

APPENDIX I

PUBLIC MEETINGS

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A. PUBLIC MEETINGS SUMMARY

Summary of Transformation Draft EIS Public Meetings (August 12-14, 2003)

Anchorage Public Meeting

The Anchorage public meeting was held at the Loussac Library from 12:00 PM until 8 PM on August 12, 2003. Attendance at the three review sessions are listed below. The recorded public comments and transcripts from these meetings are shown in Chapter 9.

1:00 Session: Approximately 14-15 people from public, plus 2-3 news television and newspaper crews attended the meeting.

4:00 Session: Approximately 10-11 people from public attended the briefing.

7:00 Session: Approximately 8-10 people attended the briefing.

Fairbanks Public Meeting

The Fairbanks public meeting was held at the Carlson Center from 12:00 PM until 8 PM on August 13, 2003. Attendance at the three review sessions are listed below. The recorded public comments and transcripts from these meetings are shown in Chapter 9.

1:00 Session: Approximately 15 people from the public and one news reporter attended the briefing.

4:00 Session: Six people attended the briefing.

7:00 Session: Three people from public attending the briefing.

Delta Junction Public Meeting

The Delta Junction public meeting was held at the Jarvis West Office Building from 12:00 PM until 8 PM on August 14, 2003. Attendance at the three review sessions are listed below. The recorded public comments and transcripts from these meetings are shown in Chapter 9.

1:00 Session: No one from the public attended the briefing.

4:00 Session: Three people from the public plus one news reporter attended the briefing.

7:00 Session: Two people from public attending the briefing.

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B. ATTACHMENTS TO AUGUST 26, 2003 LETTER FROM LAW OFFICES OF GUESS & RUDD

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OFFICES IN
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March 6, 2003
Hand Delivered
Chief, Environmental Resources
Public Works
Building 724
Fort Richardson, AK 99505-6505
Re: Draft Environmental Assessment
– Range Expansion Projects Donnelly Training Area
Our File No. 11025.014

Dear Sir or Madam:

I am the City Attorney for the City of Delta Junction, Alaska (“the City”). The City adjoins the northerly boundary of the Donnelly Training Area. I am writing at the direction of the City Council of the City. Residents of the City, and the City Council itself, have very serious reservations and concerns about the proposed Range Expansion Project. The City has directed me to comment on the Draft Environmental Assessment and Finding of No Significant Impact (“the Draft EA”).

The City has a long history of strong support for the military, the Department of the Army and USARAK in particular. Nothing in this letter should be understood or interpreted as a change in that support. Rather, the City’s concerns are with the specific sites within the Donnelly Training Area chosen for the Combined Arms Collective Training Facility (Project No. 56693) (“CACTF”) and the Battle Area Complex (Project No. 53401) (“BAX”). Both the CACTF and the BAX are proposed for the Eddy Drop Zone. In the case of the CACTF, the proposal is for the northwesterly corner of the Eddy Drop Zone, approximately 6/10ths of a mile from the Donnelly Flats Range boundary and improved private property. The City believes strongly that both the CACTF and the BAX should be located at sites a greater distance from the City limits and improved private property.

The City’s concerns fall into four specific categories: Wildfire Hazard, Noise Hazard, Safety Issues, and Hydrologic Issues. In each case, the City strongly believes that the Draft Environmental Assessment fails to address analyze the City’s concerns.

1. WILDFIRE HAZARD

Criticism A: The failure of the Draft EA to fully address the real risk of wildfire caused by small arms fire in the Eddy Drop Zone is a serious deficiency.

The Draft EA concedes that small arms fire increases the risk of wildfire.¹ So far as it goes, that concession is accurate. For example, the Vinasale Fire in May 2002 was allegedly ignited

by “popper shells” discharged by biologists to drive off a moose.² The Vinasale Fire ultimately burned some 200,000 acres and came within six miles of the village of McGrath. If a few “popper shells” – essentially, firecrackers fired from shotguns – can ignite a fire, the quantitative risk of sustained small-arms fire at the CACTF and the BAX must be orders of magnitude greater.

Criticism.B: The Draft EA completely fails to address the risk of wildfire ignited by wheel, track, and air vehicles.

The Draft EA fails to describe the other risks created by the proposed ranges. The vehicles used in exercises, including helicopters, can themselves ignite wildfires. Most recently, the Fish Creek Fire of June 2001 was apparently ignited by the hot exhaust from a helicopter. In its Report of Fire Investigation for Fire #73-111-246, Fish Creek, the State of Alaska concluded, “With the absence of other sources of ignition, the exhaust system of the helicopter is the most probable source of ignition of Fire 73111246.”³

The Draft EA is unclear as to the extent to which vehicles would be used at the CACTF. In the case of the BAX, the Draft EA specifically states motor vehicles would be used on the BAX. Yet the Draft EA completely fails to address the risk of wildfire ignited by exhaust systems on wheeled, tracked, and air vehicles.

Criticism C: The Jarvis North Fire Mitigation Project is inadequate and incomplete, and fails to address even the wildfire risks the Draft EA recognizes.

This issue is critical in light of the proposed wildfire mitigation techniques proposed by USARAK. The Jarvis North Fire Mitigation Project (USARAK 2003) proposes to clear approximately 130 acres in a narrow band 50-150 meters wide, removing combustibles and replanting with non-coniferous vegetation.⁴ In effect, the Draft EA proposes a kind of quasi-firebreak, eliminating areas of black spruce.

There are several drawbacks to the proposed mitigation techniques. First, the proposed quasi-firebreak is too small. As the Draft EA concedes elsewhere,⁵ in high risk conditions “spotting” – fires ignited by sparks and embers from the main fire – can occur as far as half a mile ahead of the active front of the fire. Removal of even all vegetation in a 50-150 meter firebreak will not safeguard against “spotting.” Many of the firebreaks south of Ft. Greely were ineffective in the Donnelly Flats Fire.⁶

Second, the proposed quasi-firebreak will be ineffective. Under dry conditions grasses and deciduous vegetation can burn quickly and spread fire rapidly. The Fish Creek Fire ignited largely burned through wetlands with few spruce trees. The primary fuel, at least in the first stages of the fire, was the grass and deciduous vegetation that the Draft EA proposes for mitigation.⁷ That fire began in dead grasses. The Fire Analysis Reports for the Fish Creek Fire repeatedly state that “Hardwoods have not stopped fire movement.”⁸ Eliminating black spruce is simply not enough.

Third, the proposed quasi-firebreak is not located in all the necessary areas. The mitigation techniques appear to target only the areas easterly of Eddy Drop Zone.⁹ The Draft EA acknowledges that the average wind velocity in the Delta area is 8.2 miles per hour.¹⁰ The City does not have wind direction data for the Eddy Drop Zone, but the main runway of nearby Allen Airfield lies almost due north-south, suggesting that prevailing winds are from the south. Moreover, as explained below, the City has had significant experience with fires exacerbated by southerly winds. Yet the drawings at Figures 3.5.2f and 3.5.2g show the primary mitigation areas to be to the east of the CACTF and the BAX, not to the north. The Draft EA does not explain why the City is unprotected.

Criticism D: The Draft EA discusses only risk index ratings for the Eddy Drop Zone. It omits discussion of fire weather indices.

The Draft EA, in discussing fire risk assessment, focuses on risk index ratings.¹¹ Risk index ratings, on the City's understanding, evaluate the site-specific vegetation and topography.¹² Risk index ratings, to some extent, can be controlled by the kind of selective vegetation removal that the Draft EA proposes. However, the Draft EA omits discussion of what the City believes is a more complete system of fire risk assessment: the fire weather index ("FWI"). Developed in Canada, the FWI measures the effects of weather on forest fuels. The measure is independent of the type of forest fuel.¹³ An FWI in excess of 29 represents an extreme fire risk, independent of forest fuels.¹⁴ On the City's understanding, the Alaska Fire Service, part of the U.S. Bureau of Land Management, uses and relies on the FWI.

The Draft EA identifies an unspecified fire rating system used for range management by the USARAK, Regulation 350-2. But a careful review of Regulation 350-2 demonstrates several problems with the Regulation and the Draft EA:

- (1) It remains unclear whether or not the Regulation and the Draft EA use the FWI or some other, unspecified fire risk assessment strategy. Absent identification and description of the risk assessment strategy that USARAK will use, it is impossible to evaluate that risk assessment strategy in the context of the proposed new ranges.
- (2) The Regulation and the Draft EA focus on the fire risks associated with weapons fire on ranges. At no point that the City can identify do they even mention the kind of risk that triggered the Fish Creek Fire, vehicle exhaust systems.
- (3) The Risk Management strategies set out in the Regulation may be acceptable for ranges at some distance from the City and developed areas; they are not acceptable for ranges that present a risk immediately adjacent to the City and its environs, as discussed infra.

Criticism E: The additional fire management strategies proposed in the Draft EA are inadequate. They fail to take into account how quickly a wildfire can move under conditions that prevail in the Eddy Drop Zone and the Donnelly Training Area. The City's grave concerns about wildfire are not hypothetical. Three typical example fires are instructive.

The Fish Creek Fire: According to Alaska Division of Forestry records, the Fish Creek Fire began at about 1243 hours June 20, 2001.¹⁵ It was reported immediately to Division of Forestry officials. The fire was relatively close to Fairbanks, and the first fire control teams were dispatched 4 minutes later. When the fire started, a brush clearing crew was already on the scene. Forty minutes later, an aerial tanker with retardant was on the fire; it was already at 10 acres, with a 10-15 mph wind from the west moving the fire eastwards. By 1348 hours, the fire was at 30 acres despite control efforts. By 1512 hours it was at 80-100 acres. Despite the control efforts of three aerial tankers and substantial ground crews, and relatively mild 10 mph winds, by 1900 hours the fire was at 500 acres and the ground crews reported they were "losing the fire," that it was getting entirely out of control. By June 21, 2001, a little over one day later, the fire was 8,600 acres and had burned more than five miles eastward, to within a half mile of the Totatlanika River.¹⁶

If the path of the Fish Creek Fire over the first day is drawn onto the Eddy Drop Zone, commencing at the southerly margin of the BAX, Delta Junction would have been destroyed by fire. Despite the immediate reporting of the fire, despite all of the efforts of the Division, and the immediate availability of all of the resources of the Fairbanks Regional Headquarters, the Fish Creek Fire could not be controlled. It appears that the area of the Fish Creek Fire is considerably

wetter than the Eddy Drop Zone. It is certainly the case that average wind speeds at the Eddy Drop Zone are higher than in the Fish Creek area. The same resources are not immediately available at the City. All of these factors point to a more serious wildfire at Eddy Drop Zone. Unlike the Fish Creek Fire, there will be little time to react. These factors will act to move any wildfire into the City very, very quickly.

The Vinasale Fire: The Vinasale Fire of May 2002, ignited in a remote area by “popper shells” used to drive off a moose,¹⁷ was reported at 1822 hours on May 22, 2002.¹⁸ A suppression crew was on the fire at 1842 hours, some 20 minutes later, very good time for a remote fire. By the time the crew arrived, the fire, driven by a modest 10-mph south wind, had grown to 5 acres. Despite the arrival of a fire retardant tanker about an hour after the fire was reported, the fire had by then grown to 8-10 acres and by 2005 hours the fire covered 200 acres and was a mile long. By 2137 hours, despite two tankers and several skilled crews, the fire was 2.5 miles long. By noon the following day, May 23, 2002, the fire covered 5,000 acres and was uncontrolled. As in the case of the Fish Creek Fire, if the path of the Vinasale Fire over the first day is drawn onto the Eddy Drop Zone, commencing at the southerly margin of the BAX, Delta Junction would have been destroyed by fire.

The Donnelly Flats Fire: Any remaining question about the speed with which a fire in the Eddy or Donnelly Drop Zones can move is answered by the example of the Donnelly Flats Fire of 1999, a fire still quite fresh in the memories of the City and its citizens. The Donnelly Flats Fire, Incident B222, had somewhat mysterious origins, but appears to have been man-caused. The fire was reported at about 1005 hours on June 11, 1999, east of the Richardson Highway in the Donnelly Training Area.¹⁹ The fire initially burned southerly, away from Ft. Greely and Delta Junction. A sustained attack was mounted over two days. At about 1000 hours on June 13, east winds began to blow at an estimated 10 miles per hour. Temperatures rose into the eighties and relative humidity fell to the high twenties. By 1500 hours on June 13 the fire had jumped the Richardson Highway and was approaching Alyeska Pipeline Pump Station Nine. That evening the winds shifted to the south, gusting to 50 miles per hour. The fire jumped two previously prepared fire breaks south of Ft. Greely, triggering evacuation of Ft. Greely and southern areas of Delta Junction. The Ft. Greely Rod and Gun Club, an EPA monitoring station, and the main gate guard shack were destroyed by the fire; seven other Ft. Greely buildings were damaged. Over June 15-17, the fire was gradually controlled as winds died down, relative humidity rose and 4/10ths of an inch of rain fell. The City and its environs were spared as much by a change in weather as anything else.²⁰

It takes no great insight to see that if the southerly winds had arisen any earlier, or if the fire had started closer to the City, the fire could not have been controlled and significant property loss would have occurred. The City also notes that 8.00% of the fire’s perimeter was uncontrolled because it was an impact area and considered unsafe for crews.²¹

The Draft EA fails to adequately recognize and address these risks. While it admits that the fire risk is very high,²² the additional measures proposed are inadequate in light of real world examples like the three described fires, and are internally inconsistent.

The Draft EA states that an Initial Attack Response Team would be “pre-positioned in the Delta area during periods of high fire danger when live-fire is scheduled.”²³ Two paragraphs later, the Draft EA states “A fire danger rating system (described in USARAK Regulation 350-2) would be used to minimize fire risks from range operations at all proposed sites during high fire danger periods.”²⁴ USARAK Regulation 350-2 at §4.2(b) prohibits most kinds of weapons discharge when fire danger is high, and prohibits all but a few activities when fire danger is extreme.²⁵

The Draft EA is inconsistent: will live fire activities be permitted or not when fire danger is high? Will any of those activities be permitted when fire danger is extreme?

The Draft EA is inadequate: the entire Fairbanks Region Headquarters and its resources were “pre-positioned in the Fish Creek area” when the Fish Creek Fire was ignited, but were unable to control it. A detailed Fire Management Plan was in place for portions of the areas burned in the Fish Creek Fire. The Vinasale Fire, despite its relatively remote location, was attacked within minutes of being ignited. Under high or severe fire conditions, with even a modest wind, wildfires can be uncontrollable. There is no reason to assume that the resources proposed by the Draft EA will be any more successful than those that were available at Fish Creek or Vinasale.

The Donnelly Flat Fire speaks for itself.

Criticism F: The proposed CACTF and .BAX are too close to the City and surrounding improved areas to permit an effective response to a wildfire threat.

The BAX and, in particular, the CACTF, are simply too close to allow a timely response to a wildfire, particularly in high or severe fire conditions. Wildfires, particularly when driven by the kinds of winds that regularly occur in the Delta Junction area, spread very rapidly, as the narrative for the Fish Creek Fire demonstrates. The only way to assure adequate time to assemble sufficient resources to meet the threat of a wildfire is an adequate buffer zone. The 6/10ths to one and one half mile buffer contemplated by the Donnelly Range Expansion leaves too little distance.

Criticism G: The Draft EA is deficient in failing to analyze recent wildfires in Interior Alaska.

To assist the City and others, the Draft EA, in its discussion of wildfire risk, should analyze recent fires in similar terrain, and show that the sites ultimately selected for the CACTF and BAX take into account the real world of wildfire management in the conditions that prevail in the Donnelly Training Area.

In such an analysis, the Draft EA should take into account the effect of extended dry conditions, a common summer weather pattern in Interior Alaska, and the limited resources available to attack several fires simultaneously. USAPAK need look no further than the extended narrative of the frustrated fire crew on the Vinasale Fire, unable to obtain resources when that fire was threatening a nearby community. The narrative states, in part, “It’s hard to comprehend, as a firefighter on the ground, the lack of proper support when a fire of this size is burning only minutes away from McGrath.”²⁶ The resources available to attack wildfires are limited. Obviously, the weather conditions that increase the risk of wildfire affect large areas. If more than one wildfire occurs in the Delta region, or, worse still, if more than one wildfire threatens the City and its area, the resources to attack that fire may not be available.²⁷ Finally, wildfires wholly or partially in impact areas present difficult control issues because of the hazards presented to ground crews by unexploded ordinance.²⁸

If such an analysis of recent wildfires had been made, USARAK would have recognized that the wildfire risk presented by the CACTF and the BAX cannot be managed without a larger buffer of distance between the CACTF and BAX, on the one hand, and the privately owned, improved areas on the other. The Donnelly Flats Fire of 1999, the Fish Creek Fire of 2001 and the Vinasale Fire of 2002 demonstrate that in high or severe fire conditions, with any significant wind, wildfire control, at a minimum, requires resources that cannot be assembled immediately, and that a distance buffer is the only practical solution.

Recommendation 1: The Donnelly Range Improvements should be located at a greater distance from the City and other privately owned, improved property, to allow sufficient time to respond to the threat of a wildfire.

Recommendation 2: USARAK should clearly adopt the Canadian Fire Weather Index to measure fire risk. All fire risk activities, including both live fire exercises and vehicle traffic, should be avoided in High and Severe FWI conditions.

The City supports USARAK and its efforts to expand and improve the training opportunities available at the Donnelly Training Area. But the CACTF and the BAX should be constructed further from the site selected should consider taking advantage of distance and terrain to make control of a wildfire easier and the threat to lives and private property lower.

USARAK should measure and apply the Canadian Fire Weather Index to assess fire risk. In those conditions that the FWI labels High and Severe, all types of activities carrying a material risk of fire ignition should be curtailed.

A final consideration for USARAK may be the net operational days and the net effectiveness for the CACTF and the BAX. To the extent that the wildfire risk is increased by the proximity of these proposed ranges to the City and other private, improved areas, the proposed ranges are less useful to USARAK. A training facility that is closed half the summer because of wildfire risk has diminished value to USARAK. By choosing locations further from the City, the wildfire risk would be mitigated and the utility of the range to USARAK increased.

2. NOISE HAZARD

Criticism H: The Draft EA is deficient in failing to take into account the noise generated by ground vehicles and aircraft.

The Draft EA describes how noise generated by transportation sources, such as vehicles and aircraft, is generally assessed.²⁹ The Draft EA specifically states that air and ground vehicles will be used at the BAX.³⁰ The Draft EA states that the BAX is designed for “crew-served, vehicle-mounted weapons systems.”³¹ It provides that “Close air support could also be incorporated to add training realism using dry (no live-fire) runs over the BAX.”³² Although it is somewhat unclear, this statement suggests that aircraft will be flying at low altitudes over the BAX, possibly while firing non-live or dud ammunition.³³ The Draft EA does not clearly state how air and ground vehicles will be used at the CACTF.

The Draft EA completely fails to address the noise generated by troop transportation, land vehicles used in maneuvers and training, and aircraft used in maneuvers and training, transport, monitoring, supply and support. The Draft EA completely fails to discuss the effect of that noise on the City and surrounding areas.

Noise from aircraft can be particularly acute. Because of the altitude of the aircraft, the noise buffering effects of vegetation and terrain can be lost or diminished.

Noise levels from vehicles can be as serious a problem as weapons. Jet engines and helicopter turbines can generate high noise levels even in normal operating conditions. The omission of discussion of these noise sources in the Draft EA is a serious oversight and defeats the purpose of the Draft EA.

Criticism I: The Draft EA fails to adequately analyze the noise levels at the CACTF. The location of weapons fire within the CACTF is not discussed. The role, if any, of aircraft in the CACTF is not discussed.

The Draft EA provides projected noise levels for the Collective Training Range and BAX but fails to provide any projected noise levels for the CACTF.³⁴ The boundary of the CACTF is approximately 6/10ths of a mile from improved private property, yet the Draft EA summarily dismisses the issue of noise generated by small arms fire on the CACTF assuming that all ranges are more than 1,000 meters from the boundaries and directed to the interior of the installation.³⁵

The Draft EA is silent on where within the CACTF small arms fire will occur. To the extent that small arms fire occurs near the easterly or northerly boundaries of the CACTF, it may well be closer to private property than the kilometer that the Draft EA assumes. The Draft EA provides a drawing showing noise levels at the BAX;³⁶ there is no equivalent drawing for the CACTF. The City notes that the Zone 2 contour extends well beyond the boundaries of the LAX itself in that drawing.³⁷ It is impossible to tell whether Zone 2 or 3 boundaries extend beyond the boundaries of the CACTF.

Because the Draft EA fails to address the role or use of aircraft at the CACTF, it is not possible to evaluate whether aircraft will present an additional noise hazard for adjoining property owners.

If, in fact, this portion of the Draft EA has assumed that the CACTF is to be located south of the LAX, in contradiction to Figure 2.1b and the City's comments at Note 28 *supra*, then the contradiction represents a very serious internal inconsistency and casts serious doubts on the Draft EA as a whole and the discussion of noise levels in particular.

Criticism J: The Draft EA does not take into consideration the combined effects of noise from all sources or environmental conditions in interior Alaska.

The Draft EA considers noise levels from small arms and high amplitude impulsive noise from high caliber weapons and blast noise.³⁸ These analyses, however, appear to be separate and do not take into account that multiple activities will likely be taking place at the same time or within close proximity at the same installation. The Draft EA further fails to analyze the combined effects of the noise generated by the weapons activities and the noise generated by vehicles, both land based and aircraft, on and above the installation. The City has not consulted experts on these issues, but it would seem intuitively obvious that the noise levels generated by, say, a number of helicopters and a number of small weapons working in a joint exercise would be louder than either noise source in isolation.

Interior Alaska also experiences periods of strong temperature inversion during the winter months. The different temperature and pressure conditions at the inversion boundary can act as a reflector for sound, magnifying the volume of distant sounds to a surprising degree.³⁹ Most residents of the Interior are familiar with the effect. Temperature inversions are less common in the area of the City than elsewhere in Interior Alaska, but they do occur. Swedish studies suggest that temperature inversions may inject errors of as much as 20 dBA in noise analyses.⁴⁰ The Draft EA is silent as to whether training exercises will occur during winter months when temperature inversions are much more likely to occur. To the extent that training exercises do occur during the winter, and in colder temperatures, the effect of strong inversions should be discussed, since those inversions can defeat the assumptions regarding noise attenuation and diminishment over distance.

At present, most of the noise from existing training activities is either sufficiently far from the City to diminish the noise level, or is conducted below the Delta River bluff and at least partially screened from the City. Neither existing limit will operate for the CACTF or BAX.

Recommendation 3: To safeguard against unacceptably high levels of noise from the CACTF and the SAX, those facilities should be located further from the City and privately owned property, preferably in locations that take advantage of natural sound barriers.

The existing ranges that are near the City take advantage of the bluff along the Delta River and greater distance to reduce the impact of n on the City and private property owners.

3. SAFETY ISSUES

The next specific area of concern the City wants to address is safety issues. To a considerable extent, the City has safety questions because the proposed uses, and the extent of the proposed uses, of the CACTF and the BAX are not described in the Draft EA.

Criticism K: The Draft LA does not address whether the new training facilities will result in aircraft overflights at the City, or create risks at the Delta Junction Airport.

The extent to which USARAK will involve aircraft in utilization of the proposed new training areas is only vaguely described in the Draft EA. In the case of the BAX, the Draft EA states only that “Close air support could also be incorporated...”⁴¹ There is no discussion of air support activities with regard to the CACTF. The omission of these issues, and vague description as in the case of the BAX, makes it very difficult for the City to evaluate the impact of the proposed ranges expansion on the City’s concerns.

The Delta Junction Airport has a significant level of use. The airport is utilized by a wide variety of users. Among other uses, it is a source of air support to the Pogo Mine, northwest of the City. To the extent that increased aircraft activity at or around the proposed new training areas affects, directly or indirectly, operation of the Delta Junction Airport, or increases the risk of an accident, there is a safety issue. The Draft EA fails to provide the City with enough information to assess that public safety risk.

Criticism L: The Draft EA fails to address the scope of “small arms fire” at the CACTF and whether “small arms fire” carries a risk for private property owners.

The BAX is designated as providing training for weapons as large as 105mm. Smaller weapons, ranging from 9mm to M-60 machine guns and 40mm rounds, would also be used. These munitions would be non-dudged.⁴² The description of weapons to be used at the CACTF is more terse, describing only “non-live-fire ammunition” and “short range training ammunition.”⁴³ All of these terms are undefined; all of these terms are relative. A M-60 is a short-range weapon in relation to a 105 mm cannon.

As noted earlier in these comments,⁴⁴ the CACTF, in particular, is quite close to private property, perhaps as close as one kilometer. Because of the vagueness of the description of weapons activity at the CACTF, it is impossible for the City to evaluate whether or not there is a public safety issue associated with the proposed weapons activities.

With regard to larger weapons, human error is an inescapable reality. A valuable satellite has been lost by NASA because teams of highly skilled and trained scientists sent commands in British instead of metric units. The further a training facility is from improved, private property, the lower the concern about human error. Because the proposed new ranges, and in particular the CACTF,

adjoins private property, the concerns for the implications of human error are higher. The issue of human error is essentially unaddressed in the Draft EA.

Criticism M: The Draft EA does not adequately address the impact of the proposed new ranges on recreational activities.

Another of the City's concerns turns on the impact of the proposed new ranges on the existing recreational activities at those sites. As the Draft EA acknowledges,⁴⁵ the area has a wide range of fairly intensive recreational use. The Draft EA says only that the proposed new ranges and associated areas will be subject to existing rules: when the range is in use, recreational uses are barred or constrained.

The difficulty with this simplistic approach is that there is no estimation of the frequency or duration of activity at the new ranges. There is no ability for the City or residents to evaluate the extent to which their recreational activities will be curtailed. The City recognizes that the land is USARAK's, and that USARAK controls the use that may be made of the property, including the right to exclude recreational users entirely. However, by selecting sites for the proposed new ranges that are nearest to the City, USARAK has magnified the impact, and magnified the concerns regarding the extent of the impact. If the proposed new ranges were further from the City, concern about the extent of their impact would be reduced.

Recommendation 4: For reasons of safety, the proposed CACTF and BAK should be located further from the City and private property.

The City would strongly prefer that, for reasons of safety, an alternative site be selected for the CACTF and BAX. The City believes locations in the North Texas Range, in particular, would be better suited. Locations in that area are screened by hills and the Delta River bluff from most areas of private property. The locations are far enough from the Delta Junction Airport that there is not likely to be a significant risk of interference. Impacts on recreational uses would be significantly reduced. If the North Texas Range is unsuitable, the City believes most of its concerns would be addressed if the Donnelly Drop Zone were chosen.

4. FLOODING AND HYDROLOGIC ISSUES

The last area of concern involves the hydrologic effects of the proposed BAX and CACTF. Specifically, the City is concerned about the risk of flooding and the risk of water table effects as a consequence of interference with natural streamflow patterns in the Eddy Drop Zone.

Criticism N: The Draft EA fails to take into account the impact of the Proposed Ranges on existing streamflows, including the effects on aufeis and stream diversion caused by aufeis.

Aufeis, sometimes called overflow ice, occurs in cold climates when stream surface ice accumulates or collapses, forcing winter streamflow to the surface, where it freezes and refreezes, accumulating in very thick layers over very wide areas. Anyone familiar with an Interior Alaska winter knows that over the course of a winter even very modest amounts of water flow can generate immense amounts of aufeis. Streams like Jarvis Creek, which carries glacier meltwater year round, running over wide channels, are particularly susceptible to aufeis formation. The City has anecdotal evidence of extensive aufeis formation along the length of Jarvis Creek throughout the Donnelly Training Area, especially in the lower half of the creek.

So far as the City can discover, there is no streamflow data for Jarvis Creek.⁴⁶ There does not appear to have been any systematic research done on aufeis formation in Interior Alaska.⁴⁷ The City has anecdotal evidence that the aufeis formations on Jarvis Creek can become so extensive

that they operate as seasonal dams, diverting some or all of the spring flow from the normal channel to the Delta River to a northeasterly course, across the Alaska Highway and Jack Warren Road to the Tanana River.

The proposed BAX site has Jarvis Creek along most of its westerly boundary. The Draft EA states that “Range construction would avoid this creek and its floodplains.”⁴⁸ In the absence of any aufeis data, the City does not understand how the Draft EA can make this assertion. In the absence of any seasonal flooding data, the City does not understand how USARAK can make this promise. If creation of the CACTF or BAX has the effect of causing flooding at Ft. Greely or the City and other private property, the consequences could be severe. As one example, if aufeis were to develop along the improved portions of the BAX, USARAK would act to protect its assets. Those actions might interfere with normal stream courses. As another example, the construction of improvements, dikes or other barriers in areas impacted by aufeis could alter stream flow.⁴⁹

The potential for harm may be high. Efforts by the Bureau of Land Management (“BLM”) and the State of Alaska Department of Transportation & Public Facilities (“DOTFP”) to control flooding associated with aufeis along Birch Creek on the Steese Highway have been only partially successful. A 1995 effort involving 6,200 feet of stream channel at milepost 98 failed in the spring of 1997 “due to inadequate armoring of the stream bank at the meander bend and failure to adequately size the height of the meander stream bank to fully contain spring breakup flows on top of winter aufeis (ice).”⁵⁰ While hydrologic data is unavailable, the City understands Birch Creek, at Milepost 58 on the Steese Highway, to be a modest spring-fed creek. Jarvis Creek is somewhat larger and carries more snowmelt.

The Draft EA should specifically address and assess aufeis concerns, and describe what provision will be made, in the BAX in particular, for seasonal channel diversion through the BAX site by aufeis damming and diversion. If there is insufficient data to assess and evaluate the risk, USARAK should not construct the CACTF and BAX at the Eddy Drop Zone.⁵¹

Criticism O: The Draft EA fails to discuss the effect of vegetation removal on permafrost.

The general area of the Eddy Drop Zone is underlain with 25%-50% permafrost.⁵² Permafrost is typically only a few degrees below freezing year round. Removal of shading vegetation can cause permafrost soils to melt and subside.⁵³ The increased solar heating caused by the absence of shade vegetation can change the average annual temperature enough to cause melting of the formerly permanent frozen soils and ice.⁵⁴

Combined with seasonal channel diversion described earlier, there is a potential for permanent stream relocation, flooding, and erosion if the proposed CACTF and BAX involve clearing of shading trees and shrubs. The Draft EA fails to describe total acreage to be cleared, making an assessment of the risk of permafrost melt difficult. But to the extent there is extensive clearing on either side of Jarvis Creek, or elsewhere, in an effort to manage wildfire risk, there is potential for erosion, differential settlement, stream channel relocation, and other complexities. The City acknowledges that there is little data presently available to allow the risks to be analyzed, but the Draft EA completely fails to acknowledge the risk. Instead, it makes the simple assertion that “Range construction would avoid this creek and its floodplains.” The failure to address the effects of vegetation removal on permafrost melting makes this claim insupportable; the planned activities may cause stream diversion.

Recommendation 5: Because the hydrology of Jarvis Creek and other streams in the area is essentially unknown, and because the effects of aufeis and aufeis damming are essentially

unknown, the CACTF and BAX should be located in the North Texas Range where the effects are unlikely to injure persons or property.

Recommendation 6: Because the effects of the removal of shade vegetation on permafrost are largely unknown, and because the effects of permafrost melt can be drastic, and because the CACTF and BAX will involve substantial amounts of clearing, the risk of ill-effects should be minimized by placing the CACTF and BAX further from the City.

The Draft EA fails to address known hydrologic and soils risks. Because data are scant or nonexistent, and because the consequences of flooding are so serious, alternate sites should be used for the CACTF and BAX.

CONCLUSION

The City remains strongly committed to USARAK and to support of its plans and activities. However, for the reasons set out in these comments, the City regrets it must oppose the CACTF and BAX in the locations proposed by the Draft EA. As set out in these comments, wildfire concerns, noise concerns, public safety concerns and hydrologic issues, not all of them even addressed in the Draft EA, suggest strongly that alternative sites, further from private property, should be utilized. The City believes that use of the North Texas Range would best address the City's concerns. Use of the Donnelly Drop Zone should occur only if careful research demonstrates that it will not have adverse hydrologic consequences for the City and surrounding areas.

The City thanks USARAK for the opportunity to make these comments. If USARAK's time and resources permit, the City requests a formal public hearing on the proposed Range Expansion Projects be conducted at Delta Junction, so that other concerns and comments of area residents may be heard.

Sincerely yours,

GUESS & RUDD P.C.

James D. DeWitt

JDD/bkh

cc: Delta Junction City Council (via facsimile) Senator Eugene Therriault, Alaska Senate (via facsimile) Representative John Harris, Alaska House (via facsimile) Colonel Fredrick L. Lehman (via U.S. Mail)

Gale A. Skaugstad (Hand Delivered)

Footnotes:

¹ Draft EA, p. 37.

² Vinasale Fire of May 2002 (Fire #204167), "Individual Incident Report," p.4.

³ Report of Fire Investigation, Fire # 73-111-246, Fish Creek, p. 3 (Memo dated July 10, 2001).

⁴ Draft EA, p. 38.

⁵ Draft EA, p. 37.

⁶ See Note 17, *infra*.

⁷ See, e.g., Report of Fire Investigation, Fire #73-111-246, Wildland Fire Situation Analysis June 24, 2001, p. 2.

⁸ See, e.g., Final Fire Report, Incident #73-111-246, Wildland Fire Situation Analysis June 24, 2001, p. 2.

⁹ Draft EA, pp. 38-39 and Figure 3.5.2f.

¹⁰ Draft EA, p. 4. The Western Region Climate Center reports the average annual wind speed at Delta Junction, Alaska to be 9.7 miles per hour for the period 1996-2002, not the lower figure reported in the Draft EA.

- ¹¹ Draft EA, p. 37.
- ¹² Draft EA, p. 37.
- ¹³ See, e.g., Report of Fire Investigation, Fire #73-111-246, Fish Creek, pp.43-53.
- ¹⁴ A summary of the FWI is available at the Alaska Service web site, <http://fire.ak.blm.gov/default.htm>.
- ¹⁵ This summary of dates and times is taken from the Fire Report for the Fish Creek Fire, Final Fire Report, Fire #73-11-246, "Individual Incident Report," pp. 4-7.
- ¹⁶ On June 22, 2001 the Division of Forestry abandoned efforts to extinguish the wildfire, shifting from an Initial Attack organization to a Type 2 organization. "Individual Incident Report," page 12.
- ¹⁷ See Note 2, *supra*.
- ¹⁸ *Id.*
- ¹⁹ This narrative is taken from the Donnelly Flats Fire, Incident B222, Incident Narrative, pp. 1-4.
- ²⁰ Donnelly Flats Fire, Incident B222, Transition Plan, p. 5 ("In general, relative humidities and winds were much less conducive to fire behavior than they had been during the major run 6/13.")
- ²¹ *Id.*, p. 5.
- ²² Draft EA, p. 37.
- ²³ Draft EA, p. 40.
- ²⁴ *Id.*
- ²⁵ The city has already noted its concerns regarding the fire classification system; see page 4, *supra*.
- ²⁶ Vinasale Fire of May 2002 (Fire #204167), "Individual Incident Report," p. 13.
- ²⁷ The Donnelly Flats Fire, Incident 5222, Wildfire Situation Analysis for the transition from Type II to Type I Team notes, "Fire Behavior – Past Five Days – Extreme fire behavior despite winds being moderate for the Delta area. Fire makes runs from approximately 1400 hrs to 2200 hr High flame lengths and full consumption of fuels. Very extreme fire behavior noted."
- ²⁸ See note 18 *supra*. See also Donnelly Flats Fire7 – Incident B222, "Agency Administrator Briefing," p. 7 ("Lots of blanks going off.")
- ²⁹ Draft EA, p. 18.
- ³⁰ The City notes that the maps in its copy of the Draft EA are inconsistent in this area. Some show the CACTF to be north of the BAX, see, e.g., Figure 2.lb at page 6. Others, perhaps Alternatives, show the CACTF apparently south of the BAX, see, e.g., Figure 3.2.2 at page 18. The City has assumed that the maps similar to Figure 2.lb are more accurate. If that assumption is in error, the City requests a corrected Draft BA and an adequate opportunity to comment on the corrected draft.
- ³¹ Draft EA, p. 5.
- ³² Draft EA, p. 8.
- ³³ See also Draft BA, p. 10.
- ³⁴ Draft EA, pp. 20 & 22.
- ³⁵ Draft EA, p. 21.
- ³⁶ Draft EA, Figure 3.3.2 at p. 22.
- ³⁷ Draft EA, p. 22.
- ³⁸ Draft EA, p. 21-21.
- ³⁹ At this date, the city has only web resources in support of its concerns regarding this issue.
- ⁴⁰ See, e.g., <http://www.met.uu.se/eng/forsk/noise.html>.
- ⁴¹ Draft EA, p. 8.
- ⁴² Draft EA, pp. 5-8.
- ⁴³ Draft EA pp: 4-5.
- ⁴⁴ See page 1, *supra*.
- ⁴⁵ Draft EA, pp. 54-55.
- ⁴⁶ The United States Geological Survey Streamflow Records show intermittent water quality records for Jarvis creek (Station ID Number 64012514532500) but no Streamflow records, either continuous or partial. The City has confirmed the absence of data with David F. Meyer, Surface Water Specialist, USGS, Alaska Science Center.

There have been general hydrologic studies of the Delta River drainage; see, e.g., Dingman, S.L. and Cold Regions Research Laboratory, Hydrologic Reconnaissance of the Delta River and Its Drainage Basin, Hanover, N.H.: Corps of Engineers, U.S. Army, Cold Regions Research and Engineering Laboratory, 1971 (cited as Dingman).

⁴⁷ There may have been aufeis studies done on the North Slope.

⁴⁸ Draft EA, p. 16.

⁴⁹ Jarvis creek is contains high sediment loads. At lower elevations, the sediments settle out, resulting in the braided channel effects notable in many parts of the steam course. There is compelling evidence of recent, catastrophic shifts of the Jarvis Creek stream course. Dingman, 65-66.

⁵⁰ <http://www.ak.blm.gov/amines/mileg8/slideshow98.htmj>.

⁵¹ The City also has concerns about the effect of stream channel diversion on Delta area wells. The City understands that Jarvis Creek and Delta River are influent; that is, subsurface. Dingman, 5-6. Changes in stream channels could alter ground water levels, and thereby affect water wells in unpredictable ways. The absence of data makes the risk impossible to assess.

⁵² Draft EA, p. 14.

⁵³ See, e.g., "Snapshots," BLM Newsletter April 19, 2002, p. 3-4. The City understands there is a research program underway, sponsored by the Joint Fire Science Program, Project No. 00-2-34. Within the time constraints imposed by the brief comment period, the City has been unable to obtain a copy of the report or progress of that research project.

⁵⁴ Some recent studies suggest that permafrost temperatures throughout Interior Alaska are warming, increasing their susceptibility to solar warming. See, e.g., Romanovsky, V. E., and Osterkamp, T. E., Permafrost: Changes and Impacts, in: R. Paepe and V. Melnikov eds.), "Permafrost Response on Economic Development, Environmental Security and Natural Resources", Kluwer Academic Publishers, 297-315, 2001.

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