Chalkyitsik Complex
Incident Summary
June 17-July 3, 2019

Alaska Type 2 Green
Incident Management Team

Norm McDonald
Incident Commander

ALASKA INCIDENT MANAGEMENT TEAM

Fire Narrative

After a shadow day the Alaska Green Team took command of the Chalkyitsik Complex from the Alaska Black Team on July 25th at 0700. At that time the complex consisted of four fires (#348 Tractor Trail 2; #367 Frozen Calf; #407 Bearnose Hill; and #424 Tettjajik Creek). These fires all started as lightning strikes (respectively on June 22, June 24, June 29, and July 2) and had been burning unimpeded for more than three weeks. These fires spanned several jurisdictions, including USFWS; State of Alaska; BLM, Doyon, Limited; Chalkyitsik Native Corporation; and BIA (Alaska Native Allotments).

June was the hottest June ever recorded – both for Alaska and globally – and July was soon added to those record books as well. Fuel indices on the Yukon Flats were at very high to extreme levels and continued increasing daily. On August 2 the Chalkyitsik RAWS (CIKA2) measured record-breaking fuel indices, some at nearly double previous maximums. The Build-Up Index (BUI) measured 329; the Duff Moisture Code (DMC) was at 330; and the Drought Code (DC) hit 634.

The Teams' transition was challenged by active fire behavior and resultant heavy smoke production by these and numerous other wildfires in Interior Alaska. The smoke conditions hampered operations and the Team's ability to obtain crucial situational awareness. Air transport of firefighters and supplies into and out of the remote Chalkyitsik Village and to sites needing protection was also compromised. In the days and weeks prior, PM2.5 concentrations were commonly measured above 350 µg/m3 by a PurpleAir sensor in Chalkyitsik. At times this sensor registered the world's worst air quality.

Type 2 teams have not often been assigned to manage remote fires in Alaska over the past 15 years. In most years, similar fires would have been managed by Type 3 organizations supported directly by the Zone.

In 2015, with a similar statewide fire and initial attack workload, some Zones and Areas placed Type 2 IMTs directly into remote locations to support complexes or groups of fires. This complicated the IMTs' work processes by limiting their Internet connectivity; kept the burden of logistically supporting the IMT on the Zones/Areas; and in some cases, overburdened the limited infrastructure in the villages where the IMTs were located.

For the Chalkyitsik Complex and the neighboring Cornucopia Complex a decision was made to manage a complex of fires with Type 2 ICP on the road system (in Fairbanks), and one or more Forward Operating Bases at remote locations.

This model has several advantages, including keeping the IMT at the base of the supply chain so the logistical workload of the Zone is lessened; allowing for the high Internet speeds and large bandwidths necessary to support modern incident data requirements; as well as minimizing the IMT's footprint at remote locations so that limited infrastructure is not overwhelmed.

The Alaska Green Team was able to successfully implement the model on the Chalkyitsik Complex and, despite some challenges, feels like it should be considered for future use on groups of remote Alaska fires.

Over the previous week the fires spanning the Draanjik River (formerly the Black River) and Little Black River drainages were showing very active to extreme fire behavior. The Bearnose Hill fire had reportedly run about seven miles in four hours, jumping the Draanjik River, and burning two Native Allotments. Crews were available but it was deemed unsafe to put them in these remote locations in the face of such extreme fire behavior, and due to the difficulty of logistical support under such smoky conditions and low river water levels.

The Team focused on protecting the community of Chalkyitsik with dozer line (locally hired equipment), direct and indirect control lines, hand line, and burnout operations. The burnout of green "oxbows" along the Draanjik River was accomplished with UAS PSD operations. Several sites along the Draanjik River upstream from the village were also protected.

Chalkyitsik Complex

501,629 acres burned as of 08/06/2019

- Natural Cause-Lightning

Protecting Agency/Unit:

- BLM Alaska Fire Service, Upper Yukon Zone

Jurisdictional Agencies/Units:

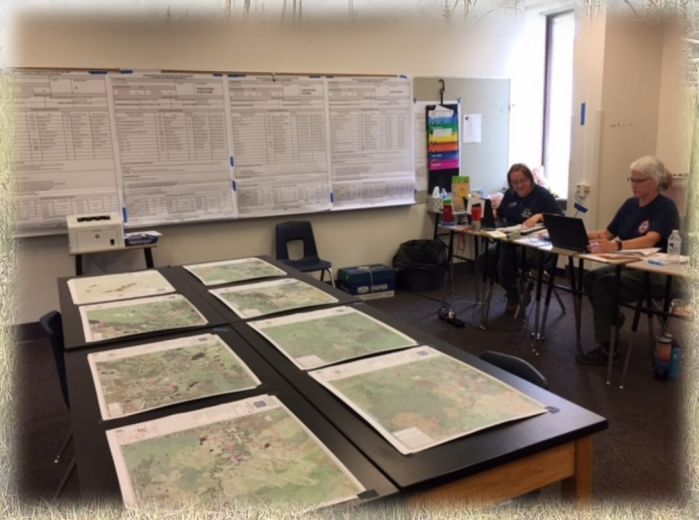
- US Fish and Wildlife Service
  - Arctic National Wildlife Refuge
  - Yukon Flats National Wildlife Refuge
- BLM Eastern Interior Field Office
- BIA, Alaska State Office
- Doyon, Incorporated
- Chalkyitsik Village Corporation
- Alaska, Department of Natural Resources

In addition, the team provided initial attack support for the Upper Yukon within the WFDSS planning area. On July 26 an incident pilot reported a new fire just west of Chalkyitsik Village on Chalkyitsik Native Corporation land. Resources responded from helibase and aggressive initial attack efforts were successful in containing fire #687 Small Timber Lake at just 34 acres. The management of this fire was delegated to the Team and it was added to the complex.

Eventually the weather moderated, with increasing cloud cover, relative humidity and more than 0.8 inch of wetting rain over several days. Fire behavior moderated as well, allowing personnel to fully secure control lines near Chalkyitsik. Firefighters were reinserted into locations where structures had survived the initial fire front in order to mop-up and keep them secure. For five consecutive days prior to transfer of command back to the Black Team none of the five fires had shown any perimeter growth. Much of the remaining workload involved retrieval of pumps and hose from remote sites.

During their tenure, Team worked together to produce a Suppression Repair Plan and a Native Allotment Damage Assessment Report. Multiple strategic planning sessions were held with Agency Administrators and Alaska Fire Service Upper Yukon Zone protection personnel. The Team coordinated with multiple dispatch offices and Buying Teams over the course of the assignment.

As of Tuesday, August 6th the total size of the complex was 501,629 acres with only 4% of the total perimeter planned for containment. The Team reported 63% completion of its objectives at the time of transition. The Alaska Green team transferred command of the complex back to the Alaska Black Team under the command of Ed Sanford on August 7th.



Incident Commander

Incident objectives were established to protect both short, and long-term values as identified in the WFDSS decision. A strategic planning meeting was held with agency administrators from affected jurisdictional agencies on July 25 to validate incident objectives and courses of action. The objectives remained valid throughout the Alaska Green IMT's assignment.

Incident Objectives

- **Firefighter and public safety are the highest priority values to be protected.**

  ⇒ Daily risk assessments were used to identify and mitigate hazards.

  ⇒ During the 14 days the Alaska Green IMT was assigned there was an outstanding safety record with only a few minor cuts, preexisting tooth conditions, and minor burns from mufflers. There were no medical issues higher than a Green (minor injury or illness).

  ⇒ The Alaska IMT was prepared to shelter residents of Chalkyitsik in place in the event fire impacted the community. Moderating conditions alleviated that concern. No members of the public incurred fire related injuries.

- **Protect the community of Chalkyitsik.**

  ⇒ The primary firefighting effort was dedicated to defending the community of Chalkyitsik and nearby allotments with direct line and firing operations. Twenty-two miles of direct line was constructed, fired, and held by the Alaska Black and Green Teams.

  ⇒ On July 26, a new fire was reported three miles to the west of Chalkyitsik. As authorized in the delegation, the IMT responded with helitack augmented by smokejumpers out of Fairbanks. What became the Small Timber Fire was halted at 35 acres. Mop-up continues through transition due to deep burning conditions.

- **Protect identified structures, Alaska Native Allotments, and other cultural values within the planning area.**

  ⇒ During the course of the incident twenty two Alaska Native Allotments were impacted by fire. The Green Team was able to complete damage assessments and document the conditions that led to their being burned.

Incident Objectives (continued)

- **Protect ecological values within the Arctic and Yukon Flats National Wildlife Refuges, and on lands within BLM, State of Alaska, and ANCSA Native Corporation jurisdictions by allowing natural fire to spread where no values are threatened or where the threat has been mitigated.**

  ⇒ The Alaska Green IMT did not take any action on areas where fire was not directly threatening allotments or identified values.

- **Support initial attack as requested by the Upper Yukon Zone.**

  ⇒ The Upper Yukon Zone responded to five fires within the planning area during the Alaska Green IMT's assignment. The IMT responded to one of the starts, fire #687, which was added to the complex several days later.

- **Maintain and enhance relationships between the Protecting Agency, Jurisdictional Agency Administrators, Tribal and ANCSA partners, and other stakeholders and cooperators via timely and accurate information exchange.**

  ⇒ Although deteriorating weather reduced the need for daily Agency Administrator meetings, the 1630 time frame was kept open for meetings as needed. Regular texting was used to communicate fire updates.

  ⇒ The Alaska IMT provided the BIA Agency Administrator office space within the ICP. Daily communication helped develop a relationship and clear direction regarding allotment protection.

  ⇒ Daily updates including video briefings were provided through Facebook, Twitter, and AK Fire Info. The team had a small Inciweb presence.

- **Accurately track and apportion incident costs and ensure cost containment measures are identified, applied, and documented.**

  ⇒ The IMT configured as a Short Team and maintained a small footprint in Chalkyitsik and in Fairbanks. Team members in Fairbanks shared a small pool of vehicles to save on rental costs.

  ⇒ Costs were tracked and apportioned according to direction provided by the Upper Yukon Zone in order to facilitate cost apportionment calculations.

  ⇒ The Alaska IMT shared an ICP with the Portland NIMO IMT managing the Cornucopia Complex to the west, and at one point shared space with Joint Information Center staff as well as the Buying Team staff in order to save on facilities costs. In lieu of hotels, Alaska IMT members from out of town shared dorm rooms on site at a fraction of the cost of Fairbanks lodging during tourist season.

Information Statistics

Info Boards	**2**
Trapline Contacts	**58**

Social Media Contacts :

- **Facebook** **7,299**
- **Twitter** **1,500**
- **Video** **4,200**

Chalkyitsik

Pronounced: CHAL-**KEET**-SIK

Chalkyitsik is located on the Draanjik River, formerly the Black River, about 50 miles east of Fort Yukon. Chalkyitsik, population 57, is a traditional Gwich'in Athabascan village, with a subsistence economy.

Information

- No community meetings were requested as the fire information officer in Chalkyitsik met with community members daily, and was accessible 24x7 at the Chalkyitsik School.
- The local trapline was 1.5 Miles long with seven stops for residents and five stops for incident staff. The trapline was walked multiple times a day.
- Daily updates were distributed through the Chalkyitsik Firenet account and posted to AKFireInfo.com by the information officer at the ICP, which in turn automatically posts to BLM Alaska Fire Service and Alaska Division of Forestry Facebook pages and their corresponding Twitter feeds. These posts were boosted to the AK IMT Facebook and Twitter feeds.
- The Joint Information Center (JIC) was the main point of contact for calls concerning the complex. The ICP information officer worked collaboratively with the BLM Public Affairs Officer and Bureau of Indian Affairs Agency Administrator.
- Chalkyitsik video updates "From the Fireline" and video updates from the Operations Chief were posted to social media channels. Analytics will be provided to the BLM Public Affairs Officer.
- Daily live updates were recorded with KZPA 900 AM Radio in Fort Yukon
- There is a new opportunity to work with the Tanana Chiefs Conference Fire Management Specialist and Public Relations staff on sharing a story about the fire season and forest regeneration in the region. This was suggested by Victor Joseph, the CEO of Tanana Chiefs Conference.

Safety & Medical

- The IMT maintained an excellent safety record while managing the incident. There were no reportable injuries during the IMT's tenure.
- Having a qualified SOF2 in Chalkyitsik allowed for a good flow of information with the Team Safety Officer.
- The areas along the river corridors where these fires were burning had a high concentration of bears; mainly black bears. Bears became more aggressive over time and interactions with firefighters near the cabins and at the edge of the village were numerous. Bear fences, bear spray, and shotguns were ordered to ensure firefighter safety. Shotguns were provided to crewmembers who were qualified to carry and shoot.
- Deep burning weakened the support system for trees. Hazard trees fell over often, especially with any uptick in winds. During critical wind events operational pauses were implemented or crews moved to safer areas. Wet weather and slick ground also impacted firefighter safety. Operational tempo was adjusted to compensate for the effects of weather.
- The telemedicine capability and Community Health Aide provider at the clinic in Chalkyitsik minimized the need to transport patients by aircraft for clinical evaluation needs.

Medical & Safety Statistics 7/25—8/4	
Transports to ER/Clinics	0
Reportable Illness/ injuries	0
Medical Unit visits	58
Documented Bear Encounters	11

Operations

The IMT faced numerous operational and logistical challenges in the management of this incident:

- The remote location of the complex limitedd logistical options to support a fire organization. The Fort Yukon station was already operating near maximum capacity supporting initial attack and other fires and was unavailable. The community of Chalkyitsik has limited infrastructure and could only support a small organization.
- Early on, smoke from fires within the complex and elsewhere throughout the Interior regularly affected the fire area and limited the use of aircraft for tactical, logistical, and reconnaissance purposes. Logistical support to Chalkyitsik including jet fuel for the helicopters was sometimes hampered by smoke.
- Boat operations within the Draanjik River corridor were made more challenging by quickly changing water levels.
- Allotments and remote values were difficult to locate and protect due to smoke and low water levels.

Due to these challenges, the IMT was unable to provide aggressive protection for all values simultaneously. Values were prioritized daily based on threat, fire potential, firefighter safety, the ability of the IMT ability to provide logistical support, and the probability of success.

Operational Strategy

- **Frozen Calf**
  - **238,989 acres**
  - **Confine**
  - **65% Complete**
- **Bearnose Hill**
  - **130,335 acres**
  - **Point-Zone Protection**
  - **50% Complete**
- **Small Timber Lake**
  - **34 acres**
  - **Full Suppression**
  - **60% Complete**
- **Tettjajik Creek**
  - **41,301 acres**
  - **Point-Zone Protection**
  - **90% Complete**
- **Tractor Trail 2**
  - **90,970 acres**
  - **Point-Zone Protection**
  - **50% Complete**

- Initial attack of new starts within the planning area that threaten values was the first operational priority.
- The next highest priority was securing the western flank of the Frozen Calf fire in the vicinity of Chalkyitsik from Fishhook Creek (northeast of Chahalie Lake) south to Ohtig Lake using direct, indirect, and burnout tactics in order to prevent the fire from impacting the community and nearby Native Allotments.
- South of Ohtig Lake, the western flank of the joined Tractor Trail 2, Bearnose Hill, and Frozen Calf fires remain unconfined. If additional spread threatens to flank existing lines and threaten Chalkyitsik from the south, a point protection strategy can be used to protect values to the west.
- Point protection actions for Native Allotments and other sites were implemented along the Draanjik River east of Chalkyitsik.
- John Herberts Village was prepped for protection that can be activated if it becomes threatened. Sites further may be evaluated for protection if a threat reemerges..

Air Operations

- A helibase was established at Chalkyitsik airstrip where a fuel bladder and aviation fueling specialist supported heicopter operations.
- One person staffed the ramp to facilitate the large number of fixed wing logistical flights which delivered people and supplies from the AFS ramp.
- Helicopter module members helped with fueling, helibase management, and with manifesting and loading/ unloading fixed wing aircraft.
- The AOBD was located in Fairbanks, and was the point of contact for UYT aircraft, AICC aircraft, facilitated orders and ordered fuel for the bladder using expanded dispatch and the Buying Team.
- The long distance supply line was challenging. Air operations were curtailed on numerous days because of smoky conditions. Jet fuel deliveries were delayed due to smoke, weather, and vendor aircraft going out of service.
- Unmanned aerial operations were conducted by a BLM Alaska Fire Service drone and pilot to scout line and minimize firefighter exposure. An aerial firing drone was also used to facilitate burning along with a helicopter PSD.

Helicopter Operations

- **Flight Hours:** 86.8 hours
- **Cost** $117,448
- **Water Dropped :** 23,000 gallons
- **Passengers Delivered:** 453
- **Cargo delivered:** 154,500 lbs

Air Attack

- **Flight Hours:** 1.6 hours
- **Cost** $17,060

Fixed-wing Logistics

- **Flight Hours:** 104 hours
- **Cost** $257,000

Fire 687 Small Timber Creek 7/26-27

- **Aircraft Used:** 10
- **Water Dropped :** 23,000 gallons
- **Cost** $79,000

Logistics

Logistics Statistics

Daily R.T. Logistics Flights FBK < > CIK	**5**
Daily Pounds of Cargo Delivered	**15,000**
Fresh Food	
A Boxes	**392**
B Boxes	**152**
Facilities	
Camps	**7**
Communication	
Radio Repeaters	**15**
River Support	
Jet Boats	**2**
Prop Boats	**3**
Lower Units Replaced	**1**

- The ICP was set up in Fairbanks with a Forward Operating Base in Chalkyitsik. This kept the village footprint small and placed the IMT at the base of the supply chain.
- The ICP was set up in Fairbanks with a Forward Operating Base in Chalkyitsik. This kept the village footprint small and placed the IMT at the base of the supply chain and was key to the Team's success.
- Emergency medical evacuation plans were coordinated directly between the Chalkyitsik Medical Unit and the UYT Dispatch and fire line to ICP communications were handled directly between involved positions, eliminating a need to have intervening Communications Unit personnel support and maximizing efficiency.
- The geographical challenges of the Yukon Flats reinforced the need for personnel to have satellite phone capability from the beginning of deployment: radio coverage capability is not a quick or certain capability.
- Bicycles were purchased and rented for transportation at Chalkyistik to improve efficiency.

Logistics (continued)

- The potable water at FOB is coming from the village of Chalkitsik. The water has been tested and is safe. The section added an additional filtration to the fill station for cubies. This has worked well and should a best practices for future remote FOBs.
- For the FOB at Chalkyitsik the IMT used Fresh Food Boxes and MREs as the backup. The Food Unit also added supplemental fresh fruit and vegetables for the FOB. This was a big morale booster for the crews.
- The geographical challenges of the Yukon Flats reinforced the need for personnel to have satellite phone capability from the beginning of deployment: radio coverage capability is not a quick or certain capability.
- The remoteness of the incident also supported the advantage of attaching solar power kits to all mountaintop communications equipment to avoid battery changes, reducing flight costs and flight crew exposure.
- During this deployment no significant need was identified to have ICP to Chalkyitsik fire line direct radio communications, though attempts to design such capability were attempted. Limitations on equipment and long distances made that not feasible without using added NIRSC radio equipment.
- Tracking pumps deployed on the various fires and sites within the Complex Planning Area has been a challenge. Some pump locations were burned over. Other sites are difficult to re-visit due to fluctuating water levels in the rivers and creeks. The IMT has prioritized accountability for these items and will be handing over a nearly complete inventory to the incoming Black IMT.
- The Alaska Pipeline Training Center in Fairbanks is an excellent location for an IMT ICP as was the Tanana Middle School. Both locations should be considered for future use.

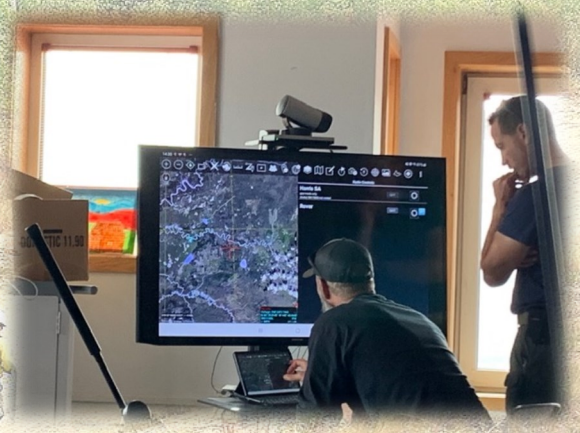
Planning

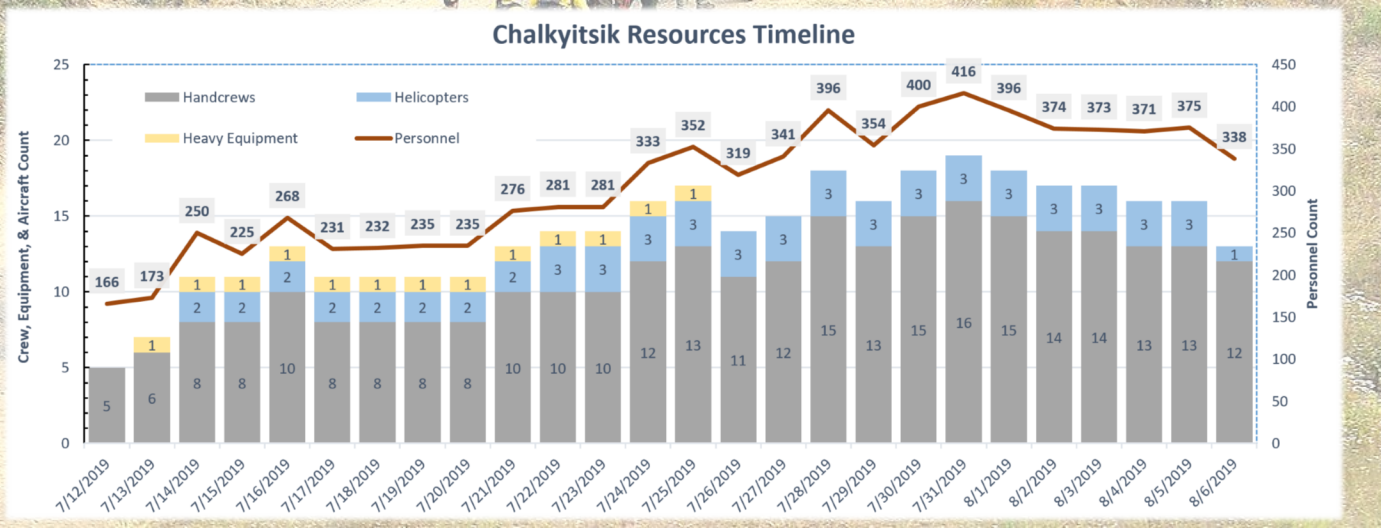
- The Alaska Green IMT completed damage assessments for the 22 Alaska Native Allotments that were burned during the incident.
- The IMT's cellular router allowed us to access to the eISuite database from Chalkyitsik. Incompatability with the new Internet service providers equipment after the move to the Pipeline Training Center forced the IMT to discontinue this service. The IMT is seeking to obtain additional equipment so that we can work toward cellular service provider independence.
- Operational briefings were conducted at Chalkyitsik Base Camp and were transmitted to the field by radio and to ICP in Fairbanks by telephone. Planning Meetings were conducted at ICP in Fairbanks and transmitted by telephone to Chalkyitsik. The IMT's pair of portable Bluetooth speakers was a critical component of this solution.
- The IMT processed remote check-ins and demobilizations both in Chalkyitsik and on the Fort Wainwright base when this was more convenient for crews and overhead.
- The Situation Unit established a method for estimating percent completion in the ICS-209 Incident Status Report at the request of the Alaska Multi-Agency Coordinating Group. The methodology weighs the workloads of containing fireline, protecting allotments, and protecting individual structures and can be replicated in the future.

Planning Statistics

Published WFDSS Decisions:	**1**
Documentation Boxes:	**5**
Daily IAPs :	
Fairbanks	**30**
Chalkyitsik	**60**

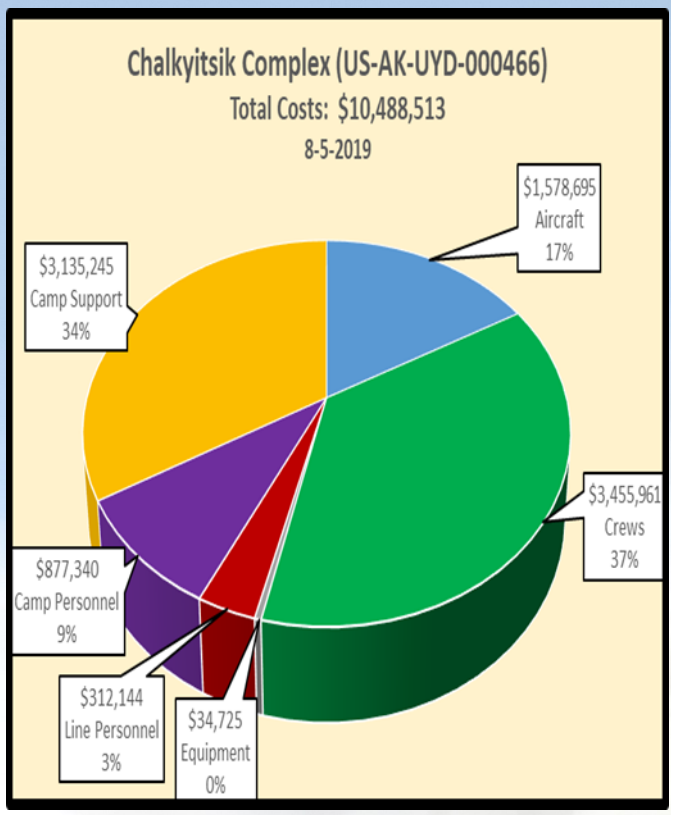
- Challenges with the multi-layered mobilization and demobilization processes involved with moving crews and overhead in and out of Chalkyitsik on Zone and commercial aircraft were alleviated by close coordination with the Zone Aircraft Specialist, Expanded Dispatch, and the AICC Aircraft Desk. The Alaska Fire Service Duty Office was especially helpful in assisting the IMT with navigating these processes.
- A structure assessment package was developed for the community of Chalkyitsik and data from the Plan was incorporated into the Alaska Known Sites Database.



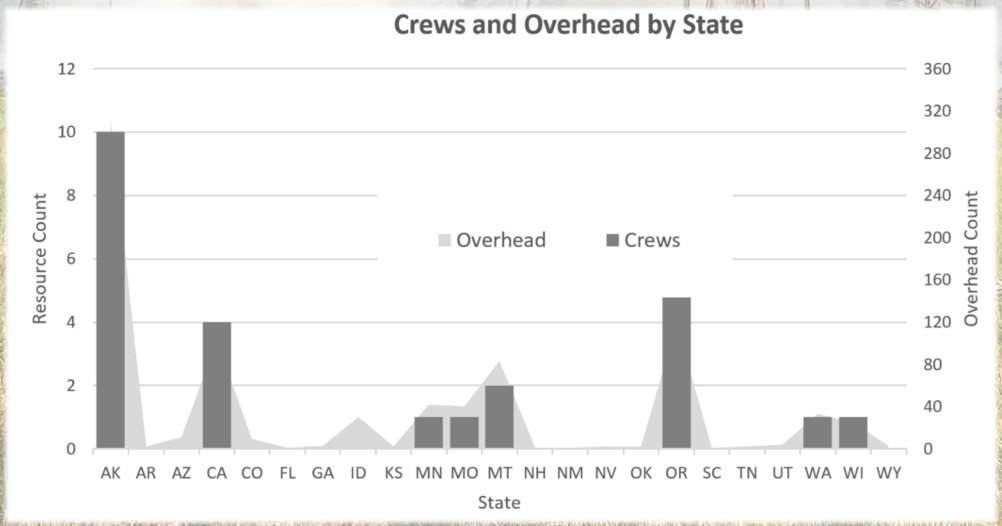


Finance

- Finance Section was adequately staffed to allow timely posting of Crew Time Reports and Equipment Shift Tickets within the new eIsuite system. COSTS were brought up-to-date and kept current. A finance person was placed at the forward operating base to help facilitate timely transfer of all financial paperwork.
- Including the Chalkyitski Complex a total of six fires were tracked in the data base.
- A lot of private equipment was available for our operational needs at Chalkyitsik. Coordination has, and continues to happen, to ensure we have equipment under agreement and are tracking time accordingly.
- We have had 19 claims for damages. There was one lost-time injury prior to the Green Team taking command of the fire.
- Time
  - Equipment OF-286 --25 were generated
  - Overhead OF-288 --193 were generated
  - Crews OF-288 --460 were generated



Total Cost of All Fires as of 8/5/2019	
	$10,488,513
Chalkyitsik Complex	$ 4,037,868
Frozen Calf	$ 3,559,964
Bearnose Hill	$ 2,009,779
Tractor Trail	$ 384,176
Tettjajik Creek	$ 35,192
Small Timber Lake	$ 461,534



ALASKA
Interagency
Incident
Management
TEAM