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U.S. ARMY CORPS OF ENGINEERS
DRAFT EIS MEETING
NANUSHUK PROJECT

Location: Unupiat Heritage Center
5421 North Star Street
Barrow, Alaska

Date: September 27, 2017

Time: 5:00 - 7:00 p.m.

P R O C E E D I N G S

1
2 JOY HUNTINGTON: (Meeting in session before recorder
3 turned on) and we appreciate you welcoming us into your
4 community. We want to first say thank you to Armstrong Energy
5 LLC for providing the food for this evening, so a big thank
6 you to them.

7 My goals as the facilitator for this meeting are to
8 make sure that this is as productive and informative as
9 possible. So you have several folks here. Ellen Lyons with
10 the Army Corps of Engineers will be making some introductions
11 soon. We really hope that you take advantage of having the
12 experts in the room that have worked extensively on this draft
13 EIS, and be able to have any questions answered that you have.

14 We do have copies of the PowerPoint presentation in
15 the back, so if for any reason you would like to take that and
16 have some time to review what's in the presentation, you have
17 until November 14th to make your written comments and send
18 those in. So we understand that you may be getting a lot of
19 this information for the first time this evening, and so we
20 have maps in the back, as well, of the different alternatives.

21 You'll hear a lot more about those this evening,
22 but, please, if you want to wait and make your comments until
23 you've had some more time to review the presentation, please,
24 definitely do that. So please keep that in mind.

25 And if you could hold questions until the end,

1 unless there's a question that you have on what's on the
2 screen in front of you. If there is anything that you want
3 clarification on from the presenter, definitely feel free to
4 ask us to either expand on that or explain it in a different
5 way.

6 But if it's a question relating to the overall
7 process or the alternatives, in the -- in a general sense or
8 about the project, please, if you could wait until the end, we
9 will have time for questions and answers at that time.

10 So we would appreciate your patience as we get
11 through our presentation. And one thing that we like to also
12 remind folks is that this project -- I'll go to the next
13 slide. This is the project that we're discussing this
14 evening. This is proposed by Armstrong Energy LLC. We have
15 some representatives from Armstrong in the room as well.

16 And this is six-and-a-half miles northeast of
17 Nuiqsut, southeast of the Colville River. And so you'll hear
18 a lot more about this project. We'll have a more in-depth
19 project overview. But we would like to keep the comments and
20 the input and the questions related to this specific project
21 and the NEPA process, as well, if we can. I think that will
22 make the best use of your time and the best use of everyone's
23 time that has traveled here this evening.

24 And I also wanted to just comment on kind of setting
25 expectations for the evening. You may not get the exact

1 answer that you're looking for in questions regarding the
2 process and the project and the alternatives. This is a
3 process that has been taking a few years to get to this point.
4 There's a lot of information available, but every question
5 regarding the bigger picture, other projects, things like
6 hiring, this may not be the correct venue to bring those
7 forward.

8 We'd really like to focus on the EIS, the draft that
9 you have, and the items that we're going through this evening
10 as much as possible.

11 So what our plan is, is we're going to have
12 introductions. I'm going to hand it over to Ellen Lyons in a
13 minute here. And we're also going to do an overview, a brief
14 overview of the NEPA process and the EIS process to kind of
15 help get folks acclimated to what we are involved with and
16 where we're at in that process right now.

17 Then we'll have a project overview, and we'll go
18 through the purpose and need of the proposed project. And
19 then spend some time going through the alternatives. Again,
20 there's maps behind you, and on each slide, we'll have a map
21 as well, so we'll go through some of the key differences and
22 why we selected or why we looked at those specific
23 alternatives.

24 And, lastly, we'll have the key findings. We'll go
25 through specific sections of the draft EIS that we narrow down 4

1 as being really important issues for the community, and
2 important issues to be looked at throughout the process. So
3 this was part of the focus of a lot of our attention in the
4 last several months. And we had meetings on each of those key
5 topic areas, as well, during the preliminary draft EIS review.

6 And then we'll talk about next steps and focus on
7 your input, which is a big part of why you're here tonight
8 and, hopefully, we get a few more people showing up as well.
9 Maybe they're getting off of work. But this process really
10 involves you and you're a key part of that, so we do look
11 forward to having as much input as we can. And thank you very
12 much for being here tonight. I'm going to hand it over to
13 Ellen Lyons.

14 ELLEN LYONS: Thank you, Joy. So my name is Ellen
15 Lyons and I am a regulatory project manager for the U.S. Army
16 Corps of Engineers. And the Corps of Engineers is the lead
17 federal agency for the Nanushuk project EIS.

18 And as the lead federal agency, in our -- one of the
19 decisions that we'll be making is whether or not to issue a
20 permit for the discharge of fill into waters of the U.S.,
21 including wetlands, for the development of this project. In
22 that role, we are neither an opponent nor a proponent for the
23 proposed project.

24 We are also working with four cooperating agencies
25 on this EIS. One is the Native Village of Nuiqsut, the U.S.

1 Fish and Wildlife Service, the EPA, and the State of Alaska
2 Department of Natural Resources. DOWL is the third-party
3 contractor who is responsible for writing the EIS under the
4 direction of the Corps.

5 So I'm just going to give a quick brief overview of
6 the NEPA process. So this EIS is required under the National
7 Environmental Policy Act. It requires a federal agency to
8 in -- evaluate the environmental effects of a major federal
9 action. It is our requirement to make a permitting decision
10 for fill into waters of the U.S. that makes this a major
11 federal action and NEPA becomes applicable to this project.

12 So we are working on an environmental impact
13 statement and evaluating a reasonable range of alternatives.
14 And, also, one of the primary parts of NEPA is public review,
15 and that's part of what this meeting tonight is. Well, that
16 is what this meeting tonight is for, is to receive input from
17 the public on the proposed project and the alternatives that
18 we're going to go over in a little bit.

19 So the first thing that we needed to do was
20 establish a purpose and need. When the applicant pro -- gave
21 us an application for the discharge of fill into waters of the
22 U.S., they provided a purpose and need. And, basically, is,
23 why is the project needed, what is its purpose?

24 From that purpose and need, we have developed a
25 reasonable range of alternatives. And each alternative, you

1 know, had to meet the purpose and need, be reasonable and
2 feasible, and we worked to -- finding alternatives that had
3 less environmental impact. One of the alternatives is also
4 the no-action alternative.

5 So once we had the alternatives established, we look
6 at effects of each individual alternative, both all -- we look
7 at direct effects, indirect effects, and cumulative effects.
8 And we look -- we compare them to the no-action alternative
9 and look at the effects for all of the alternatives.

10 And, again, part of the process is this public
11 review, which is why we are having this meeting tonight. And
12 so this just shows where we are at, right now, in the NEPA
13 process.

14 As we mentioned earlier, we came out last year in
15 March and did scoping. We've got a lot of input. We've used
16 that input to develop alternatives, and we have written the
17 draft environmental impact statement, which is currently out,
18 published and out for review.

19 That comment period closes November 14th, so you can
20 take the information that you learned tonight and you can look
21 at the EIS and you can provide written comments. But, also,
22 any comment that you give this evening, will also be part of
23 the public record and part of our analysis process.

24 So, again, as a reminder, we're here to talk about
25 the Nanushuk project. So as mentioned before, the Nanushuk

1 project is about six-and-a-half miles to the northeast of the
2 village of Nuiqsut. You have Alpine to the west, Mustang
3 to -- generally, to the south, Nuna, generally, to the north,
4 and Kuparuk to the east.

5 So the applicant proposes to produce, process, and
6 transport sales quality oil to the TAPS. Each of the
7 different alternatives includes the following aspects, and
8 each of those aspects of the project would require the
9 placement of fill into wetlands, and would, therefore, require
10 a permit from the Corps of Engineers to proceed.

11 So they require -- they're going to construct drill
12 pads, operation pads, the processing facility, roads, and
13 pipelines. The proposed project also involves screeding at
14 Oliktok Dock for barge offloading, and the construction of ice
15 roads.

16 So the applicant's purpose and need was to safely
17 produce commercial quantities of liquid hydrocarbons in its
18 oil and gas leaseholds by operating from a site east of the
19 Colville River Delta to process hydrocarbons on or near the
20 drill sites, and to transport sales quality oil through a new
21 export pipeline to the Kuparuk sales oil pipeline and then to
22 TAPS.

23 From this purpose and needs statement, we then
24 developed a reasonable range of alternatives. These
25 alternatives were developed in response to comments received

1 during scoping and also from various agency -- cooperating
2 agency meetings that we held. And we took all their input
3 and -- to develop the possible range of alternatives.

4 We then developed a screening criteria and used that
5 screening criteria to go from a broad range of alternatives
6 down to a narrow, more-focused range of alternatives. And
7 this diagram kind of illustrates that process.

8 So we looked at alternatives for all of the
9 different components of the project. We looked at alternative
10 drill site locations, fewer drill sites, drill sites further
11 east, various access road configurations, even a roadless
12 access alternative. We looked at different pipeline
13 alternatives using existing infrastructure, buried pipelines,
14 et cetera.

15 So once we got all of those potential options on the
16 table, we used the screening criteria to narrow them down to
17 ones that were reasonable and feasible. We had to make sure
18 that they addressed a public or agency concern raised during
19 scoping, and have less impact on some resource than the
20 proposed alternative.

21 So, again, this just sort of summarizes what I've
22 already mentioned, that we began with public and agency
23 scoping, used that information to develop a reasonable range
24 of alternatives, and we looked at all these different aspects
25 for those alternatives.

1 And, again, this is a -- basically, a summarization
2 of something that I've mentioned previously, so I'm going to
3 skip that slide. So in the end, once we went through that
4 process of going broad range of alternatives narrowing it
5 down, we came up with one non -- no-action alternative, which
6 is required by NEPA, and four action alternatives.

7 So this diagram illustrates the applicant's proposed
8 project, and it also shows the components of the project that
9 are similar for all action alternatives. So each alternative
10 has three drill pads -- and I'm having a hard time seeing, I'm
11 sorry. So drill site 1 and the CPF are combined on one pad
12 for the applicant's proposed alternative -- or proposed
13 project, which is alternative 2.

14 But there's a total of three drill sites, an
15 operations center, pipelines, access roads, infield roads,
16 water withdrawals, ice roads. And another aspect of the
17 project is some material sites, which I'll discuss a little
18 bit later.

19 So the NEPA process requires a no-action
20 alternative. And this alternative is, basically, if the Corps
21 would not issue an application -- or a permit for the proposed
22 project and the project would not move forward; however,
23 exploration is likely to continue.

24 Again, this is alternative 2, the applicant's
25 proposed action. So here, it shows -- you'll see that there

1 are mine sites, the NSB mine site, and the ASRC mine site, and
2 also mine site area D. So the development of a material site
3 is not part of the proposed action, but because the project
4 would require material, the development of these material
5 sites are a connected action, and so they are discussed in the
6 EIS.

7 The applicant has said that they're going to utilize
8 existing material sites, one of these two. And, if for some
9 reason, one of those material sites or both material sites
10 didn't provide enough material to construct the proposed
11 project, they could, potentially, develop a new material site
12 here.

13 If that were to occur, that would happen under a
14 separate permitting process; however, we are evaluating the
15 effects of those alternatives or those material sites and the
16 development of them in the environmental impact statement.

17 GORDON BROWER: I've got a question. You said if
18 the materials are not present or not available or something,
19 that you would want to develop new mine sites just adjacent to
20 the development?

21 ELLEN LYONS: As I said, that's not part of the
22 proposed project. Right now, they're saying that there should
23 be enough material in one of -- or two of the existing
24 material sites to develop the project, but should something
25 change, they may have to construct a new material site, and

1 it's -- right now, the potential proposal is here in mine area
2 D. So we're looking at the effects of material sites on the
3 various resources, because it's a connected action.

4 GORDON BROWER: (Indiscernible - away from mic and
5 simultaneous speech). I know you're looking at that, and I
6 just wanted to mention that the Borough, the North Slope
7 Borough is -- I'll give you an example. Other projects in
8 that vicinity that wanting to build their project with new
9 pads and new roads and develop their own mine, because it was
10 just so advantageous right next to it, has discouraged that,
11 and permitting the project minus the mine site, and
12 re-evaluate the existing mine sites in the area of
13 (indiscernible - away from mic).

14 ELLEN LYONS: And that's exactly what's going on.
15 We're looking at existing mine sites. The only reason that
16 they would develop a new site is if there wasn't enough
17 material. So it's -- the effects are evaluated in the EIS,
18 but the development of a new material site is not part of the
19 proposed action at this time.

20 So, again, in alternative 2, the drill site 1 and
21 the central processing facility are located on a single pad
22 here at this location with the operation center here. And
23 each of the alternatives, the drill sites are located in the
24 same location.

25 So alternative 3 is the southern access, and this

1 alternative was developed in response to concerns raised
2 during the scoping period or the desire to use existing
3 infrastructure. And so this alternative utilizes existing
4 Mustang Road infrastructure, and then, also, they would
5 construct a road along the pipeline corridor and then travel
6 north.

7 So in this -- we've put the alternative 2, the
8 applicant's proposed alternative on all of the slides for
9 comparison purposes. So yellow reflects the proposed action,
10 and the red in this slide is alternative 3, so that you can
11 see the differences in the slide.

12 So the central processing facility and alternative 3
13 is on a separate facility or a separate pad, and here's the
14 operation center here. Another unique aspect of this
15 alternative, is that it would require two additional bridges
16 over the Kachemach River.

17 Another change would be in the alternative 2, the
18 applicant's proposed project. The central processing facility
19 is, approximately, 14.2 miles away from Nuiqsut. In this
20 alternative, it is 10.8 miles away from Nuiqsut, so it's a
21 little bit closer.

22 So this figure shows alternative 4, the northern
23 access. Again, this alternative was developed in response to
24 comments requesting the use of existing infrastructure; in
25 this case, it utilizes existing or permitted Nuna roads, and

1 comes and accesses the field from the north.

2 Again, the drill sites are all located in the same
3 location, and that the yellow is the proposed project, and the
4 green is alternative 3. Another difference in this
5 alternative is that the pipeline to drill site 2, the
6 connected pipeline here, does not have a road along it. And
7 the lack of road along the pipeline could increase the need
8 for helicopter operations for pipeline inspection, maintenance
9 and repairs, and makes response to any pipeline spill a little
10 bit more difficult.

11 MATT DUNN: I was curious on this option of why the
12 pipeline wouldn't go to CPF3 (indiscernible - away from mic)
13 across the (indiscernible - away from mic) CPF2 instead.

14 KRISTEN HANSEN: (Indiscernible - away from mic)
15 much longer route to go all the way around, is my
16 understanding (indiscernible - away from mic).

17 UNIDENTIFIED SPEAKER: (Indiscernible - away from
18 mic).

19 PATRICK CONWAY: (Indiscernible - away from mic)
20 that we (indiscernible) is along the (indiscernible) road
21 between CPF2 and CPF1. That CPF3, we were at capacity and
22 (indiscernible) water, oil, and gas for us.

23 KRISTEN HANSEN: So it would have to go all the way
24 around back down to CPF (indiscernible - away from mic)?

25 UNIDENTIFIED SPEAKER: (Indiscernible - away from

1 mic).

2 ELLEN LYONS: Okay. Again, in this alternative, the
3 central processing facility is a little bit further from
4 Nuiqsut. It's about 15.4 miles as opposed to 14.2 for the
5 proposed action.

6 So alternative 5 is the reconfigured infield roads
7 alternative. Again, the proposed action is in yellow and the
8 alternative 5 is in this purple-blue color. This alternative
9 was designed to maximize use of existing infrastructure
10 corridors, but also to reduce development in flood plains and
11 to minimize development parallel to the Colville River.

12 So the CPF -- the central processing facility here
13 is a little bit closer to Nuiqsut. It's 11.7 miles versus the
14 14.2 miles of the proposed project, and the central processing
15 facility, again, has its own pad. The drill sites are in the
16 same locations. Again, it uses a little bit of the Mustang
17 Road before heading north into the fields. So this --

18 PATRICK CONWAY: Ellen?

19 ELLEN LYONS: Yeah?

20 PATRICK CONWAY: I'm sorry, could you mention the
21 proximity of the process facility to Nuiqsut (indiscernible -
22 away from mic) that you talked about the distance to the
23 river. Was that part of the motivation for moving the process
24 facility in the various alternatives?

25 ELLEN LYONS: Yeah. So this -- that's a good point. 15

1 The central processing facility is also farther away from the
2 Colville River. And the configuration of the access roads is
3 also different. It's not quite so parallel to the river. And
4 we received comments that that had a corralling effect on
5 caribou, and so this alternative has less of an impact on
6 caribou and it reduces that corralling effect.

7 It also pulls a lot of the infrastructure out of the
8 flood plain and introduces impacts to the flood plain of the
9 Colville River.

10 So this slide is a general comparison slide of
11 alternatives focusing mainly on acres of impacts, miles of
12 road, and numbers of bridges. This slide is in the
13 information that you were provided, so you can access it
14 there. But it just gives you a general comparison of impacts
15 from each proposed alternative.

16 So, although tonight, we're going to focus on five
17 primary resources, the environmental impact statement looked
18 at a lot of different potential effects and all these
19 different resources. So even though we don't talk about all
20 of these tonight, they are in the environmental impact
21 statement, discussed in that, and you can review that
22 information and provide comments on it.

23 However, these are the key issues that we're going
24 to discuss tonight, and these were identified through scoping
25 meetings with the public and also through meetings with the

1 cooperating agencies. And they're air quality, hydrology and
2 water quality, subsistence, human health and safety, and oil
3 spill risk.

4 And, now, Nick Enos is going to come up -- he's from
5 DOWL -- to discuss the various impacts on air quality.

6 NICK ENOS: Thanks, Ellen. So as Ellen mentioned,
7 I'm Nick. I'm the physical sciences lead on the EIS team. And
8 I've got four slides, so I'm going to cover air quality, and
9 then hydrology and water quality.

10 So what we're going to do for each of these is,
11 we'll talk about kind of what the summary of the issue was or
12 what the EIS analysis actually looked at, then we'll talk
13 about the key findings for each issue. And, really, these are
14 just the key findings, right. There's a lot more information
15 and analysis in the draft EIS, and we can certainly talk about
16 that when we get to questions.

17 But these are really the key findings of the EIS,
18 which then leads to the next slide, which would then be a
19 comparison of the different alternatives and how those
20 alternatives compare as far as impacts or potential impacts to
21 that resource.

22 So to start, air quality -- so most of you may
23 already know that air quality was a primary issue identified
24 during scoping. And, really, the concern raised during
25 scoping related to potential emissions from the proposed

1 project from construction from drilling from operations, and
2 as a result of that, potential impacts to air quality from
3 those emissions.

4 So the project would have emissions. Those
5 emissions would include criteria air pollutants. By criteria
6 pollutants, we mean those pollutants that have an air quality
7 standard, either a national or an Alaska ambient air quality
8 standard. And those are -- examples of those include things
9 like nitrogen dioxide or particulate matter.

10 The project would also have some emissions of
11 hazardous air pollutants, also called air toxics. Hazardous
12 air pollutants are those pollutants where, above a certain
13 threshold concentration, they may have adverse health effects,
14 which is why they're important and why the EIS looked at them
15 very closely.

16 Examples of those include things like benzene or
17 xylenes. The project would also have emissions of greenhouse
18 gas emissions like carbon dioxide, and the project would also
19 have emissions of fugitive dust from gravel roads and gravel
20 pads.

21 So what we found or what the EIS analysis found was
22 those emissions would occur, of course, and those emissions,
23 though, would -- the project would still meet all Alaska and
24 national -- or federal and Alaska ambient air quality
25 standards, both in the project area, but also in the community₁₈

1 of Nuiqsut, as well.

2 The EIS also found that the hazardous air pollutant
3 concentrations, although there would be emissions of hazardous
4 air pollutants, the concentrations would be well below the
5 reference concentrations that are known to cause adverse
6 health effects.

7 And then, finally, because this was an important
8 scoping issue for the community of Nuiqsut, they wanted to
9 know what the effects of air emissions would be on air quality
10 in the community of Nuiqsut. The EIS found that the effects
11 would be -- we call probable, which means -- all that means is
12 the emissions would be likely to occur, and they would likely
13 have some effect on air quality, but the effects would be
14 minor. And by minor, what we define that as is, no pollutant
15 exceeds -- the air quality standard is greater than 50 percent
16 of the air quality standard at Nuiqsut. So those would be
17 considered minor effects.

18 And then, finally, they would be medium term in
19 duration. And what does that mean? That means they would
20 last -- they would occur over the life of the project, but
21 they would not extend beyond the life of the project.

22 MATT DUNN: I got a quick question.

23 NICK ENOS: Sure.

24 MATT DUNN: Nuiqsut, in that area, has air inversion
25 often where the -- the cold air that stays -- stays for quite 19

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1 some time.

2 NICK ENOS: Yep.

3 MATT DUNN: Is that a factored into your modeling
4 (indiscernible - away from mic)?

5 NICK ENOS: That is discussed in the draft EIS.
6 There's a discussion there of arctic haze. I think in
7 Nuiqsut, they refer to it as yellow haze. I think that's what
8 your -- you might be referring to. But that -- our
9 understanding is that happens during times of inversion,
10 primarily in the winter. It -- it's considered and discussed
11 in the EIS. It doesn't change the finding of effects on the
12 criteria air pollutants.

13 GORDON BROWER: Along the same line --

14 NICK ENOS: Sure.

15 GORDON BROWER: -- considering already the air
16 pollutants that are just from the village, itself, and what
17 they encounter --

18 NICK ENOS: Yeah.

19 GORDON BROWER: -- is that this modeling -- its
20 impacts on that existing level of air pollution already
21 (indiscernible - away from mic)?

22 NICK ENOS: That's right, yeah. Yeah, Gordon, it's
23 actually a good comment. In the EIS, we -- when you go down
24 and look in the EIS, there is a tables of discussion of
25 existing ambient air quality, and that includes monitoring at 20

1 the community of Nuiqsut. I think it's over a three-year
2 period, so it includes the baseline air quality that is
3 influenced, not just by emissions in Nuiqsut, itself, in the
4 community, but also these existing air quality from -- from
5 any other factors including adjacent projects. So that is
6 factored in.

7 BILL TRACEY, SR.: I have a question.

8 NICK ENOS: Sure.

9 BILL TRACEY, SR.: Earlier in this presentation,
10 they -- you said you are studying the cumulative effects.

11 NICK ENOS: That's right.

12 BILL TRACEY, SR.: And I took that as this entire
13 project. Or is that wrong? Is it all the --

14 NICK ENOS: It's --

15 BILL TRACEY, SR.: -- industry all -- all around it?

16 NICK ENOS: Exactly. The cumulative impacts that
17 these concentrations reflect include the existing air quality,
18 including projects that are in operations today and are
19 anticipated to be in operations during the life of the
20 project.

21 BILL TRACEY, SR.: Okay.

22 NICK ENOS: Yeah. So in comparing alternatives,
23 this is one resource. You'll hear more about the other
24 resources. This is one resource where there -- there's not
25 really any meaningful difference between the alternatives.

1 The air quality -- the potential air quality for each
2 alternative is, essentially, the same, in that the findings
3 were for each alternative, the project would still meet
4 ambient air quality standards, both in the project area and at
5 the community of Nuiqsut.

6 And, similarly, for hazardous air pollutants, that,
7 for all alternatives, the emissions would not exceed any
8 threshold concentration. They would be well below threshold
9 concentrations where there would be adverse health effects.

10 And in Nuiqsut itself, similar to what I presented
11 before for the proposed action, no pollutant, criteria
12 pollutant would exceed 50 percent of the ambient air quality
13 standard. So we find that for all the alternatives, all the
14 action alternatives, the effects to air quality would be minor
15 at Nuiqsut.

16 The one difference that we discuss in the EIS
17 between the alternatives -- and we bring this up, because we
18 know this was a concern to the community of Nuiqsut -- is the
19 distance of the CPF from the community. And as Ellen
20 presented, there is a different location for the CPF for each
21 of the four action alternatives, the closest one being the
22 alternative 3, which is the southern access alternative. That
23 one puts the CPF roughly 11 miles from the community. The
24 most distal CPF is with the northern access alternative or
25 alternative 4. That puts it, roughly, 15 miles from the

1 community. We do point that out in the EIS, but I think I
2 think it's really important to state that in all of those
3 scenarios, we find that the project would still meet ambient
4 air quality standards, regardless of the CPF location in all
5 four of those cases.

6 GORDON BROWER: I got a question. What was the
7 significance from the communities standpoint --

8 NICK ENOS: Yeah.

9 GORDON BROWER: -- where the CPF (indiscernible -
10 away from mic)?

11 NICK ENOS: Good question, Gordon. I -- as I
12 recall, there was some concern, because of the prevailing
13 winds, which are -- the predominant prevailing wind is out of
14 the northeast towards the southwest, towards Nuiqsut.

15 I think they felt that if the CPF were closer, and
16 it was -- and they were directly downwind, that there would be
17 more impacts. And so, intuitively, of course, they,
18 rightfully so, thought, well, maybe if it's moved further to
19 the east, there will be less impact.

20 That was looked at in the EIS. But, like I said,
21 the finding was regardless of all four of those locations;
22 it -- they would still meet ambient air quality standards.

23 GORDON BROWER: Yeah, I would have related it to
24 probably the noise, the level of -- I would think there would
25 be power generation would be a slew of industrial --

1 NICK ENOS: Yeah .

2 GORDON BROWER: -- combustion going on in that area.

3 NICK ENOS: And there is -- noise is looked at in
4 the EIS, too. We -- I don't think we touch on it today,
5 because it wasn't a primary issue, but it is discussed in
6 relation to the facilities and the location to the facilities.

7 So another primary issue that was identified during
8 scoping, as Ellen mentioned, was impacts to hydrology and
9 water quality. And, really, this has a lot -- one of the
10 primary reasons wa -- is the potential for facilities to be
11 located in the flood plain of the Colville River or in areas
12 near drainages during spring breakup and other flooding events
13 where facilities might impact runoff during those times, and
14 because of that, potential impacts to water quality.

15 So that was really kind of the primary reason that
16 this was a key issue. And what the EIS analysis looked at was
17 that, indeed, with having -- with facilities in -- near
18 drainages or in flood plains, there are some impacts during
19 spring breakup and runoff. And the EIS did find that, during
20 times of those flooding events, that there is the potential
21 for impoundment of water behind facilities, including ice pads
22 or ice roads during spring runoff, or gravel pads and gravel
23 roads during operations.

24 And that, during that time of impoundment, there is
25 potential for changes to flow direction, including potential

1 changes to the stability of stream channels, the alignment of
2 stream channels, and then as a result of that, potential
3 erosion of the adjacent tundra and stream banks, which leads
4 to, as most of you probably know, some deposition of sediment
5 on the adjacent tundra or in the -- in nearby rivers.

6 During that time of impoundment, there can also be
7 thermokarst development or thermokarsting, which is --
8 thermokarsting is just where you get localized melting of ice
9 ridge permafrost during those times of impoundment. So the
10 EIS found there could be that potential if the water is
11 impounded behind by those facilities.

12 Then the project would also have water withdrawal
13 from nearby lakes for their -- for the water supply needs
14 during operations, and that activity could have the potential
15 to reduce water quantity availability in some of those lakes
16 that are used for that purpose.

17 And then, finally, because of the erosion will --
18 the erosion I discussed before, there is a potential for
19 increased turbidity from that erosion, but also from fugitive
20 dust from roads -- from gravel roads and gravel pads.

21 GORDON BROWER: Just a question. What was the
22 estimated amount of quantities needed to supply water from the
23 lake to -- I presume for (indiscernible - away from mic -
24 simultaneous speech) --

25 NICK ENOS: Yep.

1 GORDON BROWER: -- things like that (indiscernible -
2 away from mic)?

3 NICK ENOS: Gordon, my memory is not good enough to
4 tell you the exact number, but as soon as we're done, I'll
5 pull it up and I'll show you the quantities. We do have the
6 quantities in the EIS, but I'm -- my memory is not good enough
7 to remember the exact quantity, but remind me afterwards.

8 GORDON BROWER: Yeah, one of the -- the only reason
9 I ask is, you know, the borough may be expanding its service
10 area in the service area (indiscernible - away from mic) over
11 there, in the western sector (indiscernible - away from mic)
12 looking at that --

13 NICK ENOS: Your Honor.

14 GORDON BROWER: -- (indiscernible - away from mic)
15 would show (indiscernible - away from mic) but it's an area
16 that the borough having the exclusive (indiscernible - away
17 from mic) to provide these kind of services and we can't
18 provide those (indiscernible - away from mic) would have to do
19 some sort of waiver.

20 NICK ENOS: Good comment. I'm sure the applicant
21 would like to probably talk to you more about that at some
22 point in the future.

23 JOY HUNTINGTON: I'm just going to throw out a
24 wireless mic, so if we ask questions, kind of, you know, as
25 we're going on the slides. I can see our court reporter,

1 Marci, is struggling to get all the information. We really
2 want all the comments to be taken down. And if you can say
3 your name, that would be helpful for her, as well. But if you
4 have a question in the middle, just raise your hand and I'll
5 bring this to you to help her out a little bit. Thank you.

6 NICK ENOS: Thanks, Joy. So unlike air quality, for
7 hydrology and water quality, there actually are some pretty
8 important differences between all the different alternatives.
9 And these are just kind of the high level, the key ones.

10 But starting with alternative 4, which we find has
11 the most direct impacts to hydrology compared to the other
12 alternatives, down to alternative 5, which we found had the
13 least or the fewest direct impacts to hydrology. And, really,
14 this all comes down to location of facilities, in or adjacent
15 to the flood plains, primarily.

16 So for alternative 4, we found that that
17 alternative, when compared -- and once again, this is the
18 northern access alternative. We find that alternative 4 has
19 the most direct effects to rivers and flood plains, because it
20 has the highest number of stream crossings of all the
21 alternatives. It also has the most VSMS and bridge pilings in
22 below the ordinary high water mark, as well as in the flood
23 plains, themselves, when compared to the other alternatives.

24 Alternative 2, which is the applicant's proposed
25 action, has the most miles of actual new gravel roads

1 proposed, compared to the other alternatives, the second
2 highest number of VSMS and bridge piles below the ordinary
3 high water mark, and the highest number of cross drainage
4 stream culverts, as compared to the other alternatives.

5 Alternative 3, which is the northern -- I'm sorry,
6 the southern access alternative, has, when compared to the
7 other alternatives, more effects from having more bridge
8 crossings of rivers and also more gravel roads -- actually,
9 more mileage of gravel roads, actually, in the 50 and 200-yard
10 flood plain.

11 And then, finally, alternative 5, which is the
12 reconfigured infield road alternative that Ellen discussed,
13 and I think she discussed some of the rationale, why that is an
14 alternative. And this is part of the reason; it has the
15 lowest direct effects because it has the shortest length of
16 roads actually in the flood plains, the second lowest number
17 of stream crossings, and it has the fewest VSMS and bridge
18 pilings below the ordinary high-water mark.

19 And with that, I think we've got subsistence. I'll
20 turn it over to -- sorry, go ahead.

21 TODD SFORMO: One question

22 NICK ENOS: Sure.

23 TODD SFORMO: This is Todd. So the (indiscernible -
24 away from mic) comparison of alternatives -- oh, thanks
25 (handed mic). This is Todd. The comparison -- comparison,

1 you know, are those kind of easy-to-count things, the number
2 of the, you know, VSMS and things. But with the key findings,
3 is -- is there a list in the EIS for which alternatives have
4 the greatest potential for increased thermokarst formation?

5 NICK ENOS: Yes, yes, yes. Yeah, and, really, that
6 relates primarily to the location of the facilities
7 themselves. There's a linear -- just a -- that actually
8 relates directly to the linear distance, too, so --

9 TODD SFORMO: Thanks.

10 NICK ENOS: Yeah. I'll turn it over to Paul
11 Lawrence. Paul is with Stephen Braund and Associates, and
12 he's going to talk about subsistence.

13 PAUL LAWRENCE: Thank you, Nick. As Nick mentioned,
14 I'm with Steve Braund and Associates. I've worked with Steve
15 for about 11 years, now. And we've done a number of projects
16 in Nuiqsut of Steve's, dating back to the 80s. I started
17 working with Steve back in 2006.

18 And I'm just here to talk about subsistence today.
19 And this slide format kind of follows what Nick just did, a
20 summary, key findings, and then comparison of alternatives.

21 So for the summary, just to talk the highest level,
22 and, again, also as Nick said, the EIS has much more detail on
23 each of these resources, how they're affected, so it's kind of
24 cramming a lot in here into a couple slides.

25 But we found that the project which had the greatest²⁹

1 effects to caribou, subsistence activities, and this is
2 followed by the fish and the birds. And with fish, it seems
3 to be primarily grayling. If you had a more catastrophic
4 spill or something, you know, that could go out more to the
5 Colville or something and affect other fish resources, but
6 that would be, you know, unlikely.

7 And for the birds, it's primarily eider. There's a
8 little bit of geese hunting, but it seems like most of the
9 focus is eider, and even that, more of the eider hunting is in
10 the Beaufort Sea.

11 Fewest effects are to moose, fur bearers, small land
12 mammals; that's mostly wolf, wolverine. And then effects to
13 marine mammals subsistence is unlikely. And I'll touch on
14 each of these a little bit more.

15 One thing I did want to mention, as far as the
16 findings go that we did, you know, we don't -- we're not --
17 the EIS doesn't make these in a vacuum. We do look at like
18 three things, and I just want to touch on those briefly. I
19 believe there's 40 years of -- or 40 different study years of
20 data that we looked at to look at harvest and where people go,
21 and the timing of their activities dating all the way back to
22 1979, I think. So the community started in '73. The earliest
23 studies are from Brown, the Nuiqsut Paisangich in 1979.

24 So there's a lot of data that we had to look at.
25 And, secondly, we also looked at the biologists. There's a

1 lot of reports on how caribou react to different
2 infrastructures, things like that. So we don't just go off of
3 what we know. It's also what the biologists are saying,
4 including what ABR, the authors of the wildlife chapters for
5 the this EIS said. So we're always sure to look at that.

6 And then the third thing that we look that I know is
7 important to the local communities is the traditional
8 knowledge. So we went through, at the request, you know, of
9 the communities, and combed through a lot of testimony,
10 mostly, you know, EIS type stuff has a lot of testimony re --
11 and in there, you can find a lot of traditional knowledge
12 about what impacts the community has observed.

13 And so we not only incorporated that into our
14 reports, but we also provided that to the other authors of the
15 EIS, who then had a chance to review these quotes about their
16 resource topics and incorporate them, accordingly, into their
17 sections.

18 So moving to the key findings here, you know, the
19 EIS found that the greatest effects would be to caribou ac --
20 subsistence activities. And a couple of reasons for that:
21 One, it's a highly important resource. And by that, we looked
22 at how much it contributes to the community. It's one of the
23 main contributors to their subsistence diet. We call that the
24 material importance.

25 And then there's a cultural importance. And by

1 that, we looked at how many people are sharing this resource,
2 so if it's affected, you're going to affect a lot of the
3 community cohesion and things like that. And how many people
4 go out for this resource, and caribou ranks high across the
5 board on all those measures. So not only is it highly
6 important, but there's also high use of the affected area.

7 And for that area, we looked at a two-mile buffer of
8 all the project alternatives. And looking at -- when we
9 looked at that for the caribou, based on one study that we had
10 done, 80 percent of the -- 88 percent, I believe, of the
11 active harvesters that we interviewed that went for caribou,
12 reported using a portion of the affected project area for
13 caribou hunting.

14 Fish and birds were the kind of next level of
15 effect; less than caribou. As I mentioned earlier, there is
16 some eider hunting. Armstrong had done a study prior to the
17 EIS, and they identified that, in times of like spring
18 breakup, before they can get out to the Beaufort Sea, that the
19 community members -- sometimes whaling captains will go out
20 into the upper Colville kind of -- or lower Colville, I should
21 say, and get eiders for the nullauqtuk (ph).

22 And so there is, you know, a moderate use of the
23 affected area for birds, mostly eiders. And Armstrong's study
24 also looked at the fishing in the area. And the study we had
25 did not have data on grayling, so we couldn't say how many

1 people went to the area. But the Miluveach, Kachemach, those
2 stream or rivers were identified as being used for grayling,
3 so that was something we were able to glean from that study.

4 And these resources are important; there's no doubt
5 about it. But they are -- if you look at the measures that we
6 looked at, they are more moderate resources. There's fewer
7 people that go for them, if you were sharing, and they don't
8 contribute as highly to the diet, but they're still very
9 important to the community.

10 The next level was the effects to fur bearers and
11 small land mammals. We -- the EIS found, you know, lesser
12 effects. It's not really an important resource, again, but
13 there are fewer people that go for them. And the use of the
14 area, I believe, we calculated 50 or 48 percent of fur
15 bearers, small land mammal harvesters use the project area.
16 But that was -- primarily, there's just the southern area,
17 kind of clips that southern portion. And most of the hunting
18 for these resources occurs upriver. So there was going to be
19 less effects to those activities.

20 And, finally, the two that had the least amount of
21 effect was moose. There is a -- biologists show there's a low
22 population of moose in the area, fewer hunters. It's
23 moderately important, but just not much use out there in the
24 project area.

25 And then, lastly, marine mammals. There's -- the

1 newer data does not show use of the project area for hunting
2 marine mammals as you would expect. It's mostly out in the
3 Beaufort. But there has been some recorded use of
4 opportunistic hunting of seals on the haul-outs that can occur
5 in the east channel there. So while there could be some
6 effects, they're -- we thought they would be unlikely.

7 So comparing the alternatives, alternative 4, the
8 northern access route has the greatest impacts. I should
9 mention that while there are differences in alternatives, all
10 alternatives would have, you know, the same greater effect to
11 caribou followed by fish and birds and so forth. But there
12 are some differences that can be teased out.

13 And the reasons for the greatest effects associated
14 with alternative 4, is because it parallels that east channel
15 more, which is where more of the activity occurs. So there's
16 a potential for user avoidance. There's been studies
17 documenting people, in some instances, don't want to be
18 hunting near infrastructure or shooting towards people or
19 activity.

20 And so with the alternative 4 kind of paralleling
21 that east channel, there would be the greatest potential for
22 avoidance, greatest potential for obstructing and diverting
23 caribou. So, again, like I mentioned earlier, we looked at
24 the biologist and they talk about the potential for impacting
25 caribou movement, and I think they used the term -- corralling₃₄

1 effect is greatest with alternative 4. So we factor that in
2 when we're comparing the alternatives. And then, again,
3 because it parallels a little bit more of the east channel,
4 there's a slightly higher number of eider harvesters affected.

5 This is followed by effects to alternative 2 or from
6 alternative 2, I should say. The CPF is closest to the
7 Colville and Miluveach Rivers, and that was a concern we've
8 heard from the community. And so there could be greater
9 avoidance of that area, where grayling, eider, caribou hunting
10 occurs. And similar to alternative 4, it also has a high
11 likelihood for obstructing or diverting caribou.

12 Alternative 3 follows, and this one has the southern
13 infrastructure, and as I talked about with the wolf and
14 wolverine hunting, there is -- the further south you go, the
15 more you get of that kind of activity.

16 So because alternative 3 is this southern access
17 corridor, it could affect a slight higher number of wolf and
18 wolverine harvesters. But that's in contrast to pulling it
19 away from the Colville River, so the -- then you're not
20 affecting as many caribou har -- or harvesters, or at least
21 likely to have user avoidance. And there's fewer impacts to
22 eider harvesters on alternative 3, as well.

23 And, finally, alternative 5, we've -- the EIS found
24 had the fewest impacts compared to the other alternatives.

25 And, again, like the southern, it moves the road

1 infrastructure out of the Colville River flood plain, which is
2 a concern expressed by the community members, as that is their
3 primary area where they were hunting relative to the project.

4 Again, it reduces the roads paralleling the east
5 channel, which leads to less chance for user avoidance, less
6 chance to corral the caribou, and just overall moving the
7 infrastructure inland.

8 So I believe that kind of summarizes the key
9 findings of the subsistence. And, again, there's a lot of
10 detail. There's an appendix, so if -- you know, we'll answer
11 questions afterward, but I also encourage you to look at that,
12 and it lays out all our methods in more details about our
13 findings.

14 And with that, I'll turn it over to Maryellen to
15 talk about human health and safety.

16 MARYELLEN TUTTELL: Thank you, Paul. My name is
17 Maryellen Tuttell, and I'm with DOWL. Yes, Gordon?

18 GORDON BROWER: (Indiscernible - away from mic) ask
19 a questions, and I think it would be important (indiscernible
20 - simultaneous speech) on the subsistence (indiscernible -
21 away from mic)?

22 PAUL LAWRENCE: (Indiscernible - away from mic).

23 MARYELLEN TUTTELL: Yeah.

24 PAUL LAWRENCE: Yeah, I'm good with that.

25 GORDON BROWER: Yeah, I think before you get off

1 scot-free, we should at least grill you a little bit.

2 PAUL LAWRENCE: Yes.

3 GORDON BROWER: You know, in every alternative,
4 there's the presence of Native allotments. And Native
5 allotments, you got to go back into time why they're selected
6 where they are. And if you look at the Native Allotment Act
7 and where people were distributed before the -- before the
8 establishment of folks by the BIA school system and the -- and
9 the government to centralize people, they moved back and
10 forth.

11 And some of those Native allotment holders may not
12 be residing -- and they're not residents of Nuiqsut. They
13 might be in Barrow or they might be in Nuiqsut or they might
14 be in Barter Island.

15 And -- and there's a reason why those Native
16 allotments are where they are. If you look at the na -- the
17 North Slope Borough's resource atlas on insect relief habitat,
18 back in the 80s -- and I'm -- just as a -- could now probably
19 be used as a historical document of what was once -- because
20 some of the infrastructure like melt water have changed some
21 of the core calving areas in the distribution of caribou in
22 that area -- has substantially changed.

23 So -- and -- and -- but if you're to go back and
24 look at these historical documents of insect relief habitat in
25 the -- I think it's a 1988 resource atlas that's an addendum

1 to Title 19. We still use it today. It hasn't been updated
2 in -- in that long. You know, it's high time that it needs to
3 be updated, I think.

4 But it's a historical document and it reflects where
5 all these -- if you see the insect relief habitat and -- and
6 in these coastal areas, and it depicts these animals, those
7 lines mean, at any one time, there could have been 60 and 70
8 thousand caribou insect relieving in these areas that are not
9 being used in the same way by those terrestrial resources.
10 Maybe they have a limited access (indiscernible).

11 So if you look at Native allotments and why they're
12 there, and you put any one of these alternatives into play and
13 for any of that ins -- infrastructure with what's already
14 existing there -- and it's important to note that a shift in
15 general harvest patterns ensue with the placement of
16 infrastructure. That's documented by -- I used to know some
17 of the resources that I used to write my recommendations on,
18 like Gonates (ph) and -- and Sverre Pedersen --

19 PAUL LAWRENCE: Pedersen, yeah.

20 GORDON BROWER: -- and those folks would write these
21 things up in studies. And it's a great tool for those that
22 need to write about impacts to think of what the consequences
23 are to the owners of those Native allotments.

24 The general shift in harvest locations have already
25 occurred. And those folks that are -- have these Native

1 allotments have been consumed over time, and now they're heirs
2 with probably no -- no real access to and thro -- fro to those
3 allotments and how they were used. And for the foreseeable
4 future, going to probably be limited access or restricted
5 access to -- for subsistence purposes for discharging firearm,
6 hunting, and things that way.

7 So very long story short, and I can go on and on.
8 And our policies feed to this is, where resources were --
9 where they're normally found, you should not prohibit access
10 in the subsistence activities where those resources are
11 normally found. That is a policy of the North Slope Borough
12 in Title 19.

13 So you need to think about that approach, and think
14 about those. I think sometimes the federal government will
15 look at -- because they have jurisdiction, I think BIA, over
16 Native trust lands. If you're not physically touching that
17 land, there is no impact. That's what I've seen and that -- I
18 think that completely disenfranchises those owners of the
19 intended use of their Native allotments to be a -- selected in
20 a very high subsistence use area with thousands of resources
21 coming through to be suddenly cut off in that way.

22 I think there's some impacts there that need to be
23 thought about. That's all I wanted to do. It's a long way to
24 say it, but to get there -- and that's -- I thought you needed
25 to connect the dots. Thank you.

1 PAUL LAWRENCE: Yeah, thank you. And I can -- you
2 know, so off the top, we didn't -- normally, the Native
3 allotments are addressed in the cultural resource section,
4 which we didn't write, but I think I've talked with Maryellen
5 before. I can kind of summarize this and you can jump in.

6 That's -- specifically, like you said, there are --
7 I don't believe there's any Native allotments within the --
8 kind of the project area, but there are some up by Nuna and
9 then further south.

10 But, like you said, it's not just, oh, are you
11 physically touching the Native allotment that it should be
12 considered. So what -- you know, like you said, those areas
13 have that historical value. They've been there a long time.
14 People have been using that area a long time.

15 We try and draw on that a little bit with our -- if
16 you go to the appendix, you'll see that we pulled from the
17 very beginning, Nuiqsut Paisangich, which we are updating.
18 You know, it shows use of that area. There is historical use
19 of that area. Pisiktagvik is a very, you know, traditional
20 hunting area right between -- I don't know exactly what drill
21 site, but it's off the -- in the east channel there.

22 So we try and capture some of that historical use,
23 and, of course, the current subsistence uses, the places where
24 we see most people going, which we had, you know, 88 percent
25 of caribou hunters going. That is a reflection of those older

1 allotment areas and those areas that were so highly valued,
2 and still are.

3 And access is an important issue. And I -- you
4 know, I won't speak to all the policies of Armstrong or whoever
5 has the -- you know, for what they will allow. But, again,
6 since they're not touching now, I don't know how much access
7 would be, like, legally, you know, affected or whatever. But
8 you'd get to the issue of user avoidance, which is what we try
9 and touch on, that even though, oh, you can use the roads or
10 whatever, we know that's happened on the Niglik channel, too.
11 We've heard a lot of testimony about how there were allotments
12 and I think there's a -- Nanuq or maybe it's right by CD5 or
13 the bridge.

14 And we've heard stories about how that's less used
15 or not at all, you know, so that is something we try and touch
16 on. It might not be in the -- quite the terms you said, and
17 maybe that's something we can try and tie together a little
18 bit better in the subsistence and the cultural resource
19 chapters. So thank you for that comment.

20 MATT DUNN: Thanks. This is Matt Dunn. Kind of
21 along the same lines, but the opposite. First, I'm surprised
22 to hear that 80 percent of the caribou hunters exercise that
23 region. I -- I was -- that's just a alar -- a surprising
24 number.

25 I don't know if they routinely or they harvest in

1 that area frequently or occasionally. That's -- and there's a
2 big difference there. But the fur bearing harvesters,
3 trappers for wolverine and wolves, and that the southern area
4 the -- would be somewhat affected, is -- can we correlate the
5 fur bearing trappers using the annual ice road -- the Alpine
6 ice road for access as probably why they're going that
7 direction or maybe increased usage because of that?

8 I think you said 48 percent of the trappers go that
9 way. It may be because the ice road makes it easier to go
10 that way. And in this case, if we -- in option 3 where we're
11 going to put gravel for a portion of that and replace that ice
12 with gravel, it wouldn't necessarily make avoidance, but maybe
13 even elevate the use of trapping in that area. So it's just
14 a -- kind of an observation of how we're deriving at the
15 numbers in the impacts.

16 PAUL LAWRENCE: Okay. So for the first one, yeah,
17 the 88 percent, a lot of that has to do with the east channel.
18 And like you said, we don't have the hard numbers on how many
19 times they're going or even necessarily what they're -- how
20 many they are harvesting. We do have some harvest data, but
21 it wasn't available for this EIS.

22 But we do know, generally speaking, based on some
23 reports that have been done for the caribou monitoring study
24 for Conoco's project, between an area that we call the east
25 channel, Colville, between seven and twenty percent of the

1 harvest for caribou in a given study year, occurs in that
2 region. So that's something, you know, just another metric
3 that people can think about.

4 As far as the wolf and wolverine harvesting, I can't
5 immediately speak to whether or not it was because of ice
6 roads at 48 to 50 percent. We only have one study that
7 documents those numbers, and it was for the 1995 to 2006 time
8 period.

9 So we -- you know, we could dig into literature a
10 little bit more and see what the older historic uses were
11 maybe prior to ice roads, but that is something we can't quite
12 speak to. We know that it can occur with caribou hunting. We
13 know that the spur road that went in for CD5 with our caribou
14 monitoring project, we've seen uptick in use just in the few
15 years it's been available.

16 So there is potential for infrastructure to be used
17 by the community, but, yeah, it's a lit -- it's harder to say
18 as far as whether those, you know, gravel roads or ice roads
19 would increase their use or maybe they'd still avoid it, even
20 though there's an avenue to get out there faster, they still
21 don't (indiscernible) be -- I mean, there's trapping, but
22 there also is shooting, you know, hunting of the wolf and
23 wolverine, and that could be -- they could avoid for that
24 reason.

25 So it's hard to say, but it's something we could

1 look at a little bit more, especially like the older
2 literature and see if it talks more about that.

3 MATT DUNN: Yeah, well, would it make -- would it
4 make a negative impact into a positive impact as a result of
5 the (indiscernible - away from mic) evaluation?

6 PAUL LAWRENCE: Yeah, I don't -- I think we tried to
7 mention that the infrastructure can be a benefit. I don't
8 think it would change the finding that it's a -- you know, a
9 moderate impact, because there's still other impacts that
10 occur, even though they -- also are benefits that occur. You
11 know, it's not just a switch.

12 MATT DUNN: Okay. And -- and, yeah. And then I'm
13 going to give up the mic. But I guess another way of looking
14 at impacts, just the word, it has a negative connotation that
15 we're looking at negative impacts. But sometimes development
16 has positive impacts that I think -- I don't know if they fit
17 in an EIS or not, but they shouldn't be overlooked.

18 PAUL LAWRENCE: That's true. I -- again, I would
19 want to look and make sure. But, normally, we do try to
20 address that. Even there's an -- you know, an economic
21 benefit and that can then filter down to the community. That
22 allows them to maybe go out more, if there's more money in the
23 community, more opportunities to purchase gas and go.

24 And there's -- it seems to always be a flip side.
25 You get people saying that because there's the infrastructure,⁴⁴

1 and now they're using that money, because they have to go
2 farther from their original areas to avoid that, so they're
3 going further south, now, for wolf and wolverine or -- you
4 know, it's just an ex -- hypothetical example, but I do
5 believe we at least try to mention that and my -- we'll note
6 that and make sure that that is addressed, because we don't
7 just talk negative.

8 JOY HUNTINGTON: Might need to switch over to
9 Maryellen, now, but we will definitely come back to question
10 and answer, so if you have anything else for either Paul or
11 Nick, definitely stick around, and when we get to the end,
12 we'll provide more time for that. Thank you.

13 MARYELLEN TUTTELL: All right. Thank you. Well,
14 that was actually a good segue, because in the human health
15 and safety section, we do actually talk about the fact that
16 there are both benefits and impacts from the proposed project
17 and from the different alternatives.

18 So that kind of is the summary, that there are
19 positive benefits on human health and safety from some aspects
20 of the project, including increased income that can provide
21 additional opportunities to buy store-bought food or to get
22 access to better health care and things like that. But then
23 there's also impacts and adverse effects from various
24 components of the project.

25 So as mentioned, some of the benefits that we looked

1 at is when you increase family income, so that's typically
2 correlated with better health outcomes. And, again, this is
3 looking at large populations and, in general, correlations.

4 So just, in general, having additional income tends
5 to, again, provide for more food security, better diets, and
6 those relate, indirectly, then to better health.

7 Similarly, the increased revenues that would go to
8 the state, the borough, and to Kuukpik, those tend to also be
9 indirectly, positively correlated to health through the
10 provision of additional health infrastructure, health
11 programs, and things like that. So there are some benefits
12 from the project on human health and safety, and they do tend
13 to be indirect benefits.

14 The human health impacts, then -- one of them in
15 terms of safety would be concerns that we have heard in terms
16 of changes to transportation patterns. So if somebody used to
17 go through a certain area to get to their subsistence harvest
18 area, and now they have to find a new route to get there, it
19 could be a long route, it could be a less safe route, or just
20 because they're less familiar with that route, it could have
21 potential increase in safety. So there is an increase in
22 potential safety incidents.

23 As Paul mentioned, if there are changes in
24 subsistence harvest, then you have potential changes in diet,
25 which, again, is correlated to health effects. So if you have

1 people who rely on caribou and fish for their diets, and those
2 resources become harder to acquire and they have to substitute
3 some other lesser value food resource, then you could have an
4 adverse effect on people's diets, which then indirectly has an
5 adverse effect on health.

6 Other things that we heard about, as Nick mentioned
7 in the air quality section, there are a lot of concerns about
8 air quality, and although the distance from the CPF may not
9 change the fact that the air quality would still be healthy,
10 and there would be no -- not even a 50 percent increase in any
11 of the criteria pollutants or anything, there's a lot of
12 concern about potential emissions.

13 And so, you know, there's a lot of studies that, if
14 you are under chronic stress for long periods of time, that
15 can be correlated with different -- susceptibility to
16 different diseases. And, of course, it depends on the person.
17 Different people react to things differently, so they have
18 different levels of stress. They have different ways of
19 coping with stress.

20 So it's one of those things that's very differ --
21 difficult to measure, but increased stress can be correlated
22 with adverse health effects. And we also looked at the social
23 issues in terms of community cohesion. And when there is
24 conflict within the community, again, that increases stress.

25 And increased development can result in effects on

1 community cohesion when different people in the community may
2 feel differently about the amount of development occurring.
3 And so some people in the community may be very supportive and
4 look at more of the benefit side of it, and other people in
5 the community may be focused more on the adverse effects, and
6 so you have that conflict within the community.

7 Another issue that the community has raised several
8 times is that some people may benefit differently in terms of
9 financially, because some people may be shareholders of both
10 ASRC and Kuukpik, and other people that live in Nuiqsut may
11 not be shareholders. And so, you know, if you have the
12 benefits of development being distributed differently to
13 different people in the community, that can increase some
14 potential conflicts within the community that can just raise
15 the stress level, again.

16 So those are they types of issues that we looked at
17 and that we found as we went through the community health
18 analysis.

19 In terms of alternatives for health, as Nick
20 mentioned, you know, really, all of the alternatives have the
21 same effects. The roads may be in different places or the CPF
22 may be located different distances from the community, but the
23 effects are really the same for all of the different
24 alternatives when it comes to human health and safety. And --
25 yes? Joy?

1 TODD SFORMO: Thank you. This is Todd, again. In
2 the -- yeah, that slide, you mentioned that the human health
3 benefits, you know, is correlated to income. And, you know,
4 don't get me wrong. I always want more money, too. But you
5 said it was based on a larger population. In the EIS, do you
6 show that this correlation can also relate to smaller
7 communities? That was one question.

8 And then the other one is, in this same benefit, you
9 mentioned ability to buy store-bought food. What -- is there
10 a comparison between the health benefits of store-bought food
11 compared to subsistence food that you make -- or that is made
12 in the EIS?

13 MARYELLEN TUTTELL: Right. And, again, we go back
14 to some of the earlier discussion that there's a lot of things
15 that you can't quantify one way or another. They kind of cut
16 both ways. And so, for example, with store-bought food, if
17 you look at the borough surveys that have been done on food
18 security, there's more people -- when people complain that
19 they don't have enough access to food, they typically say,
20 they don't have enough access to store-bought food or they
21 don't have the resources to access store-bought food.

22 But if you talk about the nutritional value, then
23 you tend to hear that the subsistence resources have more
24 nutritional value. So, again, you know, overall, if people
25 had enough subsistence resource, they're still going to want

1 to supplement it with store-bought food, and it's a benefit
2 for them to have the option and the resources to be able to
3 supplement their subsistence diet with store-bought foods, or
4 if it's a year when, you know, there happens to be a lower
5 harvest, to be able make that up with store-bought food.

6 So even though store-bought food may not be as
7 nutritionally dense as subsistence foods, it's still an
8 important resource and it -- and having more food security is
9 still more positively correlated to good health.

10 In terms of the correlations, again, because of the
11 sizes of the communities, there's not a lot of health
12 statistics out there on those types of correlations, and so
13 you have to use information from larger studies.

14 And so this is more from information from the state
15 Department of Health and Human Services and the correlations
16 that they've put together. So, you know, we've tried using
17 the borough's information on -- you know, that they get from
18 their surveys they do, and we've used the Department of
19 Epidemiology at the state, and the state Department of Health
20 and Human Services data.

21 But a lot of times, we have to rely on either
22 borough wide data or information from the state, and we can't
23 really get it down to individual communities.

24 All right. So the last thing we wanted to talk
25 about is, obviously, one of the concerns with oil and gas

1 developments, is the potential for oil and gas spills or
2 spills of hazardous materials during both development and
3 operations.

4 And in the EIS, there's an entire chapter that goes
5 through the potential risks of the potential for different
6 types of spills, different sizes of spills, and the area that
7 would be affected by spills.

8 And the study is based on studies that have been
9 done by the Department of Environmental Conservation, and
10 using data from the last 40 years or so of development on the
11 North Slope.

12 And so, in very general terms, what the risk
13 analysis found was that, you know, there is potential for
14 the -- for small spills, and these tend to occur during, you
15 know, vehicle maintenance, vehicle fueling, that type of
16 thing. And they typically occur when you're on a gravel pad
17 in an area where that type of activity would occur.

18 And it's unlikely for those to migrate off of the
19 pad and affect the wider environment. But those small spills
20 do occur with more frequency, if you look at the history of
21 oil and gas development.

22 Medium to medium large spills, that's more looking
23 at the potential for say a fuel tanker to go off the road and
24 spill some of its fuel or for there to be a problem unloading
25 a tanker truck, things like that.

1 Again, the risk -- the potential for those, it's
2 fairly small, but if one of those was to occur, then there is
3 some potential prote -- potentially -- for example, if a fuel
4 truck went off the road, for some of that fuel to escape, you
5 know, the gravel pad and get into the surrounding environment.

6 Now, typically, those are noticed right away, if a
7 fuel truck goes off the road, you know, usually that gets
8 addressed pretty quickly. And so there's a good chance that
9 the area that would be affected would be limited. It wouldn't
10 get widespread.

11 And then if you look at the very large spills, and
12 here, you're talking about, you know, a catastrophic storage
13 tank failure or a catastrophic failure of the pipeline or
14 something like that, and those types of spills, you know, when
15 you're talking that size, they have more potential to get off
16 of developed areas and into the surrounding environment. But
17 those are extremely rare when you look at the history of
18 development up on the North Slope.

19 So what we've done in addition to the chapter that
20 goes through the risk assessment of these different types of
21 spills is, in each of the resource sections, there is also a
22 section that talks about, for this resource, if one of these
23 types of spills -- a small spill, a medium spill, or a large
24 spill were to occur, what are the potential effects on the
25 resource.

1 So in the EIS, we have both the chapter on oil spill
2 risk and then we also talk for each resource about the
3 potential impacts.

4 So with that, I'm going to turn it back to over to
5 Ellen, and she's going to talk about where we go from here in
6 the EIS process.

7 QAIYAAN HARCHAREK: Before you go, thank you.
8 Qaiyaan Harcharek. I'm just curious on the health and safety
9 portion, if education of school children was ever brought up
10 or thought of or studied, in general.

11 Attendance, test scores, graduation rates, dropout
12 rates are the highest in Nuiqsut or -- or have the lowest --
13 they have the lowest attendance. They have the lowest test
14 scores. Graduation rates are the low -- lower amongst all the
15 North Slope schools.

16 And some folks have thought, you know, more industry
17 being around, there's less hunting going on for -- less
18 hunting occurring by the younger children.

19 You also talked out -- talked about the money
20 distribution within the community and -- and shareholders.
21 Most parents of -- of school children are -- aren't
22 shareholders. They're -- they're all -- most of them are
23 afterborn, so they're not associated with, you know, that more
24 income coming in, so they're -- I'm just curious on the
25 cumulative -- cumulative effects of, you know, more industry, 53

1 money coming in, but not necessarily to the parents. And --
2 and if education or if that -- that area was -- was included
3 or thought of.

4 MARYELLEN TUTTELL: Yes, thanks. That's actually a
5 really good point. So, again, in these slides, we're just
6 touching a little bit on some of the key findings. But if you
7 look in the EIS, itself, in the human health section, we
8 looked at the human health effects through kind of two
9 different perspectives.

10 One was the Department of Health and Human Services
11 health effect categories. And so that looks at income. It
12 looks like -- it looks at educational attainment, and then it
13 looks at a number of other things.

14 And then we also looked at a study that the borough
15 had done that identified potential impacts of resource
16 development, and kind of how those correlate through to human
17 health.

18 And so there is a section in the EIS that talks
19 about educational attainment and how that is correlated with
20 human health. For this particular project, when we evaluated
21 it, we didn't really see a strong effect, or we couldn't
22 foresee this project changing the educational attainment for
23 the community directly or, really, even indirectly.

24 So if you have additional information on that, we'd
25 be really interested in getting that in the public comments so₅₄

1 that we can look into that further for the -- as we move
2 towards the final EIS.

3 GORDON BROWER: I got one question on --

4 MARYELLEN TUTTELL: Hold on, get the mic.

5 JOY HUNTINGTON: Getting my exercise. Thank you,
6 guys.

7 GORDON BROWER: And this is going to go to your
8 spill stuff. In -- in looking at these risks, you know,
9 they're -- you can -- you can model risk. And I think North
10 Star was one of those that was modeled just based on risk
11 and -- and what was at stake with a risk.

12 I mean, it -- the very, very low probability of a
13 spill or something to happen at North Star cumulated into a
14 \$20 million bond. It shared an -- a release happening to the
15 marine environment, and particularly with concern to all of
16 the whaling communities on the North Slope should -- maybe the
17 international whaling community, the commission discontinued a
18 quota as the only major protection for the bowhead whale.

19 And those kind of dialogue and a risk modeling that
20 en -- that ensued back in '98 for North Star to eventually get
21 adopted by the assembly under rezone, I could still remember
22 these things about risk.

23 And if you look at this and the proximity it is to
24 another major fishery, the Colville River, the qaaktaq (ph),
25 and -- and -- and for that matter, the Beaufort Sea, and

1 the -- you know, how rivers are moving, and they're -- they're
2 swift. They're -- they're quick to spew out the debris and
3 the turbidity that occurs and -- and put it out into the --
4 into the delta and -- and these things.

5 Well, if you think about all of those things, and
6 having been a responder for many, many years, better part of
7 20 years, I've been -- I've sat on at least maybe five or six
8 unified command in responding to GC2, responding to Repsol as
9 part of the unif -- unified commanding and -- and steering
10 the -- the response in -- and that's the real application of
11 it.

12 And then having been involved in many, many, many
13 mutual aid drills in the proximity of these pads in
14 relationship to the Colville River, and then the oil
15 infrastructure on the other side and -- only leads me to think
16 that you -- there needs to be more planning in terms of how
17 mutual aid in this area, would respond.

18 Because in mutual aid, it's not just the -- it's not
19 just the responsible party. It's a -- it's a group of
20 responding companies in the borough or the -- the feds, the
21 state, responsible party or your -- your friend, your village
22 responders and how everybody has to develop a way to respond
23 to a scenario. And I think this should help feed some of that
24 if mutual aid were to become a real unified command responding
25 in this part.

1 Yeah, it's great that you get an all-season road for
2 365 days a year of capability of Alaska Clean Seas servicing
3 that, but it ends when the river and things are thawed out,
4 and it's -- they have access to a Colville River to -- for
5 booming for response planning and -- and things like that.

6 And also for maybe for subsistence users to have
7 access to be able to go from -- now from a very close
8 proximity to the village and drive to west dock to get that
9 whale meat back to the community, is looking like a -- a
10 subsistence highway use, as well.

11 So looking at all of these things, it's -- I think
12 there's more prudent planning and response planning un --
13 under your spill risk analysis. Thank you.

14 MARYELLEN TUTTELL: Yeah, thank you, Gordon. And,
15 again, we would -- we definitely encourage you to look at the
16 risk assessment that's in the EIS, as well as the sections in
17 each of the resource sections where we talk about if one of
18 these spills were to occur, what the -- because, as you said,
19 it is a very low risk, but if one occurs, there could be
20 substantial effects. So that's addressed in each of the
21 resource sections.

22 And then, of course, as you know, the applicant will
23 be required to have an approved spill response plan, and I'm
24 sure the borough will ha -- will be able to work with DEC and
25 address any concerns on spill response to make sure that

1 that's addressed, as well.

2 So I'm going to turn it over to Ellen, so she can
3 wrap us up tonight.

4 ELLEN LYONS: Thank you, Maryellen. So, basically,
5 where are we right now and what happens next? So as you know,
6 tonight, we're here to talk about the draft environmental
7 impact statement for the Nanushuk project. You have until the
8 14th of November to submit written comments.

9 So you were presented a lot of information here
10 tonight, and we gave you the highlights of what we found in
11 the draft EIS. We definitely did not cover every finding,
12 even for the specific resources that we did discuss tonight,
13 so I really encourage you to take a look at the whole entire
14 environmental impact statement, review the sections that are
15 of the most interest to you, and provide us with written
16 feedback, because we're going to take all that information and
17 use it to work towards a final environmental impact statement.

18 So the other thing that's going on right now that is
19 related, is that there's a public notice for the Corps of
20 Engineers permit out for review also. And so these processes
21 are happening concurrently, and they are very related. Any
22 comment that you give on the EIS will also be considered with
23 regards to the permit decision. But you also have the
24 opportunity to submit comments directly onto the public notice
25 for the permit application.

1 And that information is on the U.S. Army Corps of
2 Engineer's website. And if you have any questions about how
3 to access that, you can contact me, but you can also look at
4 the Nanushuk EIS website. It has the public notice and a link
5 to that information also.

6 So, in general, the schedule is shown on the slide.
7 We are proposing to have the final environmental impact
8 statement published in May of 2008 [sic]. After that time,
9 the Corps of Engineers will finish our permit review process,
10 write a record of decision, and make a permitting decision.

11 So the other thing that I just want to mention,
12 since I mentioned the public notice on the permit, is that if
13 you look at both documents, you're going to see that there's a
14 little difference between some of the specifics of the
15 applicant's proposed project and the public notice versus what
16 is analyzed in the EIS.

17 And so the applicant has updated the proposal to
18 reduce the width of the road from 38 feet to 35 feet, and also
19 change the slope -- of the side slopes from three to one to
20 two one, which has resulted in a reduction of impacts. So the
21 draft EIS, at this time, analyzed the 38-foot width of the
22 road. But we are asking for comments in the public notice on
23 a 35-foot road.

24 And so even though these numbers are a little bit
25 different, the draft environmental impact statement analyzes

1 sort of a worse-case scenario, even though the applicant has
2 already proposed to narrow the roads and steepen the side
3 slopes to reduce the impacts.

4 GORDON BROWER: I got a question. You're having an
5 EIS with a record of decision, final EIS, sometime in May
6 2018. Yet, you're having a permit process that's ensuing on
7 the same project that's described in the EIS. Is there an
8 unorthodox methodology here that's going on or is this
9 standard or I -- I'm used to looking at -- or thinking that
10 you're going to develop a least environmentally damaging
11 alternative in many, many years of other EISs. It seems to me
12 that's always been the trend, anyway.

13 And then there's that least environmentally damaging
14 alternative seems to lead the path as -- as what's put into
15 the record of decision. And what will happen if the permit
16 that's being reviewed now -- I mean, is there a conflict here
17 or is that just a myth of that we're -- you're bringing out
18 the real truth of how an EIS is moving forward?

19 ELLEN LYONS: Honestly, I'd like to consider it a
20 fact that the -- every time we do this process, we try and get
21 a little bit better. And so what that is, is we use the NEPA
22 process to inform our permit decision. And so that's why we
23 have our range of alternatives that we're evaluating in the
24 EIS.

25 With that, we are always working to avoid and

1 minimize impacts to waters of the U.S. and other resources.
2 That's also happening as we do our EIS analysis, and that's
3 why your comments and concerns and questions regarding the EIS
4 is so important to us and really helps drive our analysis.
5 And so through the pro -- as the process moves forward, the
6 applicant may come to us and say, we're making additional
7 changes, we're changing the road width, we're changing the
8 layout. If necessary, we will put out an additional public
9 notice on the permit, but it wouldn't change the way the EIS
10 is moving forward.

11 Because we still have the ability to change our
12 analysis in the EIS between the draft and the final based on
13 your input. And as long as we're -- the analysis and the EIS
14 covers the potential impacts of the proposed project in its
15 final form, then we're covered under NEPA and we can also
16 include additional analysis as necessary in the record of
17 decision that I will be writing on the permit it -- that the
18 permit decision itself.

19 And so you're right, as this process moves forward,
20 the proposed project and its very fine-tuned specifics is
21 going to continue to change and be refined, and that will be
22 reflected in our analysis, both in NEPA, but especially in our
23 record of decision. Does that answer your question?

24 GORDON BROWER: (Indiscernible - away from mic).

25 Yeah, I think it kind of opens your mind to what's -- it seems

1 to be a little different in approach than others like Point
2 Thompson and those others that we've been involved with,
3 just --

4 ELLEN LYONS: And that may -- that may be the case.
5 You know we are working in a -- in a time when schedules are
6 very important to us and we want to make --

7 GORDON BROWER: Right.

8 ELLEN LYONS: -- a timely decision, in addition to a
9 very well-informed decision.

10 GORDON BROWER: And just one other thing. I know
11 decision periods are very important. The -- we want to do
12 things and -- and advance development.

13 But the other things that we worry about,
14 considerably, is consolidation of facilities. It doesn't mean
15 just one operator. It may mean Armstrong and Caelus and
16 ConocoPhillips play nice. And if they can't play nice, that's
17 where we start seeing, well, they're going to tear a few out
18 of existence to use their VSMS, so we're going to use virgin
19 tundra all the time, because that's the most cost effective
20 way of moving things forward.

21 And it doesn't lead to the use of the borough's own
22 policy to consolidate to the maximum extent practicable to --
23 to work together. And -- and what would happen? And we took
24 some of these ideas and say that ConocoPhillips has an ice
25 road for 18 miles and it disappears every single year and, by 62

1 the way, they got to build it every year, and it's in that
2 sector, that development area, and then the borough says,
3 well, we're going to build that road, and you're going to use
4 that road.

5 It's probably going to cost way less for the guys to
6 just plug into that road, and the ice road is not going to
7 built every year anymore at -- at a tune of probably 20
8 million annually, and it disappears every year.

9 Those are the types of things on consolidation
10 efforts that we think about at the borough level, and some of
11 those policies, I think should make its way through a review
12 like this.

13 ELLEN LYONS: And so I would say -- and two things.
14 One, we do evaluate cumulative impacts, and so some of those
15 things are going to be incorporated into that. But I think
16 you're also talking about our alternatives analysis. And so
17 one thing that drives the alternatives analysis is, it has to
18 be reasonable and feasible, and when it comes to making a
19 permitting decision, it also has to be practicable.

20 And so there are certain things that we may not be
21 able to consider, because it's not part of the proposed
22 project or it's not reasonable and feasible given the proposed
23 project. But it doesn't mean that it's not something that can
24 be considered in a broader scope, perhaps under a different
25 umbrella, not the Corps of Engineers.

1 I mean, because we are pretty limited with regards
2 to our scope, because we are focused on impacts to waters of
3 the U.S. And so -- but any ideas like that, that you have
4 that can be incorporated into the analysis perhaps in
5 cumulative effects, I would really suggest, you know,
6 providing those comments to us when you provide comments on
7 the draft.

8 So the last slide, I think, is, basically, just how
9 to provide your comments. Anything you say to -- here tonight
10 is on the public record and will be included in our analysis.
11 We also have some comment forms on the back table that you can
12 fill out and mail in or just hand back us this evening. You
13 can e-mail comments to the Nanushuk EIS at dowl.com or mail
14 them directly to me at this address.

15 And so, again, you have both the opportunity to
16 comment on the draft EIS, but also on the public notice for
17 the permit. And if you have any questions or confusion about
18 these two different, but very related processes, feel free to
19 contact me and I'm happy to answer any questions you may have.

20 MATT DUNN: What's the deadline on the permit
21 notice?

22 ELLEN LYONS: The same as the EIS. So both comment
23 periods close the 14th of November. And, also, I encourage
24 you to take a closer look at the draft EIS, because there is a
25 great deal of information on it and a lot of information that

1 we just weren't able to fit into this discussion tonight.

2 So with that, I think I'm going to turn it over to
3 Joy to answer any additional questions or capture any comments
4 you may have. Thank you, guys, very much for attending
5 tonight.

6 JOY HUNTINGTON: And when she says Joy is going to
7 answer any questions, that means, Joy is going to give you the
8 microphone while you ask them, and then we'll pull from our
9 team here in order to get them answered. I may be able to
10 answer some of them, though. I know you've been participating
11 throughout the evening, so we appreciate your input and
12 questions and comments that you've made already.

13 CRAIG GEORGE: Thanks. For the record, Craig
14 George. And I'm speaking, not necessarily on behalf of the
15 North Slope Borough Wildlife Department, but, anyway, this --
16 this question of displacement of subsistence activities, I
17 think is really one of the more key questions.

18 And I -- in the EIS, I strongly recommend a more
19 robust analysis of the data and trying get beyond speculation.
20 We -- you know, there's some direct evidence. There's
21 certainly a lot of hunters talk about it, but to the extent
22 possible, quantify it.

23 And then just, generally, I think a lot of us who
24 worked on -- you know, in mitigating oil and gas effects over
25 the years, I think, you know, we've been largely successful

1 with the wildlife impacts and we worked with Dr. Jukupsick
2 (ph) and others, and Cindy. Like, for instance, North Star
3 and Endicott, we could mitigate impacts to fish, for instance,
4 or even bowheads. Figured out ways at North Star to really
5 reduce the -- the noise introduced into the water and
6 deflection of bowheads, all these sorts of things.

7 The tough one is mitigating impacts to people. So
8 to the extent possible, that's -- that's the difficult one.
9 We heard from Qaiyaan, you know, there -- it sounds like
10 there's lot of issues in the village reflected in test scores
11 of kids and this sort of thing, graduation rates, but I -- I
12 don't know, personally, I think that should be part of the
13 focus of the analysis.

14 And then, you know, ways to benefit. Like, I think
15 Matt mentioned you know, what are the -- what are the upside?
16 And, in fact, the -- our department did contract a study with
17 Stephen Braund, perhaps before he started on impacts and
18 benefits of oil and gas, and to re-look at that and just think
19 outside the box with the alternatives. Are there ways that we
20 can actually make this net benefit?

21 As it's designed now, I would imagine from the
22 Nuiqsut perspective, it's another project, incremental,
23 possibly impacts, you know, benefits to the borough income and
24 these sorts of things. But from the general perspective of
25 the village, maybe not so much. But -- and certainly, the

1 state benefits and keeping the pipeline going is important,
2 this sort of thing.

3 But, anyway, I think those are some of the key
4 issues. We deal with the wildlife issues. More difficult to
5 deal with the subsistence issues. And, also, I think we heard
6 a really robust analysis of, I think you said, the ABR folks
7 did the caribou analysis on why they think this would deflect
8 caribou or lessen use of those areas or whatever. I think
9 that's going to be key issues, as well. Thanks.

10 PAUL LAWRENCE: Yeah, I can talk to that a little
11 bit. You're absolutely right. I mean, the human impact, the
12 mitigation -- there we go (gets on mic). Yeah, the human
13 impacts, mitigation for that, the topic of user avoidance is a
14 really difficult one.

15 And the caribou monitoring site is one that I know
16 of that we are digging into a little bit more. And I can't
17 remember offhand when, you know, we wrote this section for
18 this draft EIS. It's -- you know, I believe we touch on it,
19 but it's very possible there's another year or two of data
20 already out there now from that study about user avoidance,
21 why people are avoiding certain areas, what are the causes for
22 that, where are they; some hard numbers.

23 You know, so that's something that we can go back to
24 and beef up a little bit. I think that's a good comment and
25 we can try and get creative with (indiscernible) mitigation

1 ideas at -- what is the mitigation -- are we proposing
2 mitigation at this stage, too? Yeah.

3 KRISTEN HANSEN: The applicant has proposed
4 mitigation (indiscernible - simultaneous speech and away from
5 mic).

6 PAUL LAWRENCE: What about the (indiscernible) and
7 stuff? Are they --

8 KRISTEN HANSEN: We have not put it on the draft EIS
9 at this point.

10 PAUL LAWRENCE: Okay.

11 KRISTEN HANSEN: So it's going to be discussed
12 between the Corps and Armstrong (indiscernible - away from
13 mic).

14 PAUL LAWRENCE: Yes. Okay. So we will, yeah, try
15 and put our heads together and provide -- I don't -- it sounds
16 like there are not -- it's the applicant's proposed mitigation
17 that's in there right now. The subject matter expert ideas
18 are not in there at the moment, but will be discussed, so that
19 is something we'll make sure that we put our heads together
20 and try and think about ways that that could also be addressed
21 and then pass on the comment about the wildlife thing and the
22 caribou, looking at that.

23 GORDON BROWER: Yeah, just a little bit more on
24 exactly that topic, I guess. And, you know, the borough, for
25 the longest time, has looked at the human impact in relation

1 to subsistence resources.

2 The policies really speak to what you need to do
3 where resources are normally found and available for
4 subsistence, not probably quite quoting exactly how the policy
5 states. But you interrupt that policy invokes some level of
6 mitigation that we must decipher and work together.

7 And in -- you know, there is an existing program in
8 place that was designed to look at the human displacement
9 factor along with the resources when you can't discharge your
10 firearm where there might be oil field security being
11 prominent, infrastructure in the way, potential to shoot a
12 pipeline that might puncture it; who -- who knows.

13 And that is another -- another subject, too, is
14 the -- is the pipeline adequate for an -- in an area where
15 subsistence activities may be allowed. And should an
16 accidental strike, it should be able to withstand a -- an
17 impact maybe for one of the larger calibers. Think about
18 that, too.

19 But the assembly had approved and created the North
20 Slope Borough's mitigation fund advisory committee for the
21 North Slope Borough mayor. And that is an existing
22 transparent mitigation that goes to the community,
23 specifically for Nuiqsut.

24 And -- and that is something where other operators
25 are required to deposit funds and then the community

1 deliberates on the best use to mitigate subsistence activities
2 or the benefit to subsistence activities. For instance, they
3 might offset the cost of fuel for going further and using
4 other areas to subsist off of, learning new areas further out
5 or something like that.

6 So I just wanted to point that out, if that hasn't
7 been a dialogue. Because it is getting complicated. When you
8 have the BLM engaging in dialogue about regional mitigation
9 strategy, what does that do to the borough's mitigation
10 efforts that's been going on for the last 20 years and things
11 like that? So there -- there needs to be some level of wading
12 through these things where it's logical and how to address
13 them.

14 And, by the way, when the borough implements its
15 policy and determines that there is an impact, we're going to
16 be responsible to -- to -- to find a way and administer that
17 in a way that's effective for the community. Thank you.

18 KRISTEN HANSEN: Can I ask a clarifying question on
19 that? Just you -- this is Kristen. You mentioned that this
20 committee -- mitigation fund advisory committee that the
21 borough has -- requires other operators to put money forth
22 into that. Is that through a borough permitting process or
23 how does that requirement come about?

24 GORDON BROWER: It was -- it was enacted by the
25 North Slope Borough assembly under rezone for Alpine. It's

1 a -- and I think it was Alpine satellite where it was
2 codified as part of the analysis, staff recommendations, and,
3 eventually, created by the assembly to enact it.

4 And it -- it is -- it was because of the policies
5 that were impacted, it was the citation of studies from
6 biologists from Gonates (ph) to -- to Sverre Pedersen from the
7 North Slope Borough Wildlife Department and the general shift
8 that ensues after infrastructure becomes prominent.

9 And -- and I am very positive that this is going to
10 be a dialogue when your alternative -- you're starting to push
11 it to the planning department, because it's going to be a
12 rezone. The area that you're proposing for this development
13 within the borough, is a conservation area. You can't develop
14 on it unless you go through the rezone process and rezone
15 those lands.

16 And by ordinance, the legislative body of the North
17 Slope Borough, the assembly, are the only ones that can change
18 that. Thank you.

19 ELLEN LYON: This is Ellen. And partial response to
20 your comment, I just want to also take a moment to explain the
21 limitations of the Corps of Engineers' mitigation process.

22 So we are responsible for issuing permits for
23 impacts to waters of the U.S. And by law, our mitigation --
24 we can only require mitigation, which is -- has a specific
25 definition under the Corps of Engineers for impacts to waters 71

1 of the U.S.

2 So if there are -- it seems there are a lot of other
3 permits that the applicant is going to require, a rezoning
4 effort, and those processes are probably the best avenue with
5 which to work out some of these other types of mitigation that
6 the Corps of Engineers cannot, by law, require.

7 We can evaluate it in the EIS and under NEPA which
8 we will do, and we can also consider them if the applicant
9 comes forward to says there -- to say they're going to
10 implement some of these things as we make our permit decision.
11 But I can't require mitigation for anything except to remedy
12 or to mitigate for impacts to waters of the U.S., wetlands,
13 rivers, streams and lakes.

14 GORDON BROWER: Yeah, it's (indiscernible - away
15 from mic) only because the dialog seems to suggest how we deal
16 with the human --

17 ELLEN LYONS: Right.

18 GORDON BROWER: -- aspect and I just want divulge
19 the borough is endeavoring to -- to capture this.

20 ELLEN LYONS: Great.

21 GORDON BROWER: (Indiscernible - away from mic).

22 ELLEN LYONS: Thank you.

23 QAIYAAN HARCHAREK: Thank you. Oh, you had
24 mentioned the Corps having the authority to mitigate for the
25 waterways. But under NEPA, within -- within NEPA, there --

1 there are areas in there that, that mitigation, whether
2 there's adverse effects to cultural resources and to -- and to
3 the local people of the area, if you're following NEPA, how --
4 I'm just curious to know how you jump over some of the hoops
5 and only -- only deal with the waterways and not some of the
6 other ones within NEPA.

7 ELLEN LYONS: Right. It is a difficult thing to
8 kind of think about. And so what we'll do is we'll evaluate
9 mitigation under NEPA, and we will work with the applicant to
10 discuss how we feel about certain things that they could do
11 are beneficial for the overall impacts to the project.

12 But, by law, I couldn't require mitigation for
13 impacts to a cultural resource and call it mitigation. I
14 could potentially add on some special conditions to our permit
15 that requires the applicant to take a measure to do a specific
16 thing that he is -- they have agreed to implement.

17 And so while the definition of mitigation is very
18 narrow for the Corps, we still were -- we still have to make
19 sure that the permit is not contrary to the public interest,
20 and we have to look at all of what are called the 404(b)(1)
21 factors and make sure they're avoiding impacts and minimizing
22 impacts, and that it's in compliance with the Clean Water Act.

23 And that's more than just wetlands. It's natural
24 resources. It's economics. It's -- there's other public
25 interest review factors that we definitely evaluate. And

1 that's all taken it into consideration. But we just have a
2 very specific definition of mitigation. So we should still be
3 able to incorporate some of these measures, but it wouldn't --
4 it wouldn't be called mitigation. Does anyone else have any
5 other questions?

6 JOY HUNTINGTON: Or comments?

7 ELLEN LYONS: Or comments?

8 MARYELLEN TUTTELL: (Indiscernible - away from mic)
9 folks are hungry.

10 ELLEN LYONS: We do have additional food and I just
11 want to thank everyone who's come tonight to taking the time
12 to come and learn about the project, and we are available to
13 answer any other questions or take other comments. Again,
14 here is our all our contact information. If you find that you
15 have concerns later on, you have until the 14th of November to
16 submit your comments on both the draft environmental impact
17 statement and on the public notice for the Corps permit.

18 So thank you very much for coming tonight.

19 JOY HUNTINGTON: One more very important request.
20 If you would like to take some food home, some cookies for the
21 kids, we definitely don't want to haul this delicious food all
22 the way back to Anchorage, Fairbanks, other locations. So we
23 would love it if you would take a little bit of food home.
24 Thank you.

25 (Off record)

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TRANSCRIBER'S CERTIFICATE

I, Marci Lynch, hereby certify that the foregoing pages numbered 1 through 75 are a true, accurate, and complete transcript of the Nanushuk Project Draft EIS Meeting held in Barrow, Alaska, September 27, 2017, transcribed by me from a copy of the electronic sound recording to the best of my knowledge and ability.

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