



FINAL ARGUMENT
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In the Matter of Alberta Utilities Commission
Application No. 1606609
Proceeding ID No. 457

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I. INTRODUCTION

- 1) The Applicants have applied for approval to build the largest transmission lines Alberta has ever seen, and likely, will ever see.¹ RETA, a concerned landowner group, took a rational and practical position to this project; Given the unprecedented magnitude and the significance of the consequences of the project, RETA's position is that *if the project runs "adjacent to densely populated areas"*² *the line must be buried.*
- 2) However, rather than being received with an open mind to an underground option, the Applicants and the "Independent Systems Operator" put up obstacle after obstacle in front of the people that tried to bring some common sense to the chaos of this project.
- 3) We will demonstrate that what the Applicants did, in conjunction with AESO, was make key decisions (that being above ground towers through the Sherwood Park Greenbelt) at the inception of this project. Then, the Applicants and AESO spent years, and millions of dollars, running around the province, implementing a makeshift consultation program around their predetermined outcome goal.
- 4) After a considerable amount of wasted time and money - spent only in an effort to convince the Commission they "consulted" - the Applicants filed their facility application with a route they dubiously labeled as their "preferred option." They also included injudicious "alternatives" so that those alternates would pale in comparison to their "preferred option." But again, the purpose of including the alternatives was not to demonstrate that its applied-for route was superior or stands out as the preferred route. The sole purpose of the alternatives was to try to convince the Commission they did their homework. RETA will demonstrate that they failed in that regard as well.
- 5) Throughout the hearing, the Commission heard time and time again, how landowners were not informed, misinformed, given erroneous information and thoroughly confused about the Project, and the charade of what the Applicants labeled as "alternatives" was exposed time and time again. The most important aspects of a transmission line application - routing, alternatives and consultation - were a complete and utter failure in this case.
- 6) The Applicants presumed it did not matter what they told people or where they drew the line, because they were relying on approval of this project given that it is designated as "Critical Transmission Infrastructure." But the hypothetical need for this project *does not* negate the Applicant's *need* to follow the law and prepare a proper facility application.
- 7) Even if the Project need is real, which RETA does not believe, the Applicants have gravely misrepresented the true impacts of the Project to affected landowners, the Commission, the government of Alberta and the public in general. There is no hiding the fact that these will be the largest transmission towers Alberta has ever seen, and will likely ever see. But

¹ Transcript page 3372.

² Exhibit 335 (HTP Application), page 30, paragraph 136.

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rather than embracing that fact and working with stakeholders to address the very real impacts that this project will cause, the Applicants dismissed stakeholder concerns and opposed meaningful mitigation strategies.

- 8) The efforts made by RETA to inform stakeholders of the true impacts and pursuing the underground option should be commended not only by the Commission, but the Applicants themselves. Had RETA not been as determined and persistent as they were, the Applicants would have filed an application for above ground towers along the “preferred route” where thousands of people live and would have done so without a thought to modern mitigation strategies.
- 9) The Application included an underground option only as a result of RETA’s tireless efforts, not as a result of the Applicants’ foresight.
- 10) Because of the Applicants’ misrepresentations and misinformation throughout the “consultation phase,” RETA submits that if this project is approved above ground in the preferred route, the public will react as described by one expert as follows:

I think it's going to be a rude shock when people see these actually in the air. Like, there's been nothing in the province this big or this tall.³

- 11) The evidence as a whole is that directly and adversely affected landowners did not have an accurate picture of the size and location of the towers, the visual impacts and the overall impacts of the project upon them. In light of the Applicants’ failures in this regard RETA submits the Commission cannot approve this project application.
- 12) As a reminder, below is what the Applicants propose:

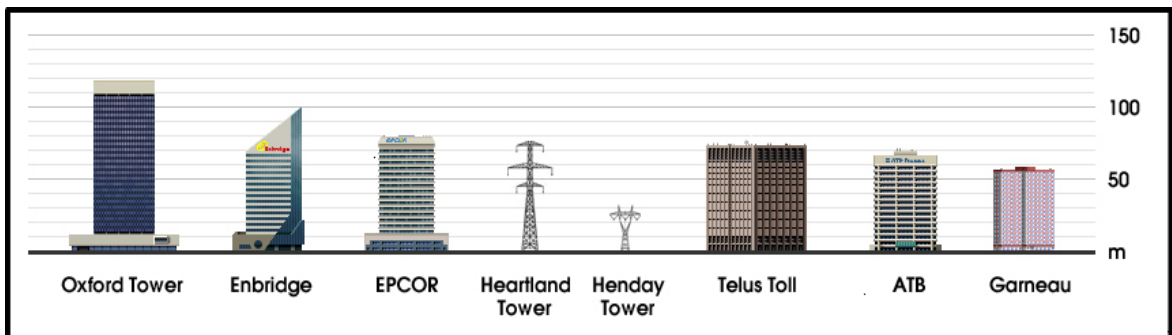


Figure 1: Heartland Tower Relative to Edmonton Skyscrapers

- 13) Given the Applicants’ grave failings in their facility application, RETA submits that the Application ought to be denied. However, should the Commission determine there is sufficient evidence before it to grant an approval, RETA submits that where the route runs in close proximity to homes, schools, daycares, hospitals and environmentally sensitive areas, the line must be buried.

³ Transcript page 6223.

II. DESCRIPTION OF INTERVENERS

A. Membership

- 14) RETA is the Responsible Electricity Transmission for Albertans. This incorporated society is made of up approximately 8,000 Albertans who are concerned about the Heartland Transmission Project (the “Project” or “Application”) and other large overhead high voltage power line proposals. Of those, over 700 are within 800 meters of the Project as it was applied for at the commencement of this hearing.⁴
- 15) RETA believes that these numbers are without precedent and are an indication of the extent of the support in this province for the undergrounding of high voltage transmission lines adjacent to densely populated areas.
- 16) While the majority of RETA’s members reside along the Applicants’ preferred route, RETA’s members come from around the province and many reside near the various route options proposed at one point or another by AltaLink L.P. and ECPOR Distribution & Transmission Inc. (the “Applicants”).

B. Extent of participation

- 17) RETA’s involvement with the Project did not begin with the Alberta Utilities Commission (the “AUC” or the “Commission”) process.
- 18) RETA was involved in many preliminary steps prior to the AUC’s formal process, including participating in the Applicant’s Community Advisory Task Group,⁵ high level discussions with the Applicants,⁶ taking part in Alberta Electrical Systems Operator’s (“AESO”), underground technical feasibility study,⁷ meeting with various members of the Alberta Legislative Assembly including Premier Stelmach,⁸ and retaining Europacable to help them understand the Applicants and AESO’s continuous objections to an underground option.⁹
- 19) RETA invested substantial time, effort and financial resources to demonstrate to AESO and the Applicants that an underground option is a feasible option in Alberta, even though there is no obligation for individual landowners to take on such a tremendous responsibility. The duty to investigate the feasibility of such options is on our government, the “Independent Systems Operator,” and those who own and operate the transmission system in Alberta. However, in this case, the burden of this incredibly challenging task was undertaken by a group of landowners.

⁴ Exhibit number 645.06.

⁵ Transcript pages 4868-4869 and Exhibit number 1122.01.

⁶ Transcript pages 3847, 4848 and 4852-4853.

⁷ Transcript pages 4851-4852.

⁸ Exhibit number 654.01, page 8.

⁹ Transcript page 4855.

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- 20) Notwithstanding RETA's tireless efforts, the truth about the Applicants' "consultation" efforts with RETA was surmised by Mr. Johnson as follows:

...it was obvious, right from the outset, the Heartland team were only paying lip service to the process.

...

In fact, without having any facts at their fingertips, the AESO and HPT embarked on what I can only characterize as a propaganda campaign to discredit underground technology. It was too unreliable. It wouldn't work in our cold climate. The cables might not be able to dissipate heat properly. Maintenance costs are too high on underground. They're too expensive. Line losses are too high. The EMF from underground is higher than overhead lines. Rather than consulting with stakeholders, the HPT launched a full scale attempt to convince everyone that underground was not viable.¹⁰

- 21) Mr. Bradley echoed Mr. Johnson's concerns as follows:

I have consulted with many of the key members of AESO/Heartland project group over the last three years. Those that seem to be telling the truth or seem sympathetic to our concerns are no longer involved in the project. Dealing with the others has left me feeling like I was being paid a grudging lip service at best.¹¹

- 22) This evidence was not challenged.

- 23) Notwithstanding RETA's efforts, the Applicants did not include a practical and economic underground option in the Application. Therefore, RETA participated in this hearing.

- 24) RETA made a number of information requests of the Applicants, answered a number of information request of various interveners, and provided a written submission, which included several expert reports and statements by members.

- 25) RETA assembled a variety of expert witnesses whose expertise allowed for commentary on the concerns of RETA's members. Those experts included Jason Hails and Brad Klaiber of MNP LLP, accountants and advisers specializing in utilities; Simon Allen, a cost consultant with an extensive history of underground cable projects; Robert Wakelin, a pipeline corrosion expert; Bernie Amell, a visual impact consultant; Dr. John Dennis, a human health stress specialist; James Farquharson, an industrial acoustics expert; Brian Gettel, a property valuation expert; and John Kristensen, an environmental expert.

- 26) In addition, RETA cooperated with Strathcona County to produce Dr. Martin Blank, who is a world renowned expert on the effects of EMF on cellular biochemistry. RETA also worked with the City of Edmonton by sharing its experts.

¹⁰ Exhibit number 654.01 pages 5-6.

¹¹ Transcript page 4849.

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- 27) RETA cross-examined those persons adverse in interest and those whose expertise could be tested and utilized to provide further valuable information to the Commission. Due to time constraints and the fact that the Applicants had tendered the cable costs to suppliers in Europe and Japan, RETA was unable to provide the AUC with an engineering expert in underground high-voltage transmission cables. The limitations befalling interveners was discussed by Bryan Bradley in his testimony before the Commission.¹²
- 28) Nevertheless, RETA was pleased to provide the Commission with a different perspective in fulfilling its role as a landowner intervener group.

III. REQUESTED DISPOSITIONS

A. Approval Should Be Denied

- 29) The Application should be denied by reason of the failure of the Applicants to put sufficient evidence to the Commission about alternatives. Further, it should be denied by reason of the failure, or more correctly failures, of the Applicants to adequately consult with those directly and adversely impacted by the Project, but especially those who will have a front row viewing of these massive towers from their kitchen windows. Finally, the Application ought to be denied because the need of this Project is uncertain.
- 30) As we understand it, the AUC's predecessor, the Energy and Utilities Board (the "EUB"), denied one transmission line application, that being EUB Decision 2007-037. The Board's written decision consists of only four pages.
- 31) One would expect that the Applicants would be intimately familiar with that four page decision and would have incorporated the EUB views in this Application.
- 32) RETA submits that the Applicants have completely misunderstood the EUB's ruling in that case. At no instance did the EUB state that the Applicants are required to present at least two alternatives to them. By the same token, RETA is not suggesting that the Applicants ought to have only presented one option to the Commission.
- 33) The following deficiencies were identified by the EUB in 2007 when they denied that application for a much smaller transmission line. These deficiencies resonate in this Application:

...the assessment of alternate routes was not sufficiently transparent, and does not consider that the comparison results presented by ATCO Electric to date are sufficient to allow the Board to determine whether or not the applied-for route (**including the alternatives less preferable to ATCO Electric**) is superior or stands out as the preferred route, given the various competing factors.¹³ [emphasis added]

¹² Transcript pages 4856-4860

¹³ EUB Decision 2007-037, page 2.

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- 34) The task on applicants is to provide the Commission with sufficient evidence to allow the Commission to assess the merits of the Application. The task is not simply to give the Commission two routes from which to choose, but to provide sufficiently clear evidence to the Commission on *all* the option, including the less preferable.
- 35) RETA submits that the Applicants misinterpreted EUB Decision 2007-037 and were instead more concerned about the AUC's caution in the Edmonton to Calgary application:

...Application No. 1478550. If you go to volume 15 and read that transcript, the AUC was extremely direct in that they expected to have an alternative because in that case we were paralleling the existing north/south 240 kV lines. And for a good portion of the route of course we hadn't developed an alternative because we at that time thought that that was the only route and were quite admonished in that proceeding by not having an alternative for the AUC to even consider.

Q. So it's your interpretation of the AUC's expectations is that when you file an application that you include alternative routes? This is where this emanates from?

A. MR. WATSON: At least one alternative which shows the -- I'll say the next best alternative to the preferred. I think some of the evidence that's on file already also points to another case where the proponents weren't very strong on a preferred versus an alternative, and we bring forward what we believe is the preferred and are clear about the preferred and show what the next best alternative is; because, as you've heard, there's lots of people who would rather see this line not going through as heavily populated areas at the east TUC route does.¹⁴

- 36) RETA submits that this basic misunderstanding caused the Applicants to fail in their duties to prepare for, and present a proper facility application to, the AUC.

i. Failure to put forward Sufficient Evidence on Route Alternatives

- 37) The Applicants failed to provide sufficient evidence to allow the Commission to conclude that its preferred route is superior or stands out as the preferred route, given the various competing factors, and RETA relies on the following three items to demonstrate this point:

- a. The alternatives are too fundamentally different to compare;
- b. The last minute preferred, preferred route; and
- c. Lack of evidence on route alternatives.

a. The Alternatives are too Fundamentally Different to Compare

- 38) In order to attempt to convince the Commission that their preferred route remained the only clear choice for the Commission, the Applicants included a significantly longer alternate route, through rural lands on the west side of the City of Edmonton in the Application.

¹⁴ Ie. Transcript pages 50 and 2026.

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- 39) The two route alternatives are not comparable, and the attempts by the Applicants to make the comparison borders on farcical.
- 40) First, the Applicants ballooned out an alternative west line through farmers' fields. If there was logic to proposing this alternative it was lost on RETA.
- 41) Second, the Applicants touted the importance of using a "Transmission Utility Corridor" repeatedly throughout the hearing.¹⁵ However, when the final decision was made to file the Application, the Applicants dismissed the benefits of a "TUC" in respect of the West TUC.
- 42) In the Application, the Applicants chose to file an application with the Commission that was not a West TUC versus the East TUC (apples to apples) comparison, but rather an East TUC to West rural land (apples to oranges) comparison.
- 43) One cannot realistically compare the two routes based on the simplified, and subjective, green versus red desktop analysis, when that matrix compares variable of a different nature, within different contexts, and about 35 kilometers apart from one another.
- 44) Even the Sturgeon Landowner Group's routing expert commented on the Applicants' route comparison as follows:

The characteristics of the two "competing" routes are so vastly different that the typical side by side, red-green tables do not reflect the essence of the choice facing the Commission. The shorter, cheaper route, with a major percentage on public land that is largely industrial, seems a natural choice compared to a longer, more expensive line in a virgin rural/country residential setting.¹⁶

- 45) In simple terms, what Mr. Berrien said is that based on the two routes presented by the Applicants, it would be absurd of the Commission to pick a "longer, more expensive line in a virgin rural/country residential setting." That was exactly the purpose of presenting this alternative. The irony is that Mr. Berrien's characterization of the preferred route as "largely industrial" is of course incorrect, since the preferred route runs "adjacent to densely populated areas."¹⁷
- 46) Unfortunately Mr. Berrien went beyond identifying the fundamental defect in the routing comparison. Rather than restricting himself to the routing matters, Mr. Berrien went on to opine on issues outside of his area of expertise, such as cost implications of an underground option, which RETA trusts the Commission will simply disregard.

¹⁵ Ie. Transcript page 567.

¹⁶ Exhibit number 566.02, page 60.

¹⁷ Exhibit 335 (HTP Application), page 30, paragraph 136.

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- 47) RETA submits that there is no merit in comparing abandoned Suncor homes to rural homes or densely built urban homes and apartments. But this is exactly what the Applicants did in their table entitled “Final Route Comparison.”¹⁸

Heartland Transmission Route Comparisons	Preferred		Alternative
	East TUC Route		West Route
Entire Route – Number of Residences, Schools, Daycares, Hospitals:			
Residences within 150 m of the centerline ¹ including only first row of residences in urban areas	6	²⁵ In TUC – 9 ²⁶ On Suncor - 4	10
Residences within 150 m of the centreline ¹ – including all urban residences	6	In TUC – 9 On Suncor - 4	10
Residences within 800 m of the edge of the RoW – including only first row of residences in urban areas	953		342
Residences within 800 m of the edge of the RoW – including all urban residences	5194		342

- 48) One does not have to be a routing expert to see that this type of comparison bears no common sense.
- 49) To ask the Commission and interveners to compare urban impacts to rural impacts is an absurd proposition.
- 50) The absurdity of such a comparison is also demonstrated in Mr. Kristensen’s hesitation to choose one route over the other based on environmental impact:

...the North Saskatchewan River is a nationally recognized ESA and is the only such one on either of the routes. The Bretona Pond wetland complex area, Bretona Pond specifically, is a buck-for-wildlife area, so it's recognized, and the county of Strathcona has recognized it as a significant wetland.

...

Now, having said that, I recognize as well that in addition to the Atim Creek area along the west alternate route there's Lois Hole Centennial Provincial Park, there's Wagner Natural Area, and as a biologist I know how important those are. So those are important areas as well. If I was asked, I would -- as a biologist I would most certainly say that under -- close to those areas, especially into the Atim Creek area, the line, it's got to be buried. I would insist on that as a biologist, as a wildlife biologist, just as I would do so with respect to the wetlands along the preferred route. So both areas are extremely important from a wildlife and wildlife habitat perspective.¹⁹

- 51) The reason for Mr. Kristensen’s hesitation in picking one route versus another is because it is illogical to compare two completely different environmental impacts (i.e. highly

¹⁸ Exhibit number 335, page 294 (pdf page 324), Table 7-8.

¹⁹ Transcript pages 4833 and 4835.

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productive [from a wildlife perspective] wetland complexes; and a highly productive provincial park) in an apples to apples comparison.

- 52) As stated above, what the Applicants' filed with the Commission was route choices that cannot be compared in an apples to apples comparison. In order for the Commission to be able to evaluate and determine which route is the "superior route", the impacts must be presented in such a way that comparison can be made. This was not done.
- 53) What the Applicants successfully did instead was pit neighbour against neighbour, community against community and municipality against municipality. And for some of the stakeholders that the Applicants successfully angered, frightened and confused, their natural instinct turned to moving these "monsters" away from them and their largest investment.
- 54) The Applicants keenly presented stakeholders with an option that would inevitably end with stakeholders arguing against one another while the Applicants sat back and observed.
- 55) Many interveners fall into the trap set by the Applicants and argued to protect their own interests even though they shared the same concerns. The only alternative which addresses those common concerns is burying the line.

b. The Last Minute Preferred, Preferred Route

- 56) From the start of the routing process, the Applicants faltered. What they actually did for the ensuing three years is still uncertain, given that during the third week of the hearing, and as a result of the actions of the HALO group, a routing amendment was made (the "April 26 Amendment").
- 57) The sole task of Mr. Foley and his expert routing team was to identify the best possible route with the least amount of impacts. Mr. Foley had over three years and millions of dollars to complete this task.
- 58) Mr. and Mrs. Regula of HALO sent a couple emails to Alberta Infrastructure and were able to accomplish what the Applicants were unable to do.
- 59) Then the Applicants tried to suggest to the Commission that they, in fact, brought up this new routing alternative with Alberta Infrastructure previously.²⁰ An undertaking to provide correspondence that supported that statement was made and the following response was provided by the Applicants:

There is no written correspondence between the Heartland Team regarding this routing.²¹

²⁰ Transcripts page 3037.

²¹ Exhibit number 1011.

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60) All the Applicants were able to produce as evidence to support their assertion were two penciled-in drawings.²²

61) However, it seems that in drafting up this undertaking response, the Applicants forgot what Mr. Foley said on the record with respect to their communications with Alberta Infrastructure:

When we filed our application last September **we had received a letter from Infrastructure** just prior to that. That was kind of our last discussion with them. They assured us there was no other changes at that point in time that we could make to move that route further away from residences.²³ [emphasis added]

62) Yet, this letter was never produced, and the Commission has been asked to rely on two penciled-in drawing supplied by the Applicants.

63) Even landowners were quick to question the reliability of the Applicants' evidence in this regard. This was described by Mrs. Johnson as follows:

If anyone has dealt with the government, you know they document everything, double check, and then triple check it. No written correspondence about their most preferred route, except for a penciled-in route, I don't believe for one second. And, Mr. Chairman, I cannot imagine that you believe them either.

...

If this is a real option and really was a preferred route, they would have written to Alberta Infrastructure and said "wait, maybe you misunderstood us. This is the best route for us because of A, B, and C," but they did not do that. Let's not -- I'm sorry. Let's not let them make a mockery of us stakeholders in Alberta.²⁴

64) More importantly, however, was that the April 26 Amendment was not just a little jog. The April 26 Amendment became the Applicants *preferred* route along the Sherwood Park Greenbelt²⁵ which is an area that directly and adversely affects over 5,000 homes.

65) In respect of the April 26 Amendment, the Applications did not provide the Commission with the level of detail that was presented for the originally applied for route.²⁶ In fact, when the April 26 Amendment was filed, it was done so with a two-page commentary and notwithstanding that the Applicants were seated at the witnesses table, they did not provide any information as to why such a major change was introduced at such a late stage of the processes. The task of gathering evidence in respect of the April 26 Amendment was placed on the interveners and the Commission.

²² Exhibit number 1011.

²³ Transcript page 3042.

²⁴ Transcript pages 4883-4884.

²⁵ Transcript page 3025.

²⁶ Transcript pages 3051-3052.

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66) If the April 26 Amendment is the Applicants' preferred, preferred route, the Commission ought to have "sufficient evidence to allow the [Commission] to conclude that its preferred route is superior or stands out as the preferred route, given the various competing factors."²⁷ This evidence was not provided to the Commission.

c. Lack of Evidence on Route Alternatives

67) The Applicants commenced their routing exercise with four potential routes. Even though the Applicants choose not to request that all four of the routes be approved in the alternative, in light of EUB Decision 2007-037, the Applicants ought to have filed evidence with in respect of these four routes with the Commission, so that the Commission could have made its own assessment of the various route segments, however, the Applicants did not.

68) Furthermore, Mr. Cline, the routing expert retained by one of the intervener groups expressed serious concerns about the Applicants route selection process:

In addition to the errors in the calculations [of] an appropriate setback from the DND site, the applicants' siting process was flawed because **they eliminated all potential routes for the proposed transmission line through an unnecessarily large no-go zone at the preliminary stage** prior to any of the metrics being applied to the route segments and prior to soliciting any stakeholder feedback.

The applicants also eliminated all route segments along road allowances without evaluation as to whether this was justified, and they failed to consider the difference between green field impacts compared to the impact of expanding existing linear disturbances.

The applicants' siting process did not ensure the lowest overall impact route was chosen because they followed a progressive elimination process where individual segments of potential routes were eliminated based on a single high priority impact rather than [a] siting process that was considered and balanced and considered all impacts together for over an entire route.

The applicant's routing process was dominated by their highest ranked criteria, which was residences within 150 metres, which alone eliminated the majority of the route segments without regard to environmental impacts, view sheds, or the cost benefit of paralleling existing linear disturbances.

By using this methodology, the total overall impact of the final route identified may in all likelihood be greater than it would have been if they had considered the route as a whole.²⁸ [emphasis added]

²⁷ EUB Decision 2007-037, page 2.

²⁸ Transcript page 6064-6065.

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- 69) Such missed opportunities were evidenced by Mr. Foley's response to Commissioner Michaud's question about the study area when he stated:

I guess to answer your question, yes, we would have initially considered everything collectively, and then when we looked at it from a routing perspective – for example even here we'd get down to, okay, what versus what drives us to a specific area that may impact two of three instead of three of three or four or five or something of that degree.

We didn't have specific statistical weighting or anything like that, but when we got into considering the constraints associated with routing, as I've said all along, one of our primary considerations, if you want to refer to that -- characterize it as waiting -- would be avoidance of residences.²⁹ [emphasis added]

- 70) It is important to note that the lack of statistical weighting for all of the impact variables in an objective and meaningful way, at the start of the routing selection process, resulted in an illogical and subjective green and red box comparison utilized by the Applicants throughout the Application. For example, because variables were not statistically weighted from the outset, “native upland vegetation crossed (km)”³⁰ was weighted equally by the Applicants with “residence within 800 m of the edge of the ROW – including all urban residences”³¹ in the final route comparison. This makes no sense.

- 71) RETA submits that the Applicants, along with AESO, predetermined the route they wanted to apply to the Commission for as early as 2008 and then worked backwards in an attempt to rationalize their selection and in doing so, they rejected common routing practices in order to achieve the end result they wanted.

ii. Failure to put forward Sufficient Evidence on Underground Alternatives

- 72) By failing to present the Commission with more than one underground option, or at the very least, provide an optimal underground alternative to the Commission, the Applicants have demonstrably increased the complexity and cost of the proposed underground option and in doing so the Applicants have failed to properly put this option before the Commission.

- 73) The Applicant and AESO have stated that placing a portion of the route underground is technically feasible.³² There are numerous examples of 500 kV underground power lines around the world.³³ In fact, the Applicants went on to say that the underground option would be its preference were it not for the costs :

A. MR. WATSON: I think we would be running a lot more underground transmission. It's pretty obvious in this proceeding that people don't like to have the

²⁹ Transcripts page 3344.

³⁰ Exhibit number 335, page 294 (pdf page 324), Table 7-8.

³¹ Exhibit number 335, page 294 (pdf page 324), Table 7-8.

³² Transcript pages 525 and 5188-5189.

³³ Exhibit number 1113.

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impediment of towers on their land or to be looking at them at a distance even if it's not on their land, and I think that's pretty universal.

...

A. MR. WATSON: So if we were able to make the costs the same and, you know, I don't see it a technology risk. We've convinced ourselves that we can build and operate either. Then I would say we would be recommending underground.³⁴

- 74) In any event, the Applicants ranked the preferred route, underground option ahead of the alternate west route.³⁵
- 75) The real question, therefore, is whether the Applicants presented an optimal underground option for the Commission's consideration. RETA submits that the answer to that question is no.
- 76) The Applicants inexperience in routing underground options is abundantly apparent when they chose to simply follow an overhead route alignment and not optimizing a potential underground route.
- 77) As stated by Dr. Gregory, an underground line is bendable and the designer of such a line is not saddled with straight line

Q. All right. Now, in terms of underground cabling, you'll agree with me that the route that you would take for an above-ground transmission line, the optimum route for an above-ground transmission line may likely not be the optimum route for an underground cabling line if you're looking to get both from A to B?

MR. GREGORY: I would agree with that.

Q. Right. So that if you were seriously looking at that, you'd look to not simply duplicate where your above-ground transmission line went; you would seek to do things like minimize the amount of obstructions that you were likely to encounter, minimize HDD drilling -- HDD, those sorts of things, right?

A. MR. GREGORY: Yes. The way a route is found for a sub sea -- for a land cable is to find the most suitable points for crossings. And having identified those along the route, then to look at connecting those crossing points up.³⁶

- 78) Mr. Allen also commented on the Applicants' approach of following an overhead line for an underground cable route as follows:

...the route of OHL and of UGC have different criteria of choice and have to be optimized case by case, it is very rare for the optimal route of these two

³⁴ Transcript pages 3183-3184.

³⁵ Transcript page 3026.

³⁶ Transcript pages 5208-5209.

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transmission systems to coincide. The preferable route for the UGC solution should therefore be reconsidered.³⁷

- 79) Rather than utilizing the correct approach to underground cable routing as described by Mr. Gregory, the Applicant merely parroted the overhead transmission route when proposing its underground option:

Q. But you went to them and said, okay, we're planning to build a -- initially you went to them and said, "We're planning to build an aboveground power line," right?

A. MR. FOLEY: Yes.

Q. Okay. And then -- and these are my words, you know those dam -- darn pesky shareholders have -- or stakeholders have influenced the process so that we need to really examine this underground option as well. So that was sort of superimposed on the aboveground considerations, right?

A. MR. FOLEY: We treated them one and the same, yes --³⁸

- 80) Even as late as April 26, 2011, when the Applicants filed their preferred, preferred route with the Commission, they chose not to consider a different underground route.³⁹
- 81) The significance of the Applicants' routing experts blindly following the overhead line for the underground option demonstrates that the underground option contained a fundamental flaw right from the start. RETA submits that this fundamental error in underground routing would not have occurred had the Applicants retained an underground cable expert to assist them in the preliminary stages of the underground routing exercise. However, it is clear from Mr. Foley's response, they did not.
- 82) In fact, the Applicants at one time considered, and consulted with RETA on, an underground route from Ellerslie to the Josephburg area, however that was quickly removed from further consideration.⁴⁰ The evidence on this routing alternative was also not filed with the Commission.
- 83) Mr. Allen also referred in his report to an option of placing the underground line in the Anthony Henday median.⁴¹ Yet it is clear that the Applicants did not discuss these or any other underground options with Alberta Infrastructure.

³⁷ Exhibit number 647.03, paragraph 3.20.

³⁸ Transcript page 539.

³⁹ Transcript page 3048.

⁴⁰ Transcript pages 4853-5854.

⁴¹ Exhibit number 647.03, paragraph 3.21.

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- 84) Furthermore, the Applicants utilized an overbuild design and employed cost accounting principles which overstated the costs and complexity for the underground option. These failings will be discussed in more detail below.
- 85) What the Commission must keep in mind when considering the veracity and validity of the Applicants' evidence on the underground option, is that the Applicants did not want this line to go underground from the outset. In the Application, that option was the only option designated as "Stakeholder Requested."
- 86) Mr. Watson confirmed this view when he stated:
- So at that point, you know, the AESO directed us to explore an application and provided us a functional spec for underground. But I would say that **the request for underground was driven by the stakeholders**, and the AESO, once we got past the technical feasibility, produced a specification that allowed us to detail it sufficiently to put in an application so that it's a fully developed alternative that this Commission can consider.⁴² [emphasis added]
- 87) Mr. Ritter, on behalf of AESO, was also quick to point out that that an underground option was not their preferred option given the economics of that option even though such an assessment is outside of the scope of their duties.⁴³
- 88) What the Applicants and AESO are saying loud and clear is that they do not fully support the underground option. In order to ensure that this alternative paled in comparison to their preferred, RETA submits that the Applicants purposely gold-plated the underground option so that their preferred above ground option would be viewed by the Commission as the "superior alternative," just as they did when they presented the ballooned-out, alternate route.
- 89) Due to the Applicants' failing to present sufficient evidence with respect to the underground option, RETA submits the proper approach for the Commission is to send the Applicants back to the drawing board to examine all the options more thoroughly and to present that evidence again before the Commission and before those directly and adversely impacted by the Project.
- 90) The fact that RETA was the party that had to educate the Applicants and AESO about the underground option is, in itself, a telling indication of: (1) the lack of knowledge about undergrounding by the Applicants and AESO; and (2) the Applicants' and AESO's continued unwillingness to pursue the underground option in good faith.
- 91) The Applicants and AESO attempted to turn the table of demonstrating that the underground option in the application was the responsibility of RETA. And with respect, we note that by some of the Commission's questions and comments, they might have been

⁴² Transcript page 521.

⁴³ Transcript page 3591.

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persuaded by this line of thinking, however, we would remind the Commission of the EUB's decision with respect to the role of interveners:

The Board considers that the onus is on ATCO Electric to demonstrate that its applied for route is superior or stands out as the preferred route, given the various competing factors, as compared to other potential routes. **The onus is not on interveners to clearly demonstrate a superior alternative.**⁴⁴ [emphasis added]

- 92) RETA fulfilled its role as intervener. It is the Applicants who failed in its role to present "evidence on record relating to the other potential routes [and technical options are] not sufficient for the Board to assess whether or not the various potential routes are even 'pretty much the same.'"⁴⁵ As a result, the Application should be denied.

iii. Failure to Consult

- 93) As stated earlier, this Application is for the largest transmission lines Alberta has ever seen, and likely will ever see. Furthermore, the Applicants preferred route runs "adjacent to densely populated areas."⁴⁶ Based on those two facts, one would expect that the consultation program would undoubtedly be a large undertaking. However, it is not the size of the consultation program that the Commission must assess, but the quality of the consultation program.

- 94) RETA submits that the Applicants consultation program failed in many respect, including, but not limited to the following:

- a. The Applicants failed under AUC Rule 007;
- b. The Applicants used one way communication techniques;
- c. Proposing a last minute buy-out option;
- d. "Stakeholder requested" underground option; and
- e. The Applicants and AESO predetermined their preferred route.

a. The Applicants failed under AUC Rule 007

- 95) The rules in respect of consultation are set out in Appendix A – Participant Involvement Program - of AUC Rule 007 (Applications for Power Plants, Substations, Transmission Lines, and Industrial System Designations (March, 2009)). Below, portions of Appendix A are produced to highlight the many failings by the Applicant in their consultation process:

A participant involvement program must include the requirements set out in this Appendix. A participant involvement program must be conducted *prior to* submitting an electric facility application...

⁴⁴ EUB Decision 2007-037, page 3.

⁴⁵ EUB Decision 2007-037, page 3.

⁴⁶ Exhibit 335 (HTP Application), page 30, paragraph 136.

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The Commission requires you, as the proponent, to assume responsibilities for involving the public and **to be aware of circumstances or applications where your participant involvement program should exceed the requirements and recommendations set out in this Appendix.**⁴⁷ [emphasis added]

- 96) If we pause here for a moment, this is the largest transmission project Alberta has ever seen, and likely will ever see. There is absolutely no question that this is a circumstance where the Applicants ought not to have exceeded the requirements and recommendations set out in the participants involvement program.
- 97) AUC Rule 007 goes on to state:

Electric Facility Development: A Cooperative Venture

The Commission considers it paramount that **effective communication** takes place among industry, government, and the **public so that concerns may be raised, properly addressed, and if possible, resolved.** All persons whose rights may be directly and adversely affected by a proposed development must be informed of the application and have an opportunity to voice their concerns and to be heard.

Before You Submit an Application

“Participant involvement” is a term encompassing all aspects of public, local authority, and industry interactions and communications. It is recognized that other groups may also have a stake in electric facility developments.

The development and implementation of the participant involvement program must occur prior to the filing of an application with the Commission. This includes:

- i) the distribution of a project-specific information package,
- ii) **responding to questions and concerns, and**
- iii) **discussing options, alternatives, and mitigating measures.**

...

The applicant must make all reasonable attempts to contact persons, provide a written description of the project, discuss the project, and address any questions and concerns.⁴⁸ [emphasis added]

- 98) If we use the Tan family as an example of the Applicants failing in terms of providing the most basic information about the Project, there is no question that the Applicants failed to comply with AUC Rule 007 in this regard.
- 99) As stated by Mrs. Tan at the Sherwood Park Community Session Meeting:

When two representatives from AltaLink came to my home, I asked them to look out of my kitchen window with me and tell me exactly the number of towers, the

⁴⁷ AUC Rule 007, page 39.

⁴⁸ AUC Rule 007, page 39.

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specific siting and the proximity of the transmission lines relative to the location of my house.

I requested that the information be given by referencing landmarks that are right on the TUC. It is imperative to me to know what I will actually see through my window, which look out directly to the TUC, and I'm sure this applies to many other residents who are living adjacent to the green belt.

I was extremely perturbed when these representatives of AltaLink were unable to tell me where the towers would be located or how many would be visible from my window. To this day, I have not been given an answer.⁴⁹

- 100) When the Applicants representatives attended at the Tan residence, Mrs. Tan asked the most basic question that any landowner can ask: Where are these towers going to be located relative my home? Yet, landowners were not afforded the courtesy of even that most basic information.
- 101) Furthermore, when the Applicants tried to provide further information to Mrs. Tan by a subsequent letter, they failed again.⁵⁰ Not only did they draw a line to the wrong home, but they never answered her original question about the distance between the transmission line to her home.
- 102) The Commission heard landowner after landowner expressing the same confusion and frustration about not knowing basic details about the Project, not due to their own ignorance, but because: (1) the Applicants did not provide that information; or (2) the Project details changed so many times.

Q...when HTP representatives came to your house and spoke to you, what did they tell you about the tower heights and locations of the towers relative to your home?

A. MS. HANINGTON: They were not able to tell me. I asked that question actually during the consultation sessions that were held either at I believe it was Millennium Place and at the hotel right close to it, and they told me, well, they didn't know where the towers were going to be going yet and they couldn't give me any type of sense of scale, like what would I be seeing out my back window or off of my deck.⁵¹

This is the fifth location of the line.

....

Q...You mentioned locations of the line had moved throughout the process. With respect to tower sizes what information were you provided relative to your home?

⁴⁹ Transcript pages 38-39.

⁵⁰ Exhibit number 1035.

⁵¹ Transcript page 3875.

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A. MR. MCCULLOUGH: Yeah, that varied. It's changed. I'm not -- to be honest, I'm still not entirely clear about the sizes.⁵²

- 103) Furthermore, if we juxtapose the landowner evidence of misinformation in this case to Mr. Allen's evidence about the misinformation during the consultation phase in his Ireland example, the similarities are evident:

At about three weeks into the hearing, though, based on a lot of questions that were asked that were brought up by some of the people objecting to the overhead line and preferring an underground cable, were complaining about inconsistencies in the information that had been provided in the application; and the case in particular was that the transmission company had published, in several publications, notification that the average tower heights were going to be between 32 and 37 metres high for this 400 kV line, which is about 50 percent of what they are over here. But in the cross-examination, it came out that more than 50 percent of them were going to be over 40 metres high. So this was considered to be, you know, a rather embarrassing mistake, and as a consequence, they decided that they would withdraw that application for the time being, so that's why that one hasn't gone ahead.⁵³

- 104) The difference is that in Ireland, because of their clear mistakes and misinformation about tower heights, the applicants withdrew their application. In this case, the Applicants changed tower heights and locations throughout the public consultation process (inevitably leaving landowners confused), yet they stood by their application.
- 105) The Commission cannot simply ignore the unchallenged evidence from landowners stating that basic project information was not provided to them. RETA submits that this Application ought to be denied for this reason.
- 106) This turns us to the next section of Appendix A of Rule 007:

If the scope of the project changes, such as a change to the surface location, the applicant must notify **all** persons included in the initial consultation program of the proposed change. If the project change results in the inclusion of new participants, the applicant must meet all participant involvement program requirements in regard to the new participants as well.⁵⁴ [emphasis added]

- 107) The scope of this Project changed so many times throughout the consultation process that all those changes are difficult to list. However, one of the most notable changes to the Application was the late inclusion of the Ellerslie substation.

⁵² Transcript pages 3911-3912.

⁵³ Transcript page 3770.

⁵⁴ AUC Rule 007, page 40.

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- 108) There is but one application number that was subject to this hearing, that being AUC Application No. 1606609. Yet, in terms of the consultation process, the Applicants clearly states that:

Commencing in March 2007, the Heartland Team initiated a comprehensive participant involvement program for the 500 kV Line Project in accordance with Appendix A of Rule 007: *Applications for Power Plants, Substations, Transmission Lines, and Industrial System Designations*.⁵⁵

- 109) That paragraph takes readers to footnote number 11, which reads:

As discussed in this Application, there are two other AltaLink projects that are closely related to the proposed Heartland Transmission Line – the Eilerslie 89S Substation Expansion Project (See Part 1, Section 4.2) and the Heartland 12S Substation/240 kV Line Project.⁵⁶

- 110) There is no question that the Eilerslie substation is part of the Application, and the Applicants have asked the Commission to approve the Eilerslie substation as part of this Application. However, consultation on this aspect of the Application did not commence until January 7, 2010,⁵⁷ almost 3 full years after the consultation efforts on the Application commenced.

- 111) Another clear example of the Applicants misunderstanding of AUC Rule 007 and consequent failing in this regard was apparent in the Applicants response to Commissioner Beattie question about how the April 26 Amendment:

A. MR. BRANDELL: Taken literally, this might suggest that we should go back and renotify everybody, including on the east and the west route.

A. MR. WATSON: It says affected by the change.

A. MR. BRANDELL: I guess that's the -- so maybe there isn't any --

A. MR. WATSON: There you go. No, go ahead.

A. MR. BRANDELL: Obviously we didn't go out and notify everybody involved in the project, but certainly we notified and consulted with individuals who we felt would be directly impacted by the change.

- 112) Mr. Brandell, the lead for the Applicants consultation program, conceded to Mr. Watson's incorrect interpretation of the rule. AUC Rule 007 clearly states that "all" persons must be notified, not only those that are directly affected, as Mr. Watson suggested.

⁵⁵ Exhibit 335, paragraph 308.

⁵⁶ Exhibit 335, paragraph 308.

⁵⁷ Transcript page 1007.

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- 113) In fact with respect to the April 26, 2011, amendment the evidence shows that not all stakeholders were even afforded the basic courtesy of a personal discussion by the time the hearing came to a close.⁵⁸
- 114) The Applicants clearly failed under AUC Rule 007 in terms of consulting stakeholders when it came to the change of scope of the Project.
- 115) Turning to the next section of AUC Rule 007, which relates to “Planning a Participant Involvement Program” and determining who to include the rule reads in part as follows:

For transmission line and substation developments, the applicant must provide public notification to all occupants, residents, and landowners within 800 m measured from the edge of the proposed right of way for the transmission line and/or the proposed substation site boundary. The applicant must provide personal consultation to all occupants, residents, and landowners on or directly adjacent to the proposed right of way for the transmission line and/or proposed substation site location.

In an urban setting, the applicant must provide public **notification and personal consultation** to all occupants, residents, and landowners within the first row of houses facing the proposed development and hold at least one information session or public open house meeting in communities that would be traversed by the proposed development.⁵⁹ [emphasis added]

- 116) In terms of who they included, the Applicants stated they expanded the 800 meter radius (for notification) to 1,000 meters in all circumstances.⁶⁰ They may argue that they did so because they understood they were aware that Rule 007 states that applicants are to be “aware of circumstances or applications where your participant involvement program should exceed the requirements and recommendations set out in this Appendix.”
- 117) Given that these are the largest towers Alberta has ever seen, and likely will ever see, one would expect the Applicants would exceed the requirements of AUC Rule 007 because this Project would fall under those special circumstance criteria. However, Mr. Watson very clearly articulated to Commissioner Beattie that that was not the reason the notification zone was expanded. According to Mr. Watson, the only reason the Applicants expanded the notification zone was in case they “screwed up,” and needless to say, they did:

A. MR. WATSON: I would see it as falling into that, and this is a good opportunity because I was looking to bring it up somewhat in relation as I was listening to Bruce answer your questions to Ms. Michaud on why we go to the 1,000 metre versus the 800 metre.

⁵⁸ Transcript page 3368.

⁵⁹ AUC Rule 007, page 41.

⁶⁰ Transcript page 2891.

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It's specifically to deal with this kind of a change in that if you move 100 metres one way or another, you've still got a bit of a buffer so that you're not running out and having to restart your participant involvement program, you know, from steps way further back. That 1,000 metres still gives you a bit of a buffer for these 100-metre changes, and that's the reason why we've chosen to go to 1,000 as a business practice, if you will.⁶¹

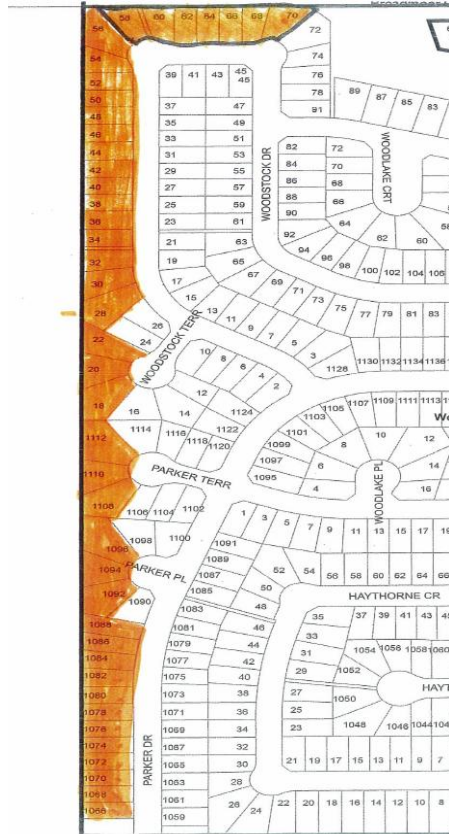
- 118) Mr. Watson cleared the record in terms of the Applicants' intent in extending the notification zone and assured the Commission that the reason was not because the Applicants realized that this Project warranted expanding the basic requirements of AUC Rule 007.
- 119) However, if we look once again at the AUC Rule 007 requirement for an urban setting, the notification and consultation requirements are meagerly restricted to the first row of houses. So the Applicants decided that the most reasonable approach would be to extend the notification zone in the urban setting from the first row of houses to 1,000 meters, but to leave the consultation zone to the first row of houses requirement.
- 120) Upon closer review of the Applicants consultation zone in an urban area RETA, questions the logic to their approach. Mr. Hoffmeyer in his evidence, highlighted the unfounded approach taken by the Applicants in his slides.⁶²
- 121) In his evidence, Mr. Hoffmeyer clearly demonstrated that the Applicants' definition of first row of homes changed from street to street.
- 122) RETA submits that the Applicants ought to have exceed the requirements and recommendations set out in Appendix A in respect of the consultation zone in urban areas to satisfy AUC Rule 007. RETA submits that in order to satisfy AUC Rule 007, the Applicants ought to have extended AUC Rule 007, at least as far as they did to the top row of homes in the Woodbrige Farms subdivision.⁶³

⁶¹ Transcript page 3365.

⁶² Exhibit number 1005.01.

⁶³ Exhibit number 1005.01.

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- 123) Given the magnitude of this Project, in order to satisfy AUC Rule 007 for this Project, RETA submits that at a minimum the Applicants ought to have consulted with all landowners south and east of the home identified as “70” in the above figure.
- 124) One would expect that given the unprecedented size of this project, the Applicants would strive for comprehensiveness in their consultation efforts. However, the Applicants failed in this regard as well.
- 125) There is no question in light of the evidence above that the Applicants failed under the participant involvement requirements of AUC Rule 007 to consult with landowners.

b. One Way Consultation

- 126) In order to “consult” there must be some type of two-way discussion and this just was not the case. Dr. Dennis stated it as follows:

it's the basic lack of two-way communication, which I think is the more fundamental error, which has resulted in conflict, stress.

There was a community meeting on April 20th, and I've got some phrases that were used in that meeting as well as some phrases that were used tonight. But I'll just go back to the April 20th meeting. And I'm quoting from the hearing, and the

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references are page and line numbered in my direct evidence. That the consultation was a process -- "was a giant farce." And, again, this is not my view. This is what I heard. "It's not consulting but insulting."

One resident said, "If I found studies that contradicted theirs," meaning the Heartland team, "then mine were wrong, or I was told mine were wrong and that mine must have been based on false data. He wouldn't listen to what I had to say."

"A feeling of disenfranchisement and an overpowering helplessness." "Elderly neighbours who are so stressed, and even with medications their doctors are asking them to disengage the process." "The Heartland transmission project debate has been a source of frustration beyond description." "Our voice is not being heard," "stress and anxiety," "tears in our eyes and despair," "government is not listening," "anger and fear." And different people cope with this kind of stress in different ways.

...

Bottom line a lot of worry, a lot of fear, a lot of anger, a lot of stress, and some of it's to do with health and some of it's to do with other applications. But my point is that the communication process from the start started with quite an extreme view, and I think RETA has adopted an alternate view to -- in an attempt to balance the scientific argument.⁶⁴

127) Dr. Dennis conclusion in terms of their consultation process was that:

...The adopted one-way communication evident in the HTP failed to effectively engage and educate the public, and has failed to reduce frustration and stress within the general public as evidenced by the views expressed by residents during this Hearing.⁶⁵

128) Accordingly, RETA submits that because of the Applicants' failure, the Commission ought to send the Applicants back to the drawing board until they have developed a two-way communication process that minimizes stress and conflict amongst neighbors, communities and municipalities.

c. Last Minute New and Improved Buy-Out Option

129) In terms of buying landowners out, the Commission heard that many landowners almost begged to be bought-out throughout the consultation process. In response, the Applicants maintained that the buy-out policy that was developed for smaller projects would suffice and determined that it would be in the public interest to instead spend millions of dollars jogging the line here and there to avoid buy-outs.

130) After weeks of cross examination by intervener counsel, the Applicants continued to contend that their existing policy was the appropriate policy in this unique circumstance.

⁶⁴ Transcript pages 3420-3422.

⁶⁵ Exhibit number 647.06, page 3.

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It was not until the Chair, on the fourth week of the hearing asked the Applicants whether, given that this project is the largest Alberta has ever seen or will ever see, that the Applicants turn their minds to amending their buy-out policy.

- 131) It was not until May 27, 2011, and weeks after the hearing was closed did the Applicants amend their buy-out policy. However, this late stage change in policy is not without further uncertainty for the fate of some landowners as was evidenced in the responses filed by the Applicants in response to interveners' information requests.⁶⁶
- 132) RETA submits that rather than complimenting the Applicants on amending their buy-out policy, the Applicants ought to be admonished for not doing so during the appropriate time to do so. This policy ought to have been presented when the Applicants were consulting with landowners, at the kitchen table, not the Commission table.
- 133) In RETA's submission, the Applicants' change of policy was "too little too late." It appears as a sign of desperation.

d. "Stakeholder Requested" Underground Option

- 134) The Applicants filed the Application with four main options, with too many line amendment and jogs to count. According to Mr. Watson, the Applicants ranked those options as follows:

A. MR. WATSON: So again, I view this as a lot of different factors, not simply the monopole or the underground. And I believe the east TUC is the least-impact route from tip to tail, all things considered. And the taking of private land being one, but environmental another. So again, I would say that the preferred route remains the preferred route regardless of what technology is applied.⁶⁷

- 135) In light of Mr. Watson's comment below, RETA questions whether the Applicants understood the extent of stakeholder support for the underground option:

...**we heard the human cry for underground** and tried to work with that so that we weren't, you know, going outside -- outside of what we were comfortable with building, so we've got over that hurdle. Yes, it's more costly, but in that regard we put that plainly in front of the AUC.⁶⁸ [emphasis added]

- 136) Mr. Brandell also commented on stakeholders unequivocal support for the underground option:

The underground option I think is a very good example of where we got a lot of input from stakeholders who suggested that **the underground option was something that they would look on very favourably**. As a result of that we

⁶⁶ Exhibit numbers 1221-1227.

⁶⁷ Transcript page 3026.

⁶⁸ Transcript page 2951.

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completed a fully developed underground option and provided it in our application.⁶⁹ [emphasis added]

137) RETA questions whether the Applicants really listened to stakeholder feedback when the underground option dominated the voice of the Applicants' feedback.

138) Even well into the hearing, the question was not whether it should be moved a little to the west or not; rather whether or not to bury the line:

Have you received any phone calls or emails with respect to [the April 26] amendment?

A. MR. BRANDELL: Not that I'm aware of. Sorry, just a moment. I'll correct that statement. We have received a number of emails. **The general theme is that despite the fact we're moving it further away from them, their preference is still to go underground.**⁷⁰ [emphasis added]

139) This frustration was described by Ms. Tan as follows:

This "realignment" makes it evident that AltaLink and EPCOR have either not heard stakeholders' views at all, or are acting unconscionably, as stakeholders have made it clear that if transmission lines must be built, that this should be done in a way that minimizes the impact on all stakeholders. A slight shift to the right or left is not acceptable, as we've said repeatedly.

This makes me question whether AltaLink and EPCOR ever listened, or even had any intention of listening to stakeholder concerns.⁷¹

140) Notwithstanding three years of "consultation" and the strong preference for the underground option, RETA questions whether the Applicants truly listened to stakeholder feedback and whether they really supported the underground option.

e. The Applicants and AESO predetermined their Preferred Route.

141) In September of 2008 the Applicants distributed their first communication ever to stakeholders about this Project and informed those individuals that on the one hand:

The two TFOs involved in the Heartland Transmission Projects are AltaLink and EPCOR. These two companies are partnering on this project as the proposed transmission line may cross the operating territories of AltaLink and EPCOR. Once the AESO determines the need for a transmission line or directs the TFO to submit a facility application to the AUC, this application typically indicates preferred and alternate routes along with rejected routes.⁷²

⁶⁹ Transcript page 2834.

⁷⁰ Transcript pages 3062-3063.

⁷¹ Transcript pages 3903-3904.

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142) In the same correspondence they stated:

The AESO has reviewed various options to transport power from the Keephills Wabamun area through technical and cost reviews and a series of stakeholder consultation activities, and the AESO has narrowed down the potential option to two: A new double-circuit 500 240 kV transmission line which will initially operate at 240 located either in the transportation and utility corridor or east of Edmonton from the existing Ellerslie substation in south Edmonton to the existing substation in the Heartland region. A new double-circuit 500 kV line from the existing transmission line called 1202 L located either in the TUC or the west of Edmonton to a new substation located in the Heartland region.⁷³ [emphasis added]

143) The routing in the Application did not come to anyone's surprise, when after three years of "routing analysis" and "consultation," the Applicants filed the Application with one route located in the "TUC [and] the west of Edmonton."

144) This message was communicated directly to Mr. Johnson by AltaLink employee Mark Johns:

In one of the first meetings we had with AltaLink and EPCOR, one of the senior project engineers, Mark Johns of AltaLink, stated that the route along the East TUC would be chosen and submitted to the AUC even though they were evaluating all four routes for suitability.⁷⁴

145) Mr. Bradley was also notified of this early routing decision by Mr. Johns, of AltaLink, and Ms. Malloy of EPCOR was also in attendance at that meeting:

We were informed at that meeting by Mark Johns that from the outset of the planning of the project the Sherwood Park greenbelt was the preferred route. The manager of community relations for EPCOR at the time, Mary Malloy, was in charge of the meeting that night...

We had a follow-up to that meeting in the basement of the Ramada Hotel in Sherwood Park where Mark Johns again was present and assured us that given the preliminary comparisons of the possible routes they were looking at the Sherwood Park greenbelt easily won out over all others and would be presented if not as the preferred route as one of the two preferred routes that would be put forward. This was in February 2009, almost a whole year before the routing selections were finalized. And, as a matter of fact, I think that was the last time I remember seeing Mark Johns.⁷⁵

146) This evidence was not challenged.

⁷² Transcript pages 921-922.

⁷³ Transcript pages 922-923.

⁷⁴ Exhibit number 654.01 page 5.

⁷⁵ Transcript pages 4850-4851.

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- 147) Mr. Johnson and Mr. Bradley were not the only ones privy to this information, this was exactly what the Applicants were communicating to many other affected landowners – including Mr. Kozak and Mrs. Murray – the preferred route is the East greenbelt line and the West line was just added for the Commission, right up to the time of the hearing.
- 148) The amount of stakeholder evidence in this regard cannot be ignored by the Commission. Mr. Foley’s testimony where he described the Applicants routing efforts together with the consultation process ad nauseam must be questioned when intervenor after intervenor presented evidence contradictory to that of Mr. Hudson about what the Applicants representatives were communicating to intervenors . This consistent intervenor testimony remains unchallenged on the record.
- 149) The Applicants failed to consult. They did not comply to the requirements of AUC Rule 007, their communication was one-way, they did not listen, which caused an inordinate amount of stress, and the decisions they made along the way caused more confusion then clarity. Therefore, RETA submits that the Commission has no choice but to deny the Application on the basis of these failures.

iv. Need

- 150) While the pure need question is beyond the jurisdiction of this forum, the Commission under the public interest mandate must consider the social and economic consequences of approving the Application.
- 151) RETA submits that in order to do this, the Commission must not restrict itself to simply a determination of which route or technological option is more expensive than the other, but rather it must examine the overall impact of this Project on Albertans.
- 152) The Commission heard many intervenors who questioned the need for the Project and much evidence was filed in respect of the financial implications. This goes to whether the Project should be approved, but it also goes to its timing and whether the phased approached provided through undergrounding is preferable.

B. Conditions to be applied in the Event of Approval

- 153) Should the Commission determine there is sufficient evidence before it to decide on an appropriate route and technology, RETA submits that the 500 kV transmission line should be buried in proximity to homes, schools, hospitals, daycares and environmentally sensitive areas. The following are the detailed reasons for this recommendation.

i. Partial Undergrounding is Technically Feasible

- 154) There is no disagreement among the participants in this hearing about whether the underground option is technically feasible. Mr. Watson was unequivocal in his answer:

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Q. Okay. And, similarly, if the Commission says you go through the underground - through the east TUC route and you have to do it underground, you'll do it underground? It's technically feasible, all the rest of it?

A. MR. WATSON: Absolutely. We're prepared to build it underground. It's technically feasible. We have been clear in our submission that it is something the AUC can approve if they feel it's the right thing to be doing, and we'll build it.

... if I could just add one more thing to the undergrounding. We brought forward this option as a **fully developed and approvable option** for this Commission to consider. And that will be their task to do. So, you know, **we have gone to length to ensure that it is, in fact, technically feasible**. And we have put information in front of the Commission here that makes it approvable so that -- so that the decision can be made.⁷⁶ [emphasis added]

155) Mr. Gregory for Cable Consulting International confirmed their initial findings at the hearing as follows:

Our February 2010 recommendation remains unchanged. The 500 kV underground cable system is technically feasible for the Heartland project, subject to the validation testing recommended in the study.⁷⁷

156) In terms of technical feasibility of an underground option, the evidence is clear. The only question remains is whether the Commission will condition the Applicants to do so. For the following reasons, the Commission's answer should be as unequivocal as Mr. Watson's.

ii. Cost of Undergrounding

157) As stated above, the Applicants would prefer undergrounding but for the costs. However, RETA submits they have erred in two respects in their costs analysis:

- a. The Applicants have not considered all the true costs; and
- b. The Applicants have not optimized the underground option so the purported costs of this option are overstated.

158) Before we delve into these failings on the Applicants cost assessment, we would like to remind the Commission about what Albertans said about paying extra in order to bury these transmission lines.

159) RETA retained Leger Marketing to complete an independent survey to shed some light on the thoughts of a random sample of Albertans on this issue.⁷⁸ The results dated November 2, 2009, showed:

⁷⁶ Transcript pages 525 and 899-900.

⁷⁷ Transcript pages 5188-5189.

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Two-thirds (68%) of Albertans are willing to pay something on their monthly electricity bill to have power lines buried when they run close to people's home or schools.

On average, Albertans are willing to pay the following on their monthly power bill to have power lines buried:

\$3.55 when they run close to homes or schools

\$4.02 when they run close to their own home or child's school.⁷⁹

- 160) The City of Edmonton retained Angus Reid to complete a similar survey for residents of the City of Edmonton. The results of the survey were very similar:

Two-in-three believe that even if it costs more, the lines should be buried where they are close to residences.⁸⁰

- 161) These results were not challenged by the Applicant, nor did the Applicant commission its own study to counter what Albertans believe is in their best interest. RETA submits that the Commission ought to read into the absence of views from the Applicants and recognize that the views presented by the Applicants were their own.

- 162) The best and only evidence, of "the public interest" view on the cost of undergrounding was filed by RETA and the City of Edmonton.

- 163) However, indirectly and likely unintentionally, the Applicants also filed evidence that demonstrated that clear message from stakeholders was to have the lines buried. For example, the only feedback received in response to their April 24, 2011, amendment was to bury the line, stakeholder requested option, etc.⁸¹

- 164) The Commission is being asked to make a decision in the public interest of Alberta, and the view of Albertans is clear: two thirds of Albertans accept the increased cost of undergrounding. Thus, the question turns to what the actual cost to Albertan's will be to have a portion of this Project buried.

- 165) The Applicants stated in the Application that:

...for every \$100 million added to a transmission project's cost, the average monthly bill for each resident in Alberta would increase by approximately 10 cents.⁸²

⁷⁸ Exhibit number 645.03, page 3.

⁷⁹ Exhibit number 645.03, page 13.

⁸⁰ Exhibit number 0620.02, page 5.

⁸¹ Transcript pages 3062-3063.

⁸² Exhibit number 337, page 169 (pdf page 199), Table 6-1.

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- 166) In response to AUC Information Request 50(a), the assumptions and calculation that corresponded to the analysis that 10 cents would be equivalent to \$100 million, the Applicants stated:

The calculations are based on the AESO Fact Sheet that states "...residential customers can expect an increase of about \$1 per month for every \$1 billion spent..." on transmission system reinforcement projects. The \$100 million example (10% of \$1 billion) reflects the same proportionate cost impact on the average residential consumer bill of 10 cents (10% of one dollar).⁸³

- 167) At the most expensive of the Applicants' predictions to have the line buried, Albertans would pay \$0.42 per month (over the overhead costs). Based on RETA's figures the least expensive that the underground option would affect Alberta ratepayers would be under \$0.10 per month. These are clearly costs that all Albertans are willing to accommodate, as evidenced in the Leger Marketing survey.
- 168) In any event, the actual increase to a *monthly* household power bill will be far less than what many pay for one coffee.
- 169) The exasperation of this extended debate was summed up by Steven Petasky at the Sherwood Park Community Meeting as follows:

So why do we do this? I mean, we're trying to ...bring great people here, but we're deterring them with these things.

We are probably one of the most prosperous economies in the world. I think we can all agree on that. So why we're having the conversation is beyond me.

We have the money. We're very, very wealthy communities. We should be able to make the investment. It's pennies in the big picture.

As a result, our province invests billions of dollars back into improving the quality of life for our residences. We have decorative bridges at hundred million dollars apiece. We do public transit to help get us to work 60 seconds quicker in the morning; urban parks for places for our families to go out on the weekends.

How are the lines different? We build these things to improve our quality of life. It's very, very clear, no matter what comes of the whole thing. If we bury the lines, it will improve our quality of life. If they go above ground, it will deteriorate our quality of life, very very simple.⁸⁴

- 170) The Applicants squandered millions of dollars objecting to a mitigation strategy that will cost its ratepayers pennies.

⁸³ Exhibit number 460.02, pdf page 295.

⁸⁴ Sherwood Park Community Meeting Transcript page 95.

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171) It is important to note that, with respect to the costs of undergrounding, it is primarily the capital costs that have been the focus of attention and discussion during this hearing. Although RETA submits that the capital costs may be slightly higher for underground than for above ground lines, if the capital, maintenance and transmission loss costs over the life of a line are combined, underground lines are less expensive than above ground lines. The Commission should consider not only the **capital costs** when comparing underground and overhead lines, but also the much **longer-term maintenance and transmission loss costs** over the 60-year life of the line.⁸⁵

a. The Applicants have not considered all the true costs

172) The evidence of the Applicants, and particularly Mr. Watson, is that no formal analysis of the various impacts of overhead versus underground was done.⁸⁶

173) For example, the Applicants did not calculate private property value losses or consider those losses in their analysis. The Applicants did not do any formal analysis of health impacts costs due to EMF, corona effect, stress or anything else. Rather, they take the position that health is not an issue.

174) Since the Applicants glibly assessed the safety risk with respect to pipelines at zero, this obviously was not a factor in their analysis. And no monetary value has been placed on impacts to birds and wetlands. Rather, Mr. Watson has made the assessment of preferred versus non-preferred options on the basis of value judgement. With all due respect, the values of the Applicants and the values of Albertans are not synonymous. This is borne out by the Leger Marketing survey reviewed earlier.

b. The Applicants have not optimized the underground option so the purported costs of this option are overstated

175) RETA provided the Commission with two sets of witnesses to provide evidence of the inflated nature of the Applicants' underground option costs estimates.

176) RETA retained Mr. Simon Allen, a costs consultant⁸⁷ with considerable experience in the costing of underground cabling. RETA also relied on Dr. Rittinghaus' cable costs (which

⁸⁵ Transcript page 4934.

⁸⁶ Transcript pages 570-572.

⁸⁷ Mr. Allen's CV states that he provides consulting services for Europacable. Under cross-examination Mr. Allen stated that **one** of Europacable's objectives is to promote **partial** undergrounding. He stated that there were not **many** manufacturers which produce both above ground and underground cable, but at no time did Mr. Allen state that Europacable only produces underground cables (Transcript page 3781).

Thomas Neesan, Secretary-General of Europacable, further clarified Europacable's role and objectives as follows:

Overhead lines were, are and will be a main means of transport of electricity. We have no information on what percentage of the overhead lines on a worldwide basis is manufactured by Europacable members and/or the members of ICF (International Cablemakers Federation), my guess would be 80%+. Our industry is not opposed to overhead lines. It's our business." (Exhibit number 1101).

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turned out to be highly accurate) as well as the assistance of other engineers in reviewing the design choices made by the Applicants. Mr. Allen further provided alternative costs based on European experiences with various cabling projects. This approach was taken because the Applicants have not provided any detailed breakdown of their costs analysis.⁸⁸

- 177) In respect of the European cost assessments utilized by Mr. Allen, the Commission must recognize that those costs were estimates presented by utility companies proposing to construct a transmission line, not dissimilar to the Applicants presenting their cost estimates in this case. However, the fundamental difference is that applicants in the European cases are more experienced with underground cable costs than the Applicants or their mother company, SNC Lavalin.
- 178) RETA submits that the evidence of Mr. Allen on costs is the most detailed and best evidence before the Commission and therefore ought to carry more weight than the predictions made by the Applicants.
- 179) The unreasonableness of their cost predictions is evidenced in their cable cost predictions versus the actual costs received from the tender bid. The cost difference in that case was \$27.3 Million (or 19%). This is a significant difference in itself and only represents one of the 19 line items used in the underground cost assessment.⁸⁹
- 180) RETA also notes that after a little bit of due diligence the Applicants found that further potential savings in respect of project scheduling and AFUDC. And upon cross-examination admitted a further 13.9 Million could be saved through the use of three-phased shunt reactors.⁹⁰
- 181) RETA submits that the Applicants' other underground cost predictions cannot be relied on by the Commission when their cable cost prediction was so significantly overstated.
- 182) The only detailed underground costs analysis provided to the Commission were those provided by RETA. Mr. Allen detailed a number of areas in which savings could be made including, route optimization to reduce the number of obstacles and therefore, the amount of horizontal drilling, reduced shoring, direct burial, a tighter construction schedule utilizing more crews, and possibly through examination of other design options such as a four cable system.⁹¹
- 183) He concluded that "although the Applicants have designed an underground cable route which is technically feasible and robust, the costs are significantly higher than other projects examined, even allowing for the impact of cold weather conditions."⁹²

⁸⁸ Transcript page 3625.

⁸⁹ Exhibit 838.02, page 90 (pdf page 91), Table 9.

⁹⁰ Transcript pages 3644.

⁹¹ Exhibit number 647.03 and Transcript pages 3624-3638.

⁹² Transcript page 3638.

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- 184) Mr. Allen’s data was then utilized by Mr. Hails and Mr. Klaiber of MNP. MNP reviewed the numerical integrity of the applicants’ cost and economic information and presented alternative project costs based on different cost assumptions – primarily those of Mr. Allen, and Dr. Rittinghaus, combined with elements of the Application.
- 185) MNP found that while the Applicants’ numerical model was, by and large sound, the simplistic AFUDC formula used could result in large cost swings dependent upon the particular in service date utilized.⁹³
- 186) By simply utilizing Dr. Rittinghaus’ costs and Mr. Allen’s revised cost projections, MNP was able to demonstrate a reduction of \$159.8 Million.⁹⁴ They noted the Applicants’ admission of potential savings of \$27.3 Million in transmission line costs as well as \$13.9 Million if three phase shunt reactors could be used.⁹⁵
- 187) By utilizing the revised design options in Mr. Allen’s report, MNP demonstrated potential savings of \$243.2 Million.⁹⁶ In addition, if construction times could be altered, as suggested by Mr. Allen, MNP calculated savings of up to \$115.8 Million of which the Applicants subsequently admitted to realizing \$70.6 Million.⁹⁷
- 188) MNP stated that by utilizing different but reasonable escalation rates, \$53.0 Million could be saved.⁹⁸ They noted that the Applicants utilized a 15% contingency rate over the entire route that included the underground option. If the Applicant had used a 10% rate, as they did for the overhead option, project costs could be reduced by \$40.1 Million.⁹⁹
- 189) Finally, through the use of accounting options accepted by International Financial Reporting Standards, the Applicants could potentially save Albertans \$49.1 Million.¹⁰⁰
- 190) MNP demonstrated that through the incorporation of viable cost inputs the project option including the undergrounding could be costed at \$736.5 Million as opposed to over a billion, and that utilizing the alternate design would result in an overall cost of \$668.1 Million.¹⁰¹
- 191) We understand that a particular point of contention is the four cable phased system proposed by RETA. RETA submits that this option meets AESO’s functional specifications and the N-1 reliability criteria. The reasons are as follows:
- a. Schedule A of Section 41.4 of the *Electric Utility Act*, SA 2003, c E-5.1, requires AESO to set timelines and benchmarks for other CTI projects but not the Heartland

⁹³ Transcript page 3641.

⁹⁴ Transcript page 3644.

⁹⁵ Transcript page 3644.

⁹⁶ Transcript page 3645.

⁹⁷ Transcript page 3645.

⁹⁸ Transcript page 3466.

⁹⁹ Transcript page 3648.

¹⁰⁰ Transcript page 3648.

¹⁰¹ Transcript page 3649.

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project.¹⁰² One can safely assume, therefore, that so long as the N-1 criteria can be met, the project elements can be phased. One can also view the first phase of the four cable system as providing the equivalence of a dual circuit. Assuming appropriate switching devices are installed, then during a fault circumstance the fourth cable takes over. During the repair of the faulty line, the circuit must be de-energized but this is a Category C event and can be accommodated for through planned load shedding.¹⁰³

- b. The Applicant and AESO state that true dual circuits are required from the outset to provide N-1 reliability but this is not so. The N-1 criteria is a system criteria.¹⁰⁴ In other words, it is not the circuit but the system, Alberta's system, that must be able to operate so that "there are no thermal limits, voltage limits, the system is stable, no cascading and there's no loss of demand or firm transfers" during a single fault situation.¹⁰⁵ It is important to recognize that this is a system standard, not a line standard. If it were otherwise, every circuit would have to be a double circuit and we know this is not the case.

192) AESO and Dr. Gregory clearly disagree with this position. RETA was unable to engage an expert such as Dr. Gregory and cannot counter with authority his assertions. However, the point should not be lost that there are alternatives to the Applicants' proposal which cost less and are capable of providing Alberta with an affordable cost effective underground high voltage system.

193) Should the Commission accept AESO's view, RETA submits it should nevertheless carefully examine those measures that can be employed to reduce underground cost such as those as RETA has outlined in its evidence.

iii. Health

194) RETA submits that in terms of the potential health effects of this project, this is another area where the Applicants' attempted to minimize the negative effects of these monster, larger-than-ever-seen-before in Alberta, transmission lines and towers.

195) Dr. Bailey was introduced to the Commission as the "author of the EMF research report."¹⁰⁶ Dr. Bailey, a neuropsychologist, a discipline that specializes on the psychology of the brain and its connections, reviewed the research papers on EMF. Dr. Bailey did not conduct any of the studies himself, nor did he publish any of the papers himself. Dr. Bailey simply read other peoples work and commented on it.

196) Keeping in mind the lack of credentials on the part of Dr. Bailey on this topic, we turn to his evidence. In response to whether health organizations have been able to prove that there is no health risk from EMF, Dr. Bailey states in part:

¹⁰² Transcript pages 3478-3479

¹⁰³ Transcript page 3492

¹⁰⁴ Exhibit number 1019 and transcript pages 3487-3489.

¹⁰⁵ Transcript page 3491.

¹⁰⁶ Transcript page 45.

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But science is not in the position of proving the absence of something, in this case proving the absence of a health effect of EMF.¹⁰⁷

197) However, this is exactly what Exponent report attempted to suggest to the Commission:

In summary, research published since the time of the WHO review **did not** provide strong evidence to alter the conclusions of the WHO review. Thus, the conclusions of national and international health agencies that there is **not a scientific basis to project any adverse health effects** as a result of ELF EMF found in ordinary environments, including those near transmission lines, is still appropriate.¹⁰⁸ [emphasis added]

198) Dr. Bailey cannot have it both ways. In oral evidence, Dr. Bailey stated very clearly that science is not in the position of proving the absence of health effects in relation to EMF, but states exactly that in his report.

199) What the Commission must take note of is, although he does try to convince readers that there is no basis for health effects, the Exponent report does go on to say:

Scientific research and the publication of the results of that research is an ongoing process...

The absence of a clear adverse effect of ELF EMF after continued testing increases the certainty that there is not an adverse effect, or that any possible risk associated with exposure is small. The nature of scientific investigation dictates **that no review panel can ever completely rule out the possibility that ELF EMF might have some adverse effect**. While recent scientific research does reflect some advancement in knowledge, **the issues identified in the WHO review have yet to be sufficiently clarified**.¹⁰⁹ [emphasis added]

200) In other words, the consensus is: At this time health agencies are not sure, but there is a possibility of a risk.

201) Dr. Bailey acknowledged there is a possibility of a risk in his report, but under cross examination when asked about that relationship, Dr. Bailey decided that it would be more appropriate to present an analogy about whether Winston Churchill is alive and well. After much teeth pulling, Dr. Bailey admitted that some of the research studies completed by the Bonneville Health Authority show an adverse health impact:

Q. Okay. So they characterized it as 158 out of 323.

¹⁰⁷ Transcript page 867.

¹⁰⁸ Exhibit number 246, pdf page 63.

¹⁰⁹ Exhibit number 246, pdf pages 63-64.

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Dr. Bailey, out of the 323 different health studies, you said you reviewed the report a little, are there any that showed some type of adverse health impact?

A. DR. BAILEY: Are there some studies cited in the report that --

Q. Even one.

A. DR. BAILEY: -- that suggest that?

Q. Yes.

A. DR. BAILEY: Of course.¹¹⁰

202) We ask the Commission to consider Dr. Bailey's evasiveness in acknowledging an adverse health impact caused by EMF when weighing Dr. Bailey's evidence, and whether such a response compromises his evidence as an "independent" expert. RETA submits that the lack of frank answers in respect of one of the most serious issues raised by stakeholders ought to concern the Commission as much concern as it concerns RETA.

203) Furthermore, when one compares Dr. Bailey's evidence to that of Dr. Blank, a holder of two PhD's and was qualified at the hearing as "an expert on the effects of EMF on cellular processes and the consequences to human health,"¹¹¹ with extensive experience in the physical chemistry and biology of human cellular processes,¹¹² RETA submits that Dr. Blank's evidence holds far more weight on this topic.

204) With respect to the evidence of whether there is a potential for adverse health effects, Dr. Blank's answer is unequivocal:

Experiments have shown that EMF can cause DNA strand breaks at exposure levels that are considered safe under FCC guidelines in the United States. At the same time epidemiology studies show an increased risk of cancers associated with exposure to EMF from power lines for both children, for example leukemia, and adults, for example Alzheimer's disease. The risk of Alzheimer's disease and senile dementia increases with the duration of EMF exposure.

Since we know that an accumulation of charges [sic, recte changes] or mutations in DNA is associated with cancers and degenerative diseases, there is good reason to believe that the elevated rates of cancers among persons living near power lines are probably linked to DNA damage caused by EMF.¹¹³

205) The question that remains is the degree of that risk and the extent of that adverse health effect, *not* whether that risk or health effect exist, as Dr. Bailey would like you to believe.

¹¹⁰ Transcript page 872.

¹¹¹ Transcript page 5295.

¹¹² Transcript pages 5290-5292.

¹¹³ Transcript pages 5311-5312.

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206) In terms of risks, Dr. Blank states that we live in a world of risks:

I realize that we live in a real world. And I think that you have to -- it would be good if there were no automobile accidents too, you know. The United States there were 40,000 fatalities a year, and a lot of people are maimed as a result of that. I do not advocate giving up automobiles. The thing is that one should recognize that you've got to have speed limits, you've got to have padded dashboards, you've got to prevent people from drinking while driving, you've got to prevent them from using cell phones while driving. I mean, there are all kinds of things one can do. And if people are aware of the fact that there is this danger, they'll do these things. **If they're not aware of the fact, if they stick their heads in the sand like the proverbial ostrich, they're not going to be tempted to do these things or even goaded into doing it.**

So my point of view is that there is a -- there is a potential danger with exposure to EMF.¹¹⁴ [emphasis added]

207) What Dr. Blank does is rather than continue to engage in a moot debate, discusses how such a risk can be balanced in a modern society. His advice is that one can minimize one's risk by minimizing one's exposure. And this is RETA's request of the Commission.

208) Dr. Blank notes that minimizing exposure to EMF is not a novel concept:

Communities have long known that the obvious way to lower the EMF exposure due to power lines is to locate cables far from population centers and especially schools and playgrounds where children are present for long periods of time.¹¹⁵

209) In their routing exercise, the Applicants seem to have forgotten this well known principle, and decided instead that the most appropriate option for these massive transmission lines is to go above ground, adjacent to very densely populated areas.

210) RETA submits that Dr. Blank's evidence ought to carry more weight with respect to health effects as a result of EMF exposure. When one compares the evidence presented by Dr. Blank as "an expert on the effects of EMF on cellular processes and the consequences to human health,"¹¹⁶ to that of Dr. Bailey's - a neuropsychologist who has advocated the same position for transmission companies including for TransAlta in 1988 (ERCB Decision 89-2), there is no question as to whose evidence should prevail.

211) If one compares the evidence of Dr. Bailey and Dr. Blank, their evidence is not as distinct as the Applicants would like the Commission to believe. Both doctors generally say: (1) science is an ongoing process; and (2) some degree of risk to human health as a result of EMF exposure does exist. What they do not agree on is the amount of the risk and the consequence of the risk.

¹¹⁴ Transcript page 5460.

¹¹⁵ Exhibit number 647.04 page 9.

¹¹⁶ Transcript page 5295.

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- 212) The Commission cannot ignore, when balancing the divergent views of these experts, what these two experts do agree on: science is uncertain and there is a risk. After this point, which expert is right in terms of the extent of the risk, science will one day be more certain. However, the Commission is tasked with making a decision at this time, in the public interest, on this evidence.
- 213) Furthermore, the Applicants relied heavily on the reports prepared by the WHO and Health Canada, however, the Commission simply cannot ignore the serious criticism raised about the reputation of those organizations:

The WHO has been criticized primarily for its connections with the pharmaceutical industry, but the former director of its EMF operation was funded by industry before, during, and after his tenure at WHO.¹¹⁷

...for example, I found out that smoking and cancer, the US Surgeon General in the United States said it was dangerous in 1964. I realize that Health Canada did not come out to say the same thing until the '90s. So, I mean, how do you evaluate an opinion put out by that organization in that case?¹¹⁸

- 214) Whether these organizations are presenting views in the public interest, which is the Commission's mandate, is clearly in dispute.
- 215) Dr. Blank's final exchange with Mr. Mousseau sums up the true nature and effect of this situation:

But I do know that underground lines are -- they do have a lower field. And if they're not only at the closest place, but if you take them over the course of where they're running, they do give lower magnetic fields except at the point where you're right on top of the line itself.

Q. The one we're dealing with, with people, as I think we have heard Strathcona County says, we're dealing with people at their homes, at their residences -- which are the same thing. It's late, sorry -- we're dealing with people in their homes. We're dealing with people at schools, in daycares, in their businesses.

And if functionally the magnetic field is going to be the same from either option, does it make sense to put the power line underground if your sole objective is to reduce magnetic field?

A. DR. BLANK: Suppose you're in a school room that is getting Wi-Fi as well.

Q. Okay.

¹¹⁷ Transcript page 5310.

¹¹⁸ Transcript page 5469.

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A. DR. BLANK: And you've got the added effect. Suppose you've got a television broadcast that's being -- that's going through the atmosphere at the same time. **You may just tip the balance. You know, it may be that you reach the point where you go over the threshold for a particular reaction.**

Q. Okay.

A. DR. BLANK: So that it may be the straw that breaks the camel's back kind of argument, but that's the one thing that do you really have to think about. This part looks safe, but it's only a single aspect of the whole story.

Q. Okay, sir. But let's go to the closest school then, which is Colchester Elementary School, which the building, the classroom -- let's assume that the classroom is 213 metres away. At 500 MVA with an overhead line, the magnetic field would be .1, and for the underground line, it would be less than .1. For the overhead option at 1,000 MVA, it would be 0.2, and for the underground option, it would be 0.1. I'm wondering if -- and this is the closest school -- whether the additional capital required to put it underground is warranted if the difference at the closest school is going to be .1 milligauss.

A. DR. BLANK: Well, you have your answer picked. I'm reluctant to --

Q. No, sir. I don't have my answers picked.

A. DR. BLANK: I'm -- the way the question is framed, it's obvious. Like, I was asked by Mr. Feldberg earlier, would you take the lower paying option? It's sort of an obvious thing. And what you're asking now is also kind of an obvious answer, that you pay -- you choose the cheaper option if they're equivalent. **But my point is that we don't know that they're equivalent, and you're never quite sure whether things will behave according to this simple number. You don't know what the systems are like.**¹¹⁹ [emphasis added]

- 216) In the public interest, the Commission cannot take the chance that this transmission line will be the straw that breaks the camel's back. The most effective mitigation measure must be employed in the public interest of the densely populated areas that the transmission line passes, and that mitigation option is to have the lines buried.
- 217) RETA acknowledges the Chairman's comments and concerns about why RETA had not retained an expert to present evidence about the EMF readings underground versus aboveground.
- 218) However, RETA was the only party to provide actual EMF readings at the hearing. The readings taken by RETA and the Applicants were accepted by Mr. Mildenberger as 13.7 mG directly above the buried 240 kV line at Victoria Composite High School and 63 mG

¹¹⁹ Transcript pages 5475-5477

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directly under the 240 kV line in south Edmonton.¹²⁰ In addition, Mr. Mildenberger acknowledged that these readings were typical.¹²¹

- 219) However, rather than asking AltaLink who run over 12,000 km of transmission lines in the Province, or EPCOR, another major transmission company in the Province, to provide actual readings to support their position, the Commission asked some landowners who are affected to present an expert to support their readings or by questioning where RETA took those measurements.
- 220) With respect to the Commission, RETA submits that it has satisfied its role as an intervener in this regard, and that it is the role of the Applicants to present actual contradictory readings to the Commission, but it did not. Instead the Applicants submitted modeled EMF readings which are averages, and are based on very questionable assumptions and criteria.
- 221) Furthermore, RETA submits that because the Applicants chose not to produce any actual EMF readings to contradict those presented in evidence, the Commission ought to draw a negative inference for not doing so.

iv. Stress

- 222) The Applicants attempted to argue the health impacts only in terms of EMF, but what the Applicants completely omitted in their assessment is the known negative health impacts of this project due to stress.
- 223) If the Applicants wish to continue the debate of whether this Project will cause cancer as a result of the EMF impacts, or will decrease property values, they can do so, but the reality is that the stress of this project has undeniably been confirmed by Mr. Watson:

No, I gathered that's where you're going, and I concede and acknowledge that it is stressful for all involved.

... It was a context of this project and more as a human aspect just, you know, intuitively I can appreciate that it's bloody stressful when you're involved in a project like this.

- 224) The following negative health effects as a result of stress were confirmed:
- a. Cancer
 - b. Heart disease
 - c. Bowel diseases
 - d. Mental illness
 - e. Impaired judgment
 - f. Insomnia

¹²⁰ Transcript pages 839-840.

¹²¹ Transcript page 840.

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g. Biochemical changes in the body affecting the immune system.¹²²

225) The stress impacts of the one-way communication system employed by the Applications were described in detail above. However, we note that the stress of this project on stakeholders was so apparent throughout the hearing that that the Chairman made the following comment:

But, you know, I look at that and I say, okay, so the process -- the process has health effects. There's no question about it.¹²³

226) Mr. Watson acknowledged that the simple solution of going underground, would significantly lower the stress impacts of this Project.

Q. Given these statements, would you agree with me that you could completely or, if not completely, significantly reduce the stress of this project on landowners if the project was simply built underground?

A. MR. WATSON: That perhaps would lessen the stress. **In fact, I think undoubtedly lessen the stress.**¹²⁴ [emphasis added]

227) In fact, Mr. Watson went so far as to invite the Commission to condition the transmission lines to be buried as a way of reducing the stress of stakeholders:

...one more thing to the undergrounding. We brought forward this option as a fully developed and approvable option for this Commission to consider...I hope -- I hope that the lengths they are recognized and hopefully reduce the stress, but so that at least the Commission has an approvable option to consider rather than not putting that option forward at all.¹²⁵

228) Given Mr. Watson's evidence and the known health impacts due to stress, RETA submits that irrespective of any cost differential, it is in the public interest to bury the lines.

v. Property Values

229) The Applicants did not adequately factor the property value impacts of the above ground lines into their analysis of route selection. Mr. Watson advised they did not do any mathematical calculation of property value loss in coming to their conclusions. Rather, theirs was a "value judgment". However, we ought not trust Mr. Watson's judgment as he sees transmission towers as inukshuks.¹²⁶

230) The Applicants did, however, provide an analysis to support their hypothesis that property losses are minimal. They produced Mr. Don Hoover and Dr. Ryan. Mr. Hoover's

¹²² Transcript pages 2093-2094.

¹²³ Transcript page 3599.

¹²⁴ Transcript page 899.

¹²⁵ Transcript pages 899-900.

¹²⁶ Transcript page 529.

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business is primarily agricultural appraisal work but that did not prevent him from undertaking this task.¹²⁷ No doubt his conservative approach attracts those particular clients.

- 231) Mr. Hoover's paired sales analysis and the regression analysis that followed are flawed to the point of being of little value to the Commission. Mr. Hoover admitted that failure to identify all the co-efficients would render regression analysis less useful.¹²⁸ Mr. Hoover stated that it was intrinsically difficult to determine the impact of any one factor on value,¹²⁹ and that the accuracy of his report was highly dependent upon getting proper subjects and comparables.¹³⁰ He used the phrase "input equals output"¹³¹ and we could not agree more. Dr. Ryan agreed that his analysis was dependent upon large amounts of data.¹³²
- 232) Mr. Hoover's analysis is deficient in that he did not adjust for condition or curb appeal,¹³³ did not adjust for motivation,¹³⁴ did not adjust in the urban study for visual impact¹³⁵ and the visual adjustment impact that was done for the other study was most rudimentary and arbitrary.
- 233) In fact "arbitrary" is the word that best describes most of his adjustments. Mr. Hoover's comparables are simply taken from MLS and the arbitrary assumptions he has made include a 70/30 building/land split and \$10,000 per car for garages. His methodology was wanting and there is no doubt that his failures were repeated in the inputs for Dr. Ryan.
- 234) The time frames used for Mr. Hoover's analysis extracted sales during highly volatile time periods. Mr. Hoover admitted that this could well distort the results of his analysis.¹³⁶ Mr. Gettel also expressed the same concern about Mr. Hoover's analysis.¹³⁷
- 235) While it is possible that individual adjustment factors might not yield large differences, cumulatively there is no doubt that they do. That this is so is illustrated by the fact that some of Mr. Hoover's examples show an increase in property value associated with adjacency to power lines.
- 236) Mr. Hoover explained anomalies in his analysis by indicating in certain circumstances a power line might possibly increase land values. Frankly, this is nonsensical and shows the folly of his report. He also discounted the potential premium associated with living along a greenspace stating that persons ought to have known a power line was eventually to

¹²⁷ Transcript page 645.

¹²⁸ Transcript page 641

¹²⁹ Transcript page 640.

¹³⁰ Transcript page 641.

¹³¹ Transcript page 641.

¹³² Transcript pages 641-642.

¹³³ Transcript page 642.

¹³⁴ Transcript page 643.

¹³⁵ Transcript page 644.

¹³⁶ Transcripts pages 649-650.

¹³⁷ Transcript page 4846.

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come. However, landowner witnesses consistently stated they had done their due diligence and a variety of authorities had advised them there were to be no power lines in the Restricted Development Area (“RDA”).

237) Ms. Hanington, one of the closest residents, whose home backs onto the greenbelt stated:

When I purchased my current home, I was told by both the realtor and the county of Strathcona that the space behind the west edge of the community was a restricted thoroughfare for underground pipelines, sewage pipes, and no above-ground structures would ever be built on it. And to this time the area is routinely patrolled and assessed for infractions by helicopters.¹³⁸

238) This view was reinforced repeatedly throughout the hearing, additional examples include:

We've lived in the Woodbridge Farms area for 25 years, and one of the reasons we located in this area was because of the lack of overhead power lines, and we were told that only pipelines -- sorry, that there would only pipelines allowed in the restricted development corridor, which was arbitrarily changed to a TUC.¹³⁹

The term "TUC," transmission utility corridor, is relatively new to me and many of our neighbours. I would say that the first time I heard this term was less than ten years ago, which is long after homes were built along these green spaces. So the argument of buyer beware and blaming those people who bought property along the TUCs as not having done their due diligence before purchasing is ridiculous in my opinion.¹⁴⁰

We were induced, like many other people were, to buy that house because it was a restricted development area as you've heard from so many people before that nothing would be built there, only pipelines could go there because of the nature of the pipelines themselves being underground.

We didn't believe that though so we checked it out with the county offices and we were assured by information that we were able to obtain that that was the case.¹⁴¹

239) This is further supported by sections of the Sherwood Park West which was described by RETA as follows:

The Sherwood Park West Restricted [Development] Area Regulation mirrors the Edmonton Restricted Development Area Regulation (the “RDA Regulations”) which reads at section 6(1) that the Alberta Government may only authorize uses in the Greenbelt or Restricted Development Area that:

¹³⁸ Transcript page 3870.

¹³⁹ Transcript page 3890.

¹⁴⁰ Transcript pages 3893-3894.

¹⁴¹ Sherwood Park Community Meeting Transcript, pages 40-41.

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- a) are compatible with the retention of the environment of the Area for agricultural purposes or the propagation of plant or animal life and, generally, the preservation of the environment of that Area, and
- b) do not have a detrimental or destructive effect on the land surface within the Area.

The RDA Regulations further list at section 5(1)(e) “the construction, operation or abandonment of a hydro electric or communications transmission line...” as surface disturbances that shall not be conducted in the designated areas.

It was not until decades later that the Alberta Government unilaterally changed the name of the area from “Greenbelt” or “Restricted Development Area” to “Transportation Utility Corridor” (TUC). In fact, most of the TUC signs along the Sherwood Park Greenbelt were not erected until October 2007 - several months after the Anthony Henday Drive Southeast was completed.

At any point in time between 1970’s and today, a prospective purchaser of land would not be able to find TUC legislation, nor would they be able to find anything on a land title which referred to a TUC.

The reason is quite simple. There is no “TUC legislation”. Nor is there is any legislation which expressly sanctions the development of a TUC. In reality the TUC is simply an Alberta government program.¹⁴²

- 240) RETA produced as an expert witness on property values, Mr. Brian Gettel, an AACI accredited appraiser. Mr. Gettel conducted a literature review and his own paired sales analysis. However, Mr. Gettel’s analysis differed from Mr. Hoover’s in that Mr. Gettel did not try to find similar properties and use gross across the board adjustments to try to equalize them.
- 241) Instead, Mr. Gettel studied the unique situation at Tsawwassen, British Columbia where numerous of the same houses were sold before and after the construction of the lines. This is the ideal paired sales analysis situation.
- 242) Mr. Gettel’s analysis showed losses of up to 20% and in situations, such as along the preferred route where luxury homes had been built, a much greater potential loss.¹⁴³
- 243) Mr. Johnson is not a property valuation expert, but he performed a calculation that was entirely absent in the Applicants’ analysis. RETA submits that this factor must be taken into account in the public interest analysis.

There are some 5,500 homes within 800 metres. At the average house price I believe -- again someone can correct me – somewhere around \$340,000, \$350,000.

¹⁴² Exhibit number 848.02.

¹⁴³ Transcript pages 4835-4847.

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If you take 10 or 15 percent of \$350,000 times 5,500 homes, you end up with a number in the range of 2 to 300 million range. This is not a number that's put in the equation.

When the applicant says it's too expensive to go underground, they simply ignore 2 to \$300 million that other people pay. It's not a reasonable thing to do.¹⁴⁴

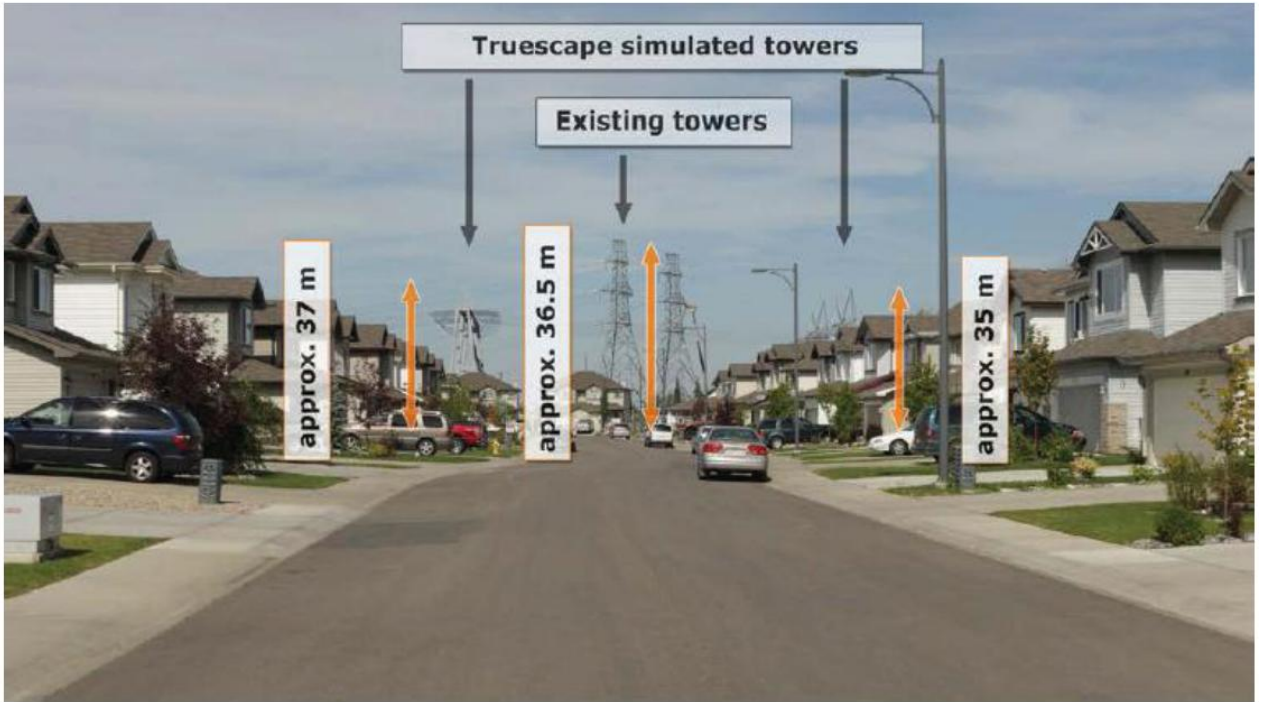
- 244) The best evidence before this Commission with respect to property devaluation is the evidence put forth by RETA and it demonstrates that the property value impact is far greater than the amounts proposed by the Applicants.

¹⁴⁴ Transcript page 4846.

vi. Visual impacts

245) With respect to the visual impacts of this project there is not much to discuss. The following two photos, both produced by Truescape, speak louder than words:¹⁴⁵

Figure 3 – 79th St SW Truescape Photo Simulation (Exhibit 838.02)



Appendix Y-1: Ellerslie, Edmonton - 79 St SW, Looking North – New Lattice Towers (Exhibit 258)



246) As described by Mr. Twiss, the only difference between the two photos is that in Figure 3, Truescape “removed the context for comparison, so we've actually cropped the image

¹⁴⁵ Exhibit number 1075.02.

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down.”¹⁴⁶ However, the effect of the “cropping” caused the towers in the Appendix Y photo to appear to be ¼ the size of those in the Figure 3 photo.¹⁴⁷

- 247) According to Mr. Amell, the original photo produced to inform stakeholders is so distorted that it does not produce an accurate visual simulation and Mr. Amell pointed to the vehicle in the bottom right to support his position.¹⁴⁸ Furthermore, according to Mr. Amell, the photo which “removed the context” is the one that more accurately reflects the visual effects of the project.¹⁴⁹
- 248) As described by Mr. Amell, Truescape’s images could have completed accurate visualizations using high quality cameras; as shown above, however, they created inaccurate visual simulations. In other words, it is not that the measurements used by TrueView in its images were incorrect, but more importantly it was the visual experience which was inaccurate:

I want you to think of this as a window to the world. When we put a panel up like this in this room, we're trying to simulate a window to the world.

The trouble with a close-up view like this is I'm having to focus my eyes on a thing that's 400 millimetres away from me. In the real world my eyes would have no trouble focusing in the distance, so there's a problem with what I'm able to deliver as an experience in this room using these panels.

So I address in our report the reality. We have to use a visual simulation that in the realistic conditions of a workshop, in the realistic conditions of a person looking at a computer screen, deliver something close to the experience that they would get in the real world. And that means either this panel should get much bigger, or you change your image proportions and your effective focal length of camera.¹⁵⁰

- 249) Furthermore, even if the visual simulations were more accurate, Mr. Amell described that it is near impossible to focus on an image when the viewing instructions are such that one’s nose almost touches the photo.¹⁵¹ This issue was only compounded when these posters were displayed on the floor at open houses.¹⁵²
- 250) More alarmingly, the Applicants omitted utilizing any visual impact assessment tools except for visualizations.
- 251) Due to the unprecedented magnitude of this project, there is absolutely no reason that the Applicants ought not to have completed a comprehensive visual impact assessment to

¹⁴⁶ Transcript page 825.

¹⁴⁷ Exhibit number 1075.02, page 5.

¹⁴⁸ Transcript pages 4827-4828.

¹⁴⁹ Transcript page 4828

¹⁵⁰ Transcript page 4826.

¹⁵¹ Transcript page 4826.

¹⁵² Transcript page 4827.

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inform stakeholders and the Commission. This is particularly so when such techniques have commonly been used by transmission companies, and others, for decades:

A tower that is located on a skyline can be visible for great distances. A tower that's visible in the land, so to speak, and if it were short enough that the land would actually have a screening ability, would -- the visual impact would be less. So VIA brings these things to bear and shows them in a map form.

What it's particularly useful for is routing. In fact I would say that VIA is most useful in the routing procedure. It is still very useful in choosing between different alignments, but during routing -- you know, this was something that was very important during the Ontario Hydro study -- was to look at the different routes and then come up with a cumulative visual impact for the different route alternatives.¹⁵³

- 252) Mr. Amell's Ontario Hydro example was from the 1980's.
- 253) By not completing a cumulative visual impact for different route alternatives, the Applicants failed to provide the Commission with the evidence required to demonstrate that their preferred route is the superior route. RETA submits that without such an assessment, the Application is fundamentally flawed and the Commission cannot make a decision about this Application.
- 254) In cross-examination the Applicants stated that they "...supplied visualization, visual simulations"¹⁵⁴ and claimed that the two terms are essentially interchangeable. As described by Mr. Amell, the error in this statement goes to the heart of the concerns raised by Riparia with the Truescape methodology. The explicit purpose of visualizations is in the words of the Applicants "to provide sufficient information for people, including the Commission, to see what these towers are going to look like in various location and at various distances and draw their own conclusions."¹⁵⁵ The essential purpose of visualizations then, is to provide observers who are not on site, to have a visual experience of the towers that replicates the aesthetic experience of an on-site observer.
- 255) A visualization presents a surrogate experience which may or may not be an accurate simulation of the real world visual experience. The Riparia report takes great pains to describe numerous reasons that the Truescape visualization method likely produces accurate visualizations, but at the same time produces significantly inaccurate visual simulations.¹⁵⁶
- 256) As pointed out in cross-examination by RETA, the property value assessments completed by Serecon were the only documents in the Application that contained actual photos of transmission towers.

¹⁵³ Transcript page 4823.

¹⁵⁴ Transcript page 789.

¹⁵⁵ Hearing transcript Day 4 page 783

¹⁵⁶ Riparia 27 Feb 2011, pages 19 to 56

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- 257) In terms of mitigation strategy of one of the most cited impacts, there is no question that the underground option completely eliminates the monstrous visual impact this project would have if built above ground, regardless of the infrastructure.¹⁵⁷
- 258) RETA submits that the visualizations produced by Truescape ought to be given no weight as it is RETA's position that the Truescape visualizations were completely misrepresentative and inappropriately minimized the true visual impact of these lines.
- 259) Considering that Truescapes' website boasts to transmission developers, we submit their conclusions are not unbiased and therefore should not be bear any weight:

Over 90% of our projects have been successfully permitted.

...

For politicians and others who may not understand the scope of a transmission proposal or upgrade, a video presentation is a professional and sophisticated way of presenting the proposal; it enables key external stakeholders to immediately understand the true impact and **benefits of the project**.¹⁵⁸ [emphasis added]

- 260) RETA submits that the only way that the benefits of this project can be presented in a photo is if the true visual impacts are minimized. As such, Truescape completed its assignment, and the Applicants succeeded once again in minimizing the real visual impacts of these unprecedented towers to stakeholders and the Commission.

vii. Noise

- 261) AltaLink is Albert's largest electrical transmission company, services 85 per cent of Albertans and operates more than 12,000 kilometers of transmission lines and 270 substations around Alberta.¹⁵⁹
- 262) Noise is a well-known issue created in the operation of transmission lines and substations, yet AltaLink does not have a written noise complaint procedure.¹⁶⁰ Such an omission speaks to AltaLink's view of addressing landowner concerns once the line is built.
- 263) Such an omission is not comforting for the landowners that will be living in close proximity to transmission lines and substations, particularly when a recommendation for noise mitigation in the design phase was made and Mr. Watson chose to disregard such a recommendation:

There's some context to that, because I was -- I guess I was personally pressured a little bit to I'll put in the noise walls, and it's not a problem, and then you know it's not going to be a problem, and I guess in hindsight may be one of those errors in

¹⁵⁷ Transcript page 2984.

¹⁵⁸ Exhibit number 887.

¹⁵⁹ Exhibit number 880.01.

¹⁶⁰ Exhibit number 1075.03, page 1.

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judgment. But it is one where, you know, it's not just -- sometimes you can fix a lot of perceived problems and, in my view, waste a lot of money doing that, versus something that's, you know, relatively reasonably less critical that can be easily remediated when and if it's a problem.¹⁶¹

- 264) Further evidence of AltaLink's disregard for landowner noise complaints is with respect to corona noise. AltaLink received complaints regarding corona noise, they completed sound survey monitoring results that indicated that the corona noise was evident, they acknowledged that corona noise levels were significantly higher under foul weather conditions, and their acoustical consultant alerted them of this very issue.
- 265) Notwithstanding the known concerns resulting from corona noise, AltaLink chose not to consider corona noise as a significant noise source worthy of inclusion in the Noise Impact Assessments for any of the surface developments other than the transmission lines.
- 266) The quality of the noise assessment in the Application ought to be of concern to the Commission when the Applicants stated under cross-examination that they were not aware of the existing oil pumping facilities near the proposed Baseline Road transition station associated with the underground option nor were they aware of the compressor station near the residences located near the proposed Heartland Substation.¹⁶²
- 267) AUC Rule 012 requires the inclusion of the contribution from these facilities in the preparation of the Noise Impact Assessments for each of these developments. The testimony provided by AltaLink with respect to these facilities suggests that the ground truthing one would associate with a project of this scope was not very thorough.
- 268) If the transmission line is built underground, the thousands of landowners along the underground portion of the transmission line will not have to negotiate noise concerns and resolutions with the Applicants. Mr. Farquharson did acknowledge that as a result of going underground, substation noise may increase, however, he also stated that such noise problems are easily mitigated.¹⁶³

viii. Safety

- 269) Mr. Bowden, on behalf of the Applicants, stated that there are no incremental increased risks associated with running the 500kV dual circuit parallel to the pipelines in the RDA.¹⁶⁴ This statement is both untrue and foolhardy. Mr. Bowden also misstated Mr. Wakelin's conclusions. Perhaps it is this attitude of brushing off any concerns and colouring the evidence to suit their needs which causes the Applicant to lose credibility.
- 270) RETA produced Mr. Robert Wakelin as their expert. His evidence¹⁶⁵ was careful and considered. It was also clear: There is incremental risk. The risks are as follows:

¹⁶¹ Transcript page 726.

¹⁶² Exhibit number 1075.03, page 2.

¹⁶³ Exhibit number 647.07, page 7.

¹⁶⁴ Transcript pages 708, 710, and 3033.

¹⁶⁵ Exhibits 647.01 and 1015.01 and Transcripts pages 3652-3664.

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- Touch voltage;¹⁶⁶
- Corrosion;¹⁶⁷ and
- Line to ground faults.¹⁶⁸

271) Mr. Wakelin's clear evidence is that while these risks can be mitigated they cannot be reduced to zero and the mitigation is not guaranteed successful.¹⁶⁹ In particular he stated the following:

- Given particular soil resistivities it may not be possible to entirely eliminate the risk of AC induced corrosion.¹⁷⁰
- There is no evidence to show that shielding electrodes are completely effective at intercepting electrical arcs.¹⁷¹ In fact in field testing done by a division of BC Hydro such shielding failed one out of five times.¹⁷²
- AC induced corrosion is not completely understood. Cathodic protection may lower soil resistivity at coating defects.¹⁷³ Further standard assumptions may be flawed.¹⁷⁴
- Mitigations to reduce the effects of AC interference can impact the ability to measure the effectiveness of cathodic protection.¹⁷⁵
- The placement of shielding electrodes to deal with faults can potentially increase the risk of damages to pipelines in a fault condition.¹⁷⁶
- The standards applied for touch voltage are for adults, not children.¹⁷⁷ Placing high voltage transmission lines in proximity to heavily populated areas, including near children's homes and schools, adds another layer of risk.

272) Finally, the new preferred above ground route as amended during the hearing puts several towers within 41 metres of the nearest pipeline.¹⁷⁸ This is not a safe distance and the risk of arching during fault conditions increases with decreased distance.¹⁷⁹

¹⁶⁶ Transcript page 3652.

¹⁶⁷ Transcript page 3653.

¹⁶⁸ Transcript page 3653.

¹⁶⁹ Transcript page 3662.

¹⁷⁰ Transcript page 3658.

¹⁷¹ Transcript page 3658.

¹⁷² Transcript page 3740.

¹⁷³ Transcript page 3659.

¹⁷⁴ Transcript page 3660.

¹⁷⁵ Transcript page 3759.

¹⁷⁶ Transcript page 3763.

¹⁷⁷ Transcript pages 3661 and 3662.

¹⁷⁸ Transcript page 3664.

¹⁷⁹ Transcript page 3654.

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- 273) Burying the line will further mitigate several of these risks and will reduce the potential of an accident caused by a fault by reducing the circumstances where such fault could occur. Further, magnetic fields are reduced by burying the line, which would result in reduced pipeline voltages during both steady-state and fault conditions, which further reduces AC corrosion risks and electrical shock hazards.
- 274) This point is extremely important. There are 80 pipelines in the RDA along the preferred route, some of which carry very dangerous substances. While the risks of an accident may be lowered through standard mitigation measures, the consequence of placing such an ignition source in proximity of such materials could be disastrous.

ix. Environment

- 275) Stantec, on behalf of the Applicants, advised that from an environmental perspective undergrounding is overall the preferred option.¹⁸⁰ This is so even though Stantec did not do any weighting analysis of construction impacts verses long term impacts¹⁸¹ and did not reference the materials supplied by RETA.¹⁸²
- 276) John Kristensen was RETA’s environmental expert. While Mr. Kristensen resides in close proximity to the preferred route, he has impeccable credentials and no other person has studied or published about the wetlands along the preferred route to the extent that he has done so. His evidence, in respect of the biological aspects of this case, was fair and balanced and we submit that it be given substantial weight.
- 277) Mr. Kristensen, in his role as expert biologist advised the Commission that the Applicants’ environmental assessment was deficient in terms of baseline biological data,¹⁸³ that wildlife reference literature was ignored,¹⁸⁴ that the construction footprint with respect to new disturbance to wildlife along the preferred route was very high,¹⁸⁵ and potential for high bird mortality exists along the preferred route due to “high numbers of poorly maneuverable bird species...extensive back and forth movement among and between the many ponds and wetland complexes....poor visibility along segments of the preferred route due to frequent fog conditions....”¹⁸⁶
- 278) His evidence was that the underground option affected the smallest number of wetland communities and that in fact, the above ground option affects close to five times more wetlands than the underground option.¹⁸⁷

¹⁸⁰ Transcripts pages 687,689, and 697-698.

¹⁸¹ Transcript page 698.

¹⁸² Transcript page 4795.

¹⁸³ Transcript page 4794.

¹⁸⁴ Transcript page 4795.

¹⁸⁵ Transcript page 4797.

¹⁸⁶ Transcript page 4799.

¹⁸⁷ Transcript page 4800.

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- 279) Mr. Kristensen critiqued the Applicants' assessment for not statistically weighting more important disturbance factors over lesser ones¹⁸⁸ and advised that the assessment was in error with respect to the stated location of several ponds and wetlands.¹⁸⁹ This leads one to question the Applicants' conclusion about "very low probability of direct environmental effects on birds at these locations."¹⁹⁰
- 280) The most significant environmental impact of an above ground line along the preferred route is the mortality of birds that would crash into the lines and towers. Estimates given by Mr. Kristensen include 124 to 214 bird deaths per kilometer per year. Estimates provided by Dr. Erin Bayne, Strathcona County's wildlife expert, include 58 to 464 bird deaths per kilometer per year. A buried line would kill no birds.
- 281) Mr. Kristensen criticized the Applicants for their consistent characterization of the wildlife habitat along the preferred route as being inferior and of low quality. He advised the Commission that the many wetlands and other habitat within and adjacent to the preferred route was home to thousands of waterbirds and other wildlife and that just because the area was adjacent to urban areas and a roadway did not render them inferior. As an illustration, he referred the photograph taken by Shirley Johnson illustrating over 1600 waterfowl in a single small pond near their home:¹⁹¹



- 282) He made the point that from an aesthetic human appreciation and environmental education perspective, natural areas within urban areas are often considered more important than natural areas in pristine situations because they offer viewing opportunities to so many more people on a much more regular basis. This is yet another reason to bury the line.

¹⁸⁸ Transcript page 4801.

¹⁸⁹ Transcript page 4805.

¹⁹⁰ Transcript page 4805.

¹⁹¹ Exhibit number 1075.06.

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x. Landowners should be compensated

a. Eligibility

- 283) RETA submits that those landowners directly and adversely impacted by a new powerline and in particular, this Project, should be compensated.
- 284) There is no question that this project is unique and unprecedented. This project will be the first dual circuit 500 kV lines in the province. They will be the tallest towers in the province. Nowhere else in the province is it foreseeable that 500 kV lines of this magnitude, will be built within 800 meters of close to 5,300 residences (or 15,000 to 20,000 people).
- 285) RETA's view is that private citizens ought not to pay more than the general public for these lines due only to the geographic location of their houses. Those persons directly and adversely monetarily impacted by this line should be fairly compensated. The Commission has the authority to place upon the Applicants, conditions to their approvals under section 19 of the *Hydro and Electric Energy Act*.
- 286) RETA submits that payment of damages to adversely impacted property owners should be one such condition.

b. Equivalency

- 287) The Applicants, through Mr. Watson, have stated a commitment to "equivalency" for private landowners on whose land the line is built and whose residences are within 150 meters of the centre of the line, or whose residence is within 200 metres from the centre-line, or boarded on two sides.
- 288) No residence along the RDA qualifies for compensation under the Applicants' scheme.
- 289) RETA submits that this distinction between landowners is artificial. The loss of value of property adjacent the RDA is no less real than the loss associated with proximity to the line in a rural setting. It matters not whether the line is over or near property. Devaluation is devaluation.
- 290) Mr. Hoover and Mr. Watson agree that it takes more than payment of market value to provide an owner equivalent reinstatement.¹⁹²
- 291) Equivalency principles are used in expropriation statutes and provide for the payment of sums above market value to allow a structure to be replaced plus payment of associated damages incurred such as interim rental costs, loss of income, moving costs and reasonable professional fees. These are the principles that the Applicants have agreed to for "direct hits" and they are the principles that should be applied to "collateral damage".

¹⁹² Transcript pages 627-630.

C. Additional Considerations

i. Colchester Elementary School

292) Colchester Elementary School is over a half a century old, is a community landmark and is ranked 80 out of 654 schools in Alberta.¹⁹³ Currently 193 students from 130 families attend Colchester Elementary school, and 32 staff member work at the school.¹⁹⁴

293) Colchester Elementary School is 108 metres from the edge of the proposed power line right-of-way.¹⁹⁵

294) The viability of Colchester Elementary School is in jeopardy if this project is built above ground:

In a recent survey of Colchester parents, 95 percent of parents indicated that if the power lines were built aboveground beside our school, they would not allow their children to go to the school. While 98 percent of parents indicated that if the power lines were buried, they would allow their child to go to Colchester School.¹⁹⁶

ii. A&D Daycare

295) The future viability of A&D Daycare is in jeopardy because of this project.¹⁹⁷ The impact to the owners of A&D Daycare, the Jobs, is severe:

Both our home and business are located immediately on the greenbelt space that runs parallel to the west boundary of Sherwood Park. We have owned and operated A&D Daycare for over 17 years and have lived at this current home address only since February of 2008, and at which that time I'll point out -- you know, through that buying process there was nothing ever mentioned of power lines going in.¹⁹⁸

296) However, the impact is not restricted to the Jobs, but this project also impacts the 19 staff members and the 80 families that bring their children to this daycare.

297) A&D Daycare was established in 1981, and is a cornerstone of childcare in the community. However, the Applicants, throughout their 3 year consultation process, never once spoke to the Jobs about the proposed transmission line and its effects on A&D Daycare.¹⁹⁹

¹⁹³ Transcript page 5505.

¹⁹⁴ Sherwood Park Community Meeting Transcript page 41.

¹⁹⁵ Sherwood Park Community Meeting Transcript page 46.

¹⁹⁶ Transcript page 5509.

¹⁹⁷ Transcript page 4876.

¹⁹⁸ Transcript page 4873.

¹⁹⁹ Transcript page 4895.

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- 298) The fact that A&D Daycare was never consulted was not challenged. This is yet another reason that this Application ought to be denied. To approve this Application with the knowledge that affected stakeholders were never consulted would clearly be in violation of AUC Rule 007 and moreover would be unconscionable given the significant consequences to the operation of A&D Daycare.
- 299) If the Application is approved, RETA submits that A&D Daycare would be “subject to significant impact due to the transmission line.”²⁰⁰
- 300) A condition of the approval should be that the owners of A&D Daycare be compensated for their losses.

iii. Monopole Option

- 301) In terms of the Applicants monopole option, there is not much to discuss in this regard. The Applicants contend that the monopole option was included in the Application because stakeholders requested it or preferred it, however, as the Commission may have noted, with one exception,²⁰¹ it was an option that was not welcome by stakeholders.
- 302) In fact the only instance that the monopole option was raised by landowners at the hearing was when the Commission, to a large extent Commission counsel, raised this option as a mitigation strategy. This is simply because, in the view of stakeholders, this is not their preferred option.
- 303) The option that was embraced by most, if not all stakeholders, was the underground option.
- 304) Just as the stakeholders were not impressed with the preferred route moving a short distance to the west at the last minute, stakeholders were not interested in the Applicants’ monopole option:

Have you received any phone calls or emails with respect to [the April 26] amendment?

A. MR. BRANDELL: Not that I'm aware of. Sorry, just a moment. I'll correct that statement. We have received a number of emails. **The general theme is that despite the fact we're moving it further away from them, their preference is still to go underground.**²⁰² [emphasis added]

- 305) The clear theme always was, and continues to be, to bury the Project, but despite the continued requests, that option is not the Applicants preferred option.

²⁰⁰ Exhibit number 1192.01, page 1.

²⁰¹ The Regula’s were the only interveners that recommended the use of the monopole option.

²⁰² Transcript pages 3062-3063.

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306) Finally, in terms of the environmental impacts, the monopole option actually causes more negative impacts than both the underground and the lattice tower option.²⁰³

iv. TUC Argument

307) As clearly stated by Mr. Johnson:

RETA is not going to advocate it goes anywhere. RETA is going to advocate if it goes near homes, schools, and houses, it goes underground.

In actual fact, our preference would be to put it underground in the -- through the preferred route because that makes the most sense because it's the shortest.²⁰⁴

308) However, RETA must address the Applicants' contention that a TUC was clearly established in the 1970s by the Province and that landowners purchasing land in close proximity ought to have known of the government's intention in this regard.

309) As described above, the Applicants' understanding of use of this area was clearly not in line with the information provided to many landowners when they purchased their homes.

310) The Commission heard a significant amount of evidence from landowners who purchased their property on the understanding that there would be no above ground structures placed in the greenspace and that they paid a premium for such a benefit.²⁰⁵

311) In fact when Mr. Mousseau asked one very vocal member of the Sturgeon Landowner Group about whether he understood that some people were not aware of this designation when they purchased their home, he stated:

Q. I guess my question to you is a little bit higher level than that. If [the TUC designation] wasn't mentioned on their title, would your position be the same?

A. MR. TAPPAUF: Well, if I was a homeowner and I didn't realize that that was a utility corridor, I'd be something ticked off.

312) Clearly, the Applicants' argument that this greenspace was a well recognized "transportation and utility corridor" fails based on the evidence of the landowners who purchased there, as well as the legislation on which the RDA was founded.²⁰⁶

²⁰³ Transcript pages 594-596.

²⁰⁴ Transcript page 4897.

²⁰⁵ See paragraphs 238 and 239 above.

²⁰⁶ Edmonton Restricted Development Area Regulations, Alta Reg 287/1974 and Sherwood Park West Restricted Development Area Regulations, Alta Reg 45/1974.

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IV. Conclusion

- 313) RETA requests the following dispositions and that the Application be denied by reason of:
- a. Need;
 - b. Failure to consult;
 - c. Failure to put forward sufficient evidence to the Commission on the underground option;
 - d. Failure to put forward sufficient evidence to the Commission on alternative route options.
- 314) Alternatively, if the Application is approved, RETA submits that the line must be buried in proximity to homes, schools, hospital and environmentally sensitive areas.
- 315) Further, RETA submits that in the event of approval above ground, impacted landowners whose properties are devalued and business which are impacted should be compensated such that landowners and business owners are not out of pocket.
- 316) The AUC has very specific guidelines for impact analysis contained in Section 6.1 of AUC Rule 007, which guidelines, while specific to Needs Identification applications, are arguably applicable in the instance of a CTI routing application. This analysis was absent from the public view as there was no needs identification stage. Therefore it is critical for them to be undertaken at this point. Those guidelines require analysis on the part of an applicant for *inter alia*:

Agricultural Impact

Residential Impact

- (a) Decrease of property values.
- (b) Loss of developable lands and constraints on development.
- (c) Relocation or removal of residence.
- (d) Psychological impact of the line.
- (e) Audible noise and TV interference.
- (f) Windbreak and other vegetation removal.
- (g) Conflict with recreational use of land holdings.
- (h) Public versus private land.

Environmental Impact

Cost

Electrical Considerations

Visual Impact

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...

(c) Visual impact of towers and lines as seen from residences, farms, roads, and recreational installations.

- 317) As illustrated in detail above, the Applicants failed on almost every point that would have been required under Section 6.1 of AUC Rule 007.
- 318) RETA has detailed the Applicants' failures and we submit that it is plain on the evidence that the Applicants have not done enough for the Commission to grant approval of this Application. If however, approval is granted, it is critical that the line be buried as RETA has stated on many occasions.
- 319) RETA submits that we ought not be timid, and just because this would be the first instance of this kind in Alberta or just because there are additional costs associated with undergrounding, that the Commission should avoid this alternative. As stated by Mr. Allen, some European jurisdictions have mandated undergrounding. Those jurisdictions have no better information than do we, but they have done so on a precautionary basis.
- 320) It is evident that the magnitude of the proposed transmission lines is without precedent in this Province, and RETA submits that the Commission ought not to be restrained by previous formulas in seeking solutions to the problems that this Project poses.
- 321) Albertans are leaders in many things. RETA submits that it is in the public interest that the Commission take a leadership role to prescribe undergrounding of high-voltage transmission lines in this circumstance and others like it.
- 322) RETA leaves the Commission with the following statement from Ms. Przybilla on behalf of the Colchester School Parents Association as follows:

...maybe this is the time when we have that discussion when it's by children, when it's by families, when it's by these kinds of organizations, institutions, whatever they might be. Maybe it's time that those discussions actually happen.²⁰⁷

ALL OF WHICH IS RESPECTFULLY SUBMITTED

Responsible Electricity Transmission for Albertans

by their legal Counsel,

PROWSE CHOWNE LLP

Donald P. Mallon, Q.C.

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²⁰⁷ Transcript pages 5526-5527.