

Meeting Notes

Dominion Diamond Ekati Mine

Jay Project Wildlife Road Mitigation Plan Workshop

Yellowknife, NT

May 22, 2015 9:00am to 2:30pm - Champaign Room, Yellowknife

Participants

In Attendance: Richard Bargery (DDEC), Claudine Lee (DDEC), Charles Klengenberg (DDEC), Nick Ballantyne (DDEC), Stephanie Rabesca (DDEC), Harry O'Keefe (DDEC), Robert Overvold (DDEC), Ed Jones (NSMA), Wayne Langenhan (NSMA), Kate Witherly (GNWT), Michael Birlea (Tlicho Government), Chuck Hubert (MVEIRB), Kate Mansfield (MVEIRB), Emily Nichol (Golder), Damian Panayi (Golder), Margaret Kralt (Dillon), Andrea Cleland (Dillon), Kim Poole (IEMA), Kevin O'Reilly (IEMA), Tee Lim (IEMA), Lorraine Seale, (GNWT), Melissa Pink (GNWT), Ron Beaulieu (Fort Resolution Metis), Stanley Louine (DKFN), Andrea Patenaude (GNWT), Sarah True (GNWT)

By Phone: Shawn McKay (FRMC), Rosy Bjornson (DKFN), Anne Gun (MVEIRB), Marc d'Entremont (DKFN), Steve Strawson (Golder), Kristine Manson (Golder)

Opening and Welcoming (Facilitator)

The Jay Project Wildlife Road Mitigation Plan workshop began at 9:00 am; the Facilitator, Margaret Kralt with Dillon Consulting (Dillon), opened the meeting by introducing herself and inviting participants to introduce themselves and state the organization they represented.

Rick Bargery, of Dominion Diamond Ekati Corporation (DDEC) provided an overview of the purpose of the Wildlife Road Mitigation Plan (WRMP) and the purpose of the meeting including:

- WRMP came out of the technical sessions- and the discussions regarding caribou
- WRMP builds on our existing methods for mitigation that have been successful at the Ekati mine, and incorporates new mitigation methods specifically to reduce the risk of caribou and other wildlife mortalities from traffic on the Jay and Misery roads.
- Incorporates suggestions that came up in the technical sessions.

Rick stated that the purpose of this Workshop is to finalize the draft WRMP based on the input and further suggestions from participants. DDEC wanted to provide an opportunity for open discussion for the WRMP, what is good and where can there be improvements. Minutes will be posted by June 1, 2015 and sent out for review shortly thereafter to make sure everything was captured from the discussion.

Wildlife Road Mitigation Plan – Overview Presentation

Harry O'Keefe of DDEC and Damian Panayi of Golder and Associates (Golder) gave an overview presentation of WRMP, including the purpose and objectives of the WRMP, stating why it was developed, what it applies to and some key background information that was used to develop the proposed methods of mitigation. The WRMP is specific to the road from the Jay Pipe to the Misery Pit and the road from Misery Pit to the main Ekati Mine Site. The WRMP was developed as a result of feedback received from the April, 2015 Jay Project Technical sessions. The document will not be a stand-alone management plan, but will likely be included as an appendix to the WWHPP. It is a living document, mitigations methods included will change over time as they appear to be effective or ineffective.

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The WRMP includes four (4) levels of mitigation that are associated with a series of triggers that initiate each level. The Levels include:

- *Level 1 (Green)* - is consistent with current mitigation methods at the Ekati Mine. It will be implemented all year round and includes the following mitigation methods: caribou have road crossings on the Misery and Jay roads, wildlife have right of way on the road at all times, vehicles must stop when there is a sighting and use radio to dispatch, speed limits on the road will be reduced when caribou are seen, observations of wildlife will be communicated to the Environmental Department by the drivers (via radios) when seen in the area wildlife, carcasses on or near roads will be removed and road snow berm heights will be managed in the winter.
- *Level 2 (Yellow)* - occur when one or more collared caribou or caribou observations occur within 30 km of the Ekati Mine or RSA. It includes mitigations such as site-wide notification of caribou approach and signage indicating caribou could be encountered. Monitoring will also increase to 2-3 times per week.
- *Level 3 (Orange)* - occur when one or more collared caribou or caribou observations occurs within 14 km of Ekati mine. It includes mitigations such as increased signage in areas where caribou might encounter the road and mobile signs where they expect to see the caribou based on previous experience. Daily monitoring and surveys of the misery road and the potential Jay road.
- *Level 4 (red)* – occurs when 40 nursery groups or 2000 caribou are within 100 km of site. It includes mitigations methods such as signage indicating caribou are likely to be encountered, speed limit reductions and the posting of signs indicating the speed limit decreases, as well as potential short term and/or long term road closures until the caribou have moved on.

A *Decision Tree* was established based on a request from the April, 2015 Jay Project technical sessions to demonstrate how decisions for mitigation are made. It is important to note that the decisions are not triggered by seasons, but by the amount of caribou that are seen on site, regardless of the time of year.

WRMP General Discussion

A general discussion was held immediately following the formal presentation. Participants were asked if there were any comments or need for clarification on the overall plan. A summary of questions and comments (paraphrased) is below.

Chuck Hubert: Would there be a benefit to calling this a “Caribou” Road Mitigation Plan rather than “Wildlife” Road Mitigation Plan?

Harry O’Keefe: This mitigation is focussed on caribou but not exclusive to them, therefore, it is not necessary to change the name.

Chuck Hubert: There is the WWHPP and the WEMP – is there value in incorporating it to the WWHPP?

Harry O’Keefe: The WRMP will be attached to the WWHPP as an appendix.

Kim Poole: There is no objective that focuses on sensory disturbance. An objective should be to minimize sensory disturbance to the caribou, not just mortality and barrier effect.

DDEC – suggestion noted.

Kim Poole: Throwing non-caribou wildlife mitigation into the WRMP is pointless; it is watering down the issues around Caribou. The Bathurst Caribou herd population has gone through a 95% decline; this should be a caribou mitigation plan, not a wildlife mitigation plan.

DDEC: suggestion noted.

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Kim Poole: Mitigation Level 1- is it an effective method? Given the Zone of Influence and other aspects, calling our first level green is not a good starting point. The objective should be to do better than where we are, as the current operational methods have proven ineffective based on the quantified ZOI, behavioural effects, and some deflections of caribou crossing the mine infrastructure.

Anne Gunn: There should be a third objective associated with mitigating behaviour – the objectives of this draft WRMP are too vague, they should be reworded to be more specific. Also, green should not be the colour used as it implies things are good. There are issues with the Bathurst Caribou herd; this plan needs to demonstrate mitigation techniques that are better. There needs to be improvements on this plan.

Harry O’Keefe: The colours associated with the Mitigation Levels are representative of signs used at site for indicating potential caribou interaction with the road. This is similar to the forest fire threat signs; it is a warning of the potential for seeing a caribou so drivers are aware and more cautious.

Kevin O’Reilly: The plan should have a diagram that shows how all the management plans are linked together, this should be included as an appendix to the WRMP. Is this a site wide plan?

Rick Bargery: This is the plan for the Jay project as that is the process we are in, it may be adjusted to be the site wide plan, not just for the Jay project, if it proves effective.

Kim Poole: In the document it states: “the mitigations that are listed below are demonstrated to be effective”- there is still a 14 km ZOI, and some caribou are deflected trying to cross the road. What is effective? There is no explanation of how it is effective. How has it been defined?

Harry O’Keefe: We would consider effectiveness as not having a significant adverse impact/effect.

Rick Bargery: It’s a traffic management plan, an operational plan. How to protect the caribou as they travel throughout the mine site itself. This has been effective as there have been no caribou mortalities because of vehicle interaction since the mine opened.

Kim Poole: For everything that is done in this plan there is no trigger or measure for effectiveness. It would be better to quantify these statements. Who is going to make this call? How is it going to be made? Who is implementing this?

Kate Witherly: Please clarify how much more traffic will be added. This is very vague on the amount of traffic and the description of volume.

Rick Bargery: There was clarification on this during the technical sessions. It is posted on one of the registries. Light vehicle traffic-in the April session (with all of the other vehicles) works out to approximately 160-210 passages/day without the winter road, and up to 290-340 passages/day with the winter road. This equates to approximately one vehicle every 4-5 minutes. This is public information and can be found on the registry.

Anne Gunn: Does DDEC have an estimate of when the next truck is visible once a truck passes? If 1 truck passes, will another be visible to the same caribou?

Rick Bargery: There is not an easy answer to that question.

Anne Gunn: As the frequency of the trucks increases, the caribou will see 2-3 trucks at a time, given that they are very visible species this will have a larger effect on them than mortality levels.

Andrea Patenaude: At the technical sessions, discussion was on the intention to monitor traffic. Triggers are caribou sightings, traffic is a huge influence on caribou but it is not clear in the base level of monitoring (Level one), it would be good to see more about traffic monitoring or link to plans that do

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focus on this.

Harry O'Keefe: higher traffic will occur during low instances of caribou sightings. If you were to add seasonality the mitigation and monitoring, the winter would be of less importance.

Kevin O'Reilly: In reference to the drivers, Ekati has been monitoring caribou for 17-18 years, presumably a lot of data have been accumulated. Would it not be useful to briefly provide the data you have accumulated? For example: when we are in "these" sections of the road you will likely see more caribou based on the information gathered from previous years. Let people know their probability of seeing caribou.

Kevin O'Reilly: Is every caribou crossing signed?

Harry O'Keefe: Segments are signed, it is similar to deer or moose crossing signs. Not every single crossing is signed but there are more general signs. When caribou are more often seen in proximity to the road, more signs are placed out and as we see them approaching, through their collars, signs will be erected.

Kevin O'Reilly: A signage system that reflects the actual presence of caribou, instead of likelihood of crossing, would be more effective. Have you thought through what the signs will look like (i.e. colour, size etc.)? Can we see this in the WRMP? Your signage system should reflect all the data you have accumulated.

Anne Gunn: Literature on traffic signs say they are generally ineffective; the most effective ones are the signs that change. Can we use new technology to make the signs more effective?

Kim Poole: A lot of emphasis is placed on the collar data to trigger mitigation. During the times the caribou are most likely to be in the area of Ekati the caribou would be moving 10-15 km per day. How much lead time are you going to have based on the collar data? How well in the past has the collar data reflected what you saw at the mine site?

Harry O'Keefe: The level of mitigation is not just based on collared data; it is based on camp sightings as well. Based on the information, we would probably have 2-3 days (this is a generalization of the time between the caribou collar being detected at 30km and the first physical sighting).

Kim Poole: How often are you able to obtain collar data updates from ENR? How recent will they be?

Harry O'Keefe: Varies with season, uploads, etc. We are in negotiations to share information as often as ENR has it. The idea is we use that proximity to increase our monitoring.

Kim Poole: So you haven't got a number of how often you will obtain information? A lot of the mitigation hinges on collars, sightings and road surveys (weekly, 2-3 times a week or daily depending on alert level), you have the collars telling you what is happening far away, but what is happening in the middle section of distance when the surveys are not being done? You jump from collar to road surveys and there is nothing in between.

Harry O'Keefe: We looking into other options for this, if you have any suggestions it would be appreciated.

Kim Poole: Suggestion: there are remote cameras, every 90 seconds image is updated. The MMG project up in Nunavut used these.

Anne Gunn: Are web cams used for traffic control an option? Do Trucks have a dispatcher?

Harry O'Keefe: Yes, the trucks have a dispatcher and that is the current method for updates. That is a point to make clearer in the plan.

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Ron Beaulieu: For the design of the road when the caribou are migrating, if you are going to put caribou crossings on the hauls road the caribous won't use them. Pushing of the herd is a big part of caribou herding, the rocks near the roads have maimed many caribou, this should be a concern, how do you regulate where the caribous go?

DDEC: Suggestion noted.

Shawn Mckay: Who is responsible for monitoring the traffic on the winter road?

Harry O'Keefe: Ekati will be monitoring all the traffic on their property and the traffic on the winter road will be monitored through the Joint Venture.

Shawn Mckay: For mitigation, when you do encounter caribous on the road, or in close proximity, the speed limit should be lowered automatically.

Chuck Hubert: In regards to the road mapping, the map should be incorporated in the WRMP with other features like the stockpile locations, highlight the map to indicate what road they actually apply to. More information is needed in the plan then what was given.

Rick Bargery: This can be done as suggested before.

Wayne Langenhan: Is Misery pit still being mined?

Harry O'Keefe: Yes.

Wayne Langenhan: You must have a monitoring system in place already; will you be adding the Jay road to the Misery road?

Rick Bargery: Yes.

Wayne Langenhan: What is the distance from Jay pit to Misery Pit?

Rick Bargery: Approximately 6 km.

Wayne Langenhan: Is the way the Misery road is currently monitored not working? What is the purpose for this? If something is already in place and it is working, why do you want to monkey with it?

Rick Bargery: From our perspective it is working, but others have concerns. We are looking at ways to improve what we currently do. We want to build on what is working today and work on how to improve.

Wayne Langenhan: Has there been any fatalities for any wildlife? How many fatalities have happened in total, not just to caribou?

Rick Bargery: Yes, 1 wolf and 10 foxes since 2000.

Chuck Hubert: It would be valuable to have lessons on what has worked and what hasn't.

Rick Bargery: The Jay pipe will extend the length of the mine for 10 years and will put traffic volume on that road that has not been seen. It will coincide with the increase phase, we can argue what has been effective and what hasn't but what it comes down to is improving our methods.

Ron Beaulieu: You are going to drain Jay pipe into Misery pit correct? The pipe that they are putting along the road, what design is it? It is going to set up a barrier? Are they burying the pipe? There have been incidents where the caribou have not been able to cross over the pipe.

Rick Bargery: Approximately 75% will be buried. There is a map on the registry.

Note: The maps show general location of the road and pipeline but not where the pipeline may be buried.

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Level 1 Mitigation (Green)

The facilitator led the group through a discussion on each of the six (6) mitigation techniques included under Level 1.

Design of Road to Incorporate Caribou Crossings

Shawn McKay: The design of the road should incorporate caribou crossings. I would like to know the width of the crossings, the slope design, the material used and how are they constructed in both the summer and winter. Will they be on lakes or forests? What is the length between crossings, as well as the number for each road?

Harry O'Keefe: We can include that in the design and it will be included in the WRMP if the Jay Project proceeds

Kate Mansfield: Can you provide clarity on approximate height of snow berms?

DDEC: Research shows that snow berms can't be higher than 1 m; DDEC will be following that research.

Kim Poole: It would be useful to define what effectiveness is, what triggers it and whether it has been effective.

Harry O'Keefe: There is a difficulty in assessing the effectiveness of the crossing. How do you determine how something it is effective?

Kim Poole: If you are asking the question you should be able to answer it. Maybe mapping in where caribou are crossing vs where the caribou crossings are.

Kim Poole: Who decides what is a safe distance, and where did 100 metres come from?

Harry O'Keefe: The stopping and proceeding of the drivers is their responsibility initially, they must report any sightings to the environment team. Once the environment team shows up they take control of the situation and determine when traffic can resume. Ideally vehicles will be moved out of the space. The idea is to have environment people there who are trained to make the appropriate judgement.

Kim Poole: How much caribou behaviour education do the drivers have? It all relates to trying to quantify and clarify reactions.

Harry O'Keefe: Point taken, we can work to rectify some of that.

Kate Mansfield: Include environmental triggers as well, such as bugs to these mitigation methods.

Kim Poole: From the document there are at least 5 different distances. Justification of all these distances is needed to make them clear on the numbers from a biological point of view, which needs to be conveyed to drivers.

Wildlife Have Right-of-Way on All Roads

Shawn McKay: Employees must wait for wildlife to move 100 m from road before moving. Does this differ between haul roads and other roads? How far do they have to pass the wildlife before they can increase their speed limit? Is there a reduced speed while close to the caribou?

Rick Bargery: Good question, clarity on this will be included in the next document.

Speed Limits Are Posted and Enforced

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Shawn McKay: How are the speed limits enforced? Are there cameras on the dashboard?

Harry O'Keefe: We have a reporting and tracking system of when vehicles leave and arrive. Some vehicles around site are controlled by governors. This is not possible on all vehicles, especially on the haul roads, as the trucks will need speed to get up hills.

Rick Bargery: We don't use cameras for any type of enforcement mechanism.

Shawn McKay: So there is no monitoring of the speed limit? Are they actually enforced?

Rick Bargery: It is tracked from the time it takes to get from point A to point B.

Chuck Hubert: Speed limit reductions are only triggered in level 4? Why?

Harry O'Keefe: Green through Orange are triggered when the caribou are more than 14 km away, we didn't think it was necessary to have speed reductions at that distance.

Kate Mansfield: The gradual speed decreases, will this include additional signage?

Harry O'Keefe: Yes, it will be in addition to the coloured signage.

Observations of Wildlife on Roads will be Communicated to the Environment Department and other Drivers in the Area

Shawn McKay: Drivers are supposed to identify what type of Wildlife is spotted? Giving their location and estimated distance?

Harry O'Keefe: Our wildlife and environment team have specific questions they have to ask when a wildlife report is called in. If it is caribou they have to go immediately. For other animals they just gather more information from the driver.

Kevin O'Reilly: Presumably, when the Environmental Department receives the information, there is a form that you use to record the information; can you attach the form to the document? This could better describe what DDEC are doing. It might be better to describe all the mitigation you do, not just this mitigation but also things like road design, linking those mitigations to very specific triggers.

Harry O'Keefe: This has been heard loud and clear, there are sections of the report that will need more details.

Wildlife Carcasses on or near Roads will be Removed

Shawn McKay: What is the plan for method of disposal?

Harry O'Keefe: There are various methods of disposal. The preferred method is transporting away from site and letting nature take care of it. Any mortality of a large animal is immediately reported to ENR, smaller animals are not immediately reported but removed.

Kevin O'Reilly: Need to be more specific with details on how wildlife carcasses are removed. How close to the road? How far away do you move it?

Rick Bargery: This is becoming larger than what we envisioned. This was an operational plan, we are discussing something that is more robust and more detailed than what this document is covering. Some of this may be covered in the WEMP.

Kevin O'Reilly: If you have standard operating procedures, reference or link them to the document. There is a greater need for detail than what is currently presented in the WRMP.

Kate Mansfield: There needs to be more explanation on how this mitigation links to the **WWHPP** and

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the WEMP.

DDEC: Noted.

Shawn McKay: Has there been any thought given to the fact that you may run into an animal that may be injured?

Harry O'Keefe: Under the Wildlife Act we are not to interfere with wildlife. This is under directive of ENR, we will talk to ENR and proceed under their advising

Road Snow Berm Height will be Managed during the Winter

Chuck Hubert: Will road snow berm heights be different on the Misery and Jay roads, based on the time of year and anticipated caribou movements?

Rick Bargery: That hasn't been something considered but it is something to look over.

Kim Poole: Snow berms should be maintained at 0.5 -1m (based on wildlife monitoring at Ekati) should not be above that.

Wayne Langenhan: As a driver we are trained not to use snow berms because it gives you a false sense of security. When creating the road, you should disperse the snow instead having snow berms.

Harry O'Keefe: We were talking about snow banks not snow berms; that should be clarified.

Shawn McKay: In the winter, are there lakes? How big are the lengths? What is the width? What are the heights of the berms? Is it slippery?

Harry O'Keefe: There are no lake roads, only all season roads.

Kevin O'Reilly: When you start to think about broadening this plan, the kind of things that Shawn mentioned should come into play when you are conducting exploration drilling in the winter.

Shawn McKay: Is it in the plans to have equipment go out and make extra caribou crossings or push outs if needed in areas where the caribou were present and only after the caribou have left the areas in question?

Harry O'Keefe: Under no circumstances are people allowed to move caribou off the road, the caribou have the right of way.

Level 2 Mitigation (Yellow)

Discuss Mitigation Measures –focus on mitigation methods and triggers that initiate:

Site-wide Notifications of Caribou Approach to the Ekati Mine

Kim Poole: Wouldn't it make more sense to combine levels 2 and 3? There isn't much of a difference, other than it triggering more monitoring. You won't be getting real time information as fast as you might like.

Harry O'Keefe: The purpose of those two levels was to try and find a balance from 2-3 times a week of monitoring to daily monitoring so we can stay on top of other issues on site.

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Kim Poole: The speed limits are set at a number at level 2 and 3. There is essentially no difference in speed limits until 4, if you had 50 caribou within a 100 metres of the road, as far as I can read, there is no speed limit change.

Harry O'Keefe: We are using the judgement of the driver. We will have more detail around that.

Kim Poole: What about considering changes at level 2-3, well before you get to your level 4 trigger speed limits?

Harry O'Keefe: You would like speed mitigation that doesn't align with the current mitigation method?

Kim Poole: Yes the more you clarify in the document (importance of numbers, proximity, composition and time of year) the more the drivers know and are educated, the better it is for the caribou.

Harry O'Keefe: We agree that we should have more speed guidelines, we will take this and consider it for the document.

Signage Indicating Caribou could be Encountered

Kevin O'Reilly: The most effective traffic management sign are the immediate feedback signs about the speed limit, like the one in front of the Ekati main camp. Digital signs get immediate feedback where it is telling the precise speed. I presume you have a safety meeting every morning, they should have a caribou specific debrief and a map of the areas where there is concern for caribou.

Mark d'Entremont: Do the warning signs have a speed limit on them?

Margaret Kralt: That will be put down as a suggestion.

Level 3 Mitigation (Orange)

Discuss Mitigation Measures –focus on mitigation methods and triggers that initiate:

Increased Signage in Areas Caribou might Encounter the Road

Mark d'Entremont: Are the speeds of the four levels reminders or suggestions? Because that can be subjective. This is in reference to reminders to slow down. Slowing down can be a subjective decision whereas reducing speed limits to a specified level of objective.

Harry O'Keefe: We can definitely address this in further detail and take away these concerns on speed and clarification.

Kevin O'Reilly: There should not be a distinction between monitoring and mitigation, put them together around the specific triggers.

Rick Bargery: There are all good suggestions; we will look at that in the next draft.

Kate Mansfield: There is a pretty big jump between triggers 3 and 4, if you think that is appropriate then explain why.

Harry O'Keefe: The decrease in steps increases the jumps in the mitigation. You can reduce the steps and then have sub steps. We will take these comments restructure and restructure.

Kim Poole: From the document it appears that DDEC is not going to get serious with mitigation unless you have 1/8 of the Bathurst Caribou Herd population within 100 m of the road? Shouldn't those numbers be a lot lower?

DDEC: We hear that comment and will look into adjusting it.

Rick Bargery: What would you suggest then? We are here to hear your comments/suggestions.

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Kim Poole: How is the grouping done?

Harry O'Keefe: A group is as small as one cow and one calf

Kevin O'Reilly: If you see one caribou from the road that should be a trigger. Should that start to trigger other actions as well? Other than having specific numbers, as you have them now in the WRMP, maybe a range is better. What range will start to trigger a specific action? If there is a caribou on the road that triggers mitigation because the driver has to stop.

Harry O'Keefe: That is a very good point to take away. One caribou will be monitored, but past that visible trigger there needs to more explanation than that.

Mark d'Entremont: The numbers that are in plan seem very high. Currently, this would mean that 10% to 15% of the Bathurst herd would have to be in close proximity to the mine before mitigative actions are triggered. Further, if this proportion of the herd is within 100 m of the mine infrastructure, they may already be experiencing some effects. Keep in mind that these caribou may move on and encounter other mines where synergistic effects may ensue. With the herd in the state that it is, you may want to limit your impact to 1% of the current population, you really need to evaluate your trigger numbers and why they are they are in place.

Note: Mark provided Golder with some additional information where this 1% threshold has been used in environmental assessment and with other conservation planning initiatives.

Andrea Patenaude: It is not super clear when the road closures come in to place; I like the idea of mixing level 2 and 3 because they are not that different in accordance with the mitigation. Then take level 4 and break it down. More clarity on the red level road closures is needed. There really is not much for guidance between zero caribou and 2000. If we are thinking about barrier effect those distances should be altered to a greater distance to slow down as the caribou will be making those decisions long before they are actually crossing.

Harry O'Keefe: Point is understood, more details have to go into this.

Andrea Patenaude: Level 2 and 3 should be combined, breakdown 4 more to create another level. Speed limit break down will happen which may lead to stoppages.

Harry O'Keefe: All will have to be incorporated into the revised document. Once a stoppage is made the environmental monitors are the only people that can start traffic again.

Kim Poole: Make sure the WRMP is practical and workable. Caribou can cover 100 m in a minute; (referring to the change in speed when caribou are 300m from the road, and then 200m) how will it be applicable to the driver if they can't see that far. The more you clarify the better it is. Whatever the mitigation is, the highest level of mitigation should be applied to those first animals. What Traditional Knowledge has shown us is the leaders of the herd are the ones controlling the movement of the caribou, if you deflect those ones you may possibly deflect the others.

Stanley Loutitt: Speed plays a major role in the caribou behaviour. If you have 30 to a herd you should be adjusting speed as to not deflect the caribou. The faster the truck the more likely the caribou will deflect. Drivers should slow down whenever they see a caribou regardless of distance.

DDEC: Suggestion noted.

Environmental Technicians Dispatched to Provide Caribou Safety

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Mark d'Entremont: The environmental technicians will be dispatched to where the caribou were spotted at 14 km?

Harry O'Keefe: They will be dispatched to the appropriate locations around site in order to monitor the caribou and manage traffic.

Level 4 Mitigation (Red)

Discuss Mitigation Measures –focus on mitigation methods and triggers that initiate:

Increased Signage in Areas where Caribou might Encounter the Road

No further discussion on this.

Environmental Technicians Dispatched to Provide Caribou Safety

No further discussion on this.

Speed Limits will be Decreased and Posted

No further discussion on this.

Short-term and Long-term Road Closures

Chuck Hubert: What would occur after the 6 hour long term closure if the caribou are still on the road?

Harry O'Keefe: We could sit for the whole twelve hour shift or shut it down for the whole day. We will close when necessary and for whatever length is needed

Kate Mansfield: Is there a maximum amount of time you will wait?

Harry O'Keefe: No. No person at any time will move the caribou. In the unlikely event that an extended road closure is necessary, we will hinder our own productivity to protect wildlife.

Chuck Hubert: Where are the stockpile locations and how big will they be?

Harry O'Keefe: Hopefully we will only have one road closed at a time, therefore the stockpile will be able to accommodate that road. We will have to optimize the amount of ore storage will be, in our experience the road closures have been closed for weather more than caribou.

Rick Bargery: We don't have exact numbers, a couple of days supply is the estimated order of magnitude.

Kim Poole: Why the six hours as described in the Draft WRMP? Is that an operational thing?

Harry O'Keefe: The idea is to give a hard number for mine operations, six hours is half a shift. The road could be switched to a long term closure as soon as you can't see an end in sight.

Kim Poole: If you do modify your objective to add sensory observations, closures will also be related to

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sensory impacts and behavioural impacts.

Monitoring

Discuss monitoring techniques that support mitigation measures:

Kevin O'Reilly: It would be helpful if you could indicate what things you plan to report annually in the WEMP/WWHPP.

Harry O'Keefe: Is there anything that you think we should be reporting? That input is valuable.

Kate Mansfield: What you have provided here, is it a monitoring program or a standard operating procedure for monitoring?

Harry O'Keefe: This is not a monitoring program, this is a way to mitigate our impacts. It is an appendix to the WWHPP.

Kate Mansfield: How will it fit into the traffic management plan, and will those comments be included?

Harry O'Keefe: We changed the name because it is separate from the traffic management plan currently in place. That is based more on safety of the vehicle and how to operate equipment around site. The report is part of the WEMP this is very Jay Project specific. Will be applied as you see it if the Jay Project is permitted. This document would supersede other current practices at that time.

Kevin O'Reilly (suggestions for annual reporting in the WEMP): reporting road kills, road closures, sightings, carcass removals, caribou movements, caribou observation levels, maybe presented in a table and comprehensive reporting on management activities.

DDEC: Noted.

Mark d'Entremont: When you talk about the surveying, are the survey methods of protocols documented on the WEMP? How are you documenting everything such as when the caribou are crossing, are they using the crossing? What is the height of the snow berms?

Harry O'Keefe: That is an issue that we are trying to address and improve the knowledge. This is a constant operational monitoring program that won't change for Jay.

Andrea Patenaude: Your behaviour surveys only begin at the red level, is this correct?

Harry O'Keefe: Conceptually we have a similar idea of what we are doing and we want to do. This is a plan for mitigating not a plan for monitoring. This is instruction and guidance; it is not a standalone document, an evolving point of the WEMP.

Harry O'Keefe: It may seem weird that caribou monitoring is only in the red, but everything before that the caribou are at a great distance. If the caribou are visible monitoring is our top priority.

Adaptive Management

Chuck Hubert: Will there be something on the description of effectiveness of this mitigation?

Harry O'Keefe: That comment is clear and it is something that we will work towards

Kim Poole: What are the negative effects? What is the trigger?

Harry O'Keefe: We will define it and clarify.

Meeting Notes

Andrea Patenaude: Is this a wildlife or caribou mitigation plan? If it is wildlife mitigation plan, more components need to be added. We need threshold for actions for other species. It is different for other species, in the WEMP we need more detail for other species.

Harry O'Keefe: Yes we agree and we will write more regarding other animals but not to the same extent.

Workshop Review and Wrap-up

Final remarks were provided after the discussion had wrapped up and participants no longer had any questions or comments. Rick Bargery from DDEC thanked everyone for their input and good feedback. They will use this to prepare a second draft of the WRMP (which will include a diagram that charts how this Plan fits in with all the other Plans). Margaret Kralt (Dillon) agreed to provide the meeting notes to DDEC by Monday May 25th, DDEC will send them to participants for review. Final comments and questions are as follows.

Harry O'Keefe: This workshop gives DDEC functional direction and we appreciate all your comments.

Chuck Hubert: What is the expected timing of second draft?

Rick Bargery: We can give you a better idea of a timeline on Monday, May 25, 2015.

Kim Poole: Are you expecting written comments?

Rick Bargery: We'll ask you to comment on the notes. Hopefully we have everything but when you get the meeting notes, you can add something if you feel it was missed. No need for written comments.

The meeting wrapped up at approximately 2:30pm.