUIDELINES

Once resources are committed to a sustained action wildfire, Duty Officers consider "back-filling" resources to maintain appropriate levels for future wildfires (Appendix X).

MODIFIERS FOR USE IN PRESUPPRESION PREPAREDNESS PLANNING

The percentage coverage determined by the PPS is not an absolute. Sustainable Resource Development staff may determine that it is necessary for deployments to exceed or be less than the percentage coverage recommended by the PPS guidelines. When this occurs, "modifiers" are used on the PPS Plan to rationalize the deviations (Appendix Y).

The purpose of the modifiers is threefold:

1. To categorize the most likely reasons for deviating from the SOPs.
2. To expedite communicating these reasons to the Provincial and Area Fire Centres.
3. To maintain an archive that records the number of times exceptions to the PPS Plan occur and the reasons for the exceptions.

Modifiers are required when a PPS Plan proposes a level of initial attack coverage that is outside the requirements specified in the SOP based on the mean HFI Class for the Area.

FIRE SEASON

Alberta's wildfire season is legislated and typically commences April 1 and ends October 31. The wildfire season may be extended (earlier or later) based on wildfire conditions. Sustainable Resource Development maintains year-round wildfire weather forecasts and monitors weather conditions that affect the wildfire environment across the Forest Protection Area of Alberta. A map of the Provincial Wildfire Forecast Zones is provided in Appendix Z.

Crews	Airtanker Groups	Helicopter Contracts
• 9 seven-person Rappel crews (63) • 47 four-person HAC crews (188) • 8 eight-person HAC crews (64) • 32 eight-person contract Firetack crews (304) • Emergency Type 2 Sustained Action crews	• Group 1: four Airtractor Amphibian 802s (May 15 to September 14) • Group 2: one Convair 580 (April 25 to August 25) • Group 3: three CL-215s (May 15 to September 11) • Group 4: one Electra L-188 (May 12 to September 11) (pre-season May 11) • Group 5: three Airtractor 802s (wheels) (April 29 to August 29) • Group 6: one Electra L-188 (May 1 to August 31) • Group 7: one Electra L-188 (May 15 to September 14) • Group 8: one Convair 580 (May 5 to September 1) • Group 9: four Airtractor Amphibian 802s (May 10 to September 9)	• Six Rappel mediums • Five Intermediates assigned to areas of high hazard or on-going wildfire operations on a provincial basis • Four mediums assigned to areas of high hazard or on-going wildfire operations on a provincial basis • Casual Charter: local or import hired as required (78 companies have casual contracts with Sustainable Resource Development)

Table 10 – Provincial resources available for wildfire suppression in 2011 (note that dates are for a core contract period)

Annually, during the wildfire season, Sustainable Resource Development maintains a number of provincial wildfire suppression resources (Table 10) in order to meet the Ministry's core business of managing Alberta's public lands, forests, fish, and wildlife. The following departmental firefighting priorities are listed in order (highest to lowest):

1. Human life
2. Communities
3. Watershed and sensitive soils
4. Natural resources
5. Infrastructure

Wildfire conditions vary from year to year. In 2007, Alberta experienced a record-breaking dry spell that contributed to 103,669 hectares being burned. In 2008, less severe wildfire hazard conditions resulted in fewer hectares being burned (20,787). In the 2010 wildfire season, Alberta experienced a 5.9% increase in the number of wildfires and a 24.9% increase in hectares burned compared with 2009. More than 1,800 wildfires were recorded in the Forest Protection Area during the 2010 wildfire season, which burned an area of almost 84,000 hectares (Figure 57). Over the past five years, there has been an average of 1,700 wildfires per season, and approximately 79,000 hectares have burned.

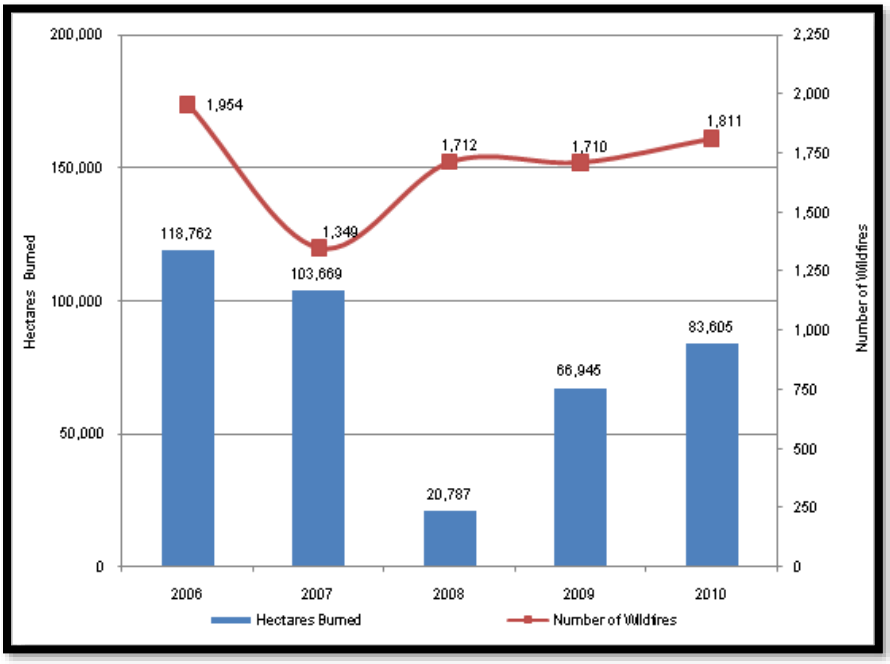


Figure 57 – Number of wildfires and hectares burned in Alberta during the wildfire season (2006–2010).

SPRING 2011

In early spring, prior to greenup, dry fine fuels respond quickly to changes in wind speed and relative humidity, resulting in rapid changes to Head Fire Intensities (Figure 58).

Figure 58 – Descriptions of Head Fire Intensity Classes 1 to 6.

Windy conditions and low relative humidity throughout the week of May 11 to 15 quickly removed the remaining snow pack. A rapid increase in wildfire activity occurred during this period, and all available resources were committed to wildfire suppression operations. There were 189 wildfires actioned across the province, over 23 of which threatened human life in communities, camps, work sites, and provincial campgrounds (Table 11). Concurrently, catastrophic wildfires were burning in Arizona, New Mexico, and eventually Texas. Mutual aid opportunities for sharing firefighting resources quickly became limited in North America.

Initial Spread Index values and Fine Fuel Moisture Code values were high to extreme across various zones of the province. The main factors were near cross-over conditions, cured fuel conditions, and the development of an upper ridge bringing strong, gusty winds (Appendix AA).

Area	Wildfire Size Class						Complex Name	Communities/Locations Threatened By Wildfires
	A	B	C	D	E	Total		
Southern Rockies (Calgary)	1	3	0	1	0	5	N/A	Morley Reserve
Foothills (Edson)	7	16	1	0	1	25	Lodgepole	Lodgepole
Fort McMurray	3	8	1	0	0	12	N/A	Fort MacKay, Oilsands camps, Richardson backcountry
Smoky (Grande Prairie)	0	3	0	1	2	6	Bitumont	N/A
Footner (High Level)	4	7	2	0	1	14	Fox Lake	Fox Lake
Lac La Biche	6	7	1	1	2	18	Janvier/ Chisholm/ Long Island	Janvier, Chisholm, Long Island Lake
Peace (Peace River)	4	2	0	0	1	7	Cadotte Lake	Cadotte Lake
Clearwater (Rocky Mountain House)	3	14	1	3	1	22	Crimson Lake	Crimson Lake Provincial Park
Lesser Slave (Slave Lake)	13	22	6	3	8	**52**	Flat Top/ Utikuma/ Gift Lake	Widewater, Canyon Creek, Poplar Estates, Town of Slave Lake, Faust, Otter Lakes Lookout, Whitefish Lookout, East Prairie/Enilda rural area, Gift Lake, Wabasca, Town of Red Earth, House Mountain area
Woodlands (Whitecourt)	4	15	5	2	2	28	Pass Creek/ Carson Lake	Pass Creek, Carson Lake Provincial Park
Total number of wildfires	**45**	**97**	**17**	**11**	**18**	**189**	**Over 23 communities/locations threatened**	
Total hectares burned	**838,596.79**							

Table 11 – Provincial wildfire activity by wildfire size class (A: <0.1 ha, B: 0.1 to 0.4 ha, C: 0.41 to 40 ha, D: 40.1 to 200 ha, E: >200 ha) between May 11 and May 15, including areas and communities threatened

LESSER SLAVE AREA

During the winter of 2010 to 2011, the Lesser Slave Area experienced a colder-than-normal winter with above-average precipitation (60–80% above-average snow depth). "Snow gone" was declared on May 9, 2011, and the wildfire danger calculations for Flat Top Lookout

commenced on May 12, which was the third-latest wildfire danger calculation start-up in the Lookout's history.

From May 11 to 15 wildfire activity increased significantly in Lesser Slave Area as dry, strong southeast winds influenced wildfire behaviour. The total detection load was high for the Lesser Slave Area during the month of May with 307 detection reports compared with 1,079 for the province as a whole.

During the week of May 11 to 15, the Slave Lake Fire Centre handled 141 of the 513 province-wide detection messages (Table 12). Of the 141 detection messages, 52 were confirmed as wildfires and actioned.

	Number of Detection Messages	
Date	**Lesser Slave Area**	**Province**
May 11	16	52
May 12	8	34
May 13	3	13
May 14	55	185
May 15	59	229
Totals	**141**	**513**

Table 12 – Number of detection messages from May 11 to May 15, 2011. Note provincial numbers include the Lesser Slave Area

The preceding week started with a low wildfire danger rating, which increased as the days progressed (Figure 59). Based on early spring conditions, data coverage, and hazard, a PPS modifier (98) was used, which indicated resources were planned and in place for initial attack (Figures 60 and 61) and support was available for other activities, such as hazard-reduction burning. The hazard in grass and fine fuels developed immediately. Hazard-reduction burning in high-risk areas commenced later than usual because of the persistent snow cover and poor burning conditions.

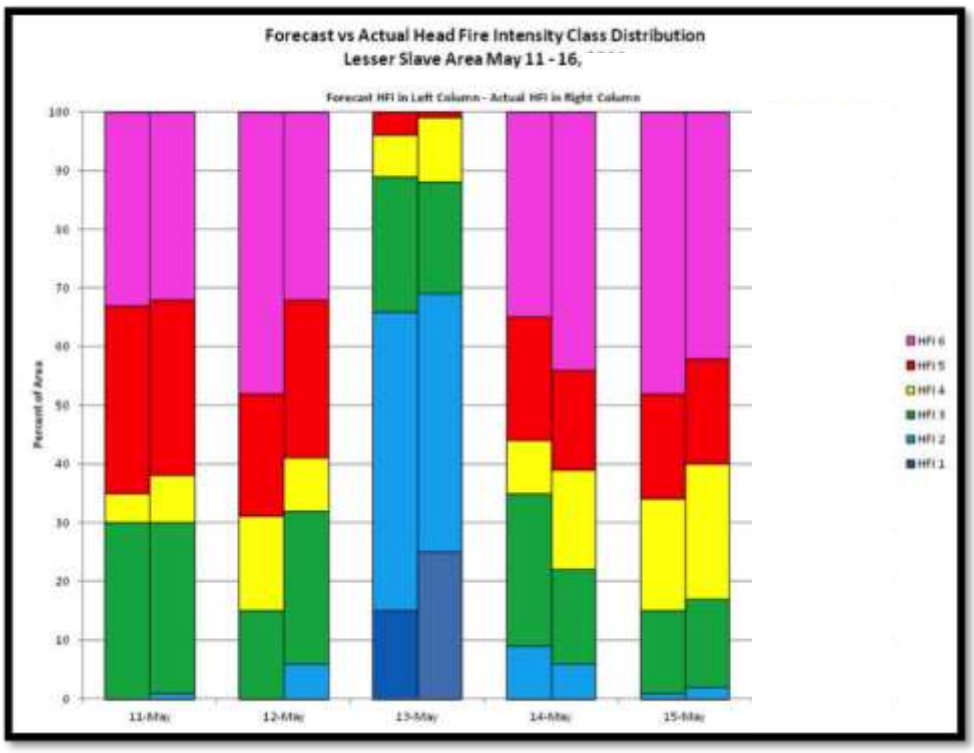


Figure 59 – Forecast versus actual Head Fire Intensity Class distribution for the Lesser Slave Area from May 11 to May 15.

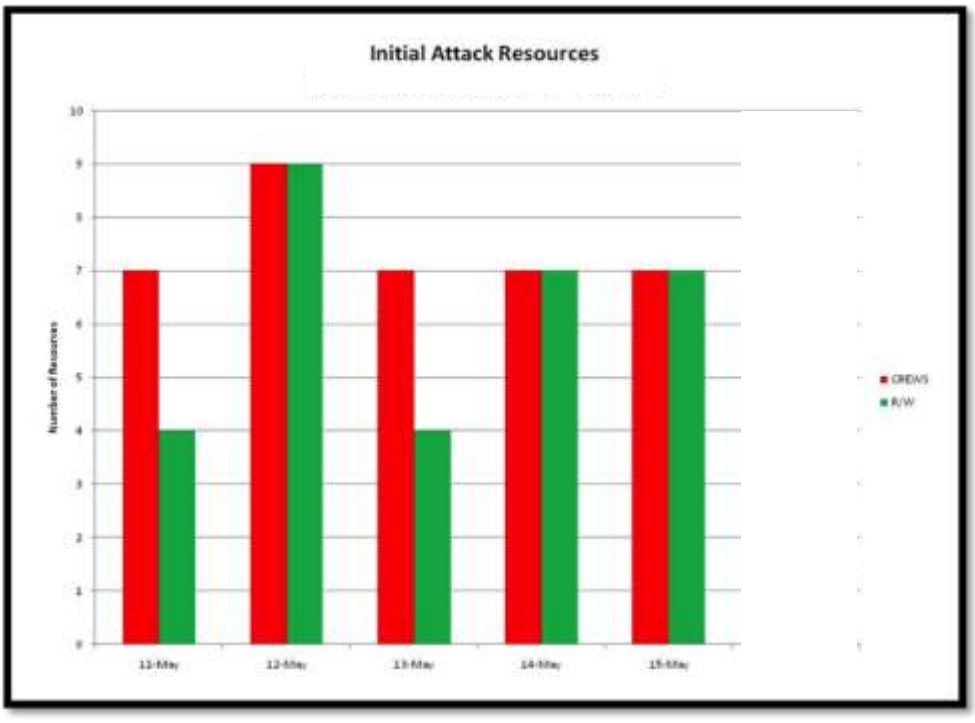


Figure 60 – The number of initial attack resources for the Lesser Slave Area from May 11 to May 15.

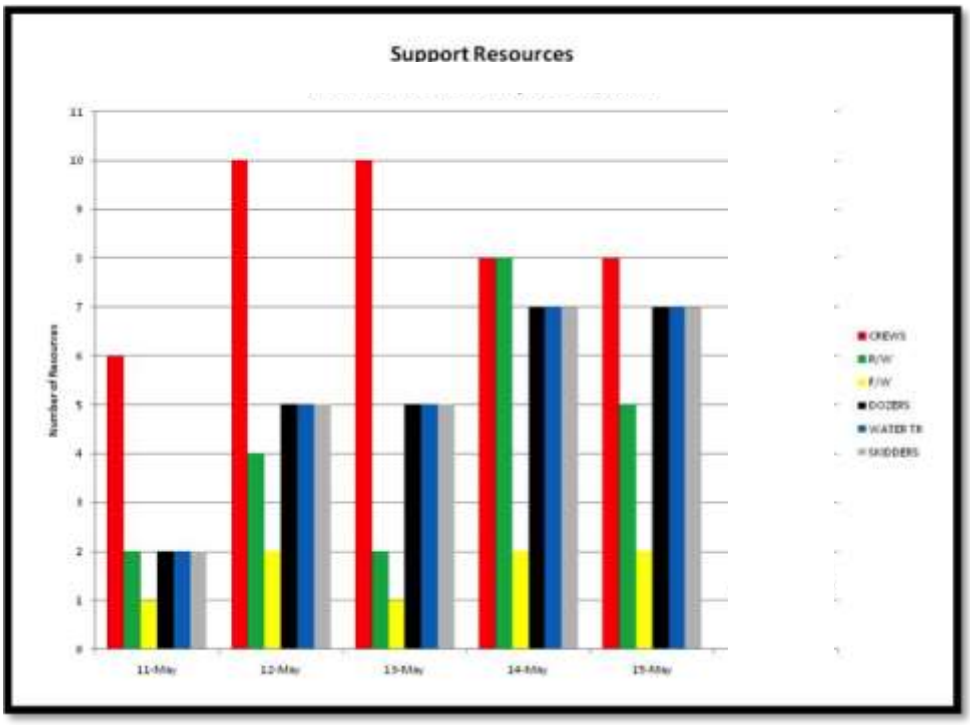


Figure 61 – The number of support resources for the Lesser Slave Area from May 11 to May 15.

Winds were forecast to increase by May 11 and a modifier (2) was used that justified the deployment of additional resources. There was the potential for multiple, fast-moving, intense surface fires due to forecasted winds and the fine fuel load. Fixed-wing patrols were planned and a Level 2 Incident Management Team was placed on standby for the Waterways, Lac La Biche, and Lesser Slave Areas.

On May 12 the PPS forecast continued to use a modifier (2) with HFIs increasing as the surface fuels dried. Initial attack coverage for the area was 53%. Much of the area was inaccessible for human use and no lightning was predicted. The fixed-wing aircraft was replaced with a helicopter for wildfire assessments.

The forecast coverage for May 13 was 87% and most resource levels were maintained. Helicopters for wildfire assessments had not yet been identified. Actual winds were lighter than forecast and scattered amounts of precipitation were recorded at various weather stations throughout the area. Although the coverage increased to 96% and HFIs were lower, a modifier (5) was used to maintain resource levels.

Fire Weather Advisories were issued on May 13 and 14 for areas east of the fifth meridian (about 100 kilometres east of the Town of Slave Lake). The Fire Weather Advisory was extended to east of the sixth meridian (about 200 kilometres west of the Town of Slave Lake) on May 15. During that period, Sustainable Resource Development managed 52 wildfire starts in the Lesser Slave Area. The weather advisories were based on several factors:

- Strong southeast pressure gradient and very dry air contributing to high to extreme Initial Spread Index values.
- Low relative humidity values in the 20–25% range, with poor overnight recoveries.
- Forecast and actual high to extreme HFI values.
- Extreme wildfire behaviour in the grass and fine fuels because of high to extreme Fine Fuel Moisture Code values, cured fuel conditions, and final snowpack removal.

On May 14 winds were forecast to increase and the fine fuels responded with a dramatic jump in the forecast HFI. The morning forecast for all zones (Appendix Z) east of the fifth meridian predicted winds from the southeast at 35 kilometres per hour, gusting to 60 kilometres per hour. A modifier (2) was used that indicated the potential for multiple wildfire starts, with a predicted coverage of 56% for the Lesser Slave Area.

The PPS prediction for May 15 showed a decrease in the available resources because of commitments to ongoing wildfires on May 14. Predicted winds were from the southeast at 40 kilometres per hour, gusting to 70 kilometres per hour for all forecast zones east of the fifth meridian. The HFI increased significantly, but fewer resources were available for new starts or support. A modifier (2) was used. Forty-four percent of the Area was effectively covered due to ongoing wildfire operations (Figure 62). Table 13 illustrates the wildfire containment success for May 14 and 15 in the Lesser Slave Area.

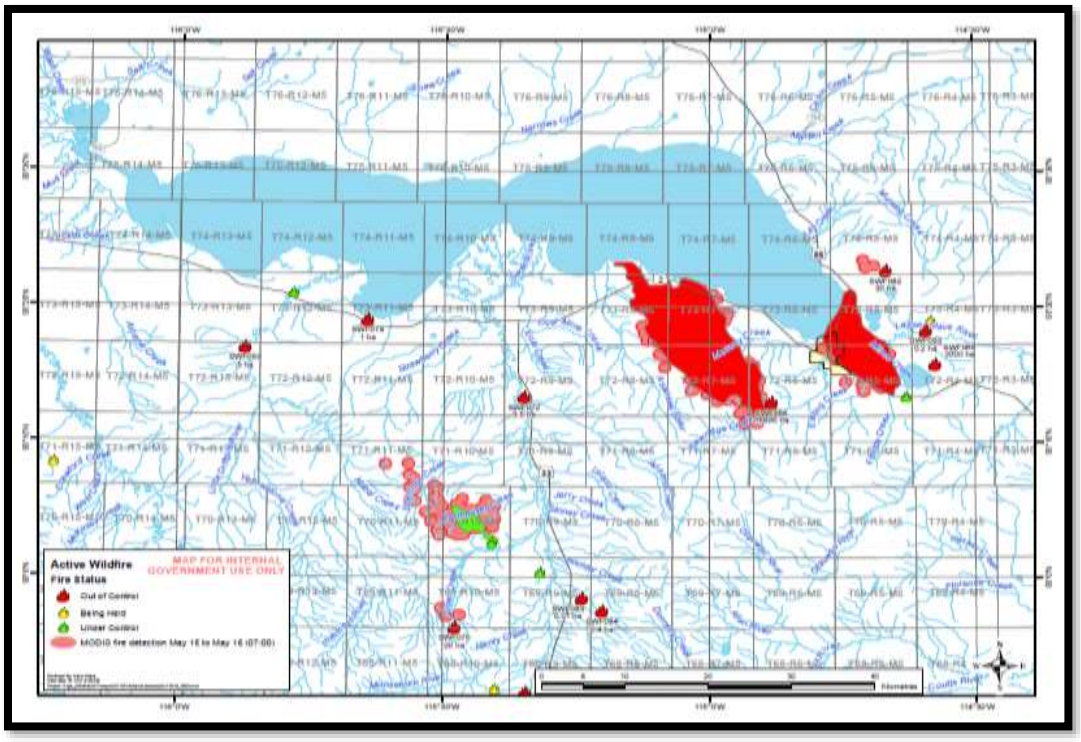


Figure 62 – Active wildfire status for the south portion of the Lesser Slave Area (May 15 to May 16).

Wildfire Containment (May 14)	Wildfire Containment (May 15)
9 wildfires were contained within the first burning period	13 wildfires were contained within the first burning period
1 wildfire was contained within the second burning period	2 wildfires were contained within the second burning period
6 wildfires became extended-period wildfires	4 wildfires became extended-period wildfires
A total of 35 of the 52 wildfires in the Lesser Slave Area were contained within a 3 day period.	

Table 13 – Wildfire containment for May 14 and 15 in the Lesser Slave Area

LESSER SLAVE LAKE WILDFIRE IMAGERY

Imagery from the National Oceanic and Atmospheric Administration–Advanced Very High Resolution Radiometer (NOAA-AVHRR) and the Geostationary Operational Environmental Satellites (GOES) (provided by Environment Canada, NOAA, and the Naval Research Laboratory after the wildfires) was used to illustrate the rapid development and growth of the Lesser Slave Area wildfires on May 14 and 15 (Figures 63, 64, 65, and 66). The GOES imagery, with coverage every 15 minutes, provided an almost continuous view of wildfire and smoke column growth and expansion. The imagery highlights the low-lying, wind-driven smoke column, as well as the speed with which these wildfires developed.

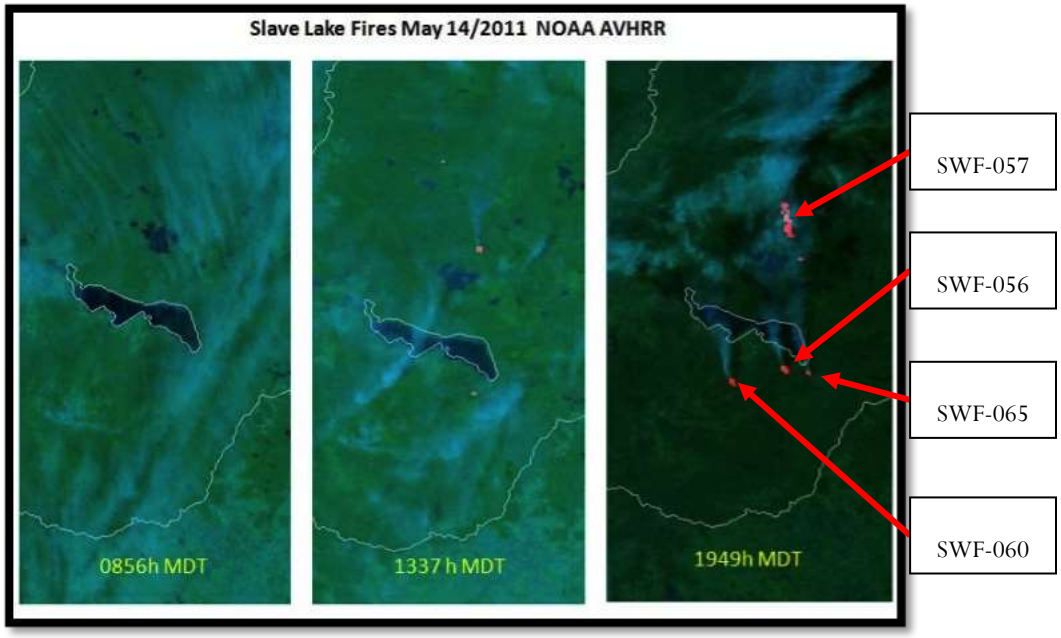


Figure 63 – NOAA-AVHRR imagery on May 14 for 08:56, 13:37, and 19:49.

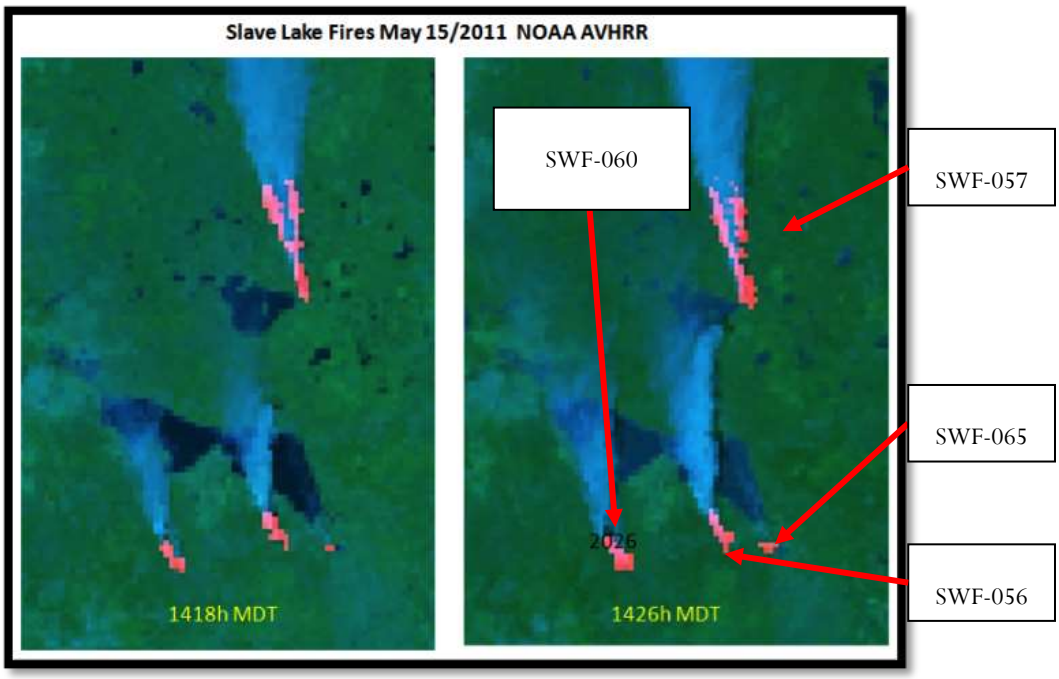


Figure 64 – NOAA-AVHRR imagery on May 15 for 14:18 and 14:26.

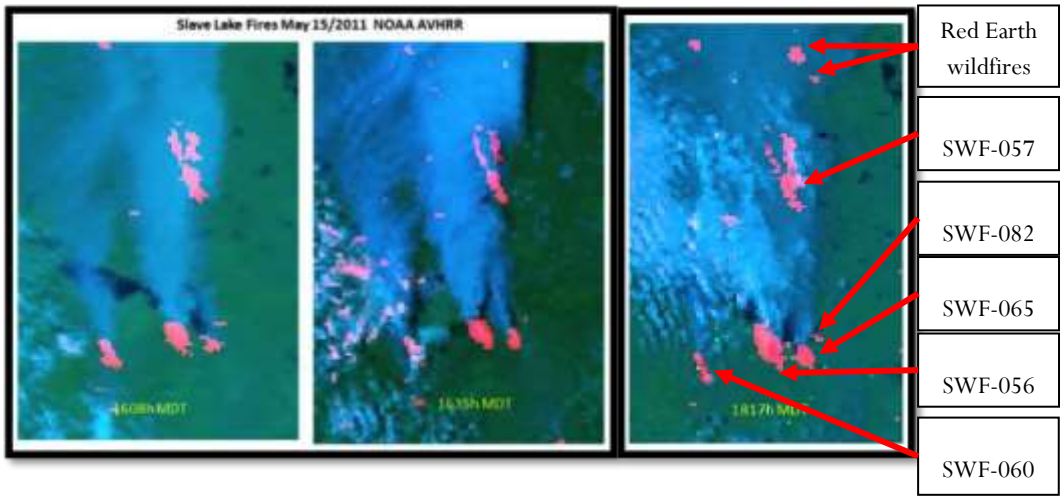


Figure 65 – NOAA-AVHRR imagery from overpasses at 16:08, 16:35, and 18:17. Note at 18:17, the image shows SWF-065 in the Town of Slave Lake and SWF-056 near the south shore of Lesser Slave Lake (May 15). A strong, merging convection column is also evident.

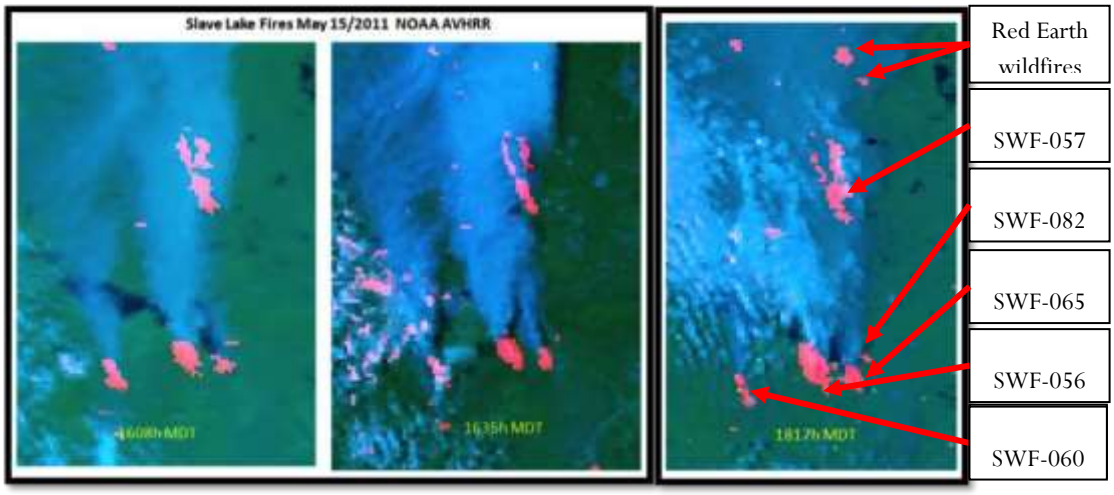


Figure 66 – NOAA-AVHRR imagery from overpasses at 16:08, 16:35, and 18:17. Note at 18:17, the image shows SWF-065 in the Town of Slave Lake and SWF-056 near the south shore of Lesser Slave Lake (May 15). A strong, merging convection column is also evident.

RESOURCE CHALLENGES

Wildfire crews were limited for initial and sustained attacks because of the number of wildfires throughout the province. The wildfire crews listed on the Provincial PPS Plans for May 14 and 15 (Table 14; Appendix BB) were committed for initial attack and sustained action on wildfires during this period. As crews became available, they were dispatched to new incidents.

Two Type 2 Incident Management Teams that had been on standby were also committed to other wildfires across the province including the one in the Lesser Slave Area.

Crew Type	May 14	May 15
Initial Attack Assignments and Crew Size		
4-Member	39	40
RAP	6	7
8-Member	4	8
Total Initial Attack Crews	49	55
Support Assignments and Crew Size		
4-Member	12	11
8-Member	38	42
Total Support Crews	50	53
Total Initial Attack and Support Crews		
	99	108

Table 14 – The number of initial attack (IA) and support action wildfire crews committed across the province based on the PPS Plan for May 14 and 15

Sustainable Resource Development staff in the Areas and at the Provincial Forest Fire Centre assembled available wildfire crews, helicopters, airtankers, and heavy equipment (Table 15) to meet the increasing fire danger ratings.

The reduction in the number of HAC crews available for the Lesser Slave Area PPS Plan on May 14 and 15 was due to mandatory days off. HAC 1 and HAC 8 were on mandatory days off before the start of their 15/6 shift which would have begun on May 16. The reduction in Firetack crews from eight on May 12 to five on May 14 and 15 was also due to one crew being on mandatory days off and the other two crews being assigned to wildfires and no longer listed as available for new starts on the PPS Plan.

The wildfires that ignited across the province were all human caused and ranged in size from Class A to Class E, with the Lesser Slave Area having the highest number of incidents. The Lesser Slave Area effectively managed the wildfire crew resources throughout the week of May 11 until extreme winds created erratic wildfire behaviour causing several wildfires to escape beyond the capability of crew resources to contain them. Backfilling initial attack or support resources was not an option based on the Lesser Slave Area and provincial wildfire load, as well as current resource commitments.

Requests for additional resources were placed through the Canadian Interagency Forest Fire Centre, the Northwest Compact, and the US National Interagency Forest Fire Centre. The request to the Canadian Interagency Forest Fire Centre on May 14 was responded to by the provinces of British Columbia and Ontario. The British Columbia Incident Management Team, Ontario Incident Management Team, and Ontario wildfire crews were dispatched to the Waterways Area. The British Columbia wildfire crews were dispatched to the Lesser Slave Area and began arriving on May 17 (three days after they were ordered). The other wildfire agencies across Canada were unable to supply any resources because of wildfire danger levels and activity in their own jurisdictions.

Neither the US National Interagency Forest Fire Centre nor the Northwest Compact could supply crews because of extensive wildfires in Alaska, Texas, Arizona, and scattered risk throughout the remaining states. A DC-10 airtanker and a MARS airtanker were contracted for use in the Waterways Area.

Provincial

	May11	May 12	May 13	May 14	May 15	May 16
RAP crews	0	0	7	6	7	9
HAC crews	37	38	46	47	50	48
Firetack crews	15	21	19	19	21	14
Type 2 crews	3	13	16	23	29	12
Light helicopters	1	3	1	4	5	4
Intermediate helicopters	14	29	21	31	41	41
Medium helicopters	6	10	13	18	22	13
Heavy helicopters	0	0	0	0	0	0

Lesser Slave Area

	May 11	May 12	May 13	May 14	May 15
RAP crews	0	0	0	0	0
HAC crews	7	7	7	6	6
Firetack crews	5	8	6	5	5
Type 2 crews	1	4	4	4	4
Dozer groups	2	5	5	7	7
Water trucks	2	5	5	7	7
Skidders	2	5	5	7	7
Light helicopters	0	2	0	2	2
Intermediate helicopters	4	7	4	6	6
Medium helicopters	2	2	2	4	4

Table 15 – Resources available for new wildfire starts for the Province and the Lesser Slave Area

LESSER SLAVE AREA RESOURCE BUILDUP

The organizational chart for May 19 is located in Appendix CC as an example of how the organization was set up for the Flat Top Complex. The chart displays the resources and assignments for the three wildfires. Refer to Appendix AA for incident weather, behaviour, and safety for the Flat Top Complex.

The Lesser Slave Area advised the Provincial Forest Fire Centre that additional resources were required for the Lesser Slave Area wildfire complexes (Flat Top, Utikuma, House Mountain, and Gift Lake). Resource orders were placed on May 14, 15, and 16.

On May 14, before the start of SWF-065, a Type 2 Incident Management Team was requested for SWF-056 and SWF-060. The order was cancelled by the Provincial Forest Fire Centre Duty Officer and replaced with an order for a Type 1 Incident Management Team because of the escalating wildfire situation. A similar situation developed for the Utikuma Complex where the Type 2 Incident Management Team was dispatched but was integrated with the incoming Type 1 Incident Management Team. A third Type 1 Incident Management Team was assigned to the House Mountain Complex, and a short Type 2 Incident Management Team was assigned to the Gift Lake Complex.

The management and reporting structure for the Utikuma Complex (north of Slave Lake) was assigned to the Peace River Fire Centre and the House Mountain Complex (southwest of

Slave Lake) was assigned to the Whitecourt Fire Centre because of the extensive wildfire activity being managed by the Slave Lake Fire Centre. The Gift Lake Complex (east of High Prairie) continued to report to the Lesser Slave Area (Table 16).

Most of the Incident Management Team positions (Appendix DD) were filled within 24 hours. Similarly, the heavy equipment, helicopters, water trucks, and tracked water units were readily available within the Lesser Slave Area or supplied by other Sustainable Resource Development Areas (Table 17).

Wildfire Number	Wildfire Size (ha)	Incident Management Team/Complex	Fire Centre/Area Assigned to Wildfire Complex
SWF-056-11	16,856	Type 1 Team/Flat Top Complex	Slave Lake (Lesser Slave Area)
SWF-065-11	4,706		
SWF-082-11	425		
SWF-057-11	87,659	Type 1 Team/Utikuma Complex	Peace River (Peace Area)
SWF-088-11	19,905		
SWF-086-11	351		
SWF-060-11	6,182	Type 2 Team/House Mountain Complex	Whitecourt (Woodlands Area)
SWF-070-11	412		
SWF-077-11	67		
SWF-080-11	2,153	Modified Type 2 Team/Gift Lake Complex	Slave Lake (Lesser Slave Area)
Total*	**138,716**		

Table 16 – Wildfires ignited within the Lesser Slave Area from May 11 to 15 and assigned to a wildfire complex. Boundaries were established for initial attack and sustained attack responsibilities for the three Fire Centres. *Total includes SWF-088 which started on May 16.

Requests from the Canadian Interagency Forest Fire Centre responded to by the British Columbia Ministry of Forests included the following resources for the Flat Top Complex (Figures 67 and 68):

- Five 20-person crews, Strike Team Leaders, and Division Supervisors requested on May 14 were mobilized on May 16 and received in the Lesser Slave Area on May 17.
- Three 20-person crews, Strike Team Leaders, and Division Supervisors were requested on May 18 and received in the Lesser Slave Area on May 21.
- Four 8-person Firetack crews on May 24.
- All the British Columbia resources received a provincial wildfire briefing at the Hinton Training Centre before arriving in the Lesser Slave Area.

	Manpower Crews			Contracted Equipment						Aircraft		
Date (May)	Type 1 Crew (4-Person)	Type 1 Crew (20-Person)	Type 2 Crew (8-Person)	ATV Water Tanks	Dozer	Excavator	Feller Buncher	Skidder	Water Tank Truck	Airtanker	Fixed Wing	Rotary Wing
14	4	0	0	6	12	5	0	0	13	15	10	5
15	4	0	0	7	17	6	0	0	15	15	7	22
16	4	0	0	8	19	7	0	0	12	14	5	34
17	3	6	0	8	18	6	0	0	4	6	3	30
18	1	6	0	12	30	9	1		9	7	4	27
19	1	6	0	13	32	9	1	2	10	0	2	27
20	2	6	0	16	31	11	1	2	10	2	2	25
21	0	9	0	17	33	10	1	2	9	0	1	22
22	0	9	0	17	32	11	1	2	7	0	1	20
23	0	9	0	15	32	11	0	2	9	0	0	18
24	1	9	4	15	10	9	0	2	9	0	0	12
25	0	9	4	14	9	9	0	1	9	0	0	8
26	0	9	4	12	13	8	0	0	7	0	0	6
27	0	9	4	14	10	7	0	0	8	0	0	6
28	0	9	4	10	10	9	1	3	9	0	0	6
29	0	9	4	10	9	9	1	3	9	0	0	6
30	1	11	4	11	9	9	2	3	9	0	0	5
31	3	11	4	11	8	8	2	3	9	1	1	6

Table 17 – Number of resources with hours worked on the Flat Top Complex (SWF-056, SWF-065, and SWF-082) during the month of May

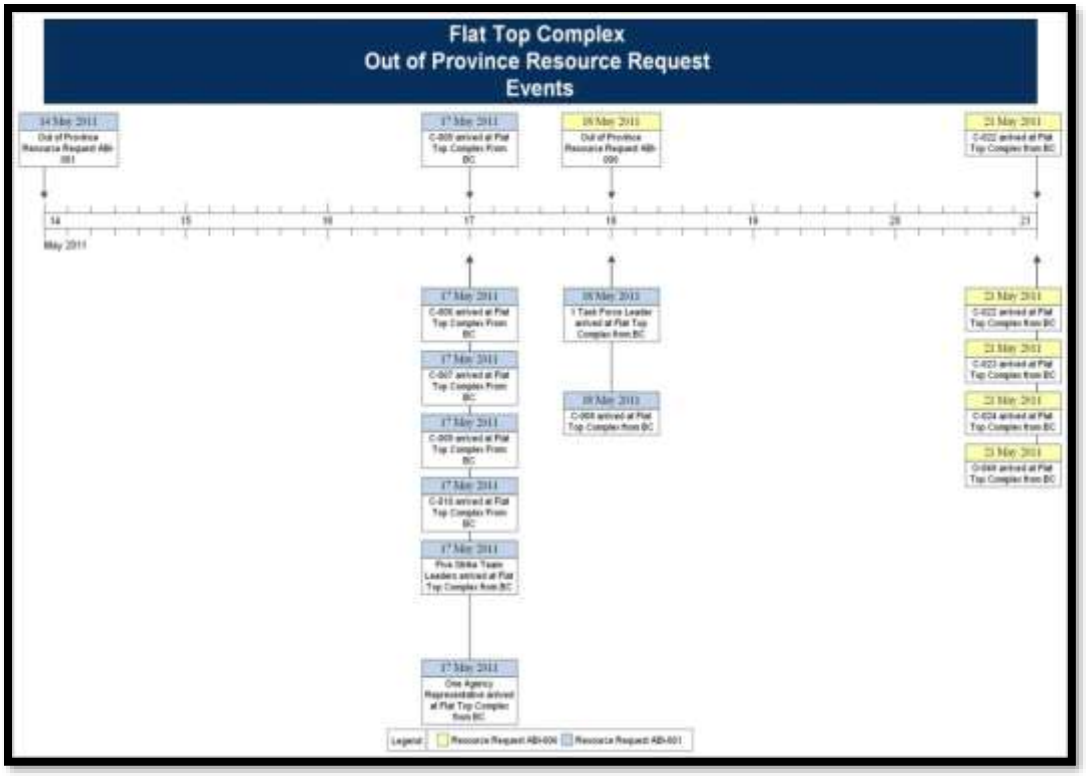


Figure 67 – Canadian Interagency Forest Fire Centre resource requests for the Flat Top Complex.

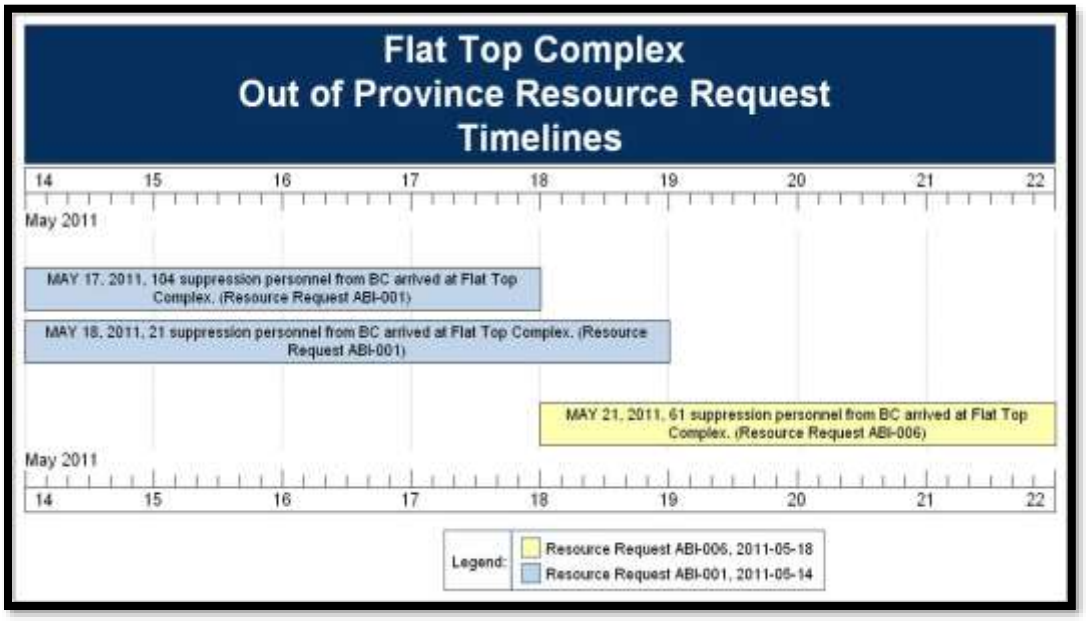


Figure 68 – Time lines for Canadian Interagency Forest Fire Centre Resource requests for the Flat Top Complex.

RICHARDSON WILDFIRE

The Richardson wildfire illustrated extreme wildfire behaviour conditions in the Fort McMurray area concurrent with the wildfire events in the Lesser Slave Area (Figure 69). The Richardson wildfire (MWF-007), which eventually burned 577,647 hectares, started on May 14, at approximately the same time as many wildfires in the Lesser Slave Area. Given the priority of SWF-065 and SWF-056, other provincial wildfires, and resource availability, limited suppression action was undertaken on the Richardson wildfire on May 14 and 15. The Richardson wildfire spread rapidly northward and travelled approximately 83 kilometres from the afternoon of May 14 through the evening of May 15 (Figure 70).

The afternoon spread rates for the Richardson wildfire averaged close to 4 kilometres per hour and 3.5 kilometres per hour on May 14 and 15, respectively. The Richardson wildfire continued to burn vigorously well into the night of May 14 as wind speeds remained high and relative humidity levels remained low. By 22:00 on May 14, wind speeds were 20–25 kilometres per hour and relative humidity values were below 20%. This contributed significantly to the continued and substantial overnight growth (Figure 71).

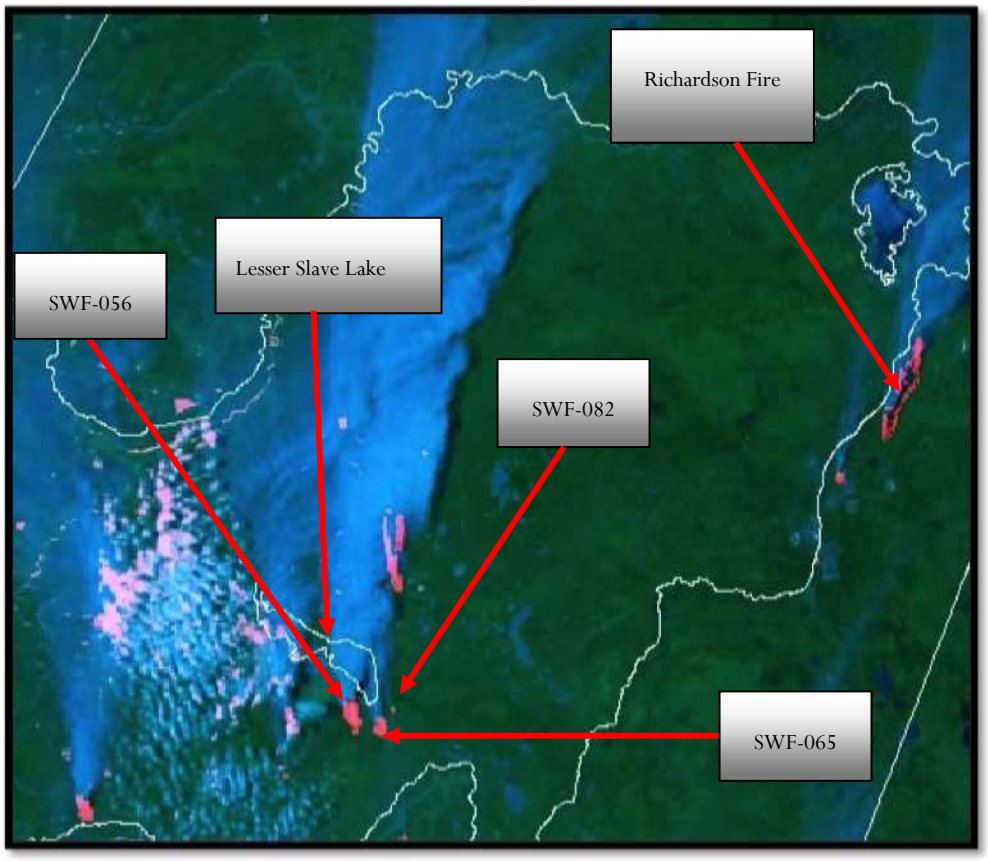


Figure 69 – NOAA-AVHRR imagery of wildfires around Whitecourt, Slave Lake, and Fort McMurray on May 15, 2011 at 16:35, approximately one hour before structures were ignited in the Town of Slave Lake. Note the flat, strongly wind-driven smoke columns.

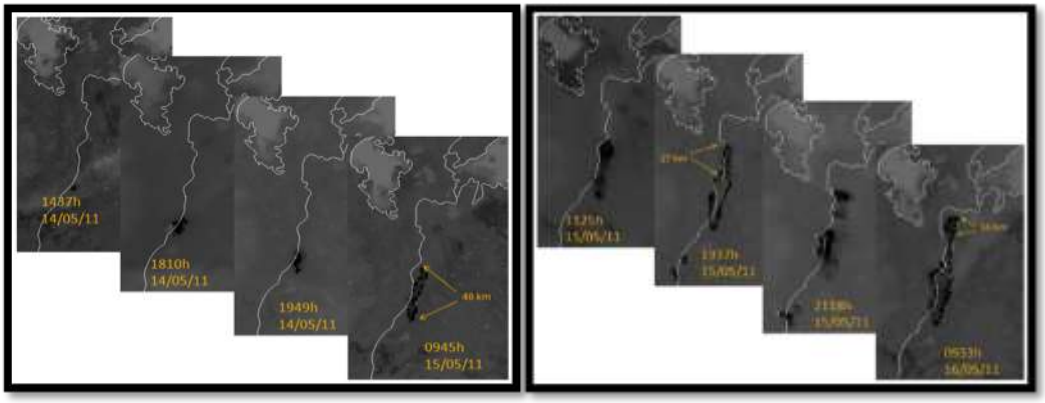


Figure 70 – NOAA-AVHRR images showing wildfire growth during (left) the afternoon and evening of May 14 and overnight on May 14 and 15. (right) Wildfire growth during the afternoon of May 15 and overnight May 15 and 16.

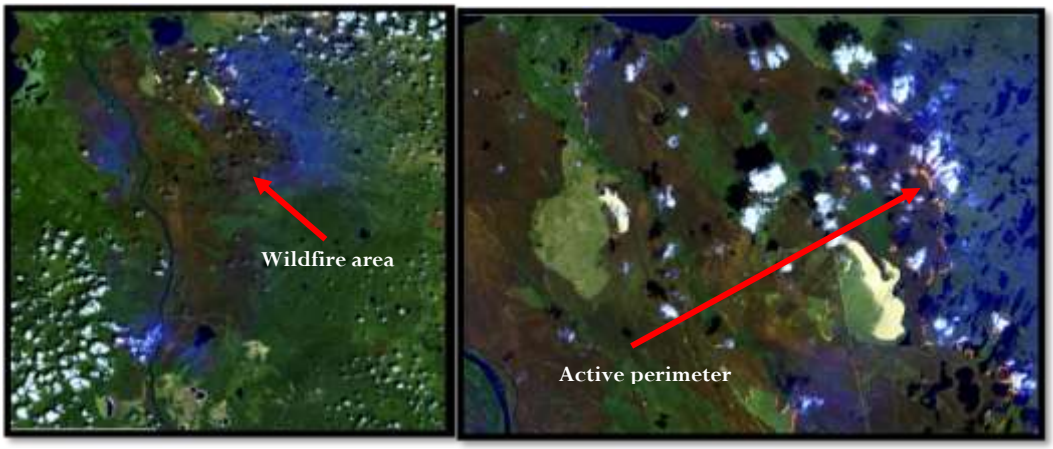


Figure 71 – Landsat images of the Richardson wildfire area (left) on June 8, 2011 and (right) active wildfire perimeter.

APPENDIX A - DOCUMENTATION AND TECHNICAL SUPPORT TEAM

BRUCE MACGREGOR

Bruce spent 41 years with Sustainable Resource Development throughout Central and Northern Alberta and has gained extensive experience in Resource and Wildfire Management.

He has been directly involved in the development of the Alberta Forest Protection Program from 1991 to 2007 as a Forest Protection Officer and as Senior Manager for the Lac La Biche Wildfire Management Area and Provincial Forest Fire Centre. Wildfire management related activities include:

- Negotiated Wildfire Agreements
- Completed a settlement strategy for three large wildfire billing agreements
- Dealt extensively with Aboriginal wildfire contractors, Aboriginal firefighters and Aboriginal administrations
- Investigated wildfires and reviewed contractor investigations
- Participated in the development of the SRD Debris Management Policy
- Expert Panel Member for SRD on five individual reviews of the Forest Protection Branch chaired by Gerry DeSorcy from 2003 to 2007
- Task Team Member for the Review of Alberta's Wildfire Crew Program during the winter of 2006/07
- Wildfire Management training course instructor at the Hinton Training Centre
- Type 1 Incident Management Team Member

He retired from Sustainable Resource Development at the end of March 2007 and now operates MacGregor Forestry Ltd.; a wildfire and forest consulting company operated out of Lac La Biche, Alberta. He is a Registered Professional Forest Technologist and is past President of the College of Alberta Professional Forest Technologists. Projects include:

- Review Team Member for the 2009 Government of Saskatchewan Fire Program Review
- Developed the 2010 Waterways Containment Strategies Pilot Project
- Developed 11 Wildfire Preparedness Plans (involving 17 communities) and 3 Wildfire Mitigation Plans for the Foothills Area
- Provide environmental and regulatory consulting services for oil & gas industry
- Provide wildfire training services for oil & gas industry
- Provide prescribed fire planning and implementation services to SRD
- Developing FireSmart plans for upstream oil and gas industry across the province
  Developing various community based Wildfire Preparedness Plans and Wildfire Mitigation Plans across the province

ROB THORBURN

Rob began his 35 year career in forestry with the Alberta Government in 1972, undertaking in those early years, a number of seasonal forestry and fire control positions.

From 1977 to 1981, Rob served as a Forest Officer in northern Alberta, working with both the public and industry in forest land use, environmental protection, and wildfire suppression.

From 1981-1984, Rob assumed the new position of Air Attack Program Coordinator for the Footner Lake Forest, managing several air tanker bases and specializing as a Provincial Air Attack Officer with airtankers, a role he remained active in until the mid-1990s.

1984 saw Rob switching direction, becoming the Assistant Chief Ranger to the High Level Ranger District.

In 1986 he accepted a position as a Wildland Fire Instructor at the Forest Technology School in Hinton. There, Rob taught forestry diploma students and provincial staff, courses on wildland fire prevention, detection, pre-suppression, suppression, wildfire science and management. During that period he led the development of Canada's first computer based wildland fire simulator and interactive multimedia training courses. In 2002 he was appointed as Head of the Provincial Wildfire Management Training program.

In 2003, Rob was appointed as the Director of the Hinton Training Centre. He continued on as Director until his retirement in May of 2010.

During Rob's career, he always maintained a "foot in the ashes" approach with regard to gaining knowledge in wildfire by keeping actively involved in suppression on Alberta's large wildland fire fronts. He seized the opportunity to do so on a number of occasions as a Type 1 Incident Commander, Incident Operations Chief, Air Operations Branch Director, and as an Air Attack Officer.

Rob currently provides consulting services in wildfire research, safety and training. He has a Forest Technology Diploma from the Northern Alberta Institute of Technology (NAIT) and is a Registered Professional Forest Technologist with the College of Alberta Professional Forest Technologists.

TERRY VAN NEST

Terry's career in forestry began in 1965 when he accepted a position with Alberta Lands and Forest. From 1965 to 1976, he worked in a number of ranger districts in Alberta and from 1976 to 1982, he worked in the Peace River Forest as a forest protection technician.

In 1982, Terry became Alberta's first provincial fire behaviour officer; a position which he held until 1991. During this period Terry was actively involved in operational fire behaviour duties with the Province as well as on a national and international scale. Other activities included technology transfer, fuels inventory, prescribed burning, wildfire investigation, fire behaviour training, co-operation in fire research projects and the development of operational fire

information systems such as Alberta's Pre-Suppression and Preparedness Planning System, and in co-operation with Forestry Canada, the development of the Intelligent Fire Management Information System.

In February 1991, Terry transferred to the Forest Technology School (now called the Hinton Training Centre) at Hinton as Senior Fire Control Instructor. During the 1990s, Terry was involved in the initiation and development of National Fire Management training and the establishment of the CIFFC National Training Working Group. Also, during this period Terry participated in international training missions to Belarus, Spain, New Zealand and the United States. In March 1999, Terry accepted the position of Training Operations Manager at the Hinton Training Centre.

In October 2002, Terry retired from the Government of Alberta. In 2002 and 2003 Terry worked as a Canadian Forest Service Training Advisor, Foreign Programs, on the Canadian International Development Agency Fire Danger Rating System project in Southeast Asia. Terry was responsible for developing a training strategy for the project and assisted with the development and delivery of the initial training program in Indonesia and Malaysia. Since 2003 Terry's wildland fire related activities have been primarily in the area of fire investigation.

Terry has a Forest Technician Diploma and has attended several fire behaviour courses at NARTC (National Advanced Resource Technologies in Marana, Arizona). Terry has co-authored several papers.

Awards received

- 1990 - Certificate of Appreciation from the Alaska Department of Natural Resources for assistance provided on The Canadian Forest Fire Danger Rating System
- 1990 - Alberta Forestry Innovation Award (Honorable Mention) for the development of the Intelligent Fire Management Information System
- 1992 - Forestry Canada Merit Award for Technology Transfer of the Intelligent Fire Management Information System
- 1995 - North American Forestry Commission Fire Management Study Group award in recognition of dedication in wildland fire suppression
- 2002 - National Wildfire Coordinating Group in recognition of contributions to wildland fire investigation (Fire Investigation Working Team 2002)
- 2004 - Canadian Forest Service Merit Award for exemplary contribution to the Southeast Asia Fire Danger Rating System Project.

RICK ARTHUR

Rick graduated from the Northern Alberta Institute of Technology (NAIT) Forest Technology Program in 1975 and has worked in a wide variety of forestry related positions across the province since then. In the last 37 years, he has worked on the fire line in positions ranging from "the guy at the end of a fire hose" to a Type 1 Incident Commander. He has been on

major fire operations from Ontario to British Columbia and from Yellowstone to the Yukon. He is a Past President for "Partners in Protection" and was extensively involved in the development of FireSmart, a program focused on reducing the risk of wildfire to communities. Partners in Protection have received numerous Provincial and National awards for the development of the FireSmart program components which have been adopted by all provinces across Canada as the model for their wildland-interface programs.

Through Rick's experience base, he has developed an extensive background in:

- Fire history
- Fire regime analysis
- Fire behaviour sciences

He was included in the cadre for the National Fire Behaviour Specialist program. Rick has been nominated for, and been successful recipient of, a number of awards including the Deputy Ministers Award. He attributes much of his success to being a strong believer in partnerships and actively seeking to create and nurture those opportunities in his daily regime.

Today, he leads the Wildfire Prevention Program for the Southern Rockies Area which is noted for its extensive FireSmart programs, numerous municipal partnerships, as well as being leaders in the provincial prescribed fire program.

MORGAN KEHR

In 1981, Morgan began his 30 year career in forestry with Alberta Sustainable Resource Development. He held various positions related to wildfire management and suppression operations throughout the province including:

- Forest Protection Technologist in Edson
- Wildfire Operations Officer in Whitecourt
- Alberta Provincial Prescribed Fire Program Lead
- Program Manager for Alberta Provincial Wildfire Operations

In addition to numerous Incident Command Team assignments on large fires across Alberta (including notable fires such as Virginia Hills, Agnes Lake, Chisholm, House River, Lost Creek), Morgan`s operational experience and certification as Planning Section Chief 1, Operations Section Chief 1, and Incident Commander 1 have been provided to the Yukon, Northwest Territories and the United States.

While in the Provincial Wildfire Operations position, Morgan represented the Province of Alberta on National and International initiatives such as the Canadian Forest Fire Centre Resource Management Working Group, the Northwest Compact Working Group, as well as the Jalisco (Mexico) Resource Sharing Agreement Working Group.

Morgan has also been heavily involved in Policy and Standard Operating Procedure development for the Province, as well as actively involved with various wildfire training courses as chair or instructor at the Hinton Training Centre.

Morgan is currently the Forestry Program Manager for the Southern Rockies area. He has a Forestry diploma from the Northern Alberta Institute of Technology (NAIT) and is a Registered Professional Forest Technologist with the College of Alberta Professional Forest Technologists.

DENNIS QUINTILIO

Dennis worked as a Fire Behaviour Specialist in Alberta for 24 years prior to assuming management positions in 1990.

- From 1967-1974, he was stationed at the Northern Forestry Centre as study leader and worked on early design and implementation of the Canadian Forest Fire Danger Rating System.
- He was appointed Project Leader in 1975 and continued to refine fire behaviour prediction elements of the system through study of large-scale experimental burns.
- From 1980 to 1990, he taught at the Environmental Training Centre which offers a two- year diploma in Forestry, and coordinated all in-service fire management training in Alberta.
- In addition to his teaching responsibilities, Dennis was also a practicing Fire Behaviour Officer and served on the Alberta Forest Service Fire Investigation Team.
- Dennis moved into his role as Director of the Environmental Training Centre in the fall of 1990.
- In 1995, he assumed the position of Executive Director, Forest Management Division, Alberta Lands and Forest Service
- In 1999 Dennis was appointed Executive Director of the Integrated Resource Management (IRM) Division responsible for implementation of IRM in Alberta.

Dennis retired from the government of Alberta in June of 2001 after 34 years of forestry practice and currently provides consulting services (Dennis Quintilio and Associates Ltd.) across Canada with a primary focus on policy level wildfire reviews (Saskatchewan, Yukon, North West Territories, British Columbia, Alberta) and FireSmart planning.

He has a B.Sc.F and a M.Sc. degree from the University of Montana and is a member of the Alberta Registered Professional Foresters Association.

GARY MANDRUSIAK

Gary Mandrusiak has been involved with most aspects of wildfire management during his 36 years with the Government of Alberta. His career took him from Forest Officer in a small Ranger District to Wildfire Prevention Officer in the Clearwater Forest Area.

Wildfire Management related activities included:

- Type 1 Incident Command Team Member
- Extended periods as Area and Regional Duty Officer
- Fire Management Training Course Instructor
- Field representative during development of Decision Support Systems
- Steering Committee member – Canadian Wildland Fire Growth Model
- Prescribed fire planning and implementation
- Wildland-urban interface planning and implementation
- Fire management input into Forest Management Plans
- Wildfire investigations and cost recovery
- Crown Officer on civil litigation cases
- Alberta Environment Achievement Award, 2001, Dickson Dam Regional Emergency Operations Team Concept and Implementation
- Premier's Bronze Award, 2003, Conklin Evacuation Team – House River Fire
- Deputy Minister's Award, 2007, R11 Forest Management Planning Team

Upon retirement from ASRD in January 2007, he formed G. Mandrusiak & Associates Ltd., providing a range of wildfire management planning and support services to the Government of Alberta, municipalities and other agencies.

Projects have included:

- Several Prescribed Burn Plans for Clearwater Area
- Monitoring, documentation and post-burn reports
- Wildfire Threat Ranking and Wildfire Preparedness Guides for over 50 multi-residence subdivisions
- Provided various inputs into FireSmart Community Plans for several communities in the Foothills Area
- Completed six FireSmart Community Plans in the Clearwater Area
- Mentoring ASRD staff in FireSmart planning process
- Participated in development of the Southern Rockies Landscape Fire Strategy
- Participated in the 2009 Government of Saskatchewan Fire Program Review
- Currently working with ASRD staff developing a Landscape Fire Strategy for Clearwater Area

MIKE FLANNIGAN

Dr. Mike Flannigan is a professor with the Department of Renewable Resources at the University of Alberta and a senior Research Scientist with the Canadian Forest Service. He received his B.Sc. (Physics) from the University of Manitoba, his MS (Atmospheric Science) from Colorado State University and his PhD (Plant Sciences) from Cambridge University. Mike also completed Meteorologist course MT35 with Environment Canada and worked as a meteorologist for a few years. Dr. Flannigan's primary research interests are fire and weather /climate interactions including:

- Potential impact of climatic change
- Lightning-ignited forest fires
- Landscape fire modelling
- Interactions between vegetation (peat in particular), fire and weather

He was the Editor-in-Chief of the International Journal of Wildland Fire (2002-2008) and has taken on leadership roles with the US National Assessment on Global Change, IPCC, IGBP Fire Fast Track Initiative and Global Change Terrestrial Ecosystems (GCTE) efforts on the global impacts of wildfire. Mike is the director of the recently formed Western Partnership for Wildland Fire Science located at the University of Alberta.

NICK NIMCHUK

Nick Nimchuk has been employed by the Government of Alberta at the Provincial Forest Fire Centre (PFFC) since 1979 as a Fire Weather Meteorologist and assumed his current role as Fire Weather Section Head in 1990. Nick is a 1977 meteorology graduate of the University of Alberta. He also has an extensive background in aviation as a former Royal Canadian Air Cadet Warrant Officer and holds a commercial pilot license.

Nick's service with PFFC commenced during a number of milestone fire seasons in Alberta. He rapidly gained experience in weather forecasting for major wildfire events and in the development and implementation of advanced technology in Alberta's fire management program such as automatic weather station and electronic lightning detection networks. Nick also played a significant role in the development of Alberta's Pre-suppression and Preparedness System (PPS) through extensive training of fire management staff in the Canadian Forest Fire Danger Rating System (CFFDRS) and Canadian Forest Fire Behaviour Prediction (FBP) System. His role in the education and training of fire personnel continued to expand into national level fire behaviour courses with the preparation and delivery of fire weather/behaviour training modules in Alberta and several other provinces and territories.

Nick has authored and co-authored a number of published papers documenting fire weather/behaviour cases studies and lightning detection network performance.

BOB MAZURIK

Bob Mazurik graduated with a Forest Technology Diploma from the Northern Alberta Institute of Technology (NAIT) in 1978. His career with the Alberta Forest Service started in 1977 cruising timber. Over the next few years Bob worked as a Forest Officer in High Level, Kinuso and Peace River.

In 1995, as part of the Land and Forest Regionalization initiative, Bob was appointed to the District Superintendent position of the East Peace District. In May, 1996 he was then appointed to the Position of Regional Forest Protection Officer for the Northwest Boreal Region. This new position was responsible for the Forest Protection program in the Northwest Region from this time until 2008. He continued to work full time in Forest Protection, working

as a Wildfire Operation officer and Wildfire Technologist in the Peace Wildfire Management Area with duties including FireSmart Community Protection and Fire and Landscape Planning. In January 2008, Bob took on the role of Provincial Fire Behaviour Specialist with the Provincial Forest Fire Centre (PFFC) in Edmonton and presently works in that position. The primary duties of this position are:

- Managing and providing support for the Spatial Fire Management System (SFMS) including maintaining the fire behaviour prediction system fuel grid (one of the key elements of SFMS)
- Administration of the Provincial Aerial Ignition Program
- Training and mentoring field staff in the use of fire behaviour models and decision support tools, including becoming the program lead in 2010 of Prometheus the Canadian Wildfire Growth Model,
- Actively participating in prescribed burning and wildfire suppression operations as a Fire Behavior Analyst (FBAN)

Bob took the Advanced Wildfire Behaviour Course in 1986 and then the Wildfire Specialist Course in 1997. He has been an FBAN on a number of prescribed fires including Mt Nestor, Mt Buller near Banff and Archer Lake north of Fort McMurray which was completed to study the effects of Mountain Pine Beetle on fire behaviour. He has worked extensively as an FBAN at the Fire Centre level assisting the Area Duty Officer during pre-suppression and suppression operations. Bob was assigned the role of the FBAN on the Flat Top Complex in May 2011. Presently he is a faculty member for the Western Cadre of the Advanced Wildfire Behaviour Course, the Advanced Wildfire Behaviour Specialist course, and is the Primary Instructor in Alberta for (SFMS) Alberta's Pre-Suppression planning tool. In 2010 he became the Chair for the Prometheus Wildfire Growth Model course.

Bob is an active member of the College of Alberta Professional Forest Technologists.

BRIAN J. STOCKS

Brian worked in forest fire research for the Canadian Forest Service in Sault Ste. Marie, Ontario for 35 years between 1967 and 2002:

- During the 1970s and 1980s, as a study leader and project leader, his research focused primarily on field investigations of fire behaviour, through the conducting of experimental burning programs in major Canadian fuel types that contributed directly to the development of the Canadian Forest Fire Behaviour Prediction System.
- Beginning in the late 1980s he became increasingly involved, as a senior fire scientist, in international, inter-disciplinary research in the area of forest fires and global change, with emphasis on the impacts of climate change on boreal fire regimes.
- During this period he led Canadian scientific delegations on experimental burning projects in Alaska, Siberia, South Africa, and Kenya, and co-coordinated international,

multidisciplinary experiments in Canada (e.g., the International Crown Fire Modelling Experiment in Canada's Northwest Territories, and the Ontario Mass Fire Experiment).

- He is the author or co-author of 190 scientific papers covering many aspects of forest fire and global change research, and is an Adjunct Professor of Fire Science in the Faculty of Forestry, University of Toronto.

In 2002 Brian retired as a senior research scientist, and formed a small company to provide consulting services. In this role he has worked on the development of the Canadian Wildland Fire Strategy and many current fire management issues across Canada. During his career he has conducted investigations on numerous serious wildfires, including fires involving substantial loss of life and property. He has a BScF degree from the University of Toronto and an MScF degree from the University of California.

DEANNA MCCULLOUGH

Deanna is the Director of Business Relations and Strategic Initiatives in the Wildfire Management Branch of Sustainable Resource Development. She was the project manager for the Flat Top Complex wildfire review.

Deanna graduated from the University of Alberta with a Bachelor of Science Degree in Forestry, She has over 25 years of experience working for the government of Alberta in forest and wildfire management positions. Over the last 8 years, Deanna has been involved in business planning, and the evaluation and refinement of various wildfire management strategies, standards, procedures and policies through internal and external reviews. She is a Registered Professional Forester with the College of Alberta Professional Foresters.

SHERRA MULDOON

In 1995, Sherra began her career with Alberta Sustainable Resource Development as a wildland firefighter where she completed five seasons in the initial attack program (Helitack and Rapattack). Sherra graduated with a Bachelor of Science Degree in Forestry from the University of Alberta. Sherra then took on various roles over an eight year period which evolved into the FireSmart Program Coordinator, including initiatives such as community protection, integration of fire, forest and land management and prescribed fire.

Sherra then became a wildfire consultant for Dennis Quintilio and Associates in 2009 and continues to work on various initiatives covering western Canada, with a primary focus on policy level wildfire reviews and FireSmart planning.

Highlights as a wildfire consultant include:

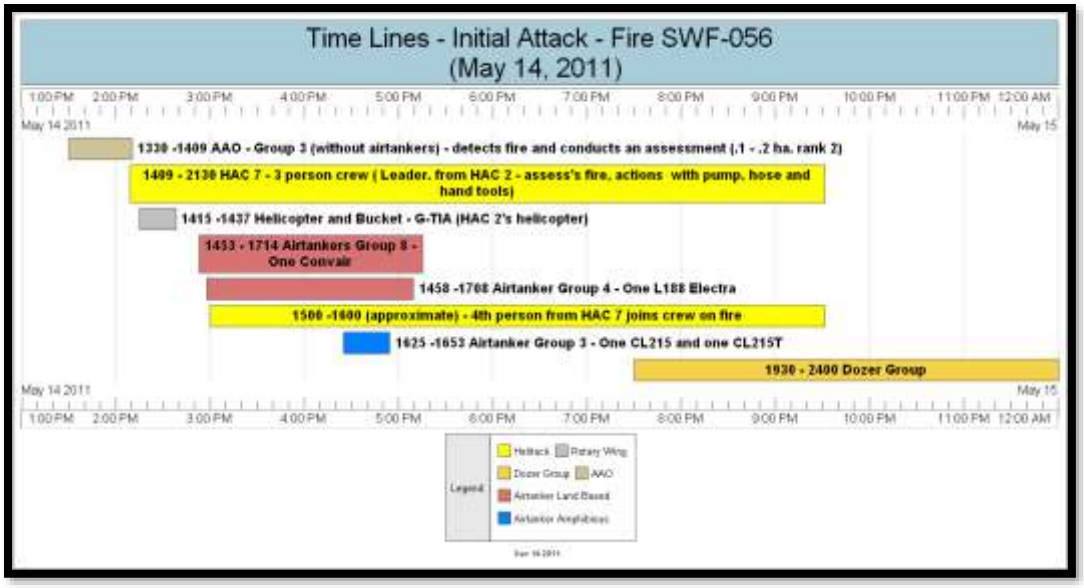
- Wildfire management program reviews, documentation reports, and landscape-level pilot projects across Western Canada
- Wildfire Preparedness Guides and Wildfire Mitigation Strategies (involving various communities across Alberta)

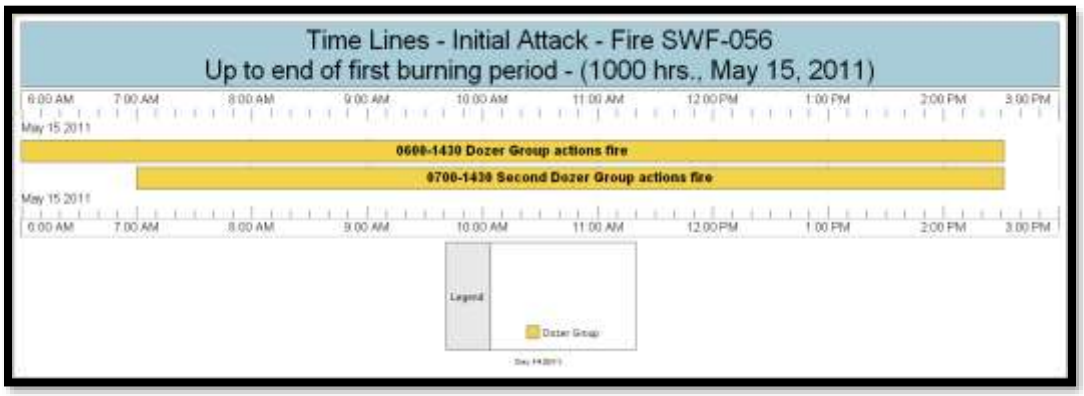
- FireSmart publications (FireSmart Guidebook for Upstream Oil and Gas Industry, FireSmart Field Guide for Upstream Oil and Gas Industry, Wildfire Prevention Best Management Practices for Oil and Gas Industry)
- Wildfire Preparedness Plans for Oil and Gas Industry
- Wildfire training (Atco, Oil and Gas Industry, Hinton Training Centre)

Sherra is a Registered Professional Forester with the College of Alberta Professional Foresters and holds various wildfire management certifications. She has been awarded the SRD Bright Idea Award and the Deputy Minister Award.

APPENDIX B - TIMELINE CHRONOLOGY OF INITIAL ATTACK FOR SWF-056 (MAY 14 - MAY 15)

Event Name	Start and end Date	Start Time	End Time	Category
Air Attack Officer - Group 3 (without airtankers) - detects wildfire and conducts an assessment (0.1-0.2 hectares, rank 2)	May 14	13:30	14:09	Air Attack Officer
HAC 7 - 3 person crew (Leader from HAC 2 assesses fire, actions with pump, hose and hand tools)	May 14	14:09	21:30	Helitack
Helicopter and Bucket - G-TIA (Helitack 2s helicopter)	May 14	14:15	14:37	Rotary Wing
Airtankers Group 8 - One Convair and Air Attack Officer	May 14	14:53	17:14	Airtanker Land Based
Airtanker Group 4 - One L-188 Electra and Air Attack Officer	May 14	14:58	17:08	Airtanker Land Based
HAC 7 - (fourth person joins crew)	May 14	15:00	21:30	Helitack
Airtanker Group 3 - One CL-215 and one CL-215T (Air Attack Officer)	May 14	16:25	16:53	Airtanker Amphibious
Dozer group	May 14	19:30	23:59	Dozer Group
Dozer group	May 15	06:00	14:30	Dozer Group
Dozer group	May 15	07:00	14:30	Dozer Group

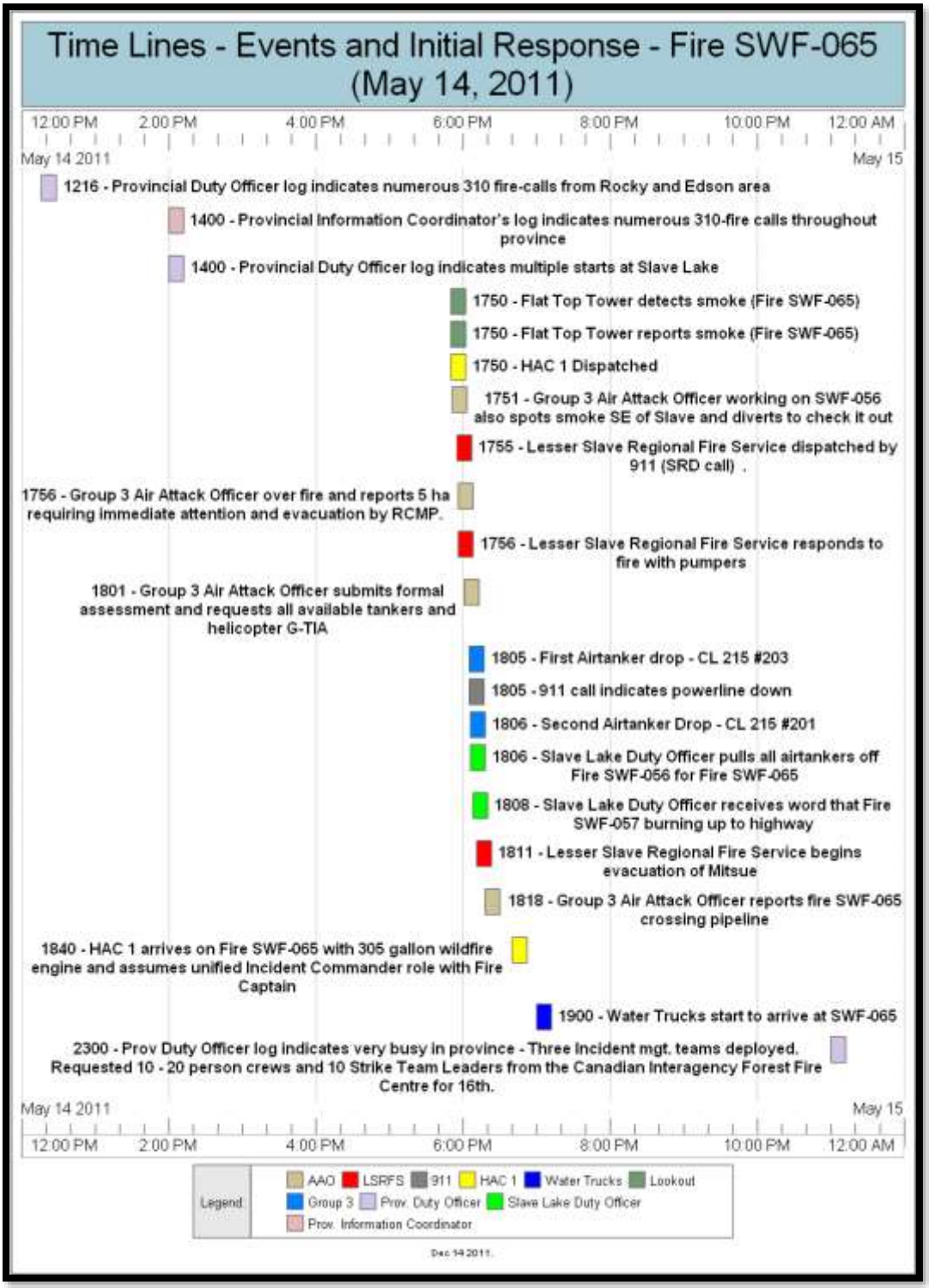

Time Lines - Initial Attack - Fire SWF-056
(May 14, 2011)
1330 -1409 AAO - Group 3 (without airtankers) - detects fire and conducts an assessment (.1 - .2 ha. rank 2)
1409 - 2130 HAC 7 - 3 person crew (Leader. from HAC 2 - assess's fire, actions with pump, hose and hand tools)
1415 -1437 Helicopter and Bucket - G-TIA (HAC 2's helicopter)
1453 - 1714 Airtankers Group 8 - One Convair
1458 -1708 Airtanker Group 4 - One L188 Electra
1500 -1600 (approximate) - 4th person from HAC 7 joins crew on fire
1625 -1653 Airtanker Group 3 - One CL215 and one CL215T
1930 - 2400 Dozer Group
Legend

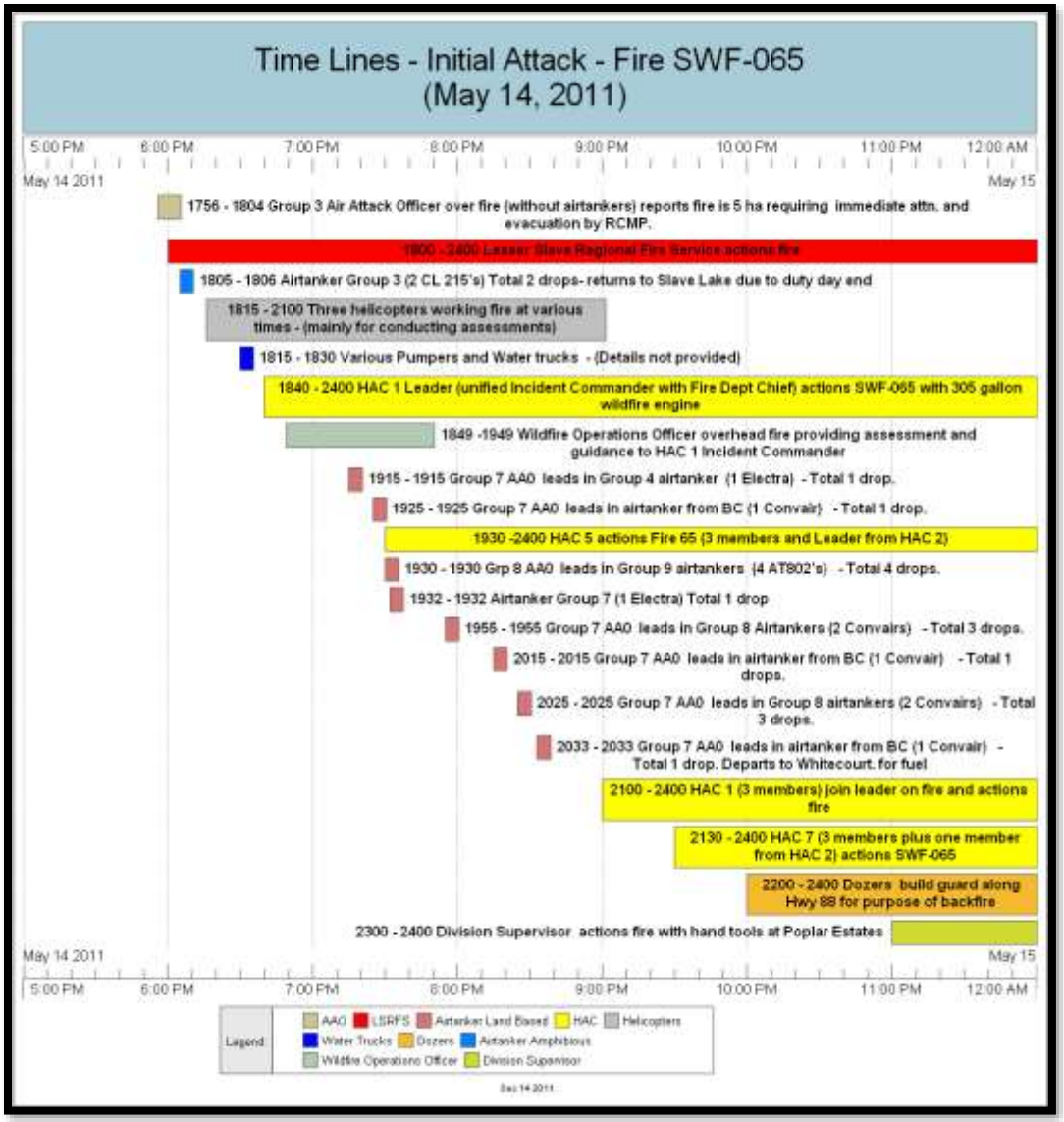

Time Lines - Initial Attack - Fire SWF-056
Up to end of first burning period - (1000 hrs., May 15, 2011)
0600-1430 Dozer Group actions fire
0700-1430 Second Dozer Group actions fire
Legend

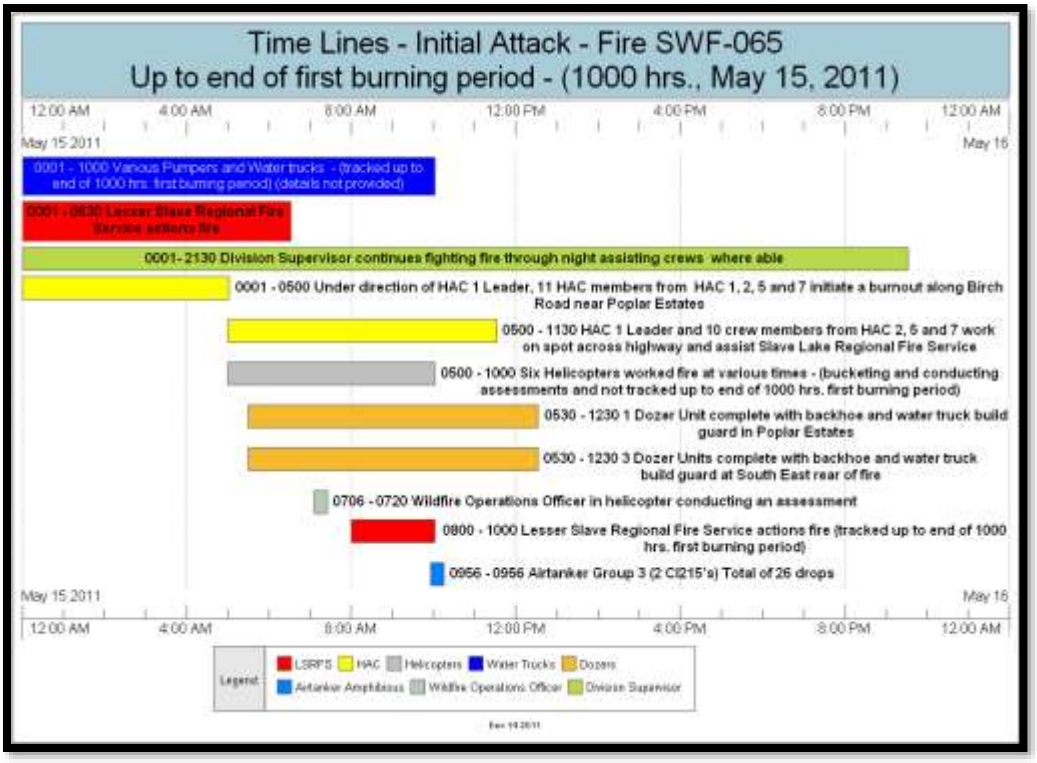
APPENDIX C - TIMELINE CHRONOLOGY OF INITIAL ATTACK FOR SWF-065 (MAY 14 - MAY 15)

Event Name (May 14)	Start Time	End Time	Category
Group 3 Air Attack Officer over wildfire (without airtankers) reports 5 hectares requiring immediate attention and evacuation by RCMP	17:56	18:04	Air Attack Officer
Fire Department actions fire	18:00	23:59	Fire Department
Airtanker Group 3 (2 CL 215s , Air Attack Officer) Total 2 drops- returns Slave due to duty day ending	18:05	18:06	Airtanker Amphibious
Three helicopters working fire at various times - (mainly for conducting assessments)	18:16	21:00	Helicopters
Various pumpers and water trucks working fire)	18:30	23:59	Water Trucks
HAC 1 Leader (Unified Incident Command with Fire Department Chief) actions SWF-065 with 305 gallon wildfire engine	18:40	23:59	HAC
WOO overhead fire providing assessment and guidance to HAC 1 I/C	18:49	19:49	Wildfire Information Officer
Group 7 AAO leads in Group 4 airtanker (1 Electra) - Total 1 drop	19:15	19:15	Airtanker Land Based
Group 7 AAO leads in airtanker from British Columbia (1 Convair) - Total 1 drop	19:25	19:25	Airtanker Land Based
Group 8 AAO leads in Group 9 airtankers (4 AT802s) - Total of 4 drops	19:30	19:30	Airtanker Land Based
HAC 5 actions SWF-065 (3 members and Leader from HAC 2)	19:30	23:59	HAC
Airtanker Group 7 (1 Electra – Air Attack Officer) Total 1 drops	19:32	19:32	Airtanker Land Based
Group 7 Air Attack Officer leads in Group 8 Airtankers (2 Convairs) - Total 3 drops	19:55	20:55	Airtanker Land Based
Group 7 Air Attack Officer leads in Airtanker from British Columbia (1 Convair) - Total 1 drops	20:15	20:15	Airtanker Land Based
Group 7 Air Attack Officer leads in Group 8 Airtankers (2 Convairs) - Total 3 drops	20:25	20:25	Airtanker Land Based
Group 7 AAO (leads in airtanker from British Columbia (1 Convair) - Total 1 drop. Departs to Whitecourt for fuel	20:33	20:33	Airtanker Land Based
HAC 1 (3 members) join Leader on fire and actions it	21:00	23:59	HAC
HAC 7 actions SWF-065 (3 members plus one member from HAC 2)	21:30	23:59	HAC
Dozers - Build guard along Highway 88 for purpose of backfire	22:00	23:59	Dozers
Division Supervisor Actions fire with hand tools at Poplar Estates	23:00	23:59	Division Supervisor

Event Name (May 15)	Start Time	End Time	Category
Under direction of HAC 1 Leader (Incident Commander), HAC 1, 2, 5 and 7 initiate a burnout along Birch Road near Poplar Estates	00:01	05:00	HAC
Fire Department actions fire	00:01	06:30	Fire Department
Various pumpers and water trucks - (not tracked after 10:00)	00:01	10:00	Water Trucks
Division Supervisor continues fighting fire through night assisting crews where can	00:01	21:30	Division Supervisor
Six helicopters working fire at various times - (mainly for conducting assessments and not tracked after 10:00)	05:00	10:00	Helicopters
HAC 1 Leader (IC) and HAC 2, 5 and 7 working on spot across highway and assisting Fire Department	05:00	11:30	HAC
1 dozer group complete with backhoe and water truck build guard in Poplar Estates	05:30	12:30	Dozers
3 dozer groups complete with backhoe and water truck build guard at South East rear of fire	05:30	12:30	Dozers
Wildfire Operations Officer in helicopter conducting an assessment	07:06	07:20	WOO
Fire Department actions fire (not tracked after 10:00)	08:00	10:00	Fire Department
Airtanker Group 3 (2 CL-215s - Air Attack Officer) Total 26 drops from start time	09:56	09:56	Airtanker Amphibious


Time Lines - Events and Initial Response - Fire SWF-065 (May 14, 2011)
12:00 PM
2:00 PM
4:00 PM
6:00 PM
8:00 PM
10:00 PM
12:00 AM
May 14 2011
May 15
1216 - Provincial Duty Officer log indicates numerous 310 fire-calls from Rocky and Edson area
1400 - Provincial Information Coordinator's log indicates numerous 310-fire calls throughout province
1400 - Provincial Duty Officer log indicates multiple starts at Slave Lake
1750 - Flat Top Tower detects smoke (Fire SWF-065)
1750 - Flat Top Tower reports smoke (Fire SWF-065)
1750 - HAC 1 Dispatched
1751 - Group 3 Air Attack Officer working on SWF-056 also spots smoke SE of Slave and diverts to check it out
1755 - Lesser Slave Regional Fire Service dispatched by 911 (SRD call) .
1756 - Group 3 Air Attack Officer over fire and reports 5 ha requiring immediate attention and evacuation by RCMP.
1756 - Lesser Slave Regional Fire Service responds to fire with pumpers
1801 - Group 3 Air Attack Officer submits formal assessment and requests all available tankers and helicopter G-TIA
1805 - First Airtanker drop - CL 215 #203
1805 - 911 call indicates powerline down
1806 - Second Airtanker Drop - CL 215 #201
1806 - Slave Lake Duty Officer pulls all airtankers off Fire SWF-056 for Fire SWF-065
1808 - Slave Lake Duty Officer receives word that Fire SWF-057 burning up to highway
1811 - Lesser Slave Regional Fire Service begins evacuation of Mitsue
1818 - Group 3 Air Attack Officer reports fire SWF-065 crossing pipeline
1840 - HAC 1 arrives on Fire SWF-065 with 305 gallon wildfire engine and assumes unified Incident Commander role with Fire Captain
1900 - Water Trucks start to arrive at SWF-065
2300 - Prov Duty Officer log indicates very busy in province - Three Incident mgt. teams deployed. Requested 10 - 20 person crews and 10 Strike Team Leaders from the Canadian Interagency Forest Fire Centre for 16th.
May 14 2011
May 15
12:00 PM
2:00 PM
4:00 PM
6:00 PM
8:00 PM
10:00 PM
12:00 AM
Legend
AAO
LSRFS
911
HAC 1
Water Trucks
Lookout
Group 3
Prov. Duty Officer
Slave Lake Duty Officer
Prov. Information Coordinator
Dec 14 2011


Time Lines - Initial Attack - Fire SWF-065
(May 14, 2011)
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
11:00 PM
12:00 AM
May 14 2011
May 15
1756 - 1804 Group 3 Air Attack Officer over fire (without airtankers) reports fire is 5 ha requiring immediate attn. and evacuation by RCMP.
1800 - 2400 Lesser Slave Regional Fire Service actions fire
1805 - 1806 Airtanker Group 3 (2 CL 215's) Total 2 drops- returns to Slave Lake due to duty day end
1815 - 2100 Three helicopters working fire at various times - (mainly for conducting assessments)
1815 - 1830 Various Pumpers and Water trucks - (Details not provided)
1840 - 2400 HAC 1 Leader (unified Incident Commander with Fire Dept Chief) actions SWF-065 with 305 gallon wildfire engine
1849 -1949 Wildfire Operations Officer overhead fire providing assessment and guidance to HAC 1 Incident Commander
1915 - 1915 Group 7 AA0 leads in Group 4 airtanker (1 Electra) - Total 1 drop.
1925 - 1925 Group 7 AA0 leads in airtanker from BC (1 Convair) - Total 1 drop.
1930 -2400 HAC 5 actions Fire 65 (3 members and Leader from HAC 2)
1930 - 1930 Grp 8 AA0 leads in Group 9 airtankers (4 AT802's) - Total 4 drops.
1932 - 1932 Airtanker Group 7 (1 Electra) Total 1 drop
1955 - 1955 Group 7 AA0 leads in Group 8 Airtankers (2 Convairs) - Total 3 drops.
2015 - 2015 Group 7 AA0 leads in airtanker from BC (1 Convair) - Total 1 drops.
2025 - 2025 Group 7 AA0 leads in Group 8 airtankers (2 Convairs) - Total 3 drops.
2033 - 2033 Group 7 AA0 leads in airtanker from BC (1 Convair) - Total 1 drop. Departs to Whitecourt. for fuel
2100 - 2400 HAC 1 (3 members) join leader on fire and actions fire
2130 - 2400 HAC 7 (3 members plus one member from HAC 2) actions SWF-065
2200 - 2400 Dozers build guard along Hwy 88 for purpose of backfire
2300 - 2400 Division Supervisor actions fire with hand tools at Poplar Estates
Legend
AAO
LSRFS
Airtanker Land Based
HAC
Helicopters
Water Trucks
Dozers
Airtanker Amphibious
Wildfire Operations Officer
Division Supervisor


Time Lines - Initial Attack - Fire SWF-065
Up to end of first burning period - (1000 hrs., May 15, 2011)
12:00 AM
4:00 AM
8:00 AM
12:00 PM
4:00 PM
8:00 PM
12:00 AM
May 15 2011
May 16
0001 - 1000 Various Pumpers and Water trucks - (tracked up to end of 1000 hrs. first burning period) (details not provided)
0001 - 0830 Lesser Slave Regional Fire Service actions fire
0001- 2130 Division Supervisor continues fighting fire through night assisting crews where able
0001 - 0500 Under direction of HAC 1 Leader, 11 HAC members from HAC 1, 2, 5 and 7 initiate a burnout along Birch Road near Poplar Estates
0500 - 1130 HAC 1 Leader and 10 crew members from HAC 2, 5 and 7 work on spot across highway and assist Slave Lake Regional Fire Service
0500 - 1000 Six Helicopters worked fire at various times - (bucketing and conducting assessments and not tracked up to end of 1000 hrs. first burning period)
0530 - 1230 1 Dozer Unit complete with backhoe and water truck build guard in Poplar Estates
0530 - 1230 3 Dozer Units complete with backhoe and water truck build guard at South East rear of fire
0706 - 0720 Wildfire Operations Officer in helicopter conducting an assessment
0800 - 1000 Lesser Slave Regional Fire Service actions fire (tracked up to end of 1000 hrs. first burning period)
0956 - 0956 Airtanker Group 3 (2 CL215's) Total of 26 drops
May 15 2011
May 16
12:00 AM
4:00 AM
8:00 AM
12:00 PM
4:00 PM
8:00 PM
12:00 AM
Legend
LSRFS
HAC
Helicopters
Water Trucks
Dozers
Airtanker Amphibious
Wildfire Operations Officer
Division Supervisor

APPENDIX D - DETECTION MESSAGE AND WILDFIRE REPORT FOR SWF-056

Database: FIRES Prod-Ora12c

Detection Message

FP40 2017/07/06 11:50:23

1. Message Number: SL005			2. Reported Date/Time: (yyyy/mm/dd hh:mm)	2011/05/14 13:30	
3. Agent Type and Agent	Air Patrol A/C Reg: _____ Helitack Support Crew Fixed Wing Helitack Man-up Machine Rapattack Crew Rotor Wing	Ground Patrol Forest Officer Guardian Patrolman Ground Patrol by Industry	Lookout/ Camera ID: _____	Unplanned 310-FIRE LFS personnel Unplanned LFS Aircraft Unplanned Public Aircraft	Other Government Agencies General Public Unplanned Industry
4. Discovered Date/Time: (yyyy/mm/dd hh:mm)	2011/05/14 13:25				
5. Location:	LAT 55.216667		LONG -114.883333		
LSD 02	SEC 08	TWP 072	RGE 06	MER 5	
6. Bearing:	Degrees	Minutes	7. Distance From Agent (km):		
8. Cross Bearing:	Degrees	Minutes	X Bearing Source:		
8B. 2nd Cross Bearing:	Degrees	Minutes	X Bearing Source:		
9. True Assist Source:					
10. Location Description:					

11. Smoke Type	12. Smoke Color	13. Base Size	14. Condition of Smoke
Heavy Column Intermittent Light Column Scattered	Black Dark Grey Light Grey Medium Grey White	Large Medium Not Visible Small Very Large	Drifting High Drifting Low Straight Up

15. Remarks/ Additional Info: [redacted] BD135 found
Fire was detected while Birddog was on a familiarization flight with AAO. No tankers were present with group as they were still arriving from Abbottsford. Resources requested but none available until r/w TIA arrived with crew arou

OFFICE USE ONLY	Confirmed Location SEC TWP RGE MER	Lookout Advised Result (Date/Time) 0000/00/00 00:00	
Fire # SWF-056-11	Next Message #	Next Message Reported Date	
Wildfire Detection Signed Off: Yes	Date: 07/11/2011 15:38:22	Userid: [redacted]	

✈ *Aerial Patrol Supplement* ✈

16. Fire Size (Ha):	.00	17. Slope (%):		18. Aspect:	N	NW	W	SW	S	SE	E	NE

19. Fuel Type

C1 Spruce / Lichen Woodland	C2 Boreal Spruce	C3 Mature Jack or Lodgepole Pine
C4 Immature Jack or Lodgepole Pine	C5 Red and White Pine	C6 Conifer Plantation
C7 Ponderosa Pine / Douglas-fir	D1 Leafless Aspen	M1 Boreal Mixedwood Leafless
M2 Boreal Mixedwood Green	M3 Dead Balsam Fir Mixedwood-Leafless	M4 Dead Balsam Fir Mixedwood-Green
O1a Matted Grass	O1b Standing Grass	S1 Jack or Lodgepole Pine Slash
S2 White Spruce / Balsam Slash	S3 Coastal Cedar / Hemlock / Douglas-fir Slash	

20. Fire Behaviour: Smouldering, Creeping, Cardling, Spotting, Running, Crowning

21. Fire Spread Potential: Limited N S E W Why? / Unlimited N S E W Why?

22. Access

23. Water Source

24. Comments:
(Resources working fire, equipment in area, values at risk, tourists, camps, location of facilities,etc)

25. Caller Info:	Phone #	Home Phone #	26. Result Code WF

Page 1 of 1

Database: Prod-Ora12c

WILDFIRE REPORT

FP48 (Apr 2007)

Wildfire #: SWF-056-11 Wildfire Name: Flat Top Complex Ecological Wildfire Mgmt. Zone: Yes **No**

Abandoned Campfire: Yes **No**

	Deg.	Min. Dec.	Decimal Degrees	--- Legal Description ---				
Latitude:	55	11.9836	55.199727	01	06	072	06	5
Longitude:	-114	54.0874	-114.901457	LSD	Sec	Twp	Rng	Mer

Assessed By: [redacted]

Assessment Resource: AAO

Detection Message: SL005

Detection Information Signed Off: **Yes** No

Assessment Result:

Beyond Resources Capability

Delayed Action - No Resources Available

Modified Action

Delayed Action - Lower Priority

Immediate Action

Dispatched Resource: Air Tanker FPD Staff FTAC **HAC** RAP WFC2

Dispatch Date/Time: 2011/05/14 13:36 Started to Fire Date/Time: 2011/05/14 13:49

Getaway Obj.: 3 minutes Tanker Blue 5 minutes Tanker Red 10 minutes Tanker Yellow **30 minutes** 60 minutes Off Duty Project Status

Dispatched Resources Diverted Date/Time: _____ Diverted To Fire #: _____ **OR** Detection Message #: _____

Initial Action By Non-FPD:

IA Resource: Fire Department Industry Land Owner Other Agency Public

Name (first and last) of this Resource or Person Supervising this Resource: _____

Did FPD take physical suppressive action on this wildfire? Yes No

OR

Initial Action By FPD:

IA Resource: Air Tanker FPD Staff FTAC HAC RAP WFC2

Name (first and last) of this Resource or Person Supervising this Resource: _____

IA Access (Crews only): **Conventional R/W** Ground Hover Exit Rappel

Initial Action Resource - Amount and Distance

IA Resource Type	Amount	Method of Travel	Distance Travelled (km)
Airtanker		Fixed Wing	
Dozer		Other	
Ground Tanker		Rotor Wing	50.00
Helitanker	1	Walk	
Other		Vehicle	
People			

Time: _____ (mins)

Operations During First Overnight Period? **Yes** No

Bucketing on this fire? **Yes** No Type of Rotor Wing: Light **Intermediate** Medium Heavy

Distance from water source: 1 km

Date/Time of First Drop: 14/05/2011 14:20:00

Area Burned:

1. Forest Protection Area 16,011.20 ha.
2. Non Forest Protection Area . ha.
3. Grand Total (1+2) 16,011.20 ha.

Origin:

B.C. DND Indian Reservation
Metis Settlement N.W.T. National Park
Private Land **Provincial Land** Provincial Park
Saskatchewan U.S.A.

Objectives Met: *

Report Time:	Yes	No	**N/A**	(5 min. or less)
Getaway Time:	**Yes**	No	N/A	(As per PPS)
IA Size:	Yes	No	N/A	(2 ha. or less)
1st Burn Period:	Yes	**No**	N/A	(1000h next day)

* N/A - Objective is not applicable to this wildfire.

Objectives Comments: (See page 3 for complete comments)

Extreme winds and ROS

SWF-056-11 Page 1 of 3 2017/07/06 11:47:04 Report Page 1 of 3

Database: Prod-Ora12c

WILDFIRE REPORT

FP48 (Apr 2007)

	Date:	Size (ha):	Lapse Time:
Wildfire Started:	2011/05/14 13:20	n/a	n/a
Discovered:	2011/05/14 13:25	n/a	5m
Reported:	2011/05/14 13:30	n/a	5m
Dispatched:	2011/05/14 13:36	n/a	6m
Started for Fire:	2011/05/14 13:49	n/a	13m
IA Arrival Time at Fire:	2011/05/14 14:10	n/a	21m
Assessment:	2011/05/14 13:40	0.20	- 30m
Air Fire Fighting Started:	2011/05/14 14:20	1.50	40m
Ground Fire Fighting Started:	2011/05/14 14:21	1.50	41m
Contained (BH, UC):	2011/05/23 14:51	18,939.00	9d31m
Controlled (UC):	2011/05/23 17:00	16,856.50	14d2h40m
Turned Over:			null
Extinguished:	2011/07/23 15:07	16,011.20	75d47m

Fire Cause: Lightning ☐ Human Caused ☑

Prevention Incident #: 24717

Permit #:

WUI Incident: Yes No (If Yes, see Remarks)

Carryover Fire: ☐

Ha. Burning At Carryover:

Restart Of Fire #:

Overrun By Wildfire #:

Assessment DateTime:

Wildfires Overran:

Remarks: (See page 3 for complete remarks)

MAY 14
Detection time updated as per radio log - [redacted]

1330 BD135 sites smoke AAO comments (Fire was detected while Birddog was on a familiarization flight with AAO. No tankers were present with group as they were still arriving from Abbottsford. Resources requested but none available until r/w TIA arrived with crew around 14:05. Water source close by for bucketing and pump however fire was beginning to spot uphill.
No tankers available.)
1410 - GTIA arrives with HAC 7 off loads the crew, and starts bucketing at 1420
1423 IC on 056 reports burning into cutblocks and spreading rapidly
1440 flash in cutbock, over 4 hectares, spotting potential, runs on heads, 200 m. Up front rank 4
1456 IC reports burning in cutblock and grass. Tankers working. 6 miles S of Slave on Bayer Road. Deciduous trees
1503 BD132 says high priority, two loads dropped, burning into C1, C2, flanking action. First drops not successful
1512 BD132 will need a replacement at 1600
1551 BD132 finishing with Tanker 53. Success on right flank. Awaiting replacement
1601 BD132 need replacement, going for fuel. R/W bucketing on head
1625 [redacted] (Assessor) over fire. Flank fire activity has died down. Torching half way up hill. Heavy equipment required. Nothing more at this time
1634 [redacted] (assessor) reports fire now 30 hectares
2023 BD130 enroute to fire from MM

MAY 15
1210 BD130 Tanker 489 coming to join. Sever spot fire. unorganized fire front. Ground groups working tail. Dozers not effective on spot fires. Need skimmers
1244 BD130 fire growth becoming intense. Pull tankers to other priorities, not effective with one tanker
1249 BD130 diverted to SWF-074
1327 BD130 Rank 5/6 fire right flank. Large collection of spot fires. Most northwest point of fire is 55 17.49 N, 114 57.41 W
1412 BD132 need more airpower/air attack
1625 NHH - Active spot 1-1.5 km ahead of fire. West end of fire smoked in, East side no one on ground
1633 NHH - bucketing not effective on spot fire
2039 LSK - East Flank 55 20.38 x 115 00.09 - Structures on fire
2023 SIL - Fire crossed through Widewater

Completed FP41 Attached ☐ If FP41 not attached, explain

Labelled Initial Action Photo Attached ☐ If photo not attached, explain

Wildfire Mapping Required: Yes No Map attached: Yes No

Incident Commander Signature: Date Submitted:

Incident Commander Printed Name:

Signed Off By Signature: Signed Off Date:

Signed Off By Printed Name:

SWF-056 - 11 Page 2 of 3 2017/07/06 11:47:04 Report Page 2 of 3

Database: Prod-Ora02c **WILDFIRE REPORT** FP40 (Apr 2007)

Objectives Comments:

Extreme winds and ROS

Remarks:

MAY 14
Detection time updated as per radio log - [redacted]

1330 BD136 sites smoke AAO comments (Fire was detected while Bidddog was on a familiarization flight with AAO. No tankers were present with group as they were still arriving from Abbotsford. Resources requested but none available until the TIA arrived with crew around 14:05. Water source close by for bucketing and pump however fire was beginning to spot uphill.
No tankers available.)
1410 - GTA arrives with HAC 7 off loads the crew, and starts bucketing at 1420
1425 IC on 056 reports burning into cutblocks and spreading rapidly
1440 flash is cutblock, over 4 hectares, spotting potential, runs on heads, 200 m Up front rank 4
1456 IC reports burning in cutblock and grass. Tankers working. 6 miles S of Slave on Bayer Road. Deciduous trees
1508 BD132 says high priority, two loads dropped, burning into C1, C2, flanking action. Flat drops not successful
1512 BD132 will need a replacement at 1630
1551 BD132 finishing with Tanker 53. Success on right flank. Awaiting replacement
1601 BD132 need replacement, going for fuel. FPW bucketing on head
1625 [redacted] (Assessor) over fire. Flank fire activity has died down. Torching half way up hill. Heavy equipment required. Nothing more at this time
1634 [redacted] assessor reports fire now 90 hectares
2028 BD130 enroute to fire from MM

MAY 15
1210 BD130 Tanker 489 coming to join. Seven spot fire, unorganized fire front. Ground groups working tail. Dozers not effective on spot fires. Need skimmers
1244 BD130 fire growth becoming intense. Pull tankers to other priorities, not effective with one tanker
1249 BD130 diverted to SWF-074
1327 BD130 Rank 5/6 fire right flank. Large collection of spot fires. Most northwest point of fire is 55 17.49 N, 114 57.41 W
1412 BD132 need more skipower/air attack
1625 NH4 - Active spot 1.1.5 km ahead of fire. West end of fire is smoked in, East side no one on ground
1638 NH4 - bucketing not effective on spot fire
2039 LSK - East Flank 55 20.83 x 115 00.09 - Structures on fire
2026 SII - Fire crossed through Widewater
2041 SII - South of Kiausu, fire hit lake shore.
2149 SII - Fire down Hwy 2 around Widewater/Canyon creek for miles

MR blind area FT screened

Size updated as per GPS of burnt area of fire, chunk of upburnt aspen was taken out of the total [redacted]

Weather info taken from FT tower's PM WX. KM

SWF-058 - 11 Page 3 of 3 2017/07/06 11:47:04 Report Page 3 of 3

APPENDIX E - AIRTANKER DROPS ON SWF-056 (MAY 14 AND MAY 15)

Time	Group #	Tail #	Tanker Type	Volume (liters) water	Total Volume Water	Volume (liters) LC 95A	Total Volume LC95A	Total Volume Water and LC 95A
May 14								
14:53	Group 8	453	Convair			7955	7955	7955
14:58	Group 8 AAO leading in Group 4 A/T	490	Electra			11365	11365	11365
15:34	Group 8 AAO leading in Group 4 A/T	490	Electra			11365	11365	11365
15:34	Group 8	453	Convair			7955	7955	7955
15:55	Group 8	453	Convair			7955	7955	7955
16:25	Group 3	201	CL 215	5455 x 3	16365			16365
16:25	Group 3	203	CL 215	5455 x 3	16365			16365
16:50	Group 4 AAO leading in Group 3 A/T	203	CL 215	5455 x 2	16365			16365
16:53	Group 4 AAO leading in Group 3 A/T	201	CL 216	5455 x 2	16365			16365
17:08	Group 4	490	Electra			11365	11365	11365
17:14	Group 4 AAO leading in Group 8 A/T	453	Convair			7955	7955	7955
Totals for May 14					**54550**		**65915**	**120465**
May 15								
12:04	Group 2	454	Convair			7955	7955	7955
12:25	Group 2 AAO leading in Group 7 A/T	485	Electra			11365	11365	11365
12:27	Group 2	454	Convair			7955	7955	7955
12:51	Group 2	454	Convair			7955	7955	7955
13:13	Group 2	454	Convair			7955	7955	7955
13:16	Group 2 AAO leading in BC A/T	489	Electra			11365	11365	11365
13:36	Group 2	454	Convair			7955	7955	7955
Totals for May 15							**62505**	**62505**
Grand Total for May 14 and 15								**182970**

APPENDIX F - AIRTANKER REQUESTS (MAY 11 THROUGH MAY 16)

Area	May 11	May 12	May 13	May 14	May 15	May 16	Grand Total
Calgary	1						1
Edson	2			6	6	3	17
Fort McMurray	1	3		3	3	1	11
Grande Prairie				2	2	1	5
High Level		1					1
Lac La Biche	2	1		1	6	3	13
Peace River					1		1
Rocky Mtn House	1	1		2	3	1	8
Slave Lake	4			8	10	7	29
Whitecourt	4			5	4	1	14
Grand Total	**15**	**6**	**0**	**27**	**35**	**17**	**100**

Note: Excludes base changes and practices

APPENDIX G - AIRTANKER REQUESTS BY VALUES AT RISK (MAY 14 AND MAY 15)

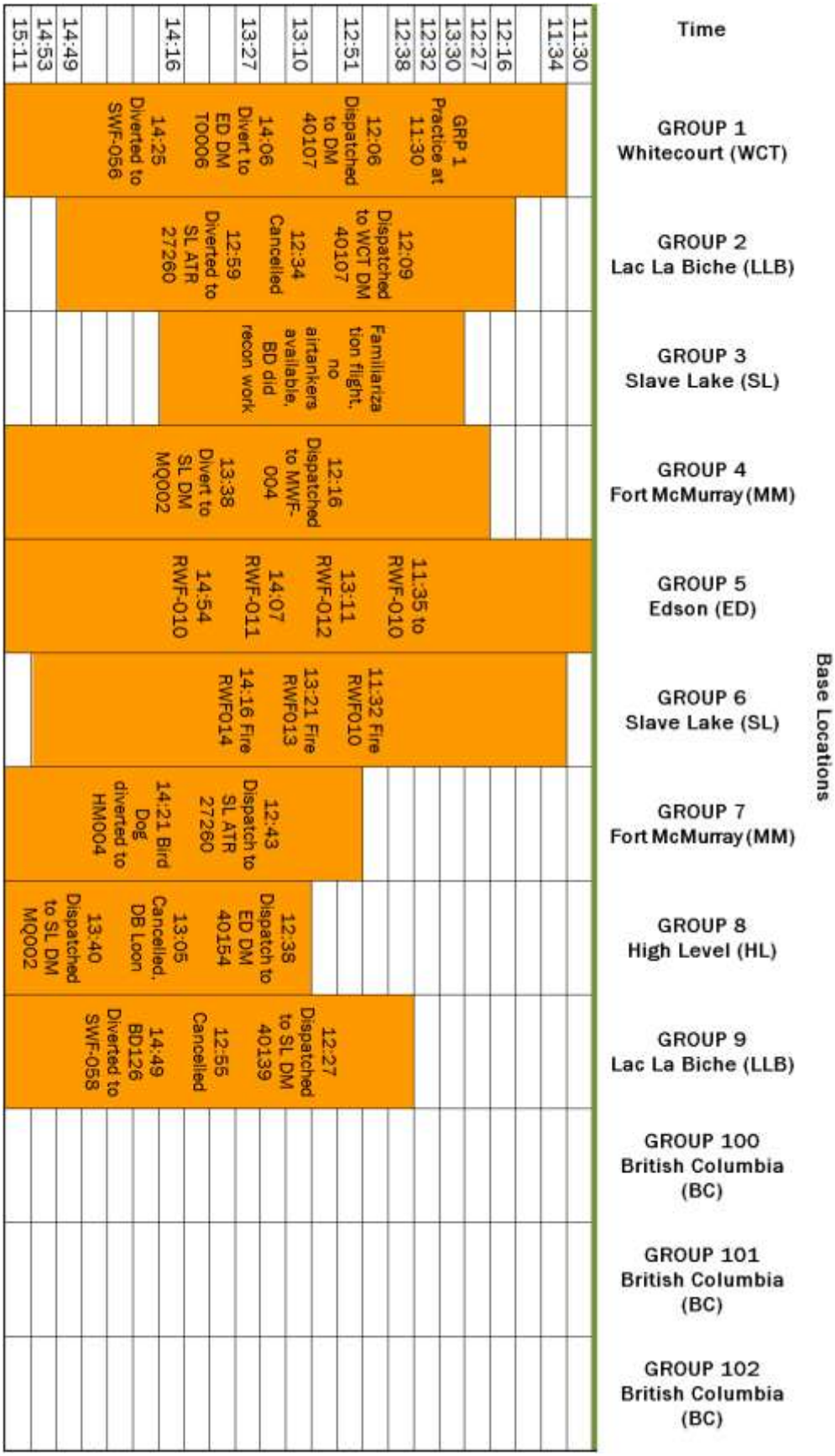
Date	Values at Risk	Edson	Fort McMurray	Grande Prairie	Lac La Biche	Peace River	Rocky Mtn House	Slave Lake	Whitecourt	Grand Total
May 5	Community		2					2	1	5
	Infrastructure		1							1
	Life	2					1			3
	Natural Resources				1		1			2
	Other	4		2				6	4	16
Total		**6**	**3**	**2**	**1**		**2**	**8**	**5**	**27**
May 15	Community		2					5	1	8
	Infrastructure		1					1		2
	Life	1								1
	Natural Resources				6	1	2	2	2	13
	Other	5		2			1	2	1	11
Total		**6**	**3**	**2**	**6**	**1**	**3**	**10**	**4**	**35**
Grand Total		**12**	**6**	**4**	**7**	**1**	**5**	**18**	**9**	**62**

*Note: Excludes base changes and practices

APPENDIX H - PROVINCIAL AIRTANKER GROUPS – TIME AIRBORNE (MAY 14)

Notes: GRP 3 Flight times taken from drop reports as tracking unit was not working properly

ATR = Airtanker Request
BD = Bird Dog
DB = Day Base
DM = Detection Message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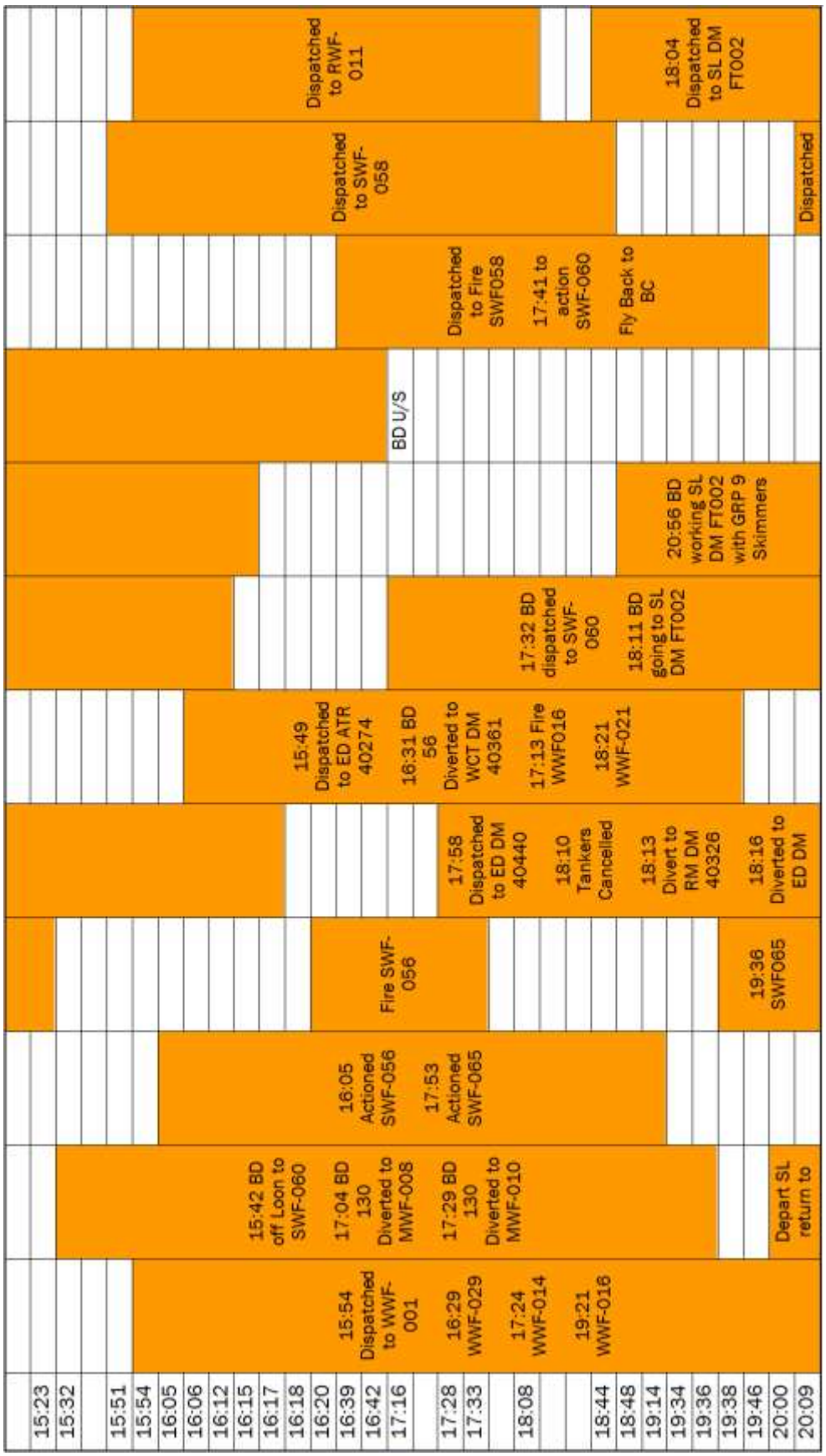
11:34
12:16
12:27
13:30
12:32
12:38
12:51
13:10
13:27
14:16
14:49
14:53
15:11
GROUP 1 Whitecourt (WCT)
GRP 1 Practice at 11:30
12:06 Dispatched to DM 40107
14:06 Divert to ED DM T0006
14:25 Diverted to SWF-056
GROUP 2 Lac La Biche (LLB)
12:09 Dispatched to WCT DM 40107
12:34 Cancelled
12:59 Diverted to SL ATR 27260
GROUP 3 Slave Lake (SL)
Familiarization flight. no airtankers available. BD did recon work.
GROUP 4 Fort McMurray (MM)
12:16 Dispatched to MWF-004
13:38 Divert to SL DM MQ002
GROUP 5 Edson (ED)
11:35 to RWF-010
13:11 RWF-012
14:07 RWF-011
14:54 RWF-010
GROUP 6 Slave Lake (SL)
11:32 Fire RWF010
13:21 Fire RWF013
14:16 Fire RWF014
GROUP 7 Fort McMurray (MM)
12:43 Dispatch to SL ATR 27260
14:21 Bird Dog diverted to HM004
GROUP 8 High Level (HL)
12:35 Dispatch to ED DM 40154
13:05 Cancelled. DB Loon
13:40 Dispatched to SL DM MQ002
GROUP 9 Lac La Biche (LLB)
12:27 Dispatched to SL DM 40139
12:55 Cancelled
14:49 BD126 Diverted to SWF-058
GROUP 100 British Columbia (BC)
GROUP 101 British Columbia (BC)
GROUP 102 British Columbia (BC)
Base Locations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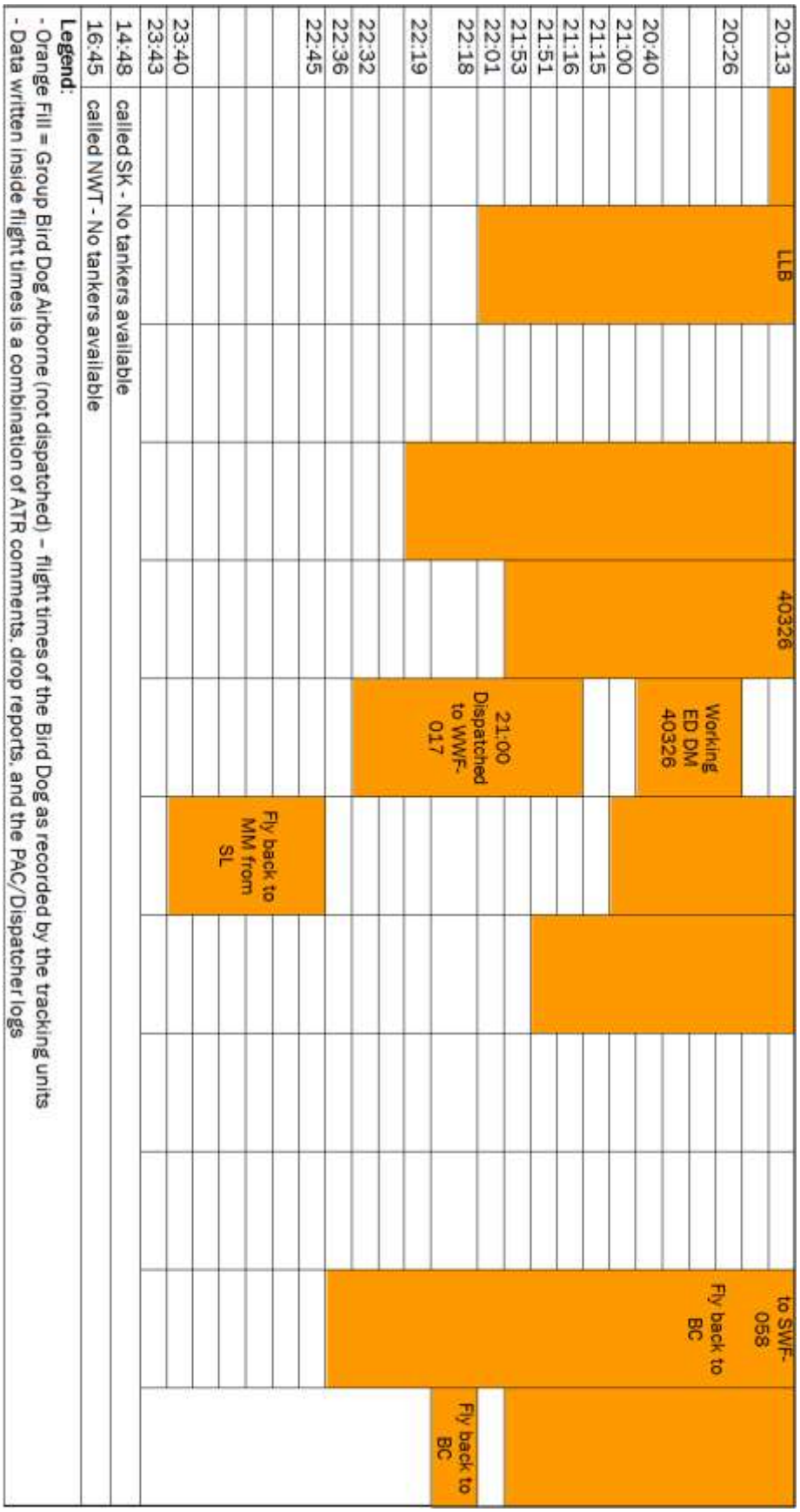
17:16
17:28
17:33
18:08
18:44
18:48
19:14
19:34
19:36
19:38
19:46
20:00
20:09
15:54 Dispatched to WWF-001
16:29 WWF-029
17:24 WWF-014
19:21 WWF-016
15:42 BD off Loon to SWF-060
17:04 BD 130 Diverted to MWF-008
17:29 BD 130 Diverted to MWF-010
Depart SL return to
16:05 Actioned SWF-056
17:53 Actioned SWF-065
Fire SWF-056
19:36 SWF065
15:49 Dispatched to ED ATR 40274
16:31 BD 56 Diverted to WCT DM 40361
17:13 Fire WWF016
18:21 WWF-021
17:58 Dispatched to ED DM 40440
18:10 Tankers Cancelled
18:13 Divert to RM DM 40326
18:16 Diverted to ED DM
BD U/S
17:32 BD dispatched to SWF-060
18:11 BD going to SL DM FT002
20:56 BD working SL DM FT002 with GRP 9 Skimmers
Dispatched to Fire SWF058
17:41 to action SWF-060
Fly Back to BC
Dispatched to SWF-058
Dispatched to RWF-011
18:04 Dispatched to SL DM FT002
Dispatched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20:26
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21:00
21:15
21:16
21:51
21:53
22:01
22:18
22:19
22:32
22:36
22:45
23:40
23:43
14:48
16:45
LLB
40326
Working ED DM 40326
21:00 Dispatched to WWF-017
Fly back to MM from SL
to SWF-058
Fly back to BC
Fly back to BC
called SK - No tankers available
called NWT - No tankers available
Legend:
- Orange Fill = Group Bird Dog Airborne (not dispatched) – flight times of the Bird Dog as recorded by the tracking units
- Data written inside flight times is a combination of ATR comments, drop reports, and the PAC/Dispatcher logs

APPENDIX I - DETECTION MESSAGE AND WILDFIRE REPORT FOR SWF-065

Database: FIRES Prod-Ora12c

Detection Message

FP40 2017/07/06 11:50:05

1. Message Number:	FT002	2. Reported Date/Time: (yyyy/mm/dd hh:mm)	2011/05/14 17:46		
3. Agent Type and Agent	Air Patrol A/C Reg: _____ Helitack Support Crew Fixed Wing Helitack Man-up Machine Rappattack Crew Rotor Wing	Ground Patrol Forest Officer Guardian Patrolman Ground Patrol by Industry	Lookout ID: FT	Unplanned 310-FIRE LFS personnel Unplanned LFS Aircraft Unplanned Public Aircraft	Other Government Agencies General Public Unplanned Industry
4. Discovered Date/Time: (yyyy/mm/dd hh:mm)	2011/05/14 17:46				
5. Location:	LAT 55.224751		LONG -114.648481		
LSD 16	SEC 11	TWP 072	RGE 05	MER 5	
6. Bearing:	Degrees 49	Minutes 0	7. Distance From Agent (km):	20	
8. Cross Bearing:	Degrees 162	Minutes	X Bearing Source: MR	MARTEN MOUNTAIN	
8B. 2nd Cross Bearing:	Degrees	Minutes	X Bearing Source:		
9. True Assist Source:					
10. Location Description:					

11. Smoke Type	12. Smoke Color	13. Base Size	14. Condition of Smoke
Heavy Column	Black	Large	**Drifting High**
Intermittent	Dark Grey	Medium	Drifting Low
Light Column	Light Grey	**Not Visible**	Straight Up
Scattered	**Medium Grey**	Small	
	White	Very Large	

15. Remarks/ Additional Info: Smoke type not provided by Lookout at time, but was determined to be a light column at time of the fire being called in as per other information.

OFFICE USE ONLY	Confirmed Location SEC11 TWP072 RGE05 MER5	Lookout Advised Result (Date/Time) 2011/05/17 19:26
Fire # SWF-065-11	Next Message #	Next Message Reported Date
Wildfire Detection Signed Off: Yes	Date: 24/10/2011 10:09:28	Userid: [redacted]

Aerial Patrol Supplement

16. Fire Size (Ha):	.00	17. Slope (%):		18. Aspect:	N	NW	W	SW	S	SE	E	NE	

19. Fuel Type

C1 Spruce / Lichen Woodland	C2 Boreal Spruce	C3 Mature Jack or Lodgepole Pine
C4 Immature Jack or Lodgepole Pine	C5 Red and White Pine	C6 Conifer Plantation
C7 Ponderosa Pine / Douglas-fir	D1 Leafless Aspen	M1 Boreal Mixedwood Leafless
M2 Boreal Mixedwood Green	M3 Dead Balsam Fir Mixedwood-Leafless	M4 Dead Balsam Fir Mixedwood-Green
O1a Matted Grass	O1b Standing Grass	S1 Jack or Lodgepole Pine Slash
S2 White Spruce / Balsam Slash	S3 Coastal Cedar / Hemlock / Douglas-fir Slash	

20. Fire Behaviour: Smouldering, Creeping, Cardling, Spotting, Running, Crowning

21. Fire Spread Potential: Limited N S E W Why? / Unlimited N S E W Why?

22. Access

23. Water Source

24. Comments:
(Resources working fire, equipment in area, values at risk, tourists, camps, location of facilities, etc)

25. Caller Info:	Phone # / Home Phone #	26. Result Code: WF

Page 1 of 1

Database: Prod-Ora12c

WILDFIRE REPORT

FP48 (Apr 2007)

Wildfire #: SWF-065-11 | Wildfire Name: Flat Top Complex | Ecological Wildfire Mgmt. Zone: Yes **No**

Abandoned Campfire: Yes **No**

	Deg.	Min. Dec.	Decimal Degrees
Latitude:	55	13.5390	55.225650
Longitude:	-114	39.0730	-114.651217

--- Legal Description ---

LSD	Sec	Twp	Rng	Mer
15	11	072	05	5

Assessed By: [redacted]

Assessment Resource: AAO

Detection Message: FT002

Detection Information Signed Off: **Yes** No

Assessment Result:

Beyond Resources Capability | Delayed Action - Lower Priority

Delayed Action - No Resources Available | **Immediate Action**

Modified Action

Dispatched Resource: **Air Tanker** FPD Staff FTAC HAC RAP WFC2

Dispatch Date/Time: 2011/05/14 17:51 | Started to Fire Date/Time: 2011/05/14 17:51

Getaway Obj.: 3 minutes Tanker Blue | **5 minutes Tanker Red** | 10 minutes Tanker Yellow | 30 minutes | 60 minutes | Off Duty | Project Status

Dispatched Resources Diverted Date/Time: _____ Diverted To Fire #: _____ **OR** Detection Message #: _____

Initial Action By Non-FPD:

IA Resource: **Fire Department** Industry Land Owner Other Agency Public

Name (first and last) of this Resource or Person Supervising this Resource: Slave Lake Fire Dept

Did FPD take physical suppressive action on this wildfire? **Yes** No

OR

Initial Action By FPD:

IA Resource: Air Tanker FPD Staff FTAC HAC RAP WFC2

Name (first and last) of this Resource or Person Supervising this Resource: _____

IA Access (Crews only): Conventional R/W Ground Hover Exit Rappel

Initial Action Resource - Amount and Distance

IA Resource Type	Amount
Airtanker	
Dozer	
Ground Tanker	
Helitanker	
Other	
People	

Method of Travel	Distance Travelled (km)
Fixed Wing	
Other	
Rotor Wing	
Walk	
Vehicle	

Time: _____ (mins)

Operations During First Overnight Period? Yes **No**

Bucketing on this fire? Yes No | Type of Rotor Wing: Light Intermediate Medium Heavy

Distance from water source: _____ km

Date/Time of First Drop: _____

Area Burned:

1. Forest Protection Area	3,973.50	ha.
2. Non Forest Protection Area		ha.
3. Grand Total (1+2)	3,973.50	ha.

Origin:

B.C.	DND	Indian Reservation
Metis Settlement	N.W.T.	National Park
Private Land	**Provincial Land**	Provincial Park
Saskatchewan	U.S.A.	

Objectives Met: *

Report Time:	**Yes**	No	N/A	(5 min. or less)
Getaway Time:	**Yes**	No	N/A	(As per PPS)
IA Size:	Yes	No	**N/A**	(2 ha. or less)
1st Burn Period:	Yes	**No**	N/A	(1000h next day)

* N/A - Objective is not applicable to this wildfire.

Objectives Comments: (See page 3 for complete comments)

extreme winds and ROS
Ground firefighting started at 1900 by FD
Two convairs actioned at 1813

SWF-065-11 Page 1 of 3 | 2017/07/06 11:48:05 | Report Page 1 of 3

Database: Prod-Ora12c

WILDFIRE REPORT

FP48 (Apr 2007)

	Date:	Size (ha):	Lapse Time:
Wildfire Started:	2011/05/14 17:34	n/a	n/a
Discovered:	2011/05/14 17:46	n/a	12m
Reported:	2011/05/14 17:46	n/a	nil
Dispatched:	2011/05/14 17:51	n/a	5m
Started for Fire:	2011/05/14 17:51	n/a	nil
IA Arrival Time at Fire:		n/a	null
Assessment:	2011/05/14 18:01	5.00	null
Air Fire Fighting Started:			null
Ground Fire Fighting Started:			null
Contained (BH, UC):	2011/05/22 18:10	4,559.00	null
Controlled (UC):	2011/05/23 15:45	4,706.90	null
Turned Over:			null
Extinguished:	2011/07/28 15:07	3,973.50	null

Fire Cause: Lightning ☐ Human Caused ☑

Prevention Incident #: 24719

Permit #:

WUI Incident: Yes No (If Yes, see Remarks)

Carryover Fire: ☐

Ha. Burning At Carryover:

Restart Of Fire #:

Overrun By Wildfire #:

Assessment DateTime:

Wildfires Overran:

Remarks: (See page 3 for complete remarks)

BD135 spots at 1751 just after getting called in by FlatTop
1751 BD135 enroute to check out smoke SE of town. Reports big and black
Changed inital action to Fire Department - local fire dept was first on site, according to notes on AAO drop report, [redacted] "Upon arrival fire trucks were present on lease on backend of fire[redacted] 1756 BD135 says smoke N of Hwy requires immediate attention. RCMP for evacuation. 1/2 mile from community of Poplar Estates
1801 BD135 wants all available tankers and TIA. RCMP at hwy. Back end of fire is 200 feet from hwy
1810 BD135 reports fire has not hit pipeline yet
1818 BD135 reports fire has crossed pipeline. Immediate threat to Poplar Estates
1829 BD135 reports fire at Vandewell road cross
1843 AA65 reports too many F/W over fire at this time, don't send any more
1848 AA65 fire rolling 30-40 hectares. Amongst 1st street of houses
1855 BD132 off Slave enroute to fire to replace BD135 as AA on SWF-065
1858 [redacted] (Assessor) east side Flank 4. Structures on fire. Full crown running to Slave River in Poplar Estates. Cannot see head of fire because of smoke. Spot fires, vehicles leaving
1928 BD132 fire now 180 hectares, almost 200 hectares
1935 [redacted] (Assessor) Hac 1 at Old Smith Hwy. Falling embers. RCMP behind fire. Sawridge truckstop evacuated.
1939 BD54 Fire amongst houses. Can see nothing at the head. Trying to keep flank down. Bulk of houses ok
1947 BD132 People on north side where they are bombing are in danger of being rolled over. Emergency vehicles need to be moved
1949 [redacted] (Assessor) says that Hac 1 will get vehicles moved
1949 [redacted] (Assessor) says fire picking up, starting to get Flank 5
2004 AA65 BD54 working tactical on left flank. Will relieve AA65 at 2040
2028 BD132 still working N and E flanks. 25 minutes of bombing left, light becoming an issue. When finished with the skimmers, send them to LLB for night.
2031 BD54 Heading back to WHCT, painted quite a few houses. Quite a few houses burnt down
2126 AA65 BD57 unloading final tanker 490 for final drop on fire
MAY 15
1004 BD135 over fire. [redacted]
1056 BD135 sees another smoke at 55 19 N, 114 35 W. Going to action = SWF-071
1221 [redacted] close to trigger point for evacuation
[redacted]

Completed FP41 Attached ☐ If FP41 not attached, explain

Labelled Initial Action Photo Attached ☐ If photo not attached, explain

Wildfire Mapping Required: Yes No Map attached: Yes No

Incident Commander Signature: Date Submitted:

Incident Commander Printed Name:

Signed Off By Signature: Signed Off Date:

Signed Off By Printed Name:

SWF-065 - 11 Page 2 of 3 2017/07/06 11:48:05 Report Page 2 of 3

Database: Prod-Ora12c **WILDFIRE REPORT** FP48 (Apr 2007)

Objectives Comments:

extreme winds and ROS
Ground firefighting started at 1800 by FD
Two convairs actioned at 1813

Remarks:

BD135 spots at 1751 just after getting called in by FlatTop
1751 BD135 enroute to check out smoke SE of town. Reports big and black
Changed inital action to Fire Department - local fire dept was first on site, according to notes on AAO drop report, [redacted] "Upon arrival fire trucks were present on lease on backend of fire [redacted] 1756 BD135 says smoke N of Hwy requires immediate attention. RCMP for evacuation. 1/2 mile from community of Poplar Estates
1801 BD135 wants all available tankers and TIA. RCMP at hwy. Back end of fire is 200 feet from hwy
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2028 BD132 still working N and E flanks. 25 minutes of bombing left, light becoming an issue. When finished with the skimmers, send them to LLB for night.
2031 BD54 Heading back to WHCT, painted quite a few houses. Quite a few houses burnt down
2126 AA65 BD57 unloading final tanker 490 for final drop on fire
MAY 15
1004 BD135 over fire. [redacted]
1056 BD135 sees another smoke at 55 19 N, 114 35 W. Going to action = SWF-071
1221 [redacted] (Ops) close to trigger point for evacuation
1225 [redacted] (Ops) 10 km or more from community. 3-4 hours away
1234 [redacted] (Ops) MD takes care of evacuation
1314 BD135 Wind blowing need retardant tankers
1449 [redacted] (Ops) Activity adjacent to highway. N and E open flame and smoke. Saw grass fire in NE. Tankers are working on protecting structures. Keep out of Muskeg, Baer Road is still good
15/15 1453 Bayer Road under no real threat. Wind from the west
15/15 1509 BD132 needs replacement
1515 BD132 -need resources on North Side
1527 BD132 trying to protect farm house structure, chasing hot spots
1531 BD132 [redacted] on chn 40 hot spotting, ground crews can go in
1549 - Bd134 Air Attack
1638 - BD56 South part of fire hot spots, Poplar Estates and around Information centre. Suggesting torch operations
1709 Hac 1 - doing a burn out on Hwy 88
1714 Hac 1 - Evacuation Slave Lake SE part of town. Fire jumped the highway
1719 LSK - confirmed Evacuation of Slave Lake
1758 LSK - Structures gone in Slave Lake
1801 Bd56 - no tankers present, beyond resource capability
1819 SII - Avalon Autobody on fire
1856 FSII - Houses in SE on fire, zoo on fire. Fire going down Hwy 88 West. Fire on south side Hwy 2 half a mile East of MD office. Mitsue is open people evacuated to the East
2012 LSK - NE point of SWF-065 at 55 17 39 N, 114 40 58 W

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APPENDIX J - AIRTANKER DROPS ON SWF-065 (MAY 14 AND MAY 15)

Time	Group #	Tail #	Tanker Type	Volume (liters) water	Total Volume Water	Volume (liters) LC 95A	Total Volume LC95A	Total Volume Water and LC 95A
May 14								
18:05	Group 3	201	CL 215	5455 x 10	54550			54550
18:06	Group 3	203	CL 216	5456 x 10	54550			54550
19:15	Group 7 AAO leading in Group 4 A/T	490	Electra			11365	11365	11365
19:25	Group 7 AAO leading in A/T from BC	449	Convair			7955	7955	7955
19:30	Group 8 AAO leading in Group 9 A/T	693	AT802	2457 x 12	29484			29484
19:30	Group 8 AAO leading in Group 9 A/T	692	AT802	2458 x 12	29484			29484
19:30	Group 8 AAO leading in Group 9 A/T	680	AT802	2459 x 12	29484			29484
19:30	Group 8 AAO leading in Group 9 A/T	691	AT802	2460 x 12	29484			29484
19:32	Group 7	485	Electra			11365	11365	11365
19:55	Group 7 AAO leading in Group 8 A/T	453	Convair			7955	7955	7955
20:15	Group 7 AAO leading in A/T from BC	449	Convair			7955	7955	7955
20:25	Group 7 AAO leading in Grp 8 A/T	453	Convair			7955	7955	7955
20:33	Group 7 AAO leading in A/T from BC	449	Convair			7955	7955	7955
Totals for May 14					**227036**		**62505**	**289541**
May 15								
09:56	Group 3	201	CL215	5455 x 13	70915			70915
10:15	Group 3	203	CL215	5456 x 13	70915			70915
10:15	Group 3 AAO leading in Group 9 A/T	693	AT802	2457 x 14	34412			34412
10:15	Group 3 AAO leading in Group 9 A/T's	680	AT802	2458 x 14	34412			34412
10:15	Group 3 AAO leading in Group 9 A/T	692	AT802	2459 x 14	34412			34412
10:15	Group 3 AAO leading in Group 9 A/T	691	AT802	2460 x 14	34412			34412
12:29	Group 3 AAO leading in Group 6 A/T	489	Electra			2839	2839	2839
13:23	Group 3 AAO leading in Group 6 A/T	489	Electra			2839	2839	2839
13:26	Group 3 AAO leading in Group 6 A/T	489	Electra			2839	2839	2839
13:28	Group 3 AAO leading in Group 6 A/T	489	Electra			2839	2839	2839

14:25	Group 2 AA0 leading in Group 7 A/T	485	Electra			11355	11355	11355
14:32	Group 2 AA0 leading in Group 8 A/T	453	Convair			7955	7955	7955
14:36	Group 2 AA0 leading in A/T from BC	482	Electra			11355	11355	11355
14:40	Group 2 AA0 leading in Group 6 A/T	484	Electra			10219	10219	10219
14:43	Group 2 AA0 leading in Group 6 A/T	484	Electra			1135	1135	1135
14:48	Group 2 AA0 leading in Group 6 A/T	489	Electra			11365	11365	11365
15:10	Group 8 AA0 leading in Grp6 A/T	484	Electra			5677 x 2	11354	11354
15:24	Group 8 AA0 leading in Grp 6 A/T	489	Electra			5678 x 2	11354	11354
15:59	Group 6 AA0 leading in Group 2 A/T	454	Convair			7955		7955
16:00	Group 6 AA0 leading in A/T from BC	445	Convair			7955		7955
16:02	Group 6 AA0 leading in A/T from BC	444	Convair			7955		7955
17:45	Group 6	489	Electra			11355		11355
17:55	Group 6	484	Electra			11355		11355
Totals for May 15					**279478**		**98803**	**378281**
Grand Total for May 14 and 15					**506514**		**161308**	**667822**

APPENDIX K - DETECTION MESSAGE AND WILDFIRE REPORT FOR SWF-082

Database: FIRES Prod-Ora10 **Detection Message** FP40 2011/07/26 09:18:51

1. Message Number: MR010		2. Reported Date/Time: (yyyy/mm/dd hh:mm)	2011/05/15 15:52	
3. Agent Type and Agent	Air Patrol A/C Reg: _____ Helitack Support Crew Fixed Wing Helitack Man-up Machine Rapattack Crew Rotor Wing	Ground Patrol Forest Officer Guardian Patrolman Ground Patrol by Industry	Lookout ID: MR	Unplanned 310-FIRE LFS personnel Unplanned LFS Aircraft Unplanned Public Aircraft Other Government Agencies General Public Unplanned Industry
4. Discovered Date/Time: (yyyy/mm/dd hh:mm)	2011/05/15 15:50			
5. Location:	LAT 55.399301		LONG -114.686790	
LSD 14	SEC 10	TWP 074	RGE 05	MER 5
6. Bearing:	Degrees 144	Minutes 30	7. Distance From Agent (km):	10
8. Cross Bearing:	Degrees	Minutes	X Bearing Source:	
8B. 2nd Cross Bearing:	Degrees	Minutes	X Bearing Source:	
9. True Assist Source:				
10. Location Description:				

11. Smoke Type	12. Smoke Color	13. Base Size	14. Condition of Smoke
Heavy Column	Black	Large	Drifting High
Intermittent	Dark Grey	Medium	**Drifting Low**
Light Column	**Light Grey**	Not Visible	Straight Up
Scattered	Medium Grey	**Small**	
	White	Very Large	

15. Remarks/ Additional Info: REF 141

OFFICE USE ONLY	Confirmed Location SEC02 TWP074 RGE05 MER5	Lookout Advised Result (Date/Time) 2011/05/20 11:30
Fire # SWF-082 -11	Next Message #	Next Message Reported Date
Wildfire Detection Signed Off: Yes	Date: 5/23/2011 14:55:18	Userid: [redacted]

Aerial Patrol Supplement

16. Fire Size (Ha): .00	17. Slope (%):	18. Aspect:	N	NW	W	SW	S	SE	E	NE

19. Fuel Type

C1 Spruce / Lichen Woodland	C2 Boreal Spruce	C3 Mature Jack or Lodgepole Pine
C4 Immature Jack or Lodgepole Pine	C5 Red and White Pine	C6 Conifer Plantation
C7 Ponderosa Pine / Douglas-fir	D1 Leafless Aspen	M1 Boreal Mixedwood Leafless
M2 Boreal Mixedwood Green	M3 Dead Balsam Fir Mixedwood-Leafless	M4 Dead Balsam Fir Mixedwood-Green
O1a Matted Grass	O1b Standing Grass	S1 Jack or Lodgepole Pine Slash
S2 White Spruce / Balsam Slash	S3 Coastal Cedar / Hemlock / Douglas-fir Slash	

20. Fire Behaviour: Smouldering, Creeping, Carding, Spotting, Running, Crowning

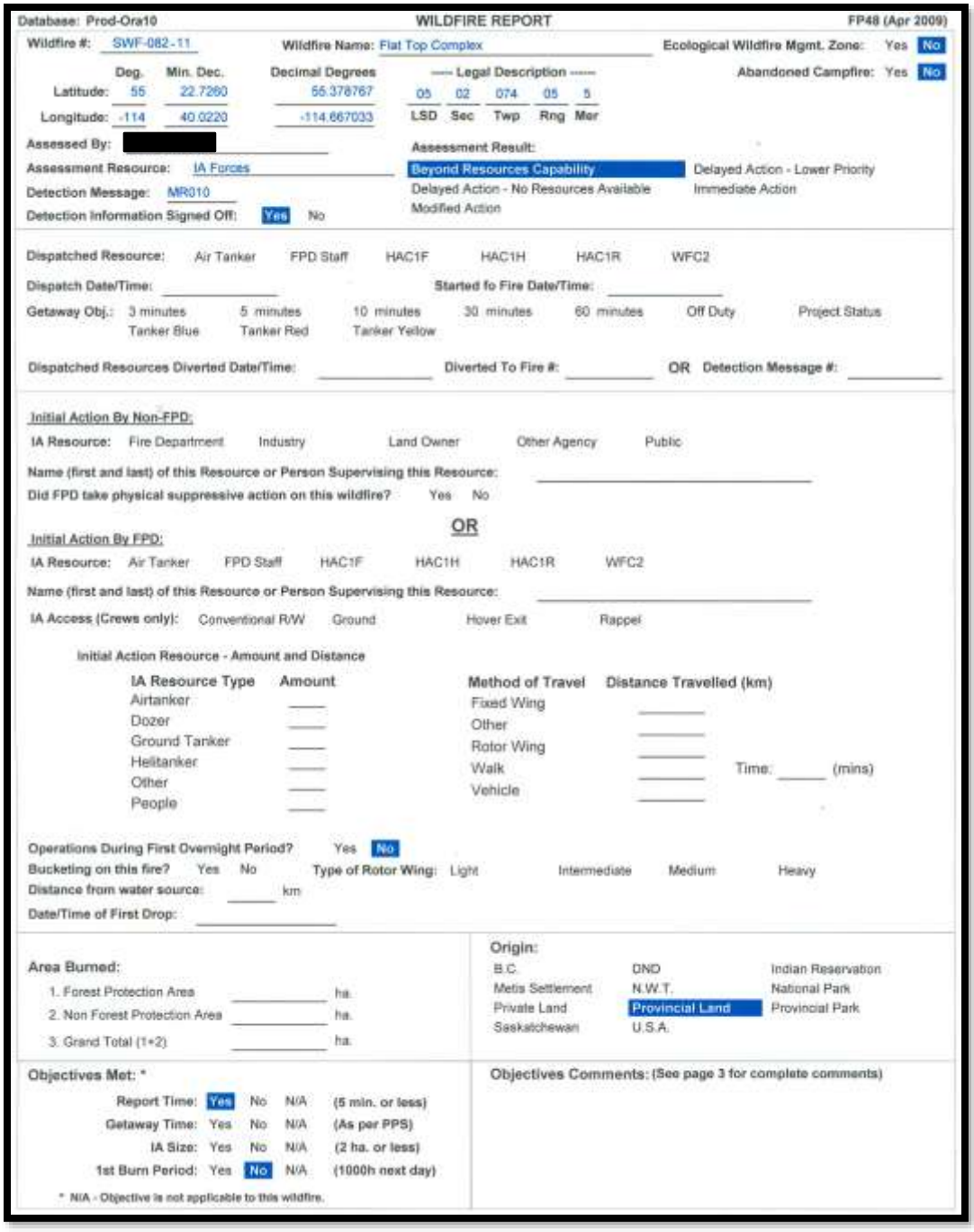
21. Fire Spread Potential: Limited N S E W Why? / Unlimited N S E W Why?

22. Access

23. Water Source

24. Comments:
(Resources working fire, equipment in area, values at risk, tourists, camps, location of facilities,etc)

25. Caller Info:	Phone #	Home Phone #	26. Result Code
			WF



Database: Prod-Ora10

WILDFIRE REPORT

FP48 (Apr 2009)

Wildfire #: SWF-082-11 Wildfire Name: Flat Top Complex Ecological Wildfire Mgmt. Zone: Yes **No**

Abandoned Campfire: Yes **No**

	Deg.	Min. Dec.	Decimal Degrees
Latitude:	55	22.7260	55.378767
Longitude:	-114	40.0220	-114.667033

Legal Description: 05 (LSD) 02 (Sec) 074 (Twp) 05 (Rng) 5 (Mer)

Assessed By: [redacted]

Assessment Resource: IA Forces

Detection Message: MR010

Detection Information Signed Off: **Yes** No

Assessment Result: **Beyond Resources Capability** / Delayed Action - Lower Priority / Delayed Action - No Resources Available / Immediate Action / Modified Action

Dispatched Resource: Air Tanker FPD Staff HAC1F HAC1H HAC1R WFC2

Dispatch Date/Time: _____ Started to Fire Date/Time: _____

Getaway Obj.: 3 minutes Tanker Blue / 5 minutes Tanker Red / 10 minutes Tanker Yellow / 30 minutes / 60 minutes / Off Duty / Project Status

Dispatched Resources Diverted Date/Time: _____ Diverted To Fire #: _____ OR Detection Message #: _____

Initial Action By Non-FPD:

IA Resource: Fire Department Industry Land Owner Other Agency Public

Name (first and last) of this Resource or Person Supervising this Resource: _____

Did FPD take physical suppressive action on this wildfire? Yes No

OR

Initial Action By FPD:

IA Resource: Air Tanker FPD Staff HAC1F HAC1H HAC1R WFC2

Name (first and last) of this Resource or Person Supervising this Resource: _____

IA Access (Crews only): Conventional R/W Ground Hover Exit Rappel

Initial Action Resource - Amount and Distance

IA Resource Type	Amount	Method of Travel	Distance Travelled (km)
Airtanker	____	Fixed Wing	_____
Dozer	____	Other	_____
Ground Tanker	____	Rotor Wing	_____
Helitanker	____	Walk	_____ Time: _____ (mins)
Other	____	Vehicle	_____
People	____		

Operations During First Overnight Period? Yes **No**

Bucketing on this fire? Yes No Type of Rotor Wing: Light Intermediate Medium Heavy

Distance from water source: _____ km

Date/Time of First Drop: _____

Area Burned:

1. Forest Protection Area _____ ha.
2. Non Forest Protection Area _____ ha.
3. Grand Total (1+2) _____ ha.

Origin:

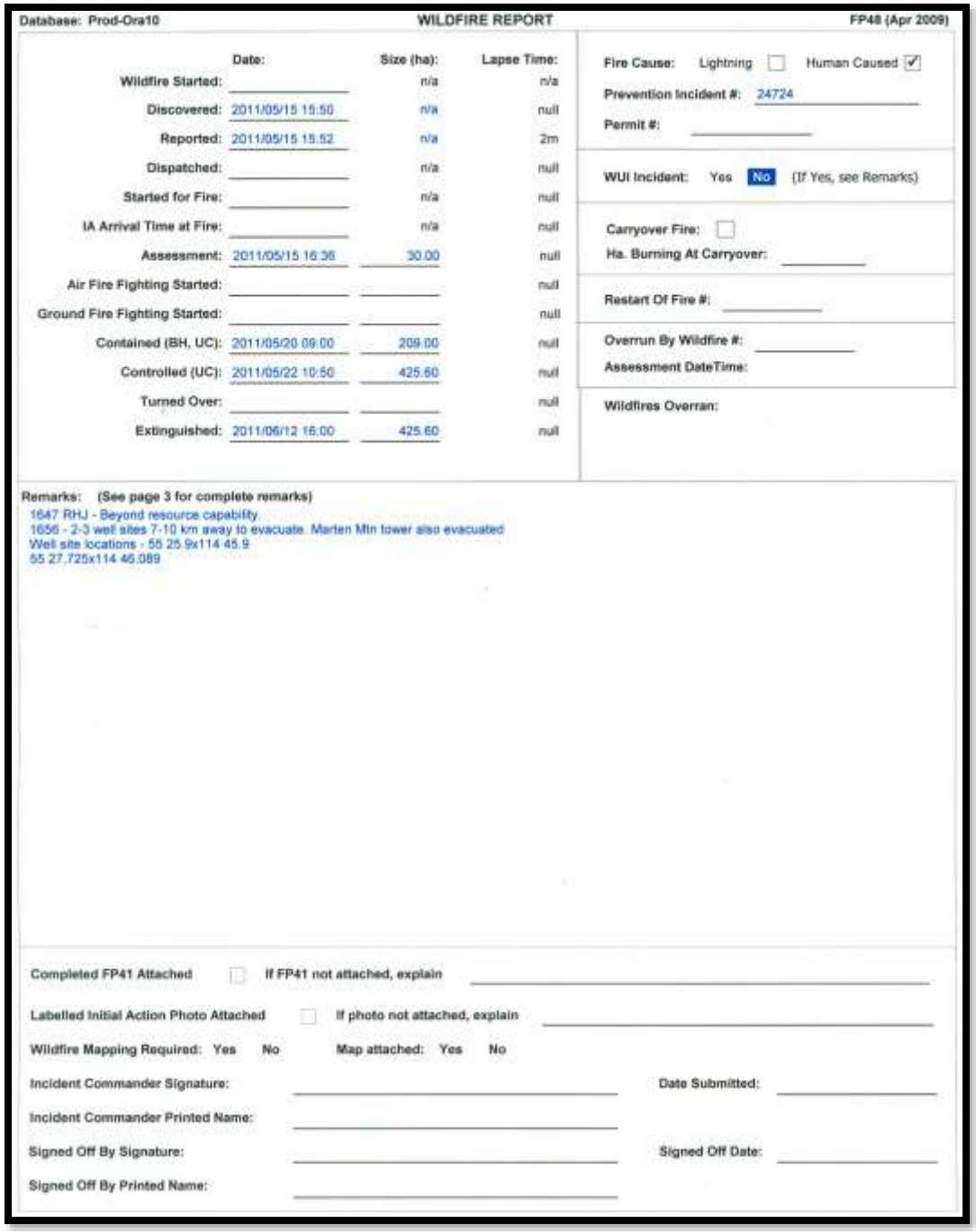
B.C. / DND / Indian Reservation / Metis Settlement / N.W.T. / National Park / Private Land / **Provincial Land** / Provincial Park / Saskatchewan / U.S.A.

Objectives Met: *

Report Time:	**Yes**	No	N/A	(5 min. or less)
Getaway Time:	Yes	No	N/A	(As per PPS)
IA Size:	Yes	No	N/A	(2 ha. or less)
1st Burn Period:	Yes	**No**	N/A	(1000h next day)

* N/A - Objective is not applicable to this wildfire.

Objectives Comments: (See page 3 for complete comments)



Database: Prod-Ora10

WILDFIRE REPORT

FP48 (Apr 2009)

	Date:	Size (ha):	Lapse Time:
Wildfire Started:		n/a	n/a
Discovered:	2011/05/15 15:50	n/a	null
Reported:	2011/05/15 15:52	n/a	2m
Dispatched:		n/a	null
Started for Fire:		n/a	null
IA Arrival Time at Fire:		n/a	null
Assessment:	2011/05/15 16:36	30.00	null
Air Fire Fighting Started:			null
Ground Fire Fighting Started:			null
Contained (BH, UC):	2011/05/20 09:00	209.00	null
Controlled (UC):	2011/05/22 10:50	425.60	null
Turned Over:			null
Extinguished:	2011/06/12 16:00	425.60	null

Fire Cause: Lightning ☐ Human Caused ☑

Prevention Incident #: 24724

Permit #:

WUI Incident: Yes No (If Yes, see Remarks)

Carryover Fire: ☐

Ha. Burning At Carryover:

Restart Of Fire #:

Overrun By Wildfire #:

Assessment DateTime:

Wildfires Overran:

Remarks: (See page 3 for complete remarks)

1647 RHJ - Beyond resource capability.
1656 - 2-3 well sites 7-10 km away to evacuate. Marten Mtn tower also evacuated
Well site locations - 55 25.9x114 45.9
55 27.725x114 46.089

Completed FP41 Attached ☐ If FP41 not attached, explain

Labelled Initial Action Photo Attached ☐ If photo not attached, explain

Wildfire Mapping Required: Yes No Map attached: Yes No

Incident Commander Signature: Date Submitted:

Incident Commander Printed Name:

Signed Off By Signature: Signed Off Date:

Signed Off By Printed Name:

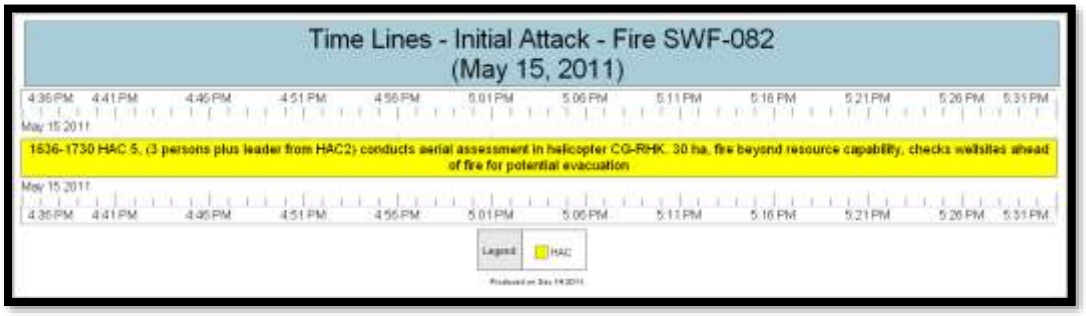
APPENDIX L - TIMELINE CHRONOLOGY OF INITIAL ATTACK FOR SWF-082 (MAY 14 - MAY 15)

Sunday, May 15, 2011

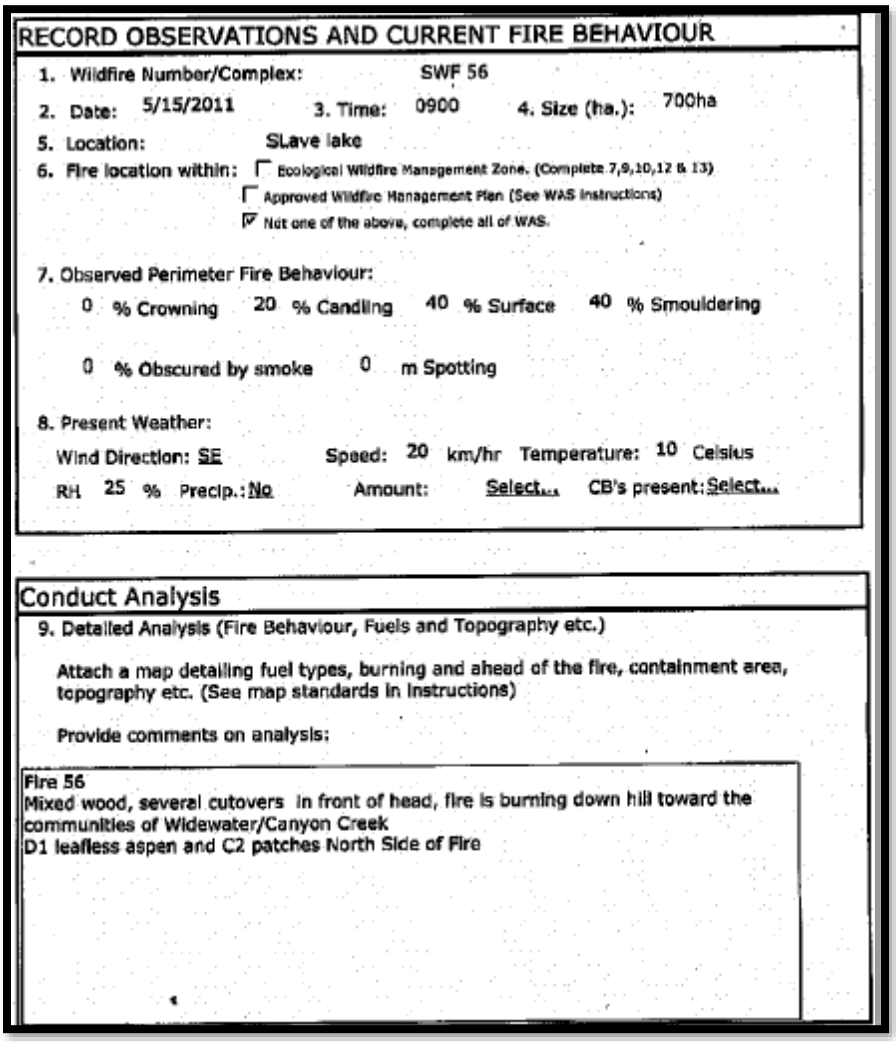
Event Name	Start Date	Start Time	End Date	End Time	Category
14:36-15:30 HAC 5, (3 persons plus leader from HAC 2) conducts aerial assessment in helicopter CG-RHK. 30 hectares, fire beyond resource capability, checks well sites ahead of fire for potential evacuation	May 15, 2011	16:36	May 15, 2011	17:30	HAC

Monday, May 16, 2011 (up to 10:00 end of first burning period)

Event Name	Start Date	Start Time	End Date	End Time	Category
Dozer group - (including back hoe and water truck). Wind and smoke blocking access to rear of fire. Walked to within 1 mile of fire and turned around	May 15, 2011	7:00 AM	May 16, 2011	12:00	Dozers



APPENDIX M - WILDFIRE ANALYSIS STRATEGY FOR SWF-056 AND SWF-065



RECORD OBSERVATIONS AND CURRENT FIRE BEHAVIOUR

1. Wildfire Number/Complex: SWF 56
2. Date: 5/15/2011 3. Time: 0900 4. Size (ha.): 700ha
5. Location: SLave lake
6. Fire location within: ☐ Ecological Wildfire Management Zone. (Complete 7,9,10,12 & 13)
☐ Approved Wildfire Management Plan (See WAS instructions)
☑ Not one of the above, complete all of WAS.

7. Observed Perimeter Fire Behaviour:
0 % Crowning 20 % Candling 40 % Surface 40 % Smouldering

0 % Obscured by smoke 0 m Spotting

8. Present Weather:
Wind Direction: SE Speed: 20 km/hr Temperature: 10 Celsius
RH 25 % Precip.: No Amount: Select... CB's present: Select...

Conduct Analysis

9. Detailed Analysis (Fire Behaviour, Fuels and Topography etc.)

Attach a map detailing fuel types, burning and ahead of the fire, containment area, topography etc. (See map standards in Instructions)

Provide comments on analysis:

Fire 56
Mixed wood, several cutovers in front of head, fire is burning down hill toward the communities of Widewater/Canyon Creek
D1 leafless aspen and C2 patches North Side of Fire

Identify Values

10. Values at and in vicinity of the fire.

Include on the analysis map, and provide a written description of the values.

Human Life:

FIRE 56 LIFE COMMUNITY, potential to run into communities of wide water/canyon creek

Communities:

Wide Water/ Canyon Creek

Watershed and Soils:

Natural Resources:

Infrastructure:

powerlines, communication towers infrasructure for town

Document Forecasts

11. Forecasted Weather and Fire Behaviour for the next three days.

Fire Behaviour forecast attached: ☐ Yes ☑ No
(Preferably done by an FBAN)

If no, provide a general 3 day forecast below: *(Can be taken from the afternoon wx forecast.)*

Today
Strong SE winds today 30-40km/hr (winds all day)

Tommorow Winds SE 20 morning becoming light in the afternoon

Provide an estimated fire size and perimeter for the next three days.

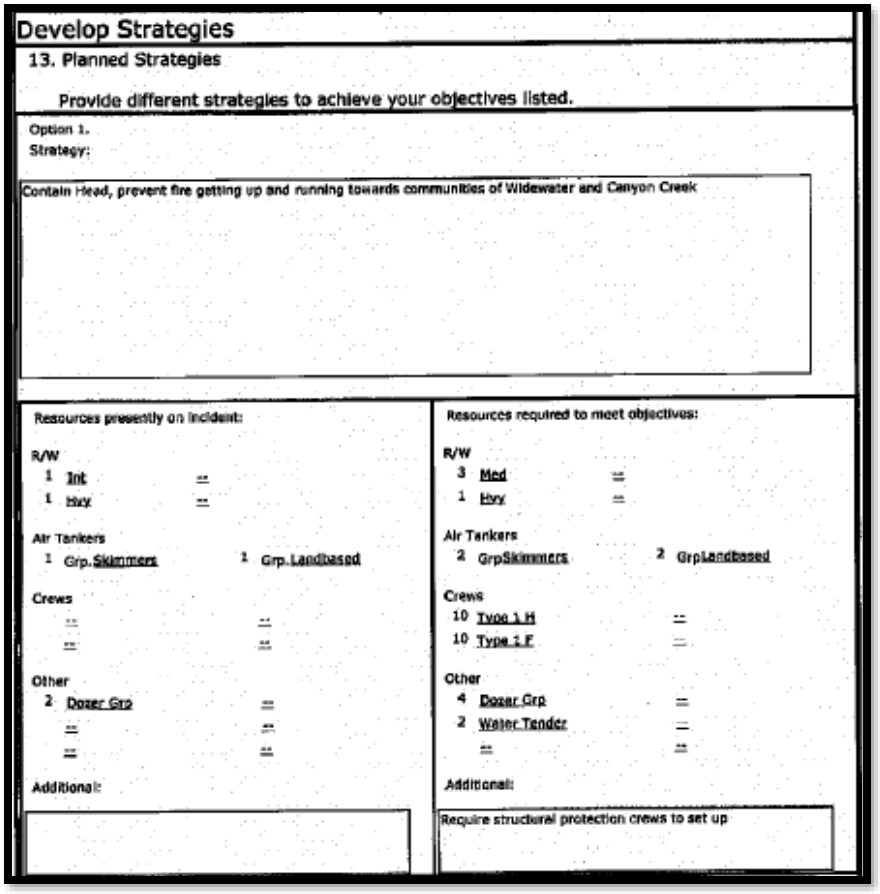
24 Hrs.	1100 ha.	48 Hrs	2200 ha.	72 Hrs	4000 ha.
	1100000 m.		2200000 m.		40000 m.

Develop Objectives

12. Incident Objectives.

Provide what the objectives(s) are for this incident. If the objectives are predetermined from a Wildfire Management Plan or Ecological Wildfire Management Zone, restate them here and reference the plan.

Keep Head of fire down using airtankers
Dozer guard on rear, moving cats into flanks
Identify burnout points to take head out from making any runs towards communities



Develop Strategies

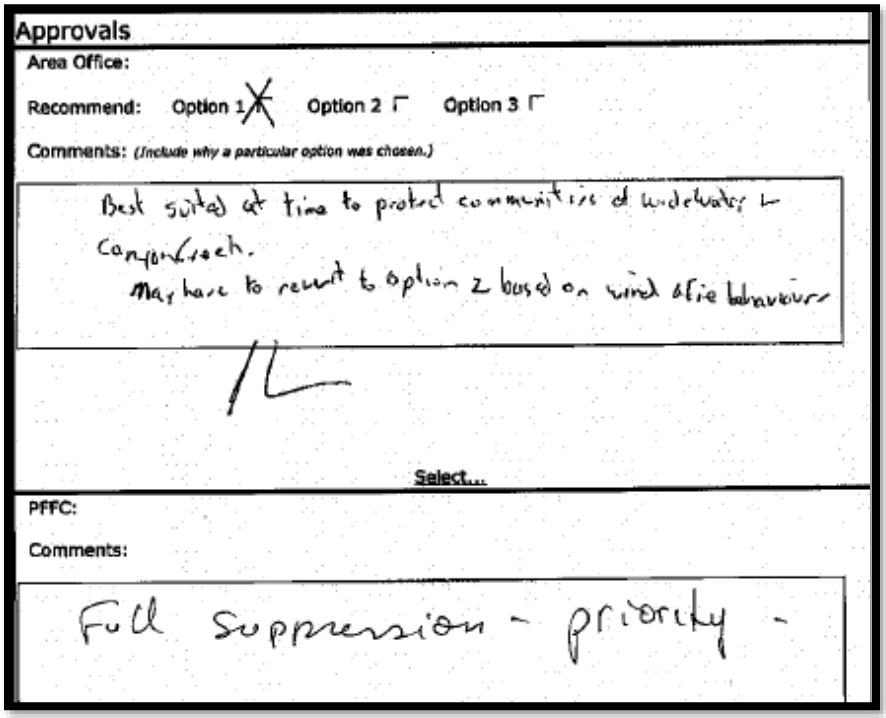
13. Planned Strategies

Provide different strategies to achieve your objectives listed.

Option 1.
Strategy:

Contain Head, prevent fire getting up and running towards communities of Wildewater and Canyon Creek

Resources presently on incident:		Resources required to meet objectives:	
R/W		R/W	
1 Int	--	3 Med	--
1 Hwy	--	1 Hwy	--
Air Tankers		Air Tankers	
1 Grp.Skimmers	1 Grp. Landbased	2 GrpSkimmers	2 GrpLandbased
Crews		Crews	
--	--	10 Type 1 H	--
--	--	10 Type 1 F	--
Other		Other	
2 Dozer Grp	--	4 Dozer Grp	--
--	--	2 Water Tender	--
--	--	--	--
Additional:		Additional:	
		Require structural protection crews to set up	



Approvals

Area Office:

Recommend: Option 1 X Option 2 ☐ Option 3 ☐

Comments: *(Include why a particular option was chosen.)*

Best suited at time to protect communities of Widewater & Canyon Creek.
May have to revert to option 2 based on wind & fire behaviours

Select...

PFFC:

Comments:

Full Suppression - priority -

RECORD OBSERVATIONS AND CURRENT FIRE BEHAVIOUR

1. Wildfire Number/Complex: SWF 65
2. Date: 5/15/2011 3. Time: 0900 4. Size (ha.): 700ha
5. Location: SLave lake
6. Fire location within:
   - ☐ Ecological Wildfire Management Zone. (Complete 7,9,10,12 & 13)
   - ☐ Approved Wildfire Management Plan (See WAS Instructions)
   - ☑ Not one of the above, complete all of WAS.

7. Observed Perimeter Fire Behaviour:

   0 % Crowning 10 % Candling 40 % Surface 50 % Smouldering

   0 % Obscured by smoke 0 m Spotting

8. Present Weather:

   Wind Direction: SE Speed: 20 km/hr Temperature: 10 Celsius

   RH 25 % Precip.: No Amount: Select... CB's present: Select...

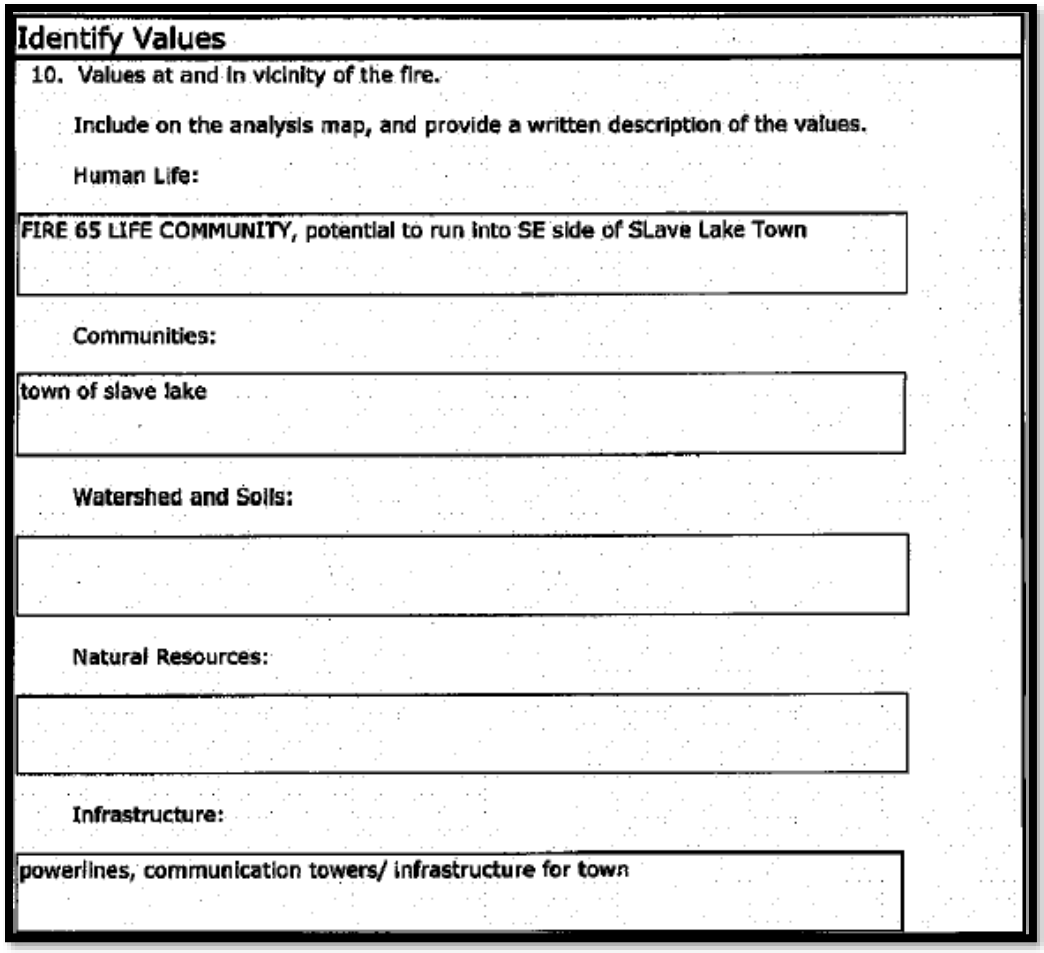
Conduct Analysis

9. Detailed Analysis (Fire Behaviour, Fuels and Topography etc.)

   Attach a map detailing fuel types, burning and ahead of the fire, containment area, topography etc. (See map standards in Instructions)

   Provide comments on analysis:

Fire 65
Mix wood and black spruce, fuel at head is C2 continious to SE side of Slave lake town
terrain is flat with good access thru fire
see map



Identify Values

10. Values at and in vicinity of the fire.

Include on the analysis map, and provide a written description of the values.

Human Life:

FIRE 65 LIFE COMMUNITY, potential to run into SE side of SLave Lake Town

Communities:

town of slave lake

Watershed and Soils:

Natural Resources:

Infrastructure:

powerlines, communication towers/ infrastructure for town

Document Forecasts

11. Forecasted Weather and Fire Behaviour for the next three days.

Fire Behaviour forecast attached: ☐ Yes ☑ No
(Preferably done by an FBAN)

If no, provide a general 3 day forecast below: *(Can be taken from the afternoon wx forecast.)*

Today
Strong SE winds today 30-40km/hr (winds all day)
Tommorow
Winds SE 20morning becoming light in afternoon

Provide an estimated fire size and perimeter for the next three days.

24 Hrs.	700 ha.	48 Hrs	800 ha.	72 Hrs	900 ha.
	70000 m.		80000 m.		90000 m.

Develop Objectives

12. Incident Objectives.

Provide what the objectives(s) are for this incident. If the objectives are predetermined from a Wildfire Management Plan or Ecological Wildfire Management Zone, restate them here and reference the plan.

Secure Structures near head (north end) of fire with structural teams and SRD Crews
Suppression all fire on north side of fire in black spruce
Work on flanks on fire

Develop Strategies

13. Planned Strategies

Provide different strategies to achieve your objectives listed.

Option 1.
Strategy:

Contain Head, prevent fire form taking a hold in the black spruce between fire and town structures
direct action with ait tankers r/w and ground crews

Resources presently on Incident:		Resources required to meet objectives:	
R/W		R/W	
2 Int	--	--	--
1 Med	--	--	--
Air Tankers		Air Tankers	
1 Grp. Skimmers	1 Grp. Landbased	Grp--	Grp--
Crews		Crews	
Type 1 H	--	--	--
--	--	--	--
Other		Other	
3 Dozer Grp	--	--	--
6 --	--	--	--
--	--	--	--
Additional:		Additional:	
6 fire department crews			

Develop Strategies

13. Planned Strategies cont.

Option 2.
Strategy:

Burnout black spruce head of fire if direct suppression becomes impossible,
Defensive structural tactics homes on SE of town of slave lake

Resources presently on incident:

R/W
2 Int --
1 Med --

Air Tankers
1 Grp. Skimmers 1 Grp. Landbased

Crews
Type 1 H --
-- --

Other
3 Dozer Grp --
6 -- --
-- --

Additional:

fire department crews

Resources required to meet objectives:

R/W
3 Med --
1 Hvy --

Air Tankers
1 Grp. Skimmers 1 Grp. Landbased

Crews
10 Type 1 H --
5 Type 1 F --

Other
6 -- --
-- --
-- --

Additional:

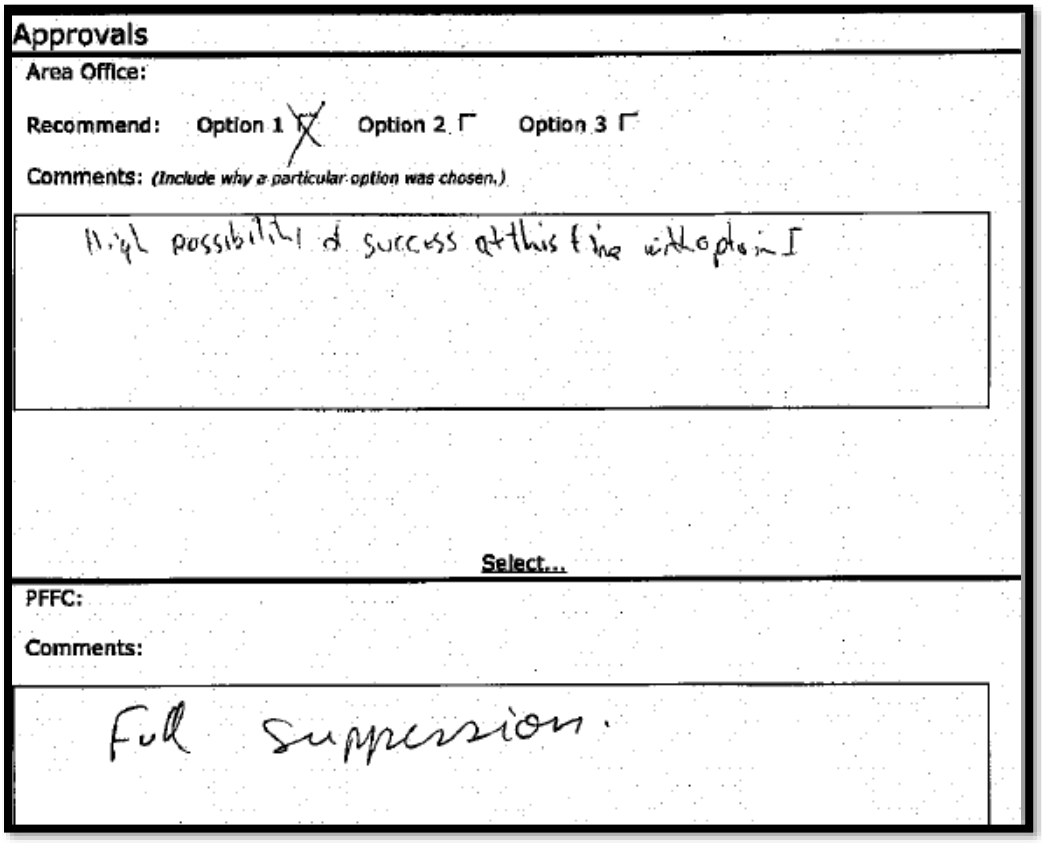
require MD fire department crews to continue structure protection
retardent operation for R/W

Develop Strategies

13. Planned Strategies cont.

Option 3.
Strategy:

Resources presently on incident:		Resources required to meet objectives:	
R/W		**R/W**	
2 Int	--	--	--
1 Med	--	--	--
Air Tankers		**Air Tankers**	
1 Grp. Skimmers	1 Grp. Landbased	Grp. --	Grp. --
Crews		**Crews**	
Type 1 H	--	--	--
--	--	--	--
		--	--
Other		**Other**	
3 Dozer Grp	--		
6 --	--		
--	--		
Additional:		**Additional:**	
6 fire department crews			



Approvals

Area Office:

Recommend: Option 1 [X] Option 2 [ ] Option 3 [ ]

Comments: *(Include why a particular option was chosen.)*

High possibility of success at this fire with option I

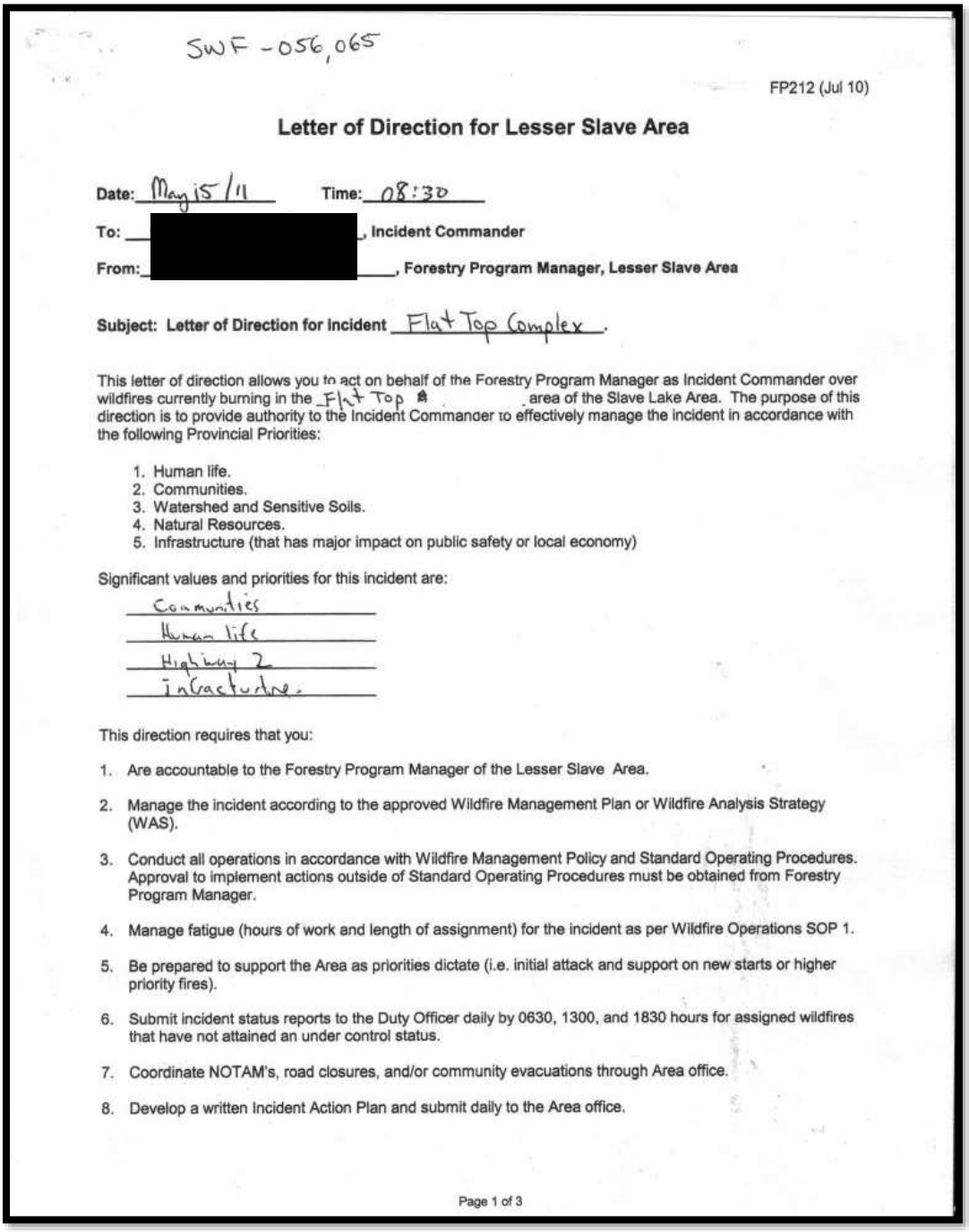
Select...

PFFC:

Comments:

Full suppression.

APPENDIX N - LETTER OF DIRECTION



SWF - 056, 065

FP212 (Jul 10)

Letter of Direction for Lesser Slave Area

Date: May 15/11 **Time:** 08:30

To: [redacted], **Incident Commander**

From: [redacted], **Forestry Program Manager, Lesser Slave Area**

Subject: Letter of Direction for Incident Flat Top Complex.

This letter of direction allows you to act on behalf of the Forestry Program Manager as Incident Commander over wildfires currently burning in the Flat Top [redacted] area of the Slave Lake Area. The purpose of this direction is to provide authority to the Incident Commander to effectively manage the incident in accordance with the following Provincial Priorities:

1. Human life.
2. Communities.
3. Watershed and Sensitive Soils.
4. Natural Resources.
5. Infrastructure (that has major impact on public safety or local economy)

Significant values and priorities for this incident are:

Communities
Human life
Highway 2
Infrastructure.

This direction requires that you:

1. Are accountable to the Forestry Program Manager of the Lesser Slave Area.
2. Manage the incident according to the approved Wildfire Management Plan or Wildfire Analysis Strategy (WAS).
3. Conduct all operations in accordance with Wildfire Management Policy and Standard Operating Procedures. Approval to implement actions outside of Standard Operating Procedures must be obtained from Forestry Program Manager.
4. Manage fatigue (hours of work and length of assignment) for the incident as per Wildfire Operations SOP 1.
5. Be prepared to support the Area as priorities dictate (i.e. initial attack and support on new starts or higher priority fires).
6. Submit incident status reports to the Duty Officer daily by 0630, 1300, and 1830 hours for assigned wildfires that have not attained an under control status.
7. Coordinate NOTAM's, road closures, and/or community evacuations through Area office.
8. Develop a written Incident Action Plan and submit daily to the Area office.

Page 1 of 3

FP212 (Jul 10)

9. Provide short and long term fire projections based on fire weather scenarios and the ramifications of such to the Area office.
10. Ensure ordering/logistics protocols are adhered to as discussed during team briefing. The Incident Management Team does not have any purchasing or hiring authority.
11. Coordinate through the Area office, timely and accurate news releases to the general public and/or local stakeholders regarding this incident when required.
12. Report any change in wildfire status or size (>10% of the previous fire size) to the Duty Officer.
13. Report all accidents involving personnel and property in accordance with Provincial procedures.
14. Discuss with the Wildfire Operations Officer or Forestry Program Manager any recommendations of suspension and/or de-certification of assigned fire personnel.
15. Discuss with the Duty Officer and/or the Logistics Coordinator recommendations for the release of personnel, aircraft and heavy equipment. Demobilization plans are to be updated and submitted on a regular basis.
16. Submit a reclamation plan addressing requirements for roads, bridges, fire line restoration, camps, helispots, and other facilities for work not completed.
17. Ensure staff evaluations are completed on all incident personnel prior to their release and submit to Area office.
18. Conduct a thorough briefing for replacement personnel or team.
19. Submit all pertinent documents, reports, and personnel appraisals in a systematic fashion to the Area office.
20. In the event of a critical incident occurring within the existing operation, refer to the critical incident action plan.

FP212 (Jul 10)

Critical Incident Action Plan

A critical incident within an existing operation will require an assessment of threat, values at risk, management, authority, need for expertise, and resource requirements.

A new incident occurs within the boundaries or adjacent to an on-going incident that:

- Impacts citizens and/or private property not previously identified
- Impacts fire personnel or fire operations
- Requires resources and management personnel to be diverted from planned assignments
- High profile – media event
- Deals with issues outside the scope of current incident authority and responsibility
- Involves new jurisdictional legal responsibilities
- Requires the need to establish "Unified Command" with local and /or provincial government/agencies

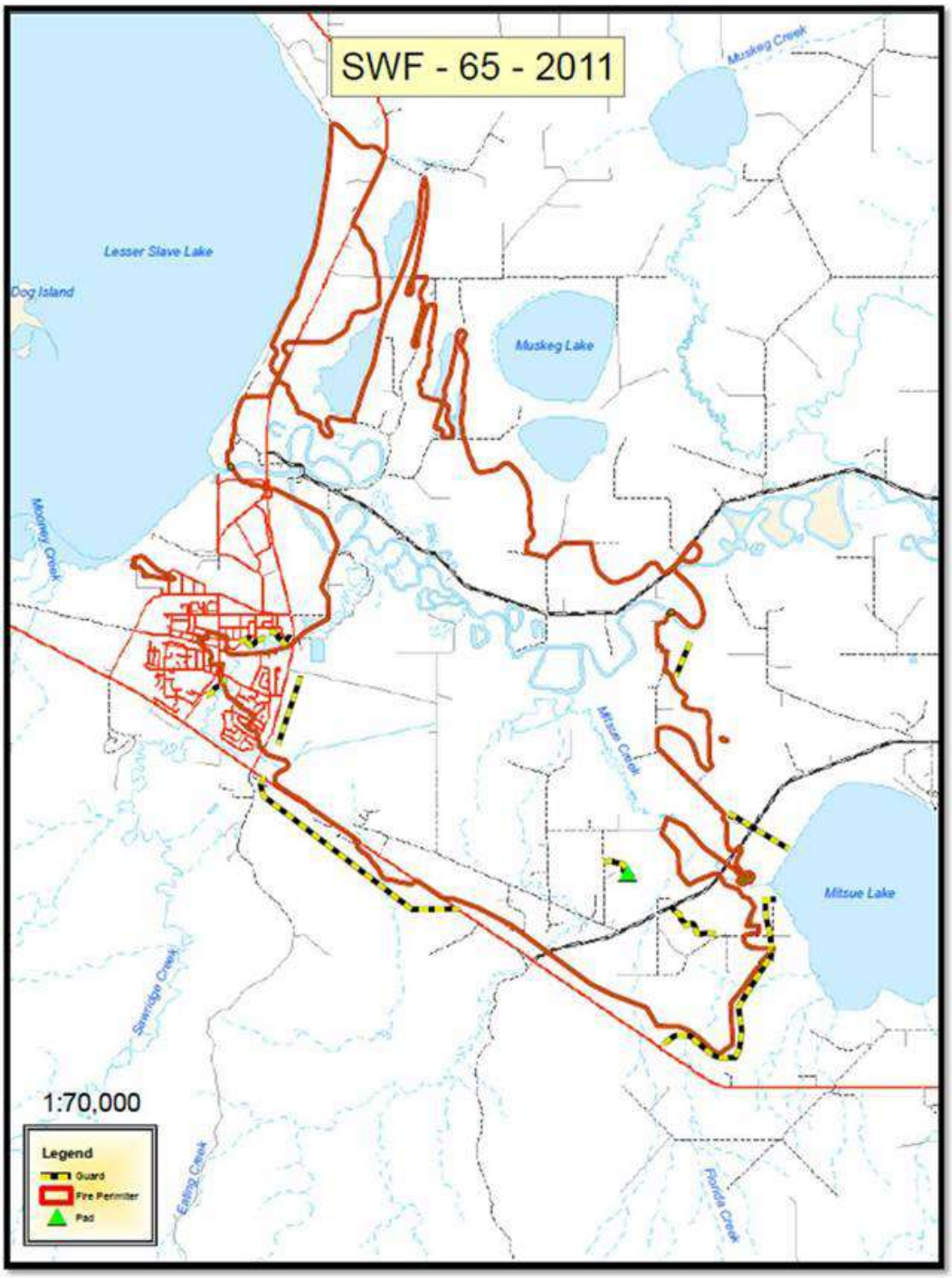
1. Immediately report the incident to the Area Duty Officer.
2. This is to be followed up with a hard copy of the Initial Incident Notification form within two hours. If the Incident Investigation Team is required to investigate the Incident, it must be noted on the Initial Incident Notification.
3. A written status report must be forwarded to Area office, who will forward it on to the PFFC Duty Officer within four hours of the event. The status report shall include what has been done so far and what will be done to complete the PAO SIIR and Serious Incident Report.
4. The Incident Management Team shall refer to the Serious Incident/Fire Entrapment/Fatality First Response Guide to secure the incident scene and prepare for the arrival of a trained incident investigator and/or the incident investigation team. Restrict any low-level helicopter flights over the area to avoid disturbance of evidence by rotor downwash.
5. Assign local fire information to handle initial media contacts. In all cases, it is the responsibility of the Forestry Program Manager to establish the "one window" media contact with the Director of Communications.
6. The Duty Officer or Manager shall arrange for a critical-incident stress debriefing team if requested.
7. If required initiate an airspace restriction (NOTAM).
8. Provide timely updates to the Area.

NOTE: If an automobile or piece of mobile equipment is involved in the incident, the reporting timelines outlined in automobile or mobile equipment accidents must be followed.

NOTE: If an aircraft is involved in the Incident, the reporting timelines outlined in aircraft incidents must be followed.

Page 3 of 3

APPENDIX O - DOZER GUARD CONSTRUCTION MAPS


SWF - 65 - 2011
Lesser Slave Lake
Dog Island
Muskeg Creek
Muskeg Lake
Mooney Creek
Mitsue Creek
Mitsue Lake
Sawridge Creek
Eating Creek
Florida Creek
1:70,000
Legend
Guard
Fire Perimiter
Pad

APPENDIX P - TRAINING REVIEW - HINTON TRAINING CENTRE

Incident Management Teams, Wildfire Managers, Duty Officers, Sustainable Resource Development Staff

1. In the last two years, what courses have been delivered that focus on the following and describe:

   a. Incident Management Team (IMT) Transition?
   Team Transition is covered in a two hour session of a newly revamped "Type 1 Fire Management" training course at the Hinton Training Centre. This course was delivered on January 23 – February 4 of 2011 of which six days was devoted to Type 1 Fire Management and five days devoted to Leadership.

   b. IMT Operations on Large Wildfire Complexes (including night time operations)?
   As per above, dealt with in the delivery of "Type 1 Fire Management" training course however there is nothing specific to "night time" operations.

   c. IMT Unified Command?
   There is a 3 ½ hour section - "Multi Agency-Multi Jurisdiction Case Study" covered off in the Type 1 Fire Management Course. Also ICS-400 deals with unified command.

   d. IMT Role in Structural Fire Protection (including structural triage)?
   There is a four hour section in the Type 1 Fire Management course – "Wildland Urban Interface" within that section there is a session on "Command During Catastrophic Interface Fires" There is also a small session on community protection.

   e. IMT Role in working with EOC, AEMA and RCMP?
   Nothing specific

   f. IMT role in procedure to evacuate?
   Nothing specific

   g. Liability of IMT team?
   Nothing specific – The 1.5 hour section on Incident Commander expectations in the Type 1 Fire Management course may address this somewhat.

2. Do courses include:

   a. Process for vital and timely communications between agencies?
   The Hinton Training Centre was not sure.

   b. Procedure for overcoming incompatible radio communications?
   No

c. Procedure for overcoming congested radio communications?
No

d. Procedure for recognizing Human Resource failures or issues and how to mitigate them?
This may be potentially addressed in the Type 1 Management Leadership course.

3. Are mock exercises or simulations conducted? If so what and when?
   - A two day team simulations is built into the Type 1 Fire Management course. Crew Leaders also have simulation built into their course in the spring.
   - No other simulations are delivered to address specific issues.
   - No simulations are conducted jointly with other agencies.
   - Table top exercises are conducted in ICS 200-400

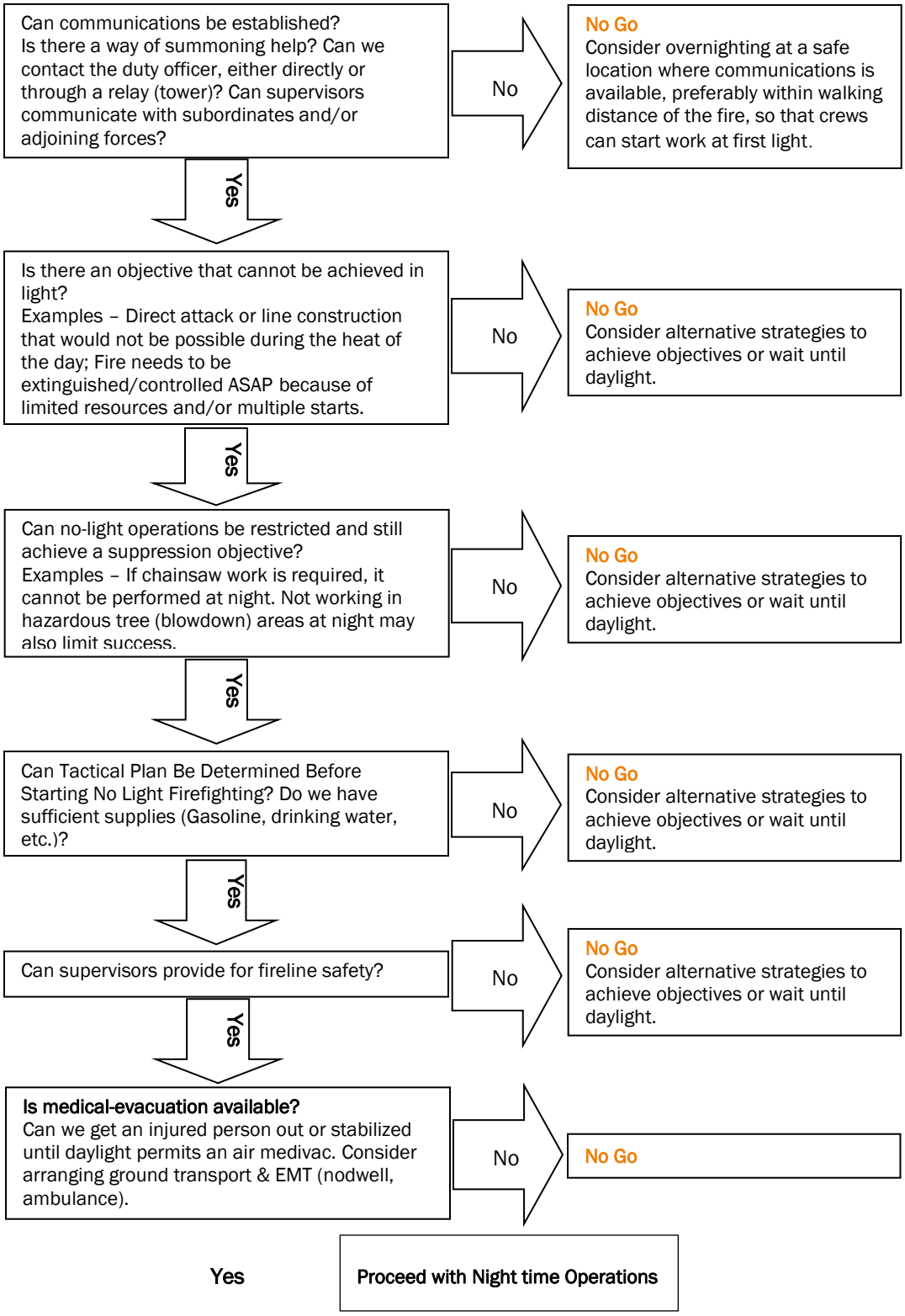
4. Does training address potential for IMT to be overwhelmed, receive large volumes of resources and equipment all at once and dispatch it appropriately?
   HTC feels it is addressed in their Type 1 Fire Management Training course under "Team Process and Strategic Planning" – 2 hours.

Additional Notes:

- HTC indicated that if a Wildfire Manager, Wildfire Operations Officer, Duty Officer or Wildfire Tech/Response Officer is not at a Type 1 level of certification, they would not have the qualifications to attend the Type 1 Fire Management course. There is the potential for a Duty Officer to obtain some training at the Duty Officer workshop.
- The S-215 and Incident Command System courses may address training needs of Wildfire Technicians and Response Officers on Complex operations.
- Operational Training Review – According to HTC, a task analysis was completed for positions on a Type 1 Fire Management Team approximately mid-2010. The result of this analysis has been the revamped Type 1 Fire Management course.
- A Provincial Training Steering Committee has also been revamped last year to address strategic direction of training and to identify deficiencies and insure operational delivery of training that is task oriented and not just academic.
- HTC mentioned that the Type II Fire Management Training course was oversubscribed. HTC looked at this and saw that training was needed for everyone subscribed to this course so they under took an initiative to deliver a second course to address student's needs.
- HTC is looking at the review of training delivery expectations for next year for all staff so as to develop courses in preparation for training needs.
- The issue of "Recurrent Training" was discussed. Currently, there is not a formal recurrent training program in place. It was thought some individuals may have 15 years without any recurrent training on specific tasks or no training on new tasks required and therefore not have the skill sets necessary for today's wildfire program needs. No Type 1 Fire Management Team refresher training courses are planned.

- Agenda and Course Objectives for Type 1 Fire Management, Type 1 Leadership and Duty Officer training courses are being collected. HTC has given permission to include these in appendices or presentations if required.

APPENDIX Q - SAFE NIGHT TIME OPERATIONS MATRIX



APPENDIX R - AGREEMENT BETWEEN SRD AND THE FIRE DEPARTMENT

Annual Mutual Aid Fire Control Plan – 2011

This Mutual Aid Fire Control Plan is entered into by the **Department of Sustainable Resource Development, Forestry Division**, hereinafter called **the Division**, and **Municipal District of Lesser Slave River M.D. 124**, hereinafter called **the Municipality**.

A. ADMINISTRATION

1. PURPOSE:

The purpose of this Annual Mutual Aid Fire Control Plan is to define operating procedures and responsibilities within the framework of the Mutual Aid Fire Control Agreement.

MUNICIPALITY:

Name: **Municipal District of Lesser Slave River No. 124**
Address: Box 722, Slave Lake, Alberta T0G 2A0
Phone: [redacted]
Fax:

DIVISION:

Name: **Alberta Sustainable Resource Development, Forestry Division**
Address: Box 390, Slave Lake Alberta T0G 2A0
Phone: [redacted]
Fax:

2. MUTUAL AID ZONES:

The entire MD #124 is within the Forest Protection Area. Wildfire suppression within this area is the responsibility of the Division. Structural and facility fire is the responsibility of the Municipality. The discovering agency shall report the fire to the responsible agency immediately and will provide mutual aid assistance based on available resources and priorities within their sphere of interest.

3. CONTACTS:

Slave Lake Wildfire Protection Area	
Manager During Regular Office Hours	[redacted]
To Report a Fire Regular Office Hours	
If Office is closed Duty Officer Cell Phone	
If No Answer Call	**(780) 310-FIRE**
Lac La Biche Wildfire Protection Area	
Manager During Regular Office Hours	[redacted]
To Report a Fire	
If No Answer Call	**(780) 310-FIRE**

Names, addresses, and phone numbers of contact personnel for the Division and Municipality are included in Appendix B – MOBILIZATION DIRECTORY.

4. MUTUAL AID REQUEST PROCEDURE:

Requests for mutual aid will be made by the following personnel:

Forestry Division
Wildfire Manager – [redacted] (Slave Lake)
Wildfire Ops Officer – [redacted]
Wildfire Prevention Officer – [redacted]

Wildfire Manager – [redacted] (Lac La Biche)
Wildfire & Air Ops Officer- [redacted]
Wildfire Prevention Officer- [redacted]

Municipality
Chief Administrative Officer – [redacted] (or designate)
Lesser Slaver Regional Fire Chief – [redacted] (or designate)

The request shall be made in writing on the Mutual Aid Request form (Appendix C). A request will be evaluated by the receiving agency based on available resources and ongoing priorities within their sphere of interest. The mutual aid request will be acknowledged in writing on the Mutual Aid Request form.

5. COST RECOVERY AND INVOICING:

All costs associated with mutual aid will be borne directly by the requesting agency or will be billed from the providing agency to the requesting agency as soon as time permits.

All reimbursements made under the provisions of this Plan shall be in accordance with the Forest and Prairie Protection Act, Forest Protection Branch policy, and the terms of the following:

1. This Agreement incorporates by reference the Mutual Aid Fire Control Agreement between the Division and the Municipality.

2. Reimbursement to the Municipality shall be at the rates and terms established in the current printing of Forest Protection Branch Equipment Rates Schedule 2 Remuneration for Equipment or at the rates included in Appendix D for specialized Municipal equipment.

3. Reimbursement to the Division shall be at the rates and terms established in the current printing of Forest Protection Branch Equipment Rates Schedule 2 Remuneration for Equipment or at the rates included in Appendix D for specialized equipment.

6. MEETINGS:

The Division and the Municipality agree to participate in annual organizational meetings to ensure that the contents of the Mutual Aid Fire Control Plan is current and to discuss matters pertaining to administration, prevention and detection, presuppression, wildfire operations, and training.

B. PREVENTION AND DETECTION

1. FIRE PERMIT ISSUANCE:

The Division is responsible for issuing fire permits on all lands within the Forest Protection Area. Permits will be issued by qualified Forest Officers and the Fire Patrolman from the Forest Area office.

The Town of Slave Lake is responsible for issuing fire permits within the corporate limits of The Town of Slave Lake. Fire permits will be issued by the Fire Chief or Deputy Fire Chief.

All fire permits issued by the Division within 2 miles of the corporate limits will be reported to the Fire Chief's office by the end of the business day in which the permit was issued.

2. FIRE CONTROL ORDERS:

Fire control orders will be requested by the Division, with input from the Municipality's Fire Chief. The Division will take the lead role in advertisement and enforcement of the fire control order on lands within the Forest Protection Area.

3. COOPERATIVE PREVENTION OPPORTUNITIES:

The Municipality and the Division will develop a joint prevention advertisement to be run in the spring municipal newsletter on an annual basis. The Division will be responsible for providing the content of the advertisement and the Municipality will be responsible for printing and distribution of the newsletter.

4. COOPERATIVE DETECTION SHARING:

The Division will perform aerial detection during periods of high and extreme hazards on within the Forest Protection Area:

The Municipality will provide ground detection through education of all Municipal staff on fire assessment and reporting procedures as outlined in this Annual Fire Control Plan.

All fires discovered by the Division within the Municipalities sphere of interest will be reported to the Fire Chief at [redacted] ***(cell phone).Also Back Door Number 911:*** [redacted].

All fires discovered by the Municipality within the Divisions sphere of interest will be reported to the Area Duty Officer at [redacted] ***or 0-(780) 310-FIRE.***

5. PRESCRIBED BURNING:

The Division will be the lead agency for all prescribed burning on lands within the Forest Protection Area. Municipal Fire Departments will be included in these prescribed fires to assist with operations and to serve as a cross-training exercise.

6. WILDLAND/URBAN INTERFACE:

The Municipality agrees to address wildland/urban interface issues within the Municipality through the application of the seven disciplines of FireSmart:

1. Public Education
2. Legislation
3. Development
4. Vegetation Management
5. Emergency Planning
6. Interagency Cooperation
7. Cross Training

The Division agrees to assist the Municipality with wildland/urban interface issues through provision of resource materials and training on the wildland/urban interface disciplines and options to minimize hazards within the Municipality.

C. PRESUPPRESSION

1. COOPERATIVE PRESUPPRESSION ACTIVITIES:

The Division agrees to supply fire equipment to the Municipality on a short-term loan basis during periods of high or extreme hazard within the Municipality. The amount of equipment provided will be based on the request from the Municipality and the degree of hazard within the Forest Area at the time of the request. The Municipality agrees to return the equipment within 24 hours of notice from the Division.

The Division will provide a list of Wildland Firefighting Unit (WFU) crew contact names and numbers to the Municipality upon request. The Division will also assist the Municipality in obtaining WFU crews for wildfire suppression in the Municipality.

The Municipality will make fire hall facilities or other suitable municipal lands available to the Division as a man up base during periods of high and extreme hazard. The Municipality will assign a staff from the Municipal fire department to standby for structural or wildfire.

2. HAZARD AND RESOURCE INFORMATION SHARING:

The Division will provide the following information to the Municipality, upon request, from April 1 to October 31.

- Fire Weather Indices
- Weather forecast
- Pre-suppression resources

The information provided will be for the Forest Protection Area therefore, the Municipality must consider this when relying on the data provided. Weather forecast information for zones within the Forest Protection Area can be obtained at http://www.srd.gov.ab.ca/wildfires/weather/default.aspx

The Municipality will provide the following information to the Division upon request.

- Pre-suppression resources available

D. WILDFIRE OPERATIONS

1. PROVISION OF MANPOWER AND EQUIPMENT FOR MUTUAL AID:

The Division and the Municipality will provide mutual aid equipment and manpower as per the terms of this Plan and the Mutual Aid Request Form. This section describes the operational procedures for cooperative use of resources by both agencies during a wildfire, prescribed fire, or structural fire.

a) When one agency requests assistance from another, the sending agency shall dispatch only personnel who meet or exceed the minimum requirements for qualification and certification by that agency.

b) At the time of the request for assistance during a wildfire, the assisting agency shall endeavor to dispatch the nearest available resources to the incident.

c) At the time of the request, each party shall assign a task force leader that supervises the activities of his/her agencies resources.

d) It shall be policy for the requesting agency to release the assisting agency from emergency duties as soon as practicable and mutually desired.

e) The Division will take charge of all wildland fires within the Forest Protection Area upon arrival. The Municipality will take charge of all structural fires upon arrival.

f) The provision of firefighting services contemplated herein and provided by the Municipality and the Division as the case may be are solely and absolutely in the discretion of the respective agency and the said agency may, without rendering the agency liable for any claims, penalty, damage or losses whatsoever to the other party or to any third party, direct any of the following:

- That there be no response whatsoever to the call for firefighting services by the respective agency regardless of the type of fire to be responded to; or
- That there be dispatched in response to the call, resources as the respective agency may request; or
- That there be dispatched in response to the call such lesser resources that, in the judgment of the respective Fire Chief or Forest Protection Officer, may be prudently available.

g) Upon request the Division will provide a contact list of private manpower and equipment providers to the Municipality by April 1 of each year.

h) If initial attack is done by an agency outside their area of jurisdiction, that agency will immediately attempt to gather and preserve evidence pertaining to the fire cause.

i) The Division or the Municipality, as the case may be, shall indemnify and save harmless the party responding to a request for assistance from the other party from and against all losses, costs, damages, injury or expense to persons or property of every nature or kind whatsoever, arising out of, or in any way attributed to, the provision of emergency services contemplated hereunder, except where such loss, damage, injury or expense is caused by the negligence or willful act of any employee or agent of the party responding.

j) The Division or the Municipality, as the case may be, shall indemnify and save harmless the party responding to a request for assistance from the other party, from damage or less to its vehicles or equipment which is directly attributable to the provision of service contemplated hereunder, provided that there shall be no such indemnity if such loss or damage is the result of any negligent or willful act of an employee or agent of the party responding.

2. COMMUNICATIONS:

The mutual-aid response radio frequency will be [redacted] MHz.

a) RADIOS: By the terms of this Agreement, each party agrees to permit the others to utilize radio frequencies for emergency purposes.

b) COMPUTERS: By the terms of this Agreement, each party agrees to permit the others to utilize appropriate computer systems.

c) TELEPHONES and CELL PHONES: By the terms of this Agreement, each party agrees to keep their phone and cell phone numbers updated in the Mobilization Directory.

3. ESTABLISHED PROTOCOL FOR "TURN-OVER" OF RESPONSIBILITY:

As per the responsibilities outlined in Sections A.2 and D.1.d, the Municipality and Division agree to complete the "turn-over" of responsibility for fire suppression to the responsible agency as quickly and efficiently as possible.

Upon arrival at a fire, the commander for the responsible agency will meet with the present commander to obtain a briefing on present suppression tactics and to discuss a schedule for "turn-over" of responsibility. It is agreed that resources from the assisting agency will be released as soon as possible based on fire suppression success.

4. ESTABLISHED PROTOCOL FOR "FORMATION" OF JOINT COMMAND

As per the responsibilities outlined in Sections A.2 and D.1.e, the County and Division agree to form joint incident command in accordance within the provisions of Incident Command System.

E. TRAINING

The Division and the Municipality agree to exchange training opportunities, including trainers, trainees, and materials. All local training that is multi-agency in nature and sponsored by one of the parties will be coordinated and made available to the other party.

Formalized training may be sponsored by the Division upon review by the Forestry Manager.

1. CERTIFICATION TRAINING OPPORTUNITIES.

Upon request the Division will sponsor and conduct a two-day wildfire suppression training course for members of the Municipal Fire Department.

A complete schedule of wildfire training courses offered at the Hinton Training Centre is available at http://srd.alberta.ca/forests/researcheducation/hintontraining/default.aspx

2. INFORMAL TRAINING OPPORTUNITIES.

The Division will assist the Municipal Fire Department in their spring hazard reduction burns and provide personnel to complete on-site field training.

The Division will provide a one-day wildland/urban interface land use planning workshop for Municipal administration and elected officials.

3. JOINT MOCK-DISASTER EXERCISES.

The Division and the Municipality will develop and implement a mock wildfire response exercise to help fire managers identify strengths and weaknesses in the present agreements, to act as a cross-training exercise for Municipal and wildland firefighters, and to act as a public education tool for residents, Municipal and Provincial government administration, and elected officials.

4. ON THE JOB TRAINING OPPORTUNITIES.

The Municipality and the Division agree to provide training assistance as necessary while working on mutual aid fire suppression.

The Division agrees to provide fire permit field training to all new Municipal Fire Guardians.

F. EFFECTIVE DATES

This Annual Mutual Aid Fire Control Plan is in effect from April 20, 2011 to April 19, 2012.

IN WITNESS WHEREOF the parties hereunto have affixed their signatures and corporate seals on the day and year first written.

[redacted]

Forestry Manager

Date: April 20, 2011

[redacted]

Municpal District of Lesser Slave River

Date: April 19, 2011

APPENDIX C – MUTUAL AID REQUEST FORM

FROM: Name
Municipality or SRD Area
Phone
Fax

TO: Name
Municipality or SRD Area
Phone
Fax

SUBJECT: MUTUAL AID REQUEST _____

LOCATION _____

As per the Mutual Aid Fire Control Agreement, mutual aid fire suppression is requested for the above fire.

The following resources are requested:

Manpower: _____

_____

Airtankers: _____

_____

Helicopters: _____

_____

Equipment: _____

_____

All costs associated with this mutual aid will be borne by the requesting agency as per the rates specified in the current Annual Mutual Aid Fire Control Plan.

Please respond to this request by ***time and date***.

Signature _____

Position _____

Your request for mutual aid assistance is approved/not approved as per this request and the terms of the Mutual Aid Fire Control Agreement.

Signature _____

Position _____

Date and Time _____

APPENIX D – ESTIMATED REIMBURSEMENT RATES 2010

Forestry Division:

Resource	*Rate*
Airtanker Group: (includes AAO and aircraft)	
CV580	[redacted] per hour plus fuel and retardant
CL215 with 201-204	[redacted] per hour plus fuel and retardant
Air Tractors (AT802)	[redacted] per hour plus fuel and retardant
L188	[redacted] per hour plus fuel and retardant
Birddog Aircraft	
Turbo Commander 690	[redacted] per hour plus fuel
Cessna Caravan C208	[redacted] per hour plus fuel
Helicopters:	
Contract Rappel	[redacted] per hour plus fuel
Casual	Government rate plus fuel
Contract Intermediate	[redacted] per hour plus fuel
Contract Medium	[redacted] per hour plus fuel
Manpower:*	
RAP Crew (7 man)	Cost. Estimate [redacted] /hour/person
HAC Crew (4 or 8 man)	Cost. Estimate [redacted] /hour/person
Emergency Firefighters	Cost. Estimate [redacted] /hour/person
Firetack 1 Crew (8 man)	Cost. Estimate [redacted] /hour/person
Air Attack Officer (contract)	Actual Cost. Estimate [redacted] day/person
Specialized Equipment:	
Helitorch	Government Rate
Compressed Air Foam Unit	Contract Rate

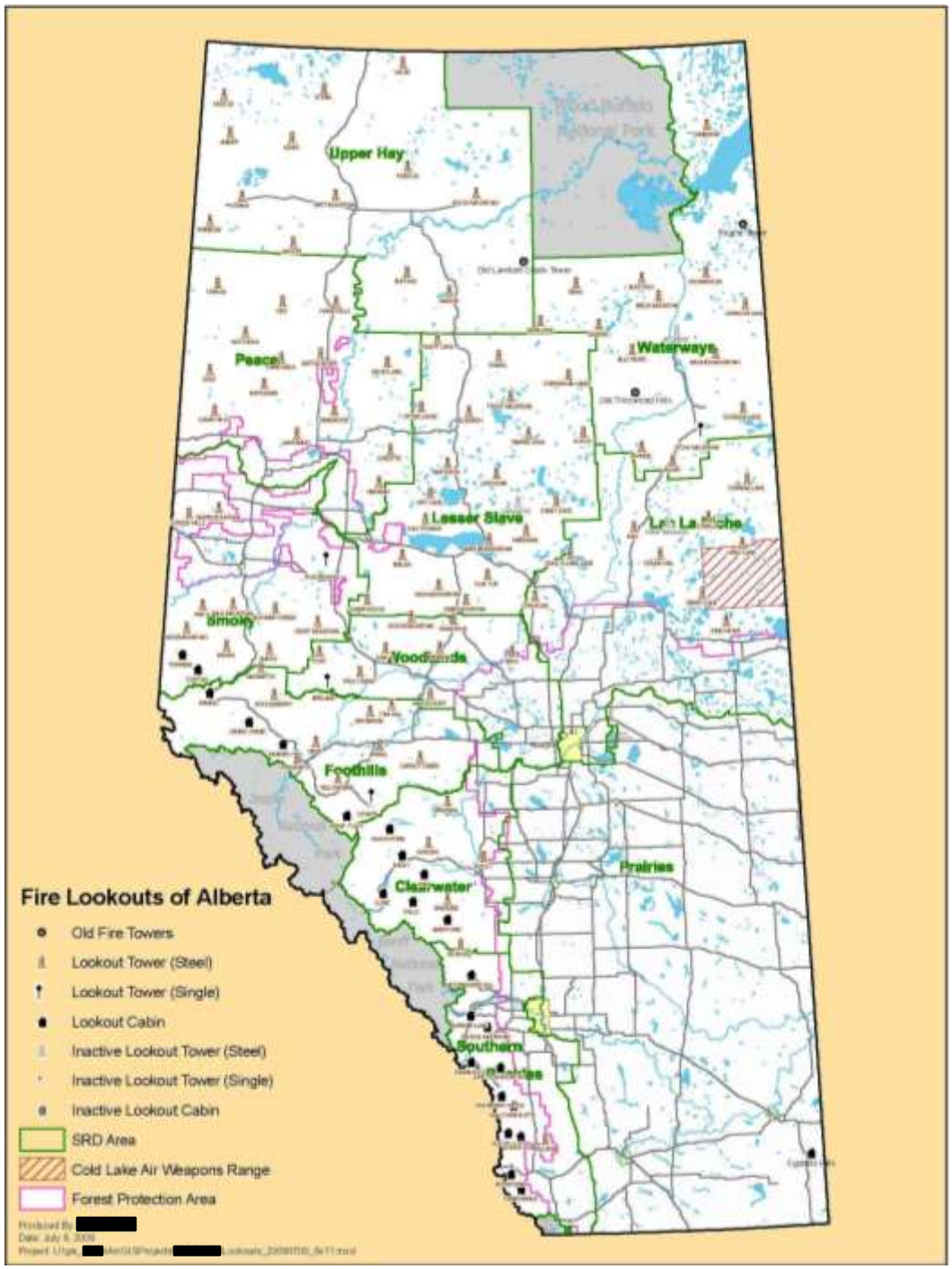
***Manpower will billed at actual cost. Estimated rates above do not include overtime rates, accommodations or meals.**

Municipality:

Resource	*Rate*
Manpower:	
Fire Fighter	Regulation Rates
Specialized Equipment:	
Rescue Unit Tanker c/w 2 man crew	Alberta Road Builder Rates/Negotiated Rates
Municipal Fire Truck c/w 6 man crew	Alberta Road Builder Rates/Negotiated Rates
Fire Pumper Fire Truck c/w 3 man crew	Alberta Road Builder Rates/Negotiated Rates
Command Vehicle	Alberta Road Builder Rates/Negotiated Rates

***Manpower costs do not include accommodations or meals.**

APPENDIX S - PROVINCIAL WILDFIRE LOOKOUTS



APPENDIX T - RESOURCE AVAILABILITY FOR 2011

MANPOWER – INITIAL ATTACK (Quick Response Crews)

- TYPE 1 RAPPEL – highly trained, physically fit initial attack crews that respond to fires by helicopter and have the training and capability to rappel to the ground from a hovering helicopter in areas of poor access. Crews are strategically pre-positioned to areas of the province with the highest hazards and greatest potential for wildfire starts.

  9 – 7 person crews (63)

- TYPE 1 HELITAC – highly trained, physically fit initial attack crews that respond to fires with helicopter or truck. Crews are strategically pre-positioned to areas of the province with the highest hazards and greatest potential for wildfire starts.

  47 – 4 person crews (188)

  8 – 8 person crews (64)

MANPOWER – INITIAL ATTACK SUPPORT AND SUSTAINED ACTION

- TYPE 1 FIRETAC (Contract Crews) – Aboriginal fire crews trained to a Type 1 standard that respond by helicopter or truck to fires, and who are mainly used as support to initial attack operations, sustained action and mop-up. Crews are strategically pre-positioned to areas of the province with the highest hazards and greatest potential for wildfire starts.

  32 – 8 person crews (256)

MANPOWER – SUSTAINED ACTION

- TYPE 2 EMERGENCY HIRE – Aboriginal firefighters that are not trained to Type 1 standards but are sufficiently trained in sustained action and mop-up roles. Crews are hired on an emergency short term basis to address situations when the hazard and wildfire potential has increased.

  Approximately 1,000 firefighters

OTHER MANPOWER

- Lookout observers, patrolmen, dispatchers, data entry personnel, man-up supervisors, division supervisors, airtanker base supervisors, camp officers, etc.

  Approximately 300 individuals

INCIDENT MANAGEMENT TEAMS

- 5 Type 1 teams on provincial roster
- Type 2 teams built in Areas(s) depending on hazard and fire operations.

HELICOPTERS – LONG TERM CONTRACTS

- 6 Rappel mediums (assigned to RAP crews).
- 5 Intermediates – assigned to areas of high hazard or on-going fire operations on a provincial basis.

- 4 Mediums – assigned to areas of high hazard or on-going fire operations on a provincial basis.
- Casual Charter – local or import hire as required (SRD has 78 companies with casual contracts).

AIRTANKERS (contracts are staggered and cover periods from April 25 to September 16, and can be extended on either end based on hazard conditions).

- Group 1 – 4 amphibious Air Tractor 802s (with Bird Dog plane).
- Group 2 – 1 Convair CV 580 (with Bird Dog plane).
- Group 3 (AB) – 1 amphibious CL215s & 2 CL215T.
- Group 4 – 1 Electra L-188 (with birddog plane).
- Group 5 – 3 wheeled Air Tractor 802s (with birddog plane).
- Group 6 – 1 Electra L-188 (with birddog plane).
- Group 7 – 1 Electra L-188 (with birddog plane).
- Group 8 – 1 Convair CV 580 (with birddog plane).
- Group 9 – 4 amphibious Air Tractor 802s (with Bird Dog plane).

FACILITIES

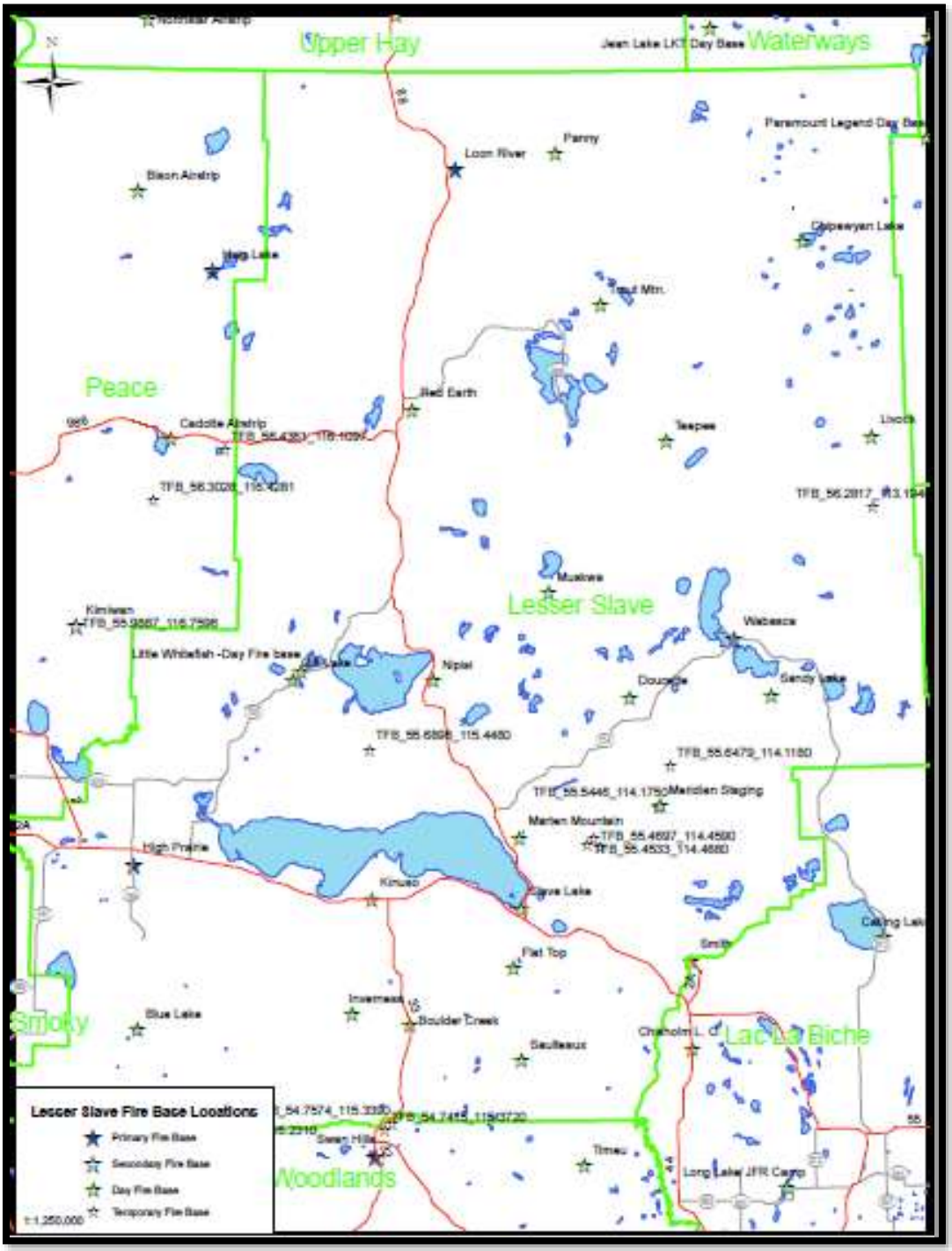
- 128 active lookouts; supplement with loaded helicopter and fixed wing aerial patrols in smoky, high hazard or holdover fire conditions.
- 14 airtanker bases.
- 38 fire bases.
- Numerous local day base sites.
- Ongoing upgrades, maintenance and replacement.

RESOURCE SHARING AGREEMENTS

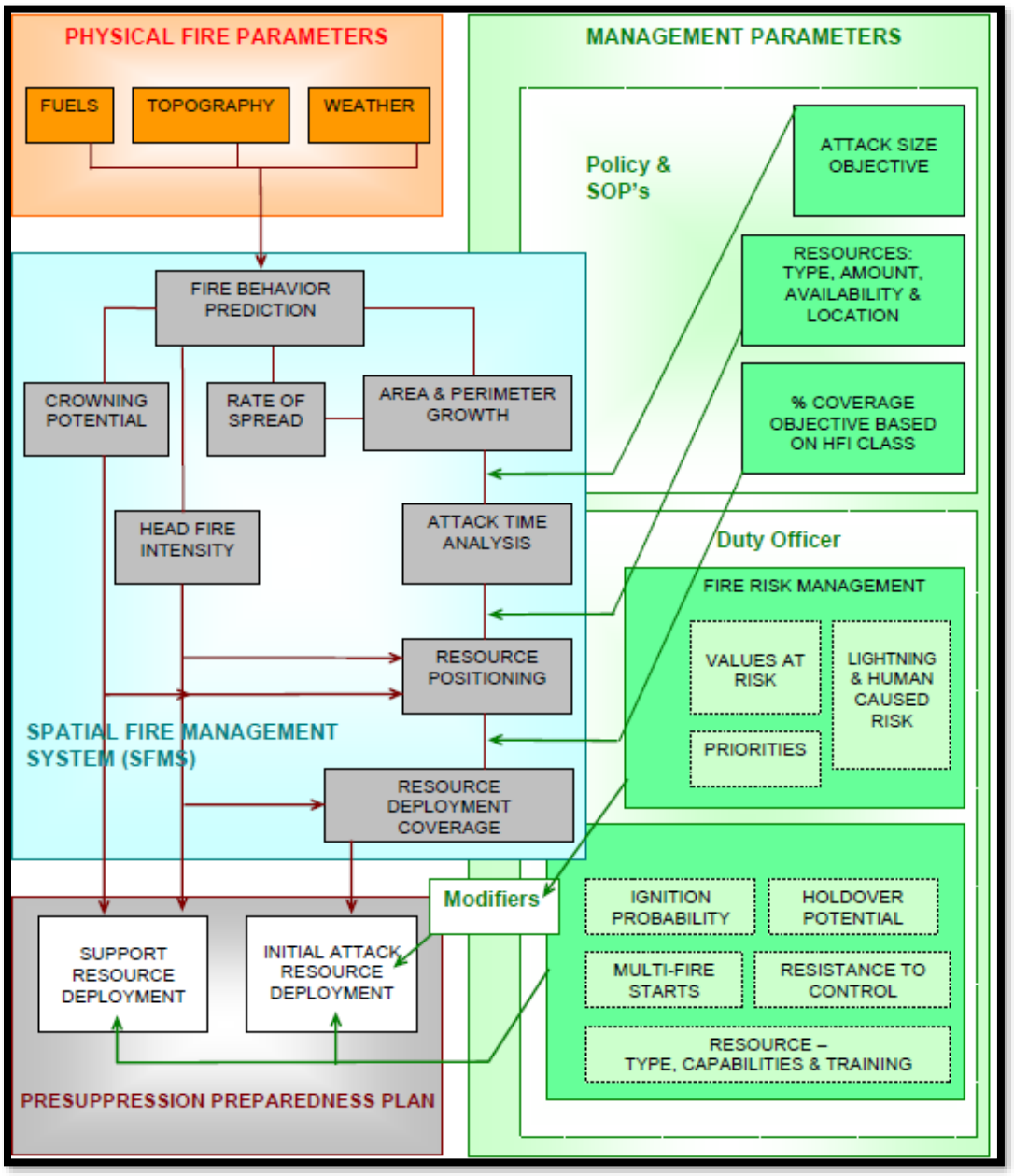
- Canadian Interagency Forest Fire Centre Mutual Aid Sharing Agreement.
- North West Compact.
- Jalisco, Mexico.

NOTE: The import and export of manpower, equipment and aircraft occurs on a regular basis, and is predicated on current and forecasted weather and fire hazards, and current and forecasted fire loads, etc.

APPENDIX U - LESSER SLAVE AREA FIRE BASE LOCATIONS



APPENDIX V - PRE-SUPPRESSION SYSTEM



APPENDIX W - CANADIAN FOREST FIRE DANGER RATING SYSTEM

The **Canadian Forest Fire Danger Rating System (CFFDRS)** is a national system for rating the potential intensity and behaviour of wildfires in Canada.

Forest fire danger is a general term used to express a variety of factors in the wildland fire environment, such as ease of ignition and difficulty of control. Fire danger rating systems produce qualitative and/or numeric indices of wildfire potential, which are used as guides in a wide variety of wildfire management activities.

The CFFDRS has been under development since 1968. Currently, two subsystems–the Canadian Forest Fire Weather Index (FWI) System (released in the early 1970s) and the Canadian Forest Fire Behaviour Prediction (FBP) System (released in the late 1980s)–are being used extensively in Canada and internationally.

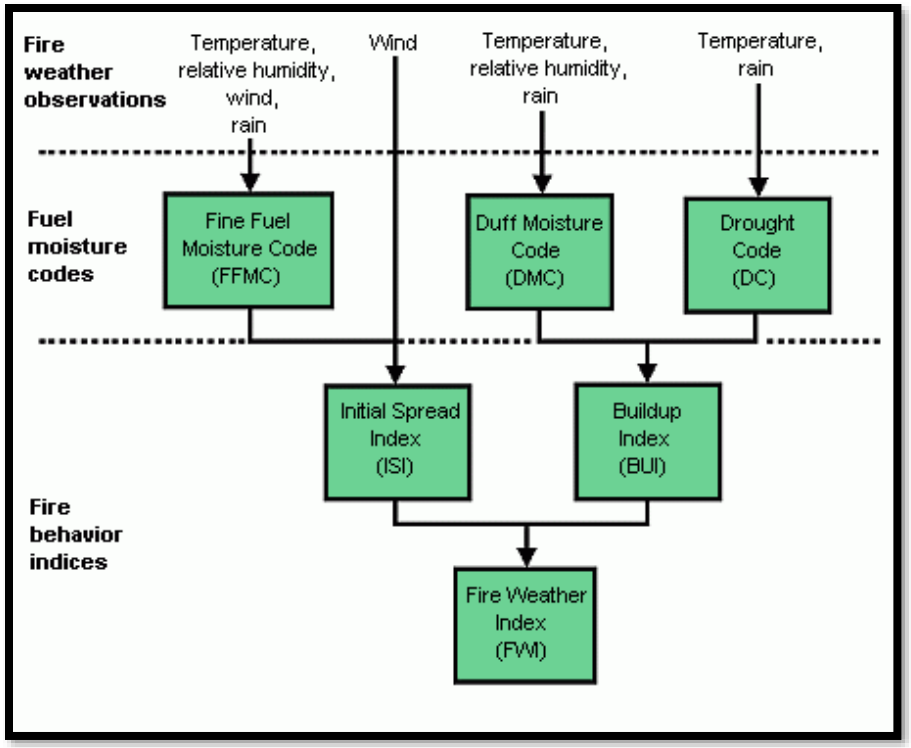
Canadian Forest Fire Weather Index (FWI) System

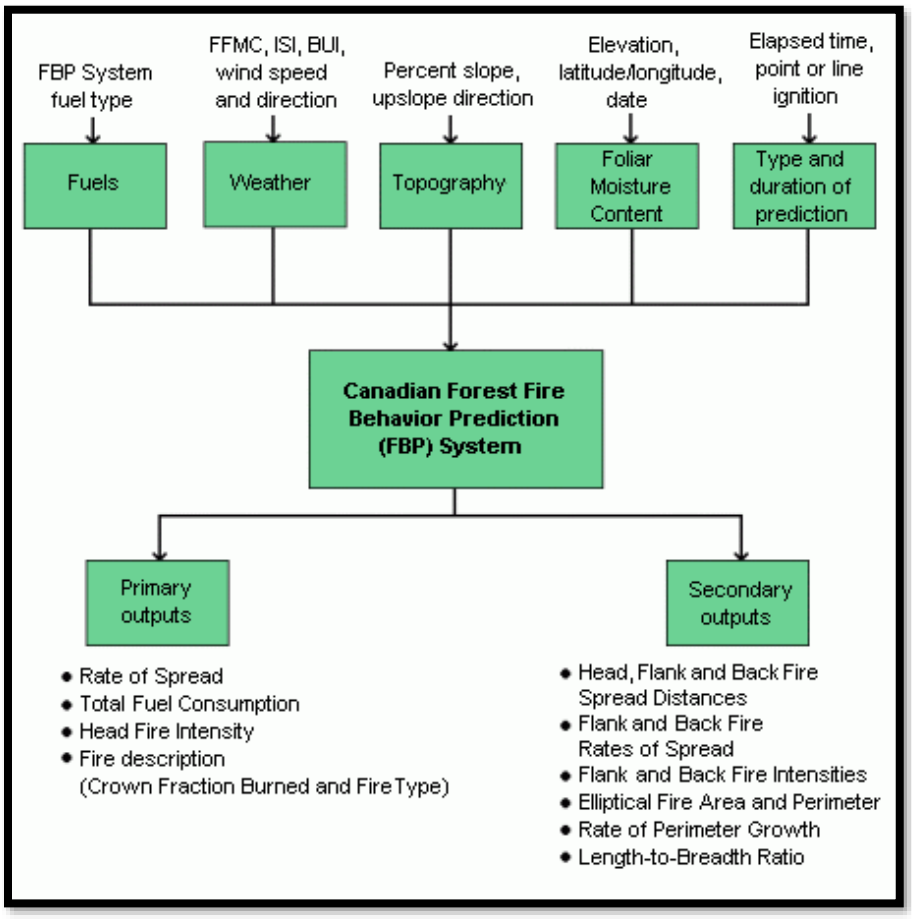
- The FWI System consists of six components that account for the effects of fuel moisture and wind on wildfire behaviour.
- The first three components, the fuel moisture codes, are numeric ratings of the moisture content of litter and other fine fuels, the average moisture content of loosely compacted organic layers of moderate depth, and the average moisture content of deep, compact organic layers.
- The remaining three components are fire behaviour indices, which represent the rate of fire spread, fuel available for combustion, and frontal fire intensity. The values rise as wildfire danger increases.
- Alberta adopted the FWI System in 1971 and it has been used as a decision aid in a variety of wildfire management planning and operational activities.
- Calculation of FWI System values commences on the third day after snow is gone at the particular recording station.

Canadian Forest Fire Behaviour Prediction (FBP) System

- The FBP System provides quantitative estimates of potential head fire spread rate, fuel consumption, and fire intensity, as well as fire descriptions. With the aid of an elliptical wildfire growth model, it gives estimates of fire area, perimeter, perimeter growth rate, and flank and back fire behaviour.
- Alberta began using the FBP System operationally in the late 1980s as a decision aid in a variety of wildfire management planning and operational activities.

CFFDRS FWI System values are calculated for each weather station daily at 13:00 MDT. Combined with spatial modelling of forecast wildfire behaviour, these values form the basis of wildfire preparedness planning in Alberta.


Fire weather observations
Temperature, relative humidity, wind, rain
Wind
Temperature, relative humidity, rain
Temperature, rain
Fuel moisture codes
Fine Fuel Moisture Code (FFMC)
Duff Moisture Code (DMC)
Drought Code (DC)
Initial Spread Index (ISI)
Buildup Index (BUI)
Fire behavior indices
Fire Weather Index (FWI)


FBP System fuel type
FFMC, ISI, BUI, wind speed and direction
Percent slope, upslope direction
Elevation, latitude/longitude, date
Elapsed time, point or line ignition
Fuels
Weather
Topography
Foliar Moisture Content
Type and duration of prediction
Canadian Forest Fire Behavior Prediction (FBP) System
Primary outputs
Secondary outputs
• Rate of Spread
• Total Fuel Consumption
• Head Fire Intensity
• Fire description (Crown Fraction Burned and Fire Type)
• Head, Flank and Back Fire Spread Distances
• Flank and Back Fire Rates of Spread
• Flank and Back Fire Intensities
• Elliptical Fire Area and Perimeter
• Rate of Perimeter Growth
• Length-to-Breadth Ratio

Definitions:

Fine Fuel Moisture Code (FFMC) The FFMC is a numeric rating of the moisture content of litter and other cured fine fuels. This code is an indicator of the relative ease of ignition and the flammability of fine fuel.

Duff Moisture Code (DMC) The DMC is a numeric rating of the average moisture content of loosely compacted organic layers of moderate depth. This code gives an indication of fuel consumption in moderate duff layers and medium-size woody material.

Drought Code (DC) The DC is a numeric rating of the average moisture content of deep, compact organic layers. This code is a useful indicator of seasonal drought effects on forest fuels and the amount of smoldering in deep duff layers and large logs.

Initial Spread Index (IS) The ISI is a numeric rating of the expected rate of fire spread. It combines the effects of wind and the FFMC on rate of spread without the influence of variable quantities of fuel.

Buildup Index (BUI) The BUI is a numeric rating of the total amount of fuel available for combustion. It combines the DMC and the DC.

Fire Weather Index (FWI) The FWI is a numeric rating of fire intensity. It combines the ISI and the BUI. It is suitable as a general index of fire danger throughout the forested areas of Canada.

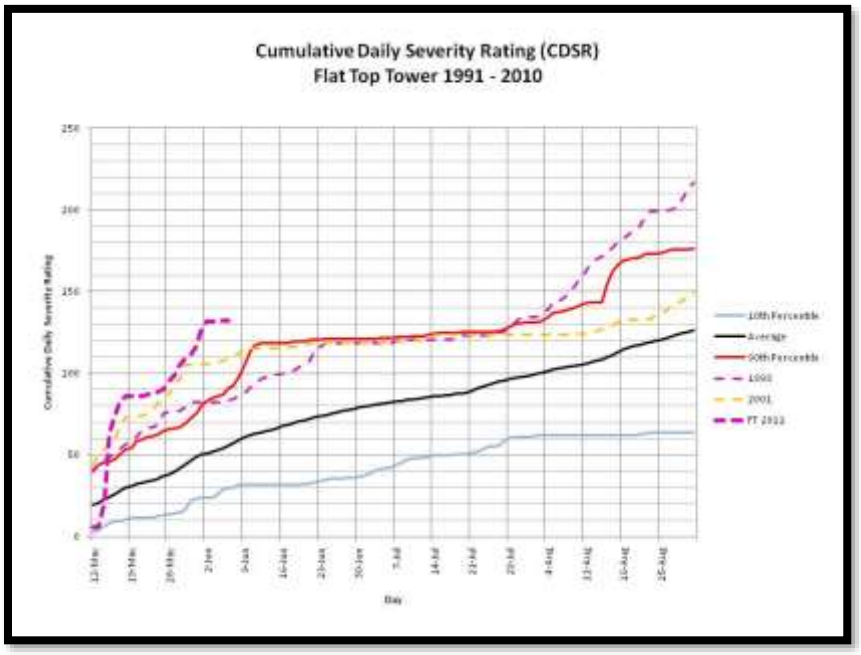
Daily Severity Rating (DSR) The DSR is a numeric rating of the difficulty of controlling wildfires.

Hazard Rating	FFMC Fine Fuel Moisture Code	DMC Duff Moisture Code	DC Drought Code	ISI Initial Spread Index	BUI Build Up Index	FWI Fire Weather Index	HFI Intensity Class
Low	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Moderate	77-84	22-27	80-189	2-4	25-40	4.5-10.5	3
High	85-88	28-40	190-299	5-8	41-60	10.5-18.5	4
Very High	89-91	41-60	300-424	9-15	61-80	18.5-29.5	5
Extreme	92+	61+	425+	16+	90+	29.5+	6

The DRS is a function of the FWI but more accurately reflects the expected efforts required for wildfire suppression by giving greater weight to higher values than lower ones. Daily DSR values can be summed to obtain a cumulative value and averaged over any desired period such as a week, month, or season. Individual DSR's can also be summed up to a given date

to provide Cumulative Daily Severity Rating (CDSR). CDSR curves show at any given time during the wildfire season the level of wildfire weather severity reached up to that date and provide an effective measure of potential wildfire intensity.

CDSR for an individual wildfire season can also be charted against long-term average CDSR, percentiles (e.g., 10th Percentile, 90th Percentile) or benchmark severe wildfire seasons.



Rate of Spread (ROS) ROS is the predicted speed of the wildfire at the front or head of the fire (where the fire moves fastest) and takes into account both crowning and spotting. It is measured in metres per minute and is based on the Fuel Type, Initial Spread Index, Build-up Index, and several fuel-specific parameters such as phenological state (leafless or green) in deciduous trees, crown base height in coniferous trees, and percent curing in grasses.

Total Fuel Consumption (TFC) TFC is the predicted weight of fuel consumed by the wildfire both on the forest floor and in the crowns of the trees. It is measured in kilograms per square metre of ground surface and is based on Foliar Moisture Content, Surface Fuel Consumption, and Rate of Spread.

Head Fire Intensity (HFI) HFI is the predicted intensity, or energy output, of the wildfire at the front or head of the fire. It has become one of the standard gauges by which fire managers estimate the difficulty of controlling a wildfire and select appropriate suppression methods. It is measured in kilowatts per metre of fire front and is based on the Rate of Spread and the Total Fuel Consumption. For operational purposes, Head

	Fire Intensity is expressed and spatially displayed as six Intensity Classes.
Crown Fraction Burned (CFB)	CFB is the predicted fraction of the tree crowns consumed by the wildfire. It is based on Buildup Index, Foliar Moisture Content, Surface Fuel Consumption, and Rate of Spread.
Fire Type (FT)	FT provides a general description of the wildfire. It is based on the CFB. If the CFB is less than 0.1 (10%), then the wildfire is a surface fire. If the CFB is 0.9 (90%) or more, then the wildfire is a continuous crown fire. If the CFB is between 0.1 and 0.9, then the wildfire is an intermittent crown fire.
Snow Gone	Snow gone is typically declared when all snow cover that is visible from the observation site has melted. Wildfire danger calculations are normally started three days after snow gone has been reported.

Descriptions of Head Fire Intensity Classes 1 Through 6

APPENDIX X - PRE-SUPPRESSION SYSTEM – RESOURCE RECOMMENDATIONS BASED ON HEAD FIRE INTENSITY

HFI Class	Manpower	Transportation	Special Equipment	Other Considerations
1&2	NIL	NIL	NIL	NIL
3	1 – Man-up Supervisor 3 – Wildland firefighting crews 1 – Fire Behaviour Analyst	1 – Bus or vans for the crews 1 to 2 - F/W for aerial patrols	3 – Fireline radio kits	Alert Wildfire Assessor for fire assessments Alert service personnel Activate Response Officer Activate Industry Liaison
4	1 – Man-up Supervisor 3 - Wildland firefighting crews 1 - Dozer Boss 1 – Deputy Duty Officer 1 – Type 2 ICT on standby 1 – Communications Officer 1 – Warehouse staff	1 – Medium R/W 1 – Bus or vans for crews 1 – F/W or R/W for assessments 1 to 2 - F/W for aerial patrols	1 – Dozer group loaded 3 – Fireline radio kits 2 – Skidders c/w tanks loaded Consider Type 1 fire radio kit	Alert Wildfire Assessor for fire assessments Alert Information Officer (IO) Activate Logistics Centre Activate Deputy Duty Officer Airtankers on auto dispatch Alert Ignition Specialist Advise PFFC to alert Type 1 ICT
5	2 – Man-up Supervisors 6 - Wildland firefighting crews 2 – Dozer Bosses Type 1 and 2 ICT + support 1 - Wildfire Assessor for assessments 1 – Deputy Duty Officer 1 – Fire Behaviour Analyst 1 –Ignition Specialist Team 1 – Information Officer 1 – Communications Officer	1 – Medium R/W 1 – F/W or R/W for assessments Busses or vans for crews 1 - R/W for aerial ignition 1 to 2 - F/W for aerial patrols	6 - Fireline radio kits 2 – Dozer groups loaded 2 – Skidders c/w tanks loaded Base camp equipment Type 1 fire radio kit	In addition to the above: Activate Wildfire Assessor for fire assessments Activate Fire Behavior Analyst (FBAN) and Aerial Ignition Team (AI) Activate Information Officer (IO) Preposition ICT(s) Communicate hazard to Wildfire Prevention Officer Preposition dozer groups Extra airtanker support to cover off the highest value areas

6	2 – Man-up Supervisors 9 – Wildland firefighting crews 2 – Dozer Bosses Type 1 and 2 ICT + support 1 – IC 2 for assessments 1 – Deputy Duty Officer 1 – Fire Behaviour Analyst 1 – Ignition Specialist Team 1 – Information Officer 1 – Communications Officer	2 – Medium R/W 1 – F/W or R/W for Assessments Busses or vans for crews 1 - R/W for aerial ignition 1 to 2 - F/W for aerial patrols	9 - Fireline radio Kits 2 – Dozer groups loaded 2 – Skidders c/w tanks loaded Base camp equipment Type I fire radio kit	In addition to the above: Preposition ICT(s) Preposition dozer groups Extra airtanker support to cover off the highest value areas

APPENDIX Y - PRE-SUPPRESSION SYSTEM MODIFIERS

Modifier 1: Re-evaluation of predicted fire behaviour based on a new weather forecast or unanticipated present weather

Modifier 2: Increased risk of lightning fires and/or a multiple fire situation

The required number of initial attack resources and/or bases is being exceeded due to an expected increase in natural risk factors such as:

- A high risk of dry lightning is forecasted or occurring.
- A 500 millibar ridge breakdown is forecasted or occurring.
- A fire weather advisory or extreme wind advisory has been issued.

Note winds are already accounted for since the program uses actual forecasted wind values to calculate predicted HFI, Attack Times and other Fire Behaviour Prediction (FBP) outputs.

Modifier 3: Increased risk of human caused fires

The required number of initial attack resources and/or bases is being exceeded due to human caused risk factors such as holidays, community events, recreational activities, seasonal concerns with respect to agricultural and industrial burning activities, hunting and fishing activities, etc.

Modifier 4: Protection of predetermined high values at risk

The required number of initial attack resources and/or bases is being exceeded to provide increased protection of one or more predetermined high value or high priority areas.

Modifier 5: Resource availability factors

The required number of initial attack resources and/or bases is being exceeded due to resource availability concerns.

Modifier 6: Seasonal considerations

The required number of initial attack resources and/or bases is being increased or decreased due to the time of year and/or an abnormal late or early fire season.

Modifier 7: Business factors

The required number of initial attack resources and/or bases is being increased or decreased due to business factors such as public concerns, public relations such as prevention initiatives, public displays, events, or demonstrations, stakeholder concerns, training or certification of resources, direction from upper management.

Modifier 8: Adding (or removing) one rotary wing will increase (or decrease) coverage by too great an amount

Use in situations where SFMS-calculated IA coverage would be higher than required if one rotary wing was added to the deployment, BUT lower than required if one rotary wing was removed from the deployment.

Modifier 97: Provincial PPS Plan (PFFC)

IA Coverage not applicable

Modifier 98: Not mandatory to, or could not calculate IA coverage – Plan still submitted to record that IA resources are still planned

Only use when:

- Weather data in spring or fall is insufficient to calculate IA coverage in SFMS yet there is a hazard and a PPS Plan is being submitted to indicate IA resources are required.
- SFMS could not be used to calculate IA coverage due to a technical or computer failure.

Modifier 99: No resources required to achieve sufficient coverage

APPENDIX Z - PROVINCIAL WILDFIRE WEATHER FORECAST ZONES

APPENDIX AA - INCIDENT WILDFIRE WEATHER, BEHAVIOUR AND SAFETY FOR THE FLAT TOP COMPLEX

Weather Forecast and Fire Behaviour Prediction

Fuel Type	ROS (m/min)	Intensity (kw/m)	Description	General Safety Message
May 15 Max Temp 20, Low RH 15, Wind 30-40, Precipitation – nil chance Fire Weather advisory issued. Extreme rates of spread and fire intensities will be encountered				
C2 M1 50% 01a 100% S2	42 30 113 21	6-28,000 6-13,000 6-12,000 6-52,000	Crown Fire Crown Fire Surface Surface	None Indicated
May 16 Max Temp – 22, Low RH - 20-25, Wind SE 25-30 G50, Precipitation - nil chance Aggressive fire behaviour at the head. Operations to be infield only if safety/escape zone in place				
C2 M1 50% 01a 100% S2	26 18 68 21	6-18,000 5- 8,000 5-7,000 6-36,8000	Crown Fire Int. Crown Surface Surface	All ground operations to be assessed constantly for safety, strategic withdrawal when warranted. Aircraft operation to be monitored and shut down when required.
May 17 Max Temp – 17, Low RH – 35%, Wind SE 15-20, Precipitation - nil chance The predicted fire behaviour will be less then what has been seen over the last 48 hrs. Intensity class 5 & 6 will still be encountered in C2 and M1 fuel types (1400-1900). Fuels remain cured and will burn easily.				
C2 M1 50% 01a 100% S2	15 10 40 8	6-11,000 4-4,000 4-4,000 6-22,000	Crown Fire Int. Crown Surface Surface	All ground operations to be assessed constantly for safety, strategic withdrawal when warranted. Clear awareness of all other rotary wing and fixed wing aircraft working same fire or fueling location
May 18 Max Temp – 18, Low RH – 30, Wind - W-NW 10, Precipitation - nil chance Aggressive fire behaviour head, operations to be infield only if safety/escape zone in place				
C2 M1 50% 01a 100% S2	8 5 21 4	5-5,900 4-2,000 4-2,200 5-12,000	Int. Crown Surface Surface Surface	All ground operations to be assessed constantly for safety, strategic withdrawal when warranted. Aircraft operations to be monitored and shut down if required.

Max Temp – 17, Low RH – 40, Wind - N/NE 10-15, Precipitation – 70% L RW/TRW The weather over the fire area will see northerly winds at about 10-15 km/hr. The wind direction may be variable so crews can expect wind direction changes through the day. Maximum temperatures will be 17 degrees with RH's of 35-40%. There is a slight possibility of thunderstorms over the fire area. If this occurs winds will increase in speed and there may be sudden changes to wind direction. Moderate spread rates and fire intensity will be encountered with the peak burning period being between 1100-2000 hrs. C2 and S2 fuel types will have the highest fire intensities and during the peak period will be Intensity Class 5.				
C2 M1 50% 01a 100% S2	7 4 17 3	5-4500 3-1600 3-1800 5-9000	Int. Crown Surface Surface Surface	All ground operations to be assessed constantly for safety, strategic withdrawal when warranted. Ground crews to ensure communications are in place prior to commencing suppression activities. With possible wind shifts throughout the day be very aware, communicate and follow LACES. Ensure smoking within camp is done within designated locations
Max Temp – 21, Low RH – 35, Wind - N/NE 10-15, Precipitation – 40% L RW/TRW A broad area of low pressure resides over the fire area. The air is unstable and there is some potential for thundershowers and rain showers. However it should be less then what occurred on Thursday. Temperatures will be slightly warmer at 21 deg, RH's will be the same at 35-40% and winds will remain out of the N-NE at 10 km. Wind direction will be variable due to weak pressure gradient. Some precipitation feel on the fire area, but it was patch. The anticipated fire behaviour ranges from smoldering fire to moderately intense surface fire with some candling in C2.				
C2 – no rain C2 – 1mm rain M1 50% 01a 100% S2	6 3 4 17 3	5- 4500 3–2000 3–1600 3–1800 5- 9000	Int. Crown Surface/C andling Surface Surface Surface	PPE to be worn at all times. Please pay attention to tripping and slipping hazards in the burn areas.
Max Temp – 23, Low RH – 30, Wind - E 10, Precipitation – 40% L RW/TRW The trough of low pressure that is over the fire area will continue to influence us for one more day. Temperatures will rise slightly to 23 degrees and a as a result the RH's are expected to be close to 30%. Winds will be from the east today at 10 km. The air remains unstable and there is a risk of TRW tomorrow. Areas of the fires have not received precipitation and as a result in C2 fuel types there is a potential for some candling and torching. All other fuel types in the areas have not received precipitation should exhibit moderate rates of spread. They type of fire in the remaining fuel types will be surface fire. There is potential for high rates of spread if thunder storms move over the fire area.				
C2 M1 50% 01a 100% D1 S2	6 4 15 1 3	5–5000 3–1600 3–1700 2–300 5- 9000	Int. Crown Surface Surface Surface Surface	When working with heavy equipment, ensure that you leave adequate spacing between yourself and the equipment, also maintain eye and/or radio contact with the operator. With the weather potentially becoming warmer, ensure that you are drinking enough water to stay hydrated. Due to deep burning in root systems,

				watch out for compromised tress and other dangers.
A cold front is approaching the fire area from the north. In advance of the cold front, winds will be easterly tomorrow at 15 km/hr. As the front gets closer, winds will increase to E20, G30. Temperature before the front arrives will be near 20 degrees and humidity will be 35-40% The front is to arrive in the fire area early evening and there will be a high potential for TRW and RW. Winds will be gusty during the cold front passage. Scattered showers fell on part of the fire, while other areas have not received any precipitation. As a result the forecasted fire behaviour will vary greatly from area to area, plus there will be impact by down drafts from TRW. Crews can anticipate intensity class 5 and rates of spread of close to 10m/min in C2 and intermittent crowning. All other fuel types should be surface fires with less intensity classes.				
C2 M1 50% 01a 100% D1 S2	9 5 22 1.5 5	5 4 4 3 6	Int. Crown Surface Surface Surface Surface	Identify slip and trip hazards and either work carefully knowing they exist or clear them in areas if you will be there for long periods. When working around heavy equipment, ensure the operator knows your location and stay clear. In dozer operations stay at least two tree lengths away. Keep up your good safety practices.

Government of Alberta

Wildfire Management Branch AM Forecast
Issued:
Sunday May 15 2011

Fire Weather

FIRE WEATHER ADVISORY REMAINS IN EFFECT FOR BOREAL AREAS EAST OF THE SIXTH FOR TODAY .....Flashy fuels extremely flammable in these zones....caution advised in all operations in the advisory area as FFMC/ISI values reach well into the extreme range...

Poor RH recovery last night as gusty SE winds persisted during the overnight hours allowing active behaviour well outside the typical burning period....strong SE winds expected to continue this burning period particularly in the SH/RE/LB/MM zones ...gusty SE winds in the east slopes as well with a slight increase in RH values...

Little change in the overall weather picture is expected this burning period as a very strong SE pressure gradient and very dry air remain over most forecast zones. The high pressure system over southern Sask generating these conditions continues to drift SE into Manitoba and will gradually lose it's grip on Alberta - dewpoints have begun to increase over southern Alberta and will produce slightly higher RH values in most zones south of Slave Lake today however no sig change in the extreme FFMC/ISI conditions is expected. The area of strongest winds will begin to drift eastward this evening into the LB/MM zones as a new low pressure system begins to develop over the ED/GP zones - a cold front will develop with this system over southern BC and will be supported by an upper disturbance in Montana. Colder and humid air will push northward into the east slopes/mtn parks Mon aftn with gusty SW winds and sct RW activity.

Mon aftn in the boreal zones east of the fifth winds of SE20G40 km/h are expected - west of the fifth E-SE winds of 15km/h are forecast. RH values will continue to persist in the 20-25 % range in most boreal zones and the SH zone. Max temps in most boreal areas will remain in the 21-24 deg range. No sig reduction in FFMC values in the boreal and SH zones is expected Mon...

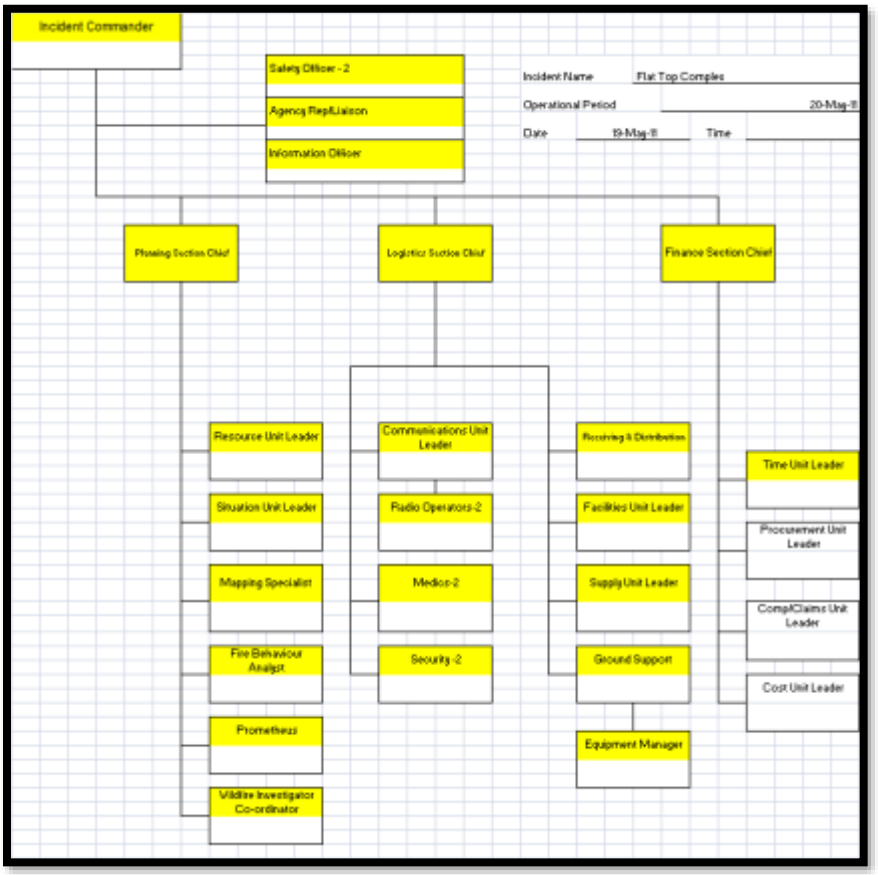
Forecast for Today and Tonight

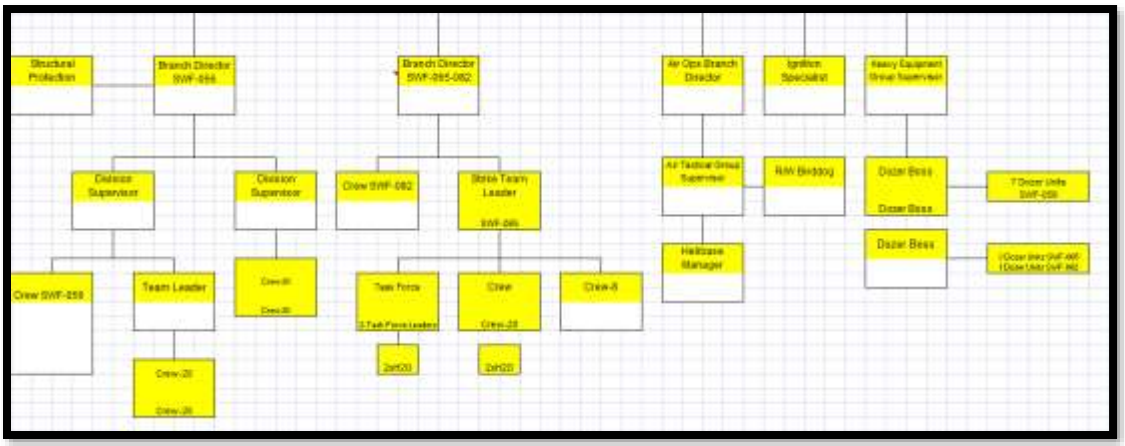
Forecast Zone	Maximum Temp	Low RH	Pcpn Coverage	Pcpn Type	Ltg Prob	Afternoon Wind
OJ	23	15	-	-	L	SE25G45
FV	23	15	-	-	L	SE30G50
MA	20	15	-	-	L	SE30G50
RE	20	15	-	-	L	SE35G60
GP	18	20	-	-	L	SE25G45
SH	18	20	-	-	L	SE40G70
PY	23	15	-	-	L	SE25G45
MM	22	15	-	-	L	SE35G50
LB	20	15	-	-	L	SE35G50
ED	17	30	-	-	L	SE30G50
RM	16	30	-	-	L	SE30G50
BO	16	35	-	-	L	SE30G50
CR	16	35	-	-	L	SE30G50
JA	15	45	-	-	L	SE20
BA	15	40	-	-	L	SE20G40
WA	16	35	-	-	L	SE25G40

APPENDIX BB - WILDFIRE CREWS ACROSS THE PROVINCE BASED ON THE PRE-SUPPRESSION PLAN (MAY 14 AND MAY 15)

	Initial Attack Assignment (IA) and Crew Size				Support Assignment and Crew Size			
	4 Member	7 Member (Rappel)	8 Member	IA Total	4 Member	8 Member	Support Total	Grand Total
May 14								
Calgary	2			**2**	4	2	6	**8**
Edson	4	3		**7**	1	2	3	**10**
Fort McMurray	5			**5**	4	4	8	**13**
Grande Prairie	4			**4**		4	4	**8**
High Level	2			**2**		2	2	**4**
Lac La Biche	7	2	3	**12**		10	10	**22**
Peace River	2			**2**				**2**
Rocky Mtn House	3			**3**	3	1	4	**7**
Slave Lake	6		1	**7**		8	8	**15**
Whitecourt	4	1		**5**		5	5	**10**
Total for May 14	**39**	**6**	**4**	**49**	**12**	**38**	**50**	**99**
May 15								
Calgary	3			**3**	4	2	6	**9**
Edson	4	3		**7**	1	2	3	**10**
Fort McMurray	5		1	**6**	3	5	8	**14**
Grande Prairie	4			**4**		4	4	**8**
High Level	5		1	**6**		3	3	**9**
Lac La Biche	7	3	3	**13**		9	9	**22**
Peace River	2		2	**4**		3	3	**7**
Rocky Mtn House	3			**3**	3	1	4	**7**
Slave Lake	6		1	**7**		8	8	**15**
Whitecourt	1	1		**2**		5	5	**7**
Total for May 15	**40**	**7**	**8**	**55**	**11**	**42**	**53**	**108**

APPENDIX CC - ORGANIZATION CHART FOR SWF-056 AND SWF-065 (MAY 19)





*Yellow highlighted positions - filled

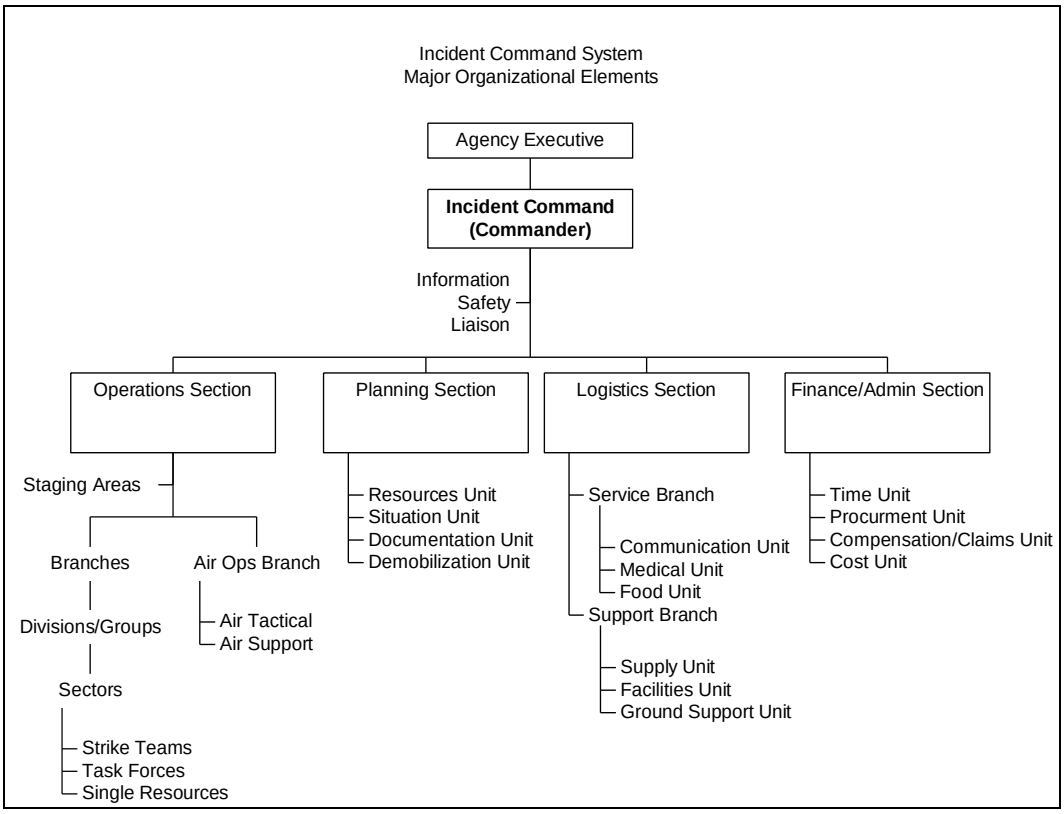
APPENDIX DD - OVERVIEW OF THE INCIDENT COMMAND SYSTEM

The Incident Command System (ICS) is used to manage an emergency incident or a non-emergency event. It can be used equally well for both small and large situations in that the system has considerable internal flexibility. It can grow or shrink to meet differing needs. This makes it an effective and efficient management system that can be applied to a wide variety of emergency and non-emergency situations including wildfire.

The organization of the Incident Command System is built around a foundation of five major management activities:

1. Command (Directed by an Incident Commander, commonly known as an IC) – Sets objectives and priorities, has overall responsibility at the incident.
2. Operations (managed by the Operations Section Chief) - Conducts tactical operations to carry out the plan. Develops the tactical objectives, organization and directs all resources.
3. Planning (managed by the Planning Section Chief) - Develops the action plan to accomplish the objectives, collects and evaluates information, maintains resource status.
4. Logistics (managed by the Logistics Section Chief) - Provides support to meet incident needs, provides resources and all other services needed to support the incident.
5. Finance/Administration (managed by the Finance/Administration Section Chief) – Monitors costs related to incident, provides accounting procurement, time recording and cost analyses.

On small incidents, these major activities may all be managed by one person, the Incident Commander (IC). Large incidents such as the Flat Top Complex usually require that they be set up as separate Sections within the organization as shown below:



Effective Span of Control (number of organizational elements that may be managed by a single person) varies from three to seven, and a ratio of one to five reporting elements is recommended. If the number of reporting elements falls outside of those ranges, expansion or consolidation of the organization may be necessary.

For complete detail on the Incident Command System, refer to the *ICS incident command system, Canadian version, Canadian National Training Curriculum, ICS Orientation - Module 1, I-100.*