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NATURAL RESOURCES CONSERVATION BOARD

Application No. 1701

SPRINGBANK OFF-STREAM RESERVOIR PROJECT

P R O C E E D I N G S

Volume 10

April 6, 2021

(Via videoconferencing)

1 Natural Resources Conservation Board Proceedings taken
2 virtually in Calgary and Edmonton, Alberta.

3

4 Volume 10

5 April 6, 2021

6

7

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16 Ron Kruhlak, Q.C.	For Alberta Transportation
Gavin Fitch, Q.C.	
Michael Barbero	

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18 Melissa Senek	For City of Calgary
Sara Munkittrick	
David Mercer	

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20 Luigi Cusano, Q.C.	For Calgary River Communities Action Group and Flood Free Calgary
Gino Bruni	

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22 L. Douglas Rae	For Stoney Nakoda Nation
Sara Loudon	

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1 Richard Secord For SR1 Concerned Landowners
Ifeoma Okoye Group

2

3 Bob Williams For Calalta Amusements Ltd.
and Calalta Waterworks Ltd.

4

5 Scott Wagner For Scott Wagner

6

7 Lorelee Vespa CSR(A) CRR RPR Official Court Reporters
Donna Gerbrandt, CSR(A)

8

(PROCEEDINGS COMMENCED AT 8:00 A.M.)

9

10 THE CHAIR: Good morning, everyone. Welcome
back to the hearing for Springbank 1701.

08:00

11

12 I certainly hope that everyone had an enjoyable
13 and, hopefully, relaxing Easter long weekend. We had
14 some great weather in Edmonton. I know folks are
15 spread around the province and perhaps even outside,
16 but from what I understand, the weather was decent and
we certainly hope that everyone had a nice weekend.

17

18 We do have a schedule for today. We had agreed on
19 some times, as you recall last week, but Ms. Friend
20 will be sending out a schedule for today just so that
you can get an idea on timing.

08:01

21

22 It looks like with the 45-minute lunch, we'll
23 finish around 5:30. So, you know, I think that works
24 well and does provide everyone with the time that we
had agreed on last week.

25

Welcome, Ms. Vespa, this morning. And I

1 understand we'll have Ms. Gerbrandt in the afternoon.
2 As Ms. Vespa was talking about this morning, it's --
3 with final argument, it's a lot to get down, so they
4 are going to split shifts for today.

5 And, again, I would ask that, you know, we're
6 cognizant of the fact that we've got a court reporter
7 getting all of this down, so in terms of your speed of
8 delivery and that, we'd appreciate being cognizant of
9 the fact that Ms. Vespa is doing her best to keep up
10 and get all of this down, so...

08:01

11 Now, we do have a few preliminary matters for this
12 morning. And I think primarily from Alberta
13 Transportation, there are -- or were some outstanding
14 undertakings which I believe have been cleared up and
15 filed, but we need to get those on the record and
16 numbered with some exhibits.

17 So let's start off with that. I'm hoping we get
18 any prelim matters done by 8:15, but let's start off
19 with the undertakings.

20 Mr. Kruhlak?

08:02

21 MR. KRUHLAK: Yes, Mr. Chairman, I can address
22 that.

23 We submitted responses to Undertakings 34, 44, and
24 46 through 59 on Saturday, April 3, which was submitted
25 to the Board and distributed to all parties. If we

1 could have that marked, please.

2 THE CHAIR: Ms. Friend.

3 MS. FRIEND: Yes, that will be

4 Exhibit Number 407.

5 **EXHIBIT 407 - AT RESPONSES TO**

6 **UNDERTAKINGS 34, 44, AND 46 THROUGH 59**

7 MR. KRUHLAK: And, Mr. Chairman, I just have two
8 other matters to speak to.

9 We also submitted on April 4th some brief
10 revisions to the transcripts from the second week of
11 the hearing, and if we could have that marked as well,
12 please.

08:03

13 THE CHAIR: Yes. And were those sent to other
14 counsel?

15 MR. KRUHLAK: They were.

16 THE CHAIR: Any objections?

17 Hearing none. Okay.

18 MS. FRIEND: And this is Laura. Sorry, that
19 will be Number 408.

20 **EXHIBIT 408 - MARCH 29 TO APRIL 1**

08:03

21 **AT TRANSCRIPT CORRECTIONS**

22 MR. KRUHLAK: Thank you, Ms. Friend.

23 Then, lastly, sir, we have just submitted to
24 Ms. Friend -- it just went out a few moments ago, as we
25 were still making some revisions -- the text of our

1 final argument, which also has attached our references
2 to the evidence, which, as Mr. Fitch and I present the
3 oral argument, we will not make reference to exhibit
4 numbers or page numbers. But, perhaps that might be
5 marked, and that might be of assistance to Ms. Vespa in
6 capturing our comments as we go through it.

7 THE CHAIR: Indeed.

8 Ms. Vespa, does that work for you? Great.

9 Thank you very much, Mr. Kruhlak.

10 MR. KENNEDY: If we assign Exhibit 409 to that. 08:04

11 THE CHAIR: 409. Thank you, Mr. Kennedy.

12 MS. FRIEND: Thank you.

13 **EXHIBIT 409 - FINAL ARGUMENT OF ALBERTA**
14 **TRANSPORTATION**

15 THE CHAIR: And a quick question for all
16 counsels. We do have, I think, Ms. Cundliffe on this
17 morning for document management. We didn't really
18 expect that there would be documents that you
19 might -- you may want up or exhibits, but it's no
20 problem if you do. I just want to check with folks. 08:04

21 Was there any intent on bringing up documents,
22 whether they're perhaps printed copy of final argument
23 or other documents for this morning?

24 And Alberta Transportation -- Mr. Kruhlak, you
25 folks will be up first, but were you intending on

1 having any documents up?

2 MR. KRUHLAK: No, sir, we aren't.

3 THE CHAIR: Okay. Thank you.

4 MR. SECORD: And Richard Secord here. We
5 weren't intending to pull up any documents, but like
6 Mr. Kruhlak, once we hear his argument, we will be
7 providing Ms. Friend with an outline of our speaking
8 notes.

9 So it may be -- there might be something that I
10 might want out of that document, perhaps, but other
11 than that, I don't expect to need the document
12 managers, or won't be keeping them very busy.

13 THE CHAIR: Thank you. Mr. Cusano?
14 Ms. Senek?

15 MR. CUSANO: Good morning, sir. Our approach
16 will be similar to Mr. Secord and Mr. Kruhlak. We will
17 not need any documents. We will also provide a copy of
18 argument to the court reporters. And during the course
19 of argument, we will not be referring to exhibit
20 numbers.

21 THE CHAIR: Okay. Thank you.

22 Ms. Senek, would it be similar for the City of
23 Calgary?

24 MS. SENEK: Similar for the City of Calgary,
25 yes. Thank you.

08:05

08:06

1 THE CHAIR: Thank you. We can deal with this
2 afternoon's later on, but thank you very much.

3 I just wanted to give a heads-up to document
4 managers so they can probably attend to some other
5 stuff that they have got on the go as well.

6 So, thanks, Ms. Cundliffe. It sounds like you
7 are, for the most part, going to be off the hook this
8 morning, but thank you for your participation in the
9 hearing, and all the work that you've done over the
10 last couple of weeks.

08:06

11 So any other preliminary matters from other
12 parties?

13 MR. CUSANO: Yes, sir. Thank you very much.

14 Sir, we have three minor transcript corrections
15 that Mr. Bruni will circulate to all counsel this
16 morning. And at some point later today, I will ask
17 that they be marked as an exhibit, but at this point
18 not all counsel have seen them. I sent them very early
19 to Mr. Secord and Mr. Kruhlak this morning, but, of
20 course, that needs a wider distribution.

08:07

21 THE CHAIR: Okay. Well, thank you. We can
22 deal with that perhaps either after lunch or quickly
23 after a break in the afternoon.

24 MR. CUSANO: Thank you, sir.

25 THE CHAIR: Thank you. Any other matters?

1 Hearing none. I think we can get started then.
2 And Alberta Transportation is first up with 150
3 minutes. So that would take us to -- what is that,
4 10 -- well, just 10:45, I think, but we're starting a
5 bit earlier than the 8:15 start, but I can give you a
6 bit of a heads-up as we get closer, Mr. Kruhlak. We've
7 got a little ways to go before then.

8 So, Mr. Kruhlak, Mr. Fitch, Mr. Barbero, the floor
9 is yours.

10 Thank you.

08:08

11 MR. KRUHLAK: I'm sure Mr. Secord wouldn't
12 object if I remained on mute for the entire morning.

13 Mr. Chairman, Panel members, Panel staff, we're
14 pleased to present to you today our final argument on
15 behalf of Alberta Transportation with respect to the
16 Springbank Off-Stream Reservoir Project, which I'll
17 refer to as SR1.

18 As I briefly indicated, Mr. Fitch and I will share
19 this presentation, and I will start.

20 And I thought it might be useful just to make some
21 introductory comments to provide some context and then
22 briefly discuss the framework of the Board's review for
23 this project.

08:08

24 Our presentation will then review the issues
25 identified by the Board under the various topic

1 sessions.

2 I'd like to situate these oral remarks within the
3 context of the very large record that exists in these
4 proceedings; in particular, the positions of all
5 parties, including Alberta Transportation, that have
6 already been set out in writing in several documents,
7 which form part of the record and have been marked as
8 exhibits.

9 In the case of Alberta Transportation, we filed
10 the comprehensive reply submission to the written
11 submissions of the interveners who oppose the project.
12 Alberta Transportation's reply submissions consist of
13 three main documents: the Exhibit 325, the actual
14 reply; the Appendix A through I of that reply, which is
15 Exhibit 327, which responds to various components of
16 the SCLG's evidence and experts; and, lastly,
17 Appendices J through M, which is Exhibit 324, which
18 responds to various aspects of the evidence of the
19 Stoney Nakoda Nations.

20 When the Board is considering this, we would
21 advise that our oral submissions that we're making this
22 morning are really supplemental to the written
23 submissions in the reply, and we will simply be
24 intending this morning to take into account the
25 testimony and evidence that the Board has heard over

08:09

08:10

1 the last two weeks.

2 Other materials Alberta Transportation ask the
3 Board to consider as part of our submissions are the
4 various opening statements that were made by Mr. Hebert
5 and other members of our witness panels. There were
6 openings for each of the five main topic sessions,
7 which all were exhibited. And the opening statement
8 for Topic 5 also included Exhibit 392, the PowerPoint
9 presentation.

10 These opening statements summarize Alberta
11 Transportation's position on the topics found by this
12 Board to be relevant for its public interest
13 determination, and we'd encourage the Board to review
14 them during its deliberations in addition to our reply
15 submissions and these closing argument remarks.

16 In this presentation, we respectfully submit that
17 the evidence clearly supports the conclusion that there
18 is a serious need for this project to be built as soon
19 as possible, that this project is in the public
20 interest for the people of Alberta, and that the
21 potential impacts of this project have been identified,
22 and Alberta Transportation is committed to implement
23 numerous mitigation measures such that, with few
24 exceptions, the project will not cause significant
25 adverse environmental effects.

08:10

08:11

1 As I've noted prior to addressing the various
2 topics discussed during the hearing, we'd like to make
3 several high-level contextual-type submissions.

4 First, despite this project being advanced by the
5 department of the government of Alberta, it's clear
6 that SR1 has been subjected to a rigorous review by the
7 respective regulators, Indigenous groups and
8 stakeholders.

9 Mr. Chairman, over the course of the last three
10 years, since the EIA was filed, numerous information
11 requests were asked by your Board, other regulators,
12 all of which Alberta Transportation responded to.

08:12

13 Further, we've just completed an almost two-week
14 hearing in which all aspects of this project have been
15 subjected to scrutiny and the interveners have been
16 given the opportunity to advocate their positions
17 directly to the Board.

18 Secondly is the issue of alternative projects.
19 This point was addressed at the pre-hearing, and the
20 Board provided the parties with the following direction
21 on this issue in its pre-hearing decision: (as read)

08:12

22 "It acknowledges that the various
23 parties are advocates for Elbow River
24 Basin flood control alternatives to SR1.
25 In particular, McLean Creek has received

1 significant attention by stakeholders
2 and the applicant. The Board's mandate
3 is limited to determining whether the
4 reviewable project, in this case, SR1,
5 is in the public interest. While a
6 general understanding of the relative
7 merits associated with project
8 alternatives may contribute some
9 contextual relevance to a determination
10 of the public interest decision on SR1,
11 the NRCB focus must be on the social,
12 economic, and environmental effects
13 associated with the reviewable project."

08:13

14 The Board went on to say that: (as read)

15 "It would entertain submissions on how
16 the proponent's considerations of
17 alternatives is relevant to a public
18 interest determination of SR1. However,
19 the Board does not find merit in the
20 expenditure of significant time and
21 resources assessing projects that are
22 not a reviewable project and under the
23 NRCBA."

08:13

24 Now, despite that direction, an alternative project,
25 MC1, was referred to numerous times by certain

1 interveners, in particular the SCLG. We reiterate that
2 there is only one project under review, only one project
3 that is being advanced, and only one project that has
4 been subjected to the regulatory scrutiny which I've
5 just referred to, and that project is SR1.

6 It's for that reason that Alberta Transportation
7 did not engage in debate during the hearing in response
8 to comments or the conjecture about MC1, for which there
9 is no fulsome record of review before this Board; which
10 would include a hearing from parties who might be
11 opposed to constructing the in-stream dam on the
12 Elbow River in a popular recreation area in Kananaskis
13 country.

08:14

14 That said, in his opening statement on the first
15 day of the hearing, Mr. Hebert, the project's executive
16 director and Alberta Transportation's lead witness,
17 identified the attributes of SR1 which led to its
18 selection, including: it is an off-stream dam and less
19 sensitive than an in-stream dam to the impacts from
20 sediment and debris; it will capture more floodwaters
21 due to the location further downstream; it's closer to
22 operation, response teams, and access roads; it has less
23 environmental impact; it has less impact on the
24 Elbow River; it's less vulnerable to damage during
25 extreme weather, including catastrophic failure during

08:15

1 construction; it has less impact on social and
2 recreational values and it has less impact on commercial
3 and tourism values; it has a positive economic impact;
4 and it is many years closer to being built and
5 functioning than any alternative project.

6 This project has received expressed support from
7 the City of Calgary, Erlton Community Association, the
8 Calgary Rivers Communities Action Group, Flood Free
9 Calgary, which, as you may have heard, includes members
10 such as Calgary Economic Development, Calgary Chamber of 08:16
11 Commerce, and the Calgary Stampede, among others. In
12 addition, a number of Indigenous groups in Rocky View
13 County, who raised initial concerns about SR1, did not
14 maintain any objections to this project advancing.

15 Now, in reviewing the framework for review, we note
16 that the NRCB is conducting the review of this project
17 pursuant to its jurisdiction under the NRCBA. The
18 purpose of the Act is to provide an impartial process to
19 review projects that will or may effect the natural
20 resources of Alberta in order to determine whether, in 08:16
21 the Board's opinion, the projects are in the public
22 interest having regard to the social and economic
23 effects of the projects and the effect of the projects
24 on the environment.

25 In previous decisions the Board has confirmed that

1 it does not have a fixed formula to determining whether
2 a reviewable project is in the public interest. In its
3 recent Cougar Creek decision the Board noted that:

4 (as read)

5 "There is no fixed objective test. To
6 make the determination the Board
7 balances the economic, environmental,
8 and social interests in the context and
9 time period for which they arise. In
10 the Board's view for a project to be in
11 the public interest, the Board must be
12 convinced that the identified project
13 benefits the region and the province and
14 is consistent with any applicable
15 *Alberta Land Stewardship Act*, regional
16 plan, without generating unacceptable
17 economic, social, or environmental
18 impacts."

19 Clearly SR1 is a reviewable project under the Act
20 because it is a water management project as defined.
21 And Alberta Transportation was required to prepare an
22 environmental impact assessment under the *Environmental*
23 *Protection Enhancement Act*.

24 On February 5th, 2015, Alberta Environment and
25 Parks, AEP, issued final terms of reference for the EIA.

08:17

08:17

1 And those terms of reference were comprehensive and
2 included diverse issues such as dam safety, air quality,
3 hydrogeology, hydrology, surface water quality,
4 vegetation, water, wildlife, and biodiversity, terrain
5 soils, historic resources, traditional ecological
6 knowledge, public health and safety, socioeconomic
7 impacts, mitigation measures, and residual effects.

8 As the Board is aware, the EIA was submitted on
9 November 7, 2017, with the revised EIA submitted in
10 March of 2018. As I've already noted, extensive
11 information requests were then submitted by Alberta
12 Transportation to AEP and the Impact Assessment Agency
13 of Canada, IAAC, and to this Board.

14 I'd like to just briefly speak to some of the other
15 approvals required for this project. The project will
16 require provincial approvals under the *Water Act* and the
17 *Public Lands Act*. Alberta Transportation has been
18 working with AEP's *Water Act* approvals team since 2019
19 on SR1. It requires the following approvals under the
20 *Water Act*: Approval to conduct project activities that
21 affect the aquatic environment; it requires a temporary
22 diversion licence; it requires approval to disturb
23 wetlands under the Alberta Wetlands Policy; and it
24 requires the acceptance by AEP's director of dam safety
25 of the dam design, consequence rating and emergency

08:18

08:19

1 management plan to ensure the project is designed,
2 constructed, operated, and maintained safely.

3 Alberta has regular discussions with the *Water Act*
4 approvals team to confirm appropriate project design and
5 environmental effects. Information is being provided,
6 including submitting the *Water Act* application in
7 July 2020; the Wetlands Impact Assessment Report in
8 August of 2020, and a Preliminary Design Report and
9 associated appendices in December of 2020.

10 Mr. Chairman, with regard to the *Public Lands Act*,
11 approvals are needed to support the construction and
12 overall operation of the reservoir by permitting the
13 temporary and permanent work that will take place within
14 the Elbow river and three tributaries located within the
15 off-stream reservoir area and along the outlet channel.

16 Finally, as you're aware, IAAC has also conducted
17 an environmental assessment of the project under the
18 *Canadian Environmental Assessment Act*. As noted by
19 Mr. Hebert in his opening statement, IAAC has released a
20 draft report, which indicates the taking into account
21 the implementation of key mitigation and follow-up
22 program measures. The project is not likely to cause
23 significant adverse effects.

24 The public review period for the IAAC draft report
25 ended April 1st, 2021, and the report is now being

08:20

08:21

1 finalized. And we understand that when that is done it
2 will be forwarded to the federal minister for decision
3 under CEAA 2012.

4 In addition, Alberta Transportation has been
5 working with Fisheries and Oceans Canada, DFO, since
6 2019. Alberta Transportation is applying for an
7 authorization under the federal *Fisheries Act* for
8 undertakings or activities that may result in harmful
9 alteration, disruption, or destruction of fish habitat
10 or the death of fish.

08:22

11 Alberta Transportation is also applying for
12 authorization under the federal *Species At Risk Act* for
13 potential effects to bull trout.

14 Alberta Transportation understands that under
15 section 74 of the *Species At Risk Act* activities
16 resulting in prohibited effects on listed aquatic
17 species at risk such as bull trout can be authorized
18 under the other federal legislation, including the
19 *Fisheries Act*. Our further understanding is that if SR1
20 receives authorization from DFO, the issued
21 *Fisheries Act* authorization will also serve as a species
22 at risk permit.

08:22

23 Alberta Transportation has had, and continues to
24 have, ongoing and regular discussions with DFO to
25 understand the potential fish offsetting requirements

1 for SR1.

2 Next, sir, I'd like to turn to project need and
3 justification.

4 In the aftermath of the devastating flood of 2013
5 of the Elbow River, the government of Alberta made flood
6 mitigation on the Elbow River a matter of the highest
7 priority. The proposed project is the government's
8 direct response to the 2013 flood, which resulted in the
9 loss of human life and significant economic and personal
10 costs to members of the public, corporations,
11 municipalities, and the province itself. As Mr. Hebert
12 said in his opening statement at the commencement of the
13 hearing: (as read)

08:23

14 "The sole purpose of SR1 is to deliver
15 the important public benefit of flood
16 mitigation on the Elbow River. In
17 tandem with the recent upgrades to the
18 Glenmore Reservoir, SR1 will operate to
19 reduce overland flooding below the
20 reservoir to levels that will not result
21 in damage to property."

08:23

22 With regard to the need for the project, at the hearing
23 we heard evidence from Mr. Hebert, the City of Calgary,
24 CRCAG, and FFC regarding the extensive social,
25 environmental, and economic costs and impacts caused by

1 the 2013 flood; identified the five fatalities, the over
2 \$5 billion in damages, the displacement of 88,000
3 Calgarians, damage to approximately 14,500 homes,
4 flooding of 4,000 businesses, and Calgary's downtown
5 core being left inaccessible for days due to power
6 outages, damaged access routes, and public safety risks
7 due to pooled water on roadways and pathways.

8 As stated by Mr. Hebert, the 2013 flood was a
9 terrible event that will always be remembered by those
10 that had to live through it.

08:24

11 Mr. Chairman, the need for this project is beyond
12 question. It has now been almost eight years since the
13 2013 flood. It's predicted that a flood of some
14 magnitude is expected on the Elbow River every eight to
15 ten years. The project is needed, and it is needed now.

16 The next aspect to address is the social and
17 economic project costs and benefits.

18 The project will provide considerable social and
19 economic benefits by substantially reducing the flood
20 hazard on the Elbow River in the City of Calgary and
21 other downstream communities. The project will reduce
22 the effects of extreme future flood events on
23 infrastructure, properties, and the people in the City
24 of Calgary and downstream communities.

08:25

25 As stated in Table 17.6 of the EIA, it is estimated

1 that \$1.5 billion is at risk due to future flooding on
2 the Elbow River of the same magnitude as the 2013 flood
3 without flood protection. Put that another way, SR1
4 will result in flood damage avoidance benefits for a
5 design flood on the Elbow River of almost 1.5 billion.

6 The resulting economic effects of a disaster of
7 this magnitude are far-reaching and have implications
8 for all Albertans. And by mitigating the risk of future
9 costly expenses related to flood damages and recovery,
10 this project will benefit all Albertans.

08:26

11 David Sol of IBI explained the process by which
12 damages were divided between the Elbow and Bow River.

13 As Mr. Sol said, an object-based model calculated
14 damages for each individual building and they were then
15 able to delineate whether the damage to a building was
16 from the Elbow or the Bow River. It's based on that
17 analysis the flooding risk from the Elbow River system
18 alone was calculated at 1.5 billion.

19 As I've stated, without SR1, there will be severe
20 impacts from unmitigated flooding. And the City of
21 Calgary's evidence was clear, the City is unable to
22 mitigate a 2013-sized flood event on the Bow River on
23 its own.

08:27

24 This project will also result in a number of
25 short-term and long-term positive economic impacts to

1 Rocky View County, Springbank, and Indigenous groups,
2 including employment and business opportunities during
3 project construction, and the economic benefits of flood
4 protection, both directly to Springbank and Rocky View
5 County and indirectly due to the reduced flood risk to
6 the City of Calgary.

7 The economic benefits for the project are detailed
8 in Exhibits 38 and 56, the employment and economy
9 volumes of the EIA.

10 Additionally, during a flood event, the project
11 will either avoid or greatly reduce the generalized
12 economic costs that would be borne by all Alberta
13 taxpayers, such as government expenditures on flood
14 cleanup.

08:27

15 Further, while SR1 does not provide a direct
16 storage component for water, we heard evidence that it
17 does improve water security on the Elbow River.

18 In oral evidence, Mr. Wood explained that,
19 currently, the Glenmore Reservoir is operated in the
20 spring for a certain degree of flood control through the
21 drawing down of the reservoir in preparation for the
22 flood season. However, if no floodwater arrives, this
23 could result in water deficits later in the year.

08:28

24 Therefore, by reducing the flood risk on the
25 Elbow River, the Glenmore Reservoir is able to operate

1 more effectively as a water supply facility. This is
2 another benefit of SR1.

3 And, as I've said, in any event, the application
4 before the Board is for flood -- for a flood mitigation
5 project to avoid the critical need -- and to address the
6 critical need for flood mitigation on the Elbow River.
7 It's not an application for a drought management
8 project.

9 As was noted in the evidence of Mr. Frigo for the
10 City of Calgary, the Elbow River watershed would not
11 warrant an investment in a drought management project.

12 In response to the repeated submissions of the SCLG
13 and others that alternatives, such as MC1, would provide
14 greater benefits than SR1, Alberta Transportation
15 reiterates that the wisdom of selecting SR1 over other
16 alternatives is not the issue before the Board.
17 Regardless, Alberta Transportation submits that the
18 evidence supports SR1, is best suited to provide timely,
19 reliable, and effective flood mitigation on the
20 Elbow River.

21 I'll address the project costs in a moment, but
22 with respect to social costs, the costs of the project
23 and the local community after construction, I just want
24 to say, the impacts associated with this project are
25 temporary, and would occur periodically, some only every

08:29

08:29

1 100 years.

2 As indicated in Alberta Transportation's filed
3 materials and confirmed by Dave Brescia in oral
4 evidence, he said: (as read)

5 "Over the last 100 years of record, the
6 project would only have operated ten
7 times, and almost every single one of
8 those flood events would have been at
9 the small size of flood, in the sort of
10 a 1 in 10-year size of flood."

08:30

11 In most years, SR1 will not be in use, and the land in
12 the reservoir, which will be Crown land, will be
13 available for use by First Nations and the public.

14 This is not a project where there will be impacts
15 such as a facility generating emissions and effluent
16 experienced by the local community 24 hours a day, seven
17 days a week. Instead after construction is completed,
18 there will be limited and mitigative impacts during the
19 infrequent flood operations.

20 Alberta Transportation reiterates that if SR1 is
21 not approved, there will continue to be serious impacts
22 from unmitigated flooding on local and downstream
23 residents and businesses with the accompanying health
24 and safety risks, public and private expense, and
25 personal and social effects. The status quo is not

08:31

1 acceptable.

2 Now with respect to project costs, we heard in
3 Mr. Hebert's opening statement that the current budget
4 for SR1 in the government of Alberta's capital plan is
5 \$432 million. Alberta Transportation submits that SR1
6 is a sound investment of public resources, a necessary
7 and critical infrastructure. This is demonstrated by
8 the substantial positive benefits that SR1 will provide
9 through the mitigation of impacts of future flooding on
10 the Elbow River, on public safety, infrastructure on the 08:31
11 lives and livelihood of downstream residents and
12 property owners.

13 It's also demonstrated by the fact that SR1 will
14 result, in the case of another 2013-type flood, in
15 avoided damages of \$1.5 billion.

16 As noted by Mr. Hebert, the cost estimates for SR1
17 are being closely monitored to ensure this flood
18 mitigation project can be delivered in a timely and
19 effective manner. Final costs will be based on final
20 design and a competitive construction tender, completion 08:32
21 of land acquisition, and any conditions set by the
22 regulators.

23 Alberta Transportation submits that there is little
24 value in comparing the current estimated costs of SR1 to
25 the early estimates of other projects which were never

1 advanced to the same degree of engineering, design and
2 stakeholder consultation and engagement. The increases
3 in cost for SR1 aren't that unusual based on having been
4 several design changes made as the project progressed
5 with additional fieldwork, engineering, and design work
6 itself. This is a normal evolution of an infrastructure
7 project as detailed design provides additional certainty
8 and understanding of the project construction
9 conditions.

10 For example, in the three and a half years between
11 March 31st, 2017, the Interim Design Report, and the
12 September 25th, 2020, Preliminary Design Report, there
13 were notable changes to the project which caused changes
14 to the project's costs estimates, including the
15 inclusion of the debris deflection barrier, the
16 relocation of the low-level outlet and the addition of
17 riprap to the diversion channel.

18 With regard to land acquisition costs, Alberta
19 Transportation prepared the land acquisition program.
20 And, as noted, landowners for whom Alberta
21 Transportation must acquire land are entitled to be
22 fully and fairly compensated, as per the *Expropriation*
23 *Act*. They're entitled to hire appraisers, legal
24 counsel, all at Alberta Transportation's expense, and
25 are entitled to compensation based on the fair market

08:33

08:33

1 value of their lands that includes disturbance, damages,
2 and damages for injurious affection.

3 The evidence is that since negotiations with SR1
4 landowners began, Alberta Transportation has obtained a
5 substantial number of appraisals, as have landowners.
6 And through this process, Alberta Transportation has
7 gained a better understanding of the anticipated land
8 acquisition costs, which have increased from the initial
9 estimates.

10 These changes to the project costs reflect that
11 Alberta Transportation has been responsive to the
12 concerns raised, and has been and remains prepared to
13 address them in the project plans.

08:34

14 Mr. Chairman, the benefits associated with SR1 are
15 indisputable. It will have a substantial effect on
16 reducing not only the real economic costs but the
17 emotional toll that has affected downstream residents
18 and businesses. As such, Alberta Transportation submits
19 that the benefits of SR1 clearly and substantially
20 outweigh the costs.

08:35

21 Next, I'd like to address the alternatives
22 considered.

23 Section 7.1 of the terms of reference in the EIA
24 require Alberta Transportation to describe the project
25 alternatives considered for flood mitigation. With

1 respect to that, Alberta Transportation went to
2 considerable lengths to consider alternatives, including
3 carrying out a scoping level assessment and benefit cost
4 analysis of an in-stream project on the Elbow River at
5 the confluence of McLean Creek.

6 The outcome of Alberta Transportation's alternative
7 assessments was that SR1 was selected.

8 It is submitted that the decision to select SR1
9 over other alternatives was justified much for the
10 reasons as summarized by Mr. Hebert, which I referred
11 to.

08:36

12 Further, as I stated in my introductory remarks,
13 Alberta Transportation submits that the selection has
14 been made, and the government's decision to select SR1
15 over other alternatives is not a matter before the
16 Board. And, as the Board has noted earlier, its mandate
17 is limited to determining whether the reviewable
18 project, in this case, SR1 is in the public interest.

19 Again, notwithstanding the Board's clear direction,
20 many interveners have spent much of their time and their
21 testimony arguing the benefits of MC1 as compared to
22 SR1. They argue MC1 could provide a suite of other
23 benefits such as recreation, drought management, and a
24 water source for firefighting.

08:36

25 Indeed, noting in particular, Ms. Hunter's

1 submissions were almost entirely aimed at arguing that
2 MC1 should have been selected over SR1, and that it was
3 flawed decision-making which resulted in SR1 being
4 selected as she reviewed a detailed timeline.

5 However, as previously noted, the Board is being
6 asked to review SR1 to determine if it is in the public
7 interest, not whether MC1 ought to have been chosen. It
8 would be impossible to compare the two projects at this
9 point, given the extensive assessments and work done on
10 SR1 since it was selected.

08:37

11 Alberta Transportation submits that the argument
12 that MC1 could provide a suite of other benefits, such
13 as I described, is simply wrong. Similar to SR1, MC1
14 was not developed with the goal of achieving these
15 multiple objectives of recreation, drought management,
16 or water source for firefighting; the conceptual plan
17 for MC1 actually just focused on flood management. The
18 purpose of both SR1 and MC1 is for flood mitigation, not
19 for generating a revenue or increasing recreational
20 opportunities. As an in-stream dam, MC1 was designed to
21 have a small pond for sediment management, not a large
22 reservoir for recreation or water management purposes.

08:38

23 Consequently, Mr. Chairman, this is not an argument
24 that MC1 would have been better than SR1; it's an
25 argument that some other project, which was never

1 designed, would be better.

2 Further, Alberta Transportation submits it's
3 important to remember that SR1 makes up only one
4 component of a larger flood mitigation plan for the Bow
5 River Basin. Other components include the upgrade of
6 Glenmore Reservoir berms within the City of Calgary,
7 berms at Bragg Creek and Redwood Meadows, and a
8 potential new flood control structure on the Bow River.

9 Ultimately, all of these projects will work
10 together to provide significantly enhanced flood
11 protection to communities in the Bow River Basin.
12 Moreover, many of these other projects fall within
13 municipal or First Nations' jurisdiction, not
14 provincial, and Alberta Transportation is not their
15 proponent.

16 Most of those other components are already complete
17 and are not part of this project and not before the NRCB
18 for approval. Again, it's only SR1. And with regard to
19 the new flood control project that was discussed on the
20 Bow, it will be reviewed and assessed in other processes
21 as required.

22 As required, in the terms of reference for the EIA,
23 Alberta Transportation has described in great details
24 the alternatives considered for flood mitigation on the
25 Elbow River. It cannot be seriously argued that Alberta

08:39

08:39

1 Transportation did not go to great lengths to assess
2 alternatives and give them serious consideration.

3 Alberta Transportation accepts that the Board's
4 public interest mandates requires it to consider whether
5 alternatives to the project were adequately assessed
6 and, Mr. Chairman, we submit that they were.

7 Next, I'd like to speak to the Crown engagement
8 with the public. Alberta Transportation submits that
9 its engagement with the public on SR1 was appropriate
10 and meets the expectations concerning public
11 consultation. Through its engagement program Alberta
12 Transportation explained the social, economic, and
13 environmental effects of the project to potentially
14 affected persons, such as landowners from whom Alberta
15 Transportation must acquire land and members of the
16 larger Springbank community. It made extensive and
17 sincere efforts to resolve the concerns that have been
18 expressed by stakeholders.

08:40

19 Beginning in 2014, Alberta Transportation engaged
20 directly with affected landowners, adjacent landowners,
21 and special interest groups, elected officials, and the
22 public to provide project information, including the
23 design and the regulatory process, answer questions and
24 obtain feedback.

08:40

25 This information was presented through a variety of

1 sources from open houses, meetings, emails, drop-offs,
2 phone calls, and newsletters. The engagement with
3 members of the SCLG is detailed in Alberta
4 Transportation's reply submissions that I referred to,
5 turning at paragraph 40 and in the consultation
6 chronology. I won't repeat all of that evidence now,
7 but I just want to bring to the Board's attention a
8 couple of points.

9 As members of the SCLG complained, the landowners
10 were not consulted early enough. We have heard evidence 08:41
11 that as early as July 18, 2014, representatives of AT,
12 Alberta Transportation, and Alberta Environment met with
13 a number of local landowners, including several who are
14 now members of the SCLG, or interveners.

15 At this meeting the landowners were advised SR1 had
16 been selected for detailed engineering and design and
17 confirmed also that both MC1 and the Calgary tunnel
18 options were moving forward for continued study. With
19 regard to MC1, that included advancement of the
20 conceptual design and scoping level, assessment, and 08:42
21 benefit cost analysis.

22 On March 3rd, 2015, representatives of Alberta
23 Transportation and Environment again met with local
24 landowners, including several members of the SCLG. The
25 purpose of that meeting was to provide an update on the

1 project and the continued review of others. Alberta
2 Transportation advised that the next step involved
3 carrying out the EIA, and later that month it held two
4 open houses, and also provided a community group, "Don't
5 Dam Springbank," a group in opposition, with a table
6 near the entrance of each of those open houses.

7 In May of 2016, two more open houses were held, and
8 on October 26, 2016, Alberta Transportation
9 representatives met with Mrs. Robinson for a walking
10 tour of her property, and she provided the history of
11 her ranch and pointed out archeological sites.

08:43

12 In 2017 and '18 there were six more open houses,
13 and as well as a technical briefing for landowners on
14 the federal environmental impact assessment that was
15 held in November of 2017 at the McDougall Centre.

16 Towards the end of 2018, senior Alberta,
17 Transportation representatives met with several persons
18 who are now members of the SCLG, including Dr. Klepacki,
19 Karen Massey, Karin Hunter, and Mary Robinson. A total
20 of four project updates were issued to stakeholders
21 since the summer of 2019, each at which invited anyone
22 with questions or comments about the project to contact
23 Alberta Transportation. And as of the date of the
24 Board's pre-hearing conference, a total of 12 open
25 houses and two community information sessions were held

08:43

1 at locations in or near the local community.

2 We heard in Mr. Hebert's opening statement that he
3 had personally spoken to numerous landowners in the
4 project area and, whenever requested, has met with them
5 to better understand their concerns.

6 And as stated by Mr. Hebert: (as read)
7 "Alberta Transportation will continue to
8 engage with stakeholders after the
9 approval of the project if it is granted
10 by this Board."

08:44

11 As I discussed in more detail a moment ago, during 2019
12 and 2020 Mr. Hebert was in regular contact with
13 Ms. Hunter in her capacity as the president of the
14 Springbank Community Association by email and phone to
15 provide project updates and respond.

16 Mr. Chairman, it's submitted that the mere fact
17 that some stakeholders have unresolved concerns does not
18 mean that Alberta Transportation's engagement and
19 consultation on the project was not adequate. It
20 engaged with local stakeholders, including members of
21 the SCLG, in good faith. Unfortunately, it's just
22 sometimes not possible to resolve all conflicts.
23 Alberta Transportation carefully reviewed the
24 landowners' statements as part of the SCLG's evidence;
25 and many of those statements have complaints about

08:45

1 Alberta Transportation's engagement with stakeholders
2 who are now members of the SCLG. As a result, Alberta
3 Transportation prepared a chronology of engagement with
4 members of the SCLG, and it was included in the reply
5 submissions.

6 I think it's noteworthy, in our submission, that
7 none of the members of the SCLG who testified at the
8 hearing took any serious exception to the accuracy of
9 that chronology. Alberta Transportation submits the
10 Board may rely on it as providing an accurate picture of
11 engagement that occurred with SCLG members. 08:46

12 One SCLG member who did comment on the chronology
13 was Ms. Hunter, who testified that entries which
14 detailed numerous email communications with Mr. Hebert,
15 I think Ms. Hunter commented that she did not consider
16 emails to be consultation. In fact, in several of those
17 emails Mr. Hebert offered to meet with Ms. Hunter as
18 president of the Springbank Community Association. In
19 cross-examination she was asked whether in her view
20 testimony that emails do not constitute consultation,
21 she considers the proponent offering to meet -- I'm
22 sorry, I should just correct that. 08:46

23 In view of her testimony that emails do not
24 constitute consultation, she considers the proponent
25 offering to meet to be consultation. In response to

1 that question, she acknowledged Mr. Hebert's various
2 offers to meet with her, and stated that she appreciated
3 his willingness to reach out and that Mr. Hebert's
4 intent was good.

5 Ms. Hunter acknowledged that she did not take up
6 Mr. Hebert's offers to meet. And when she was
7 questioned about this, she explained: (as read)

8 "I just think there's been -- there's
9 been a case of misguided expectations,
10 potentially on both sides, and honestly,
11 our philosophy and now I'm going to just
12 speak as my Springbank Community
13 Association role. Our priority has
14 always been hit those regulatory
15 deadlines. It has not been engage with
16 Alberta Transportation because
17 fundamentally we don't agree this is the
18 right project. And so for us to spend
19 time one on one with Matthew Hebert and
20 even the project team to understand,
21 what's the point."

22 Clearly, Ms. Hunter's position on SR1 and that of the
23 SCLG was fixed and no amount of consultation or
24 engagement by Alberta Transportation could have changed
25 anything. Ms. Hunter's testimony that hitting the

08:47

08:47

1 regulatory deadlines was her priority, and as she
2 explains in her presentations, both written and oral,
3 are in the nature of advocacy and argument, but not
4 evidence.

5 Mr. Chairman, it's sometimes said that consultation
6 is a two-way street. A proponent such as Alberta
7 Transportation is required to provide interested parties
8 with both information about its proposed project and
9 opportunities to ask questions and express concerns. If
10 it received questions and answers about a project, it's
11 obliged to respond to them in good faith. Alberta
12 Transportation fulfilled those obligations, but a
13 proponent cannot force someone to like a project and it
14 cannot force someone to engage with them.

08:48

15 That said, Mr. Chairman, as you know, Alberta
16 Transportation is committed to appointing a community
17 liaison, a representative from Alberta Transportation
18 during construction and from AEP during operations, who
19 will serve as that point of ongoing contact with
20 stakeholders. The community liaison will primarily
21 communicate through the local representation for
22 Indigenous groups, community associations, local
23 businesses, government administration, and local
24 government officials. Any complaints received during
25 project construction will be directed by the community

08:49

1 liaison to the construction contractor.

2 Next I'd like to address Crown consultation land
3 use.

4 In this part of our argument I'll begin by
5 discussing Alberta's consultation with Indigenous
6 people's generally and then speak to some of the
7 specific issues with respect to the Stoney Nakoda
8 Nations. I'll also comment on potential project impacts
9 on historical resources and summarize some of the
10 commitments made by Alberta Transportation.

08:50

11 Alberta Transportation has taken its obligation to
12 consult with and, where necessary, accommodate First
13 Nations very seriously and has engaged with Indigenous
14 communities. Alberta Transportation's Indigenous
15 engagement program for the SR1 project reflects its
16 efforts to conduct a meaningful and responsive
17 engagement program based on respected transparency. The
18 program designed by Alberta Transportation followed
19 federal and provincial guidelines, took direction from
20 Alberta government's Aboriginal Consultation Office,
21 ACO, and IAAC, and strove to respect each Indigenous
22 groups' specific protocols.

08:50

23 And, as you've heard, Mr. Hebert was directed to
24 consult with five Treaty 7 First Nations by the ACO and
25 another -- and engage with another eight Indigenous

1 groups identified by IAAC.

2 Alberta Transportation recognizes the NRCB must
3 also satisfy itself as to the adequacy of consultation
4 and accommodation based on all of the evidence before
5 it. In this regard, Alberta Transportation submits that
6 it has undertaken a fulsome consultation effort, which
7 was fully documented in the record of consultation,
8 submitted as Exhibits 153 and 320, as part of Alberta
9 Transportation's application before this Board.

10 Its consultation started early with the Treaty 7
11 First Nations in August of 2014, as directed by the ACO.
12 Alberta Transportation requires a positive consultation
13 adequacy decision from the ACO prior to issuance of
14 *Water Act* or *Public Lands Act* approvals for the project,
15 and to support the EIA completeness decision by Alberta
16 Environment and Parks.

08:51

17 ACO monitors Alberta Transportation's Treaty 7
18 consultation activities and receives bimonthly
19 consultation updates for review and comment.

20 Once Alberta Transportation informs the ACO that it
21 is closing consultation on the project and submits an
22 adequacy consultation request, the ACO will conduct a
23 consultation adequacy assessment to confirm that the
24 fulfillment of the delegated procedural aspects of
25 consultation have been carried out in accordance with

08:52

1 Alberta's policies and guidelines. The ACO's
2 consultation adequacy decision will include any
3 recommendations it has and is made available to the AEP
4 directors responsible for those applications to inform
5 their decision-making. Alberta Transportation is
6 required to close consultation as a prerequisite to
7 issuing those *Water Act* and *Public Lands Act* approvals.

8 Based on the March 3rd, 2021, letter from the ACO
9 to the NRCB, it's our understanding that the ACO does
10 not provide a recommendation or advice to the NRCB. The 08:53
11 ACO has no formal role in the NRCB processes, including
12 regarding any consultation that the NRCB may engage with
13 a First Nation.

14 However, the ACO and Alberta ministries may rely on
15 the NRCB process, including, but not limited to, the
16 decision report to satisfy any duty to consult that may
17 be owed by the Crown regarding potential adverse impacts
18 to the exercise of rights to which section 35 of the
19 *Constitution Act* pertains and of traditional uses, as
20 defined in Alberta's First Nation consultation policy 08:53
21 and guidelines.

22 Alberta Transportation submits that through the
23 engagement process and follow-up, it has been able to
24 successfully respond to many of the concerns raised by
25 Indigenous groups and believes this is reflected in the

1 fact that only one First Nation has chosen to intervene
2 in the hearings before this Board.

3 Alberta Transportation has described the process it
4 undertook of receiving traditional land use studies from
5 each Indigenous group, it prepared written responses to
6 the comments and concerns, it identified potential
7 mitigation to avoid or reduce those effects, and offered
8 to meet Indigenous groups and obtain their feedback.

9 In response to that feedback that was received,
10 Alberta Transportation then made a number of significant
11 modifications to the project, such as the fish passage
12 measures, the fish rescue program, improved wildlife
13 passage, and the addition of the debris deflector.

14 And as you've heard, one of the most significant
15 changes to the project in response to First Nation
16 concerns was the development of the Updated Draft
17 Guiding Principles and Direction for Future Land Use.

18 This document provides guidance for the future land
19 uses of the project for AEP as a future operator, and it
20 will be responsible for developing the final land use
21 plan once and if the project is approved and proceeded
22 with.

23 The project is predominantly situated on private
24 land that has been used for ranching and agriculture
25 since the late 1800s.

08:54

08:55

1 Alberta Transportation submits the project may
2 enhance opportunities for First Nations to exercise
3 Treaty rights and traditional land uses compared to the
4 existing conditions where access is contingent on the
5 consent of the landowner.

6 The project creates a novel situation where it
7 acquires private land, converts it to Crown land to
8 allow for future First Nation use and use by other
9 stakeholders. This includes the practice of Treaty
10 rights and traditional uses among a number of secondary
11 uses to the actual flood mitigation activities. 08:55

12 The Draft Guiding Principles calls for the
13 additional engagement to ensure all interested parties
14 have an opportunity to express any concerns or interests
15 they have in its finalization, which would occur after
16 all project approvals are obtained.

17 It is the intention that the final land use plan
18 will be developed with meaningful consideration of input
19 received by First Nations and other users.

20 The government of Alberta is interested in using an 08:56
21 iterative and collaborative approach in the development
22 of the land use plan. It anticipates that land use
23 issues pertaining to First Nations can be reasonably
24 addressed through the First Nations Land Use Advisory
25 Committee that has been proposed.

1 In addition, you've also heard that Alberta
2 Transportation has committed to meaningful Indigenous
3 participation in the construction of SR1, if it is
4 approved, through training, employment and contracting
5 opportunities.

6 Alberta Transportation developed a Draft Indigenous
7 Participation Plan and shared it with Indigenous groups
8 since November of 2019. And since that time, it's
9 advanced the draft and met with Indigenous groups
10 hosting business readiness workshops, and has obtained
11 information on businesses and contractors from those
12 First Nations that could participate in construction
13 opportunities.

08:57

14 It may be useful in the Board's consideration of
15 the adequacy of consultation to consider some of the
16 comments of Dr. Buchanan who has extensive experience in
17 this issue and commented that: (as read)

18 "The record demonstrated that Alberta
19 Transportation conducted robust and
20 meaningful consultation as he reviewed
21 the thousands of entries of meetings,
22 workshops, site visits, correspondence,
23 funding for traditional use studies and
24 ongoing updates."

08:57

25 Relevant project information was shared in a timely

1 manner and in an accessible format. Alberta
2 Transportation met with Indigenous groups in an earnest
3 effort to obtain their perspectives on the project, its
4 effects, and their specific concerns and recommendations
5 for mitigation.

6 Dr. Buchanan also noted that: (as read)

7 "Alberta Transportation took an
8 exceptional step, ensuring the draft
9 traditional land and resource use
10 effects assessment with Indigenous
11 groups prior to filing the EIA in
12 March of 2018, and offering to hold
13 workshops with Indigenous groups to
14 obtain their input on proposed
15 mitigation measures and discuss how
16 project specific concerns have been
17 addressed in the EIA."

18 Alberta Transportation submits that all of these efforts
19 reflect meaningful attempts to ensure that there has
20 been adequate consultation and engagement.

21 And further, as you've heard from Mr. Hebert, those
22 commitments do not end with this hearing, as there will
23 be continued engagement proposed going forward.

24 Now, I'd like to speak to some of the concerns
25 raised by the Stoney Nakoda Nations in these

08:58

08:58

1 proceedings.

2 Alberta Transportation has closely reviewed the
3 written submissions and evidence provided by the SNN.
4 It notes that the SNN did not take any issue with the
5 consultation record as it pertained to them. And
6 extracts from that -- from the record of consultation
7 were included in Appendix J to Alberta Transportation's
8 reply submissions, Appendix J at Exhibit 324. In fact,
9 much of the cross-examination of Alberta Transportation
10 appeared to focus on the potential flood mitigations on
11 the Bow River rather than any issues with respect to the
12 consultation logs.

08:59

13 Alberta Transportation notes that the EIA
14 reasonably identified Treaty rights and traditional uses
15 in the project development area, including those of the
16 SNN.

17 Alberta Transportation provided numerous
18 opportunities for the SNN to share input, perspectives
19 on potential effects of their Treaty rights and
20 traditional uses, including providing funding to conduct
21 a traditional uses study; providing the draft TLRU
22 assessment; and subsequently holding two workshops with
23 the SNN to obtain their perspectives on assessment
24 methodology and proposed mitigation; project-specific
25 concerns and how the project may affect the exercise of

09:00

1 Section 35 rights.

2 And Alberta Transportation provided correspondence
3 specifically requesting feedback on the exercise of
4 Treaty rights and traditional uses.

5 Alberta Transportation notes that the submissions
6 of the SNN to this Board demonstrates that it
7 understands that the NRCB and IAAC review processes are
8 intended to fulfill the provincial and federal Crown's
9 duty to consult.

10 The March 3rd, 2021 letter from the ACO to the NRCB
11 states that: (as read)

09:00

12 "Alberta may rely on the consultation
13 that occurred in the NRCB processes to
14 assist in meeting any duty to consult
15 owed by Alberta.

16 Further, the SNN have had considerable
17 opportunities for participation in
18 consultation. As noted, they've
19 received participant funding to
20 participate in the NRCB hearings and
21 have provided several witnesses to
22 provide oral Indigenous knowledge
23 testimony.

09:01

24 Alberta Transportation submits that the
25 information about traditional use by the

1 SNN provided in their interim
2 traditional land use assessment report
3 serves to confirm that the assumptions
4 made in the EIA about the nature and
5 extent of the SNN's traditional use of
6 the -- in the PDA."

7 Now, Alberta Transportation was concerned to hear the
8 comments by the elders of their experiences during the
9 site visits which were conducted in October and
10 November of 2016. They indicated they were not given
11 unrestricted access to the lands nor could they attend
12 on their own, as they indicated is often the case in
13 these types of assessments.

14 Alberta Transportation notes it was recognized that
15 the circumstances surrounding those visits was unique.
16 They involved private land rather than the more typical
17 situation of elders conducting visits on Crown land, as
18 access agreements are required from private landowners
19 that can include restrictions on times and locations.

20 It's truly unfortunate that the SNN did not bring
21 their concerns to the attention of Alberta
22 Transportation sooner rather than on the eve of this
23 hearing, as Alberta Transportation would have sought to
24 address them earlier. However, Alberta Transportation
25 stated it's committed to follow up with representatives

09:01

09:02

1 of the SNN to facilitate further site visits that can
2 take place in the most open and respectful manner as
3 possible.

4 Alberta Transportation noted and welcomed the
5 expression of interest from the SNN that they would seek
6 to complete their final traditional use assessment and
7 that elders, such as Henry Holloway, would be interested
8 in attending the site visits.

9 Bill Snow, the consultation manager for the SNN,
10 noted that the interim cultural assessment, or
11 traditional use assessment, that was prepared by the SNN
12 included some 13 recommendations that focused mainly on
13 mitigations for archaeology, wildlife, and cultural
14 monitoring.

15 Alberta Transportation has responded to each one of
16 those items in its reply document. It welcomes the
17 receipt of SNN's final traditional use assessment and is
18 prepared to provide additional support to the SNN to
19 complete that report, including facilitating additional
20 site visits, sharing project information and proposed
21 mitigation measures and the provision of additional
22 funding if required.

23 Alberta Transportation notes that there are still
24 funds remaining from the budget approved by Alberta
25 Transportation for the original visits and the TLU

09:03

09:03

1 report since 2016. However, should additional funding
2 be required, Alberta Transportation welcomes the
3 submission of a budget for review, and it would then
4 propose meetings with the SNN to plan and complete all
5 aspects of the work by the end of the summer of 2021.

6 Alberta Transportation further committed that, upon
7 receipt of the final TLUA, it would review that report
8 and provide its written response, and that response
9 would consider the concerns and potential project
10 effects identified by the SNN, noting whether those
11 potential effects have been assessed in the EIA and
12 identifying proposed mitigations to serve to reduce or
13 avoid those effects.

09:04

14 Alberta Transportation further committed to meeting
15 the SNN to receive feedback on the written response and
16 incorporate that feedback.

17 Alberta Transportation has also committed to
18 arranging site visits with the SNN and representatives
19 of Alberta Culture, Multiculturalism, and Status of
20 Women to review the specific cultural and traditional
21 sites identified by the SNN to gain input into the
22 nature and importance of how those sites -- the
23 importance of those sites and how they might be impacted
24 by the project and identify them from the SNN
25 perspective to ensure appropriate measures to record,

09:05

1 mitigate and commemorate those sites take place.

2 Alberta Transportation noted the SNN were invited
3 to observe archeological mitigation work undertaken last
4 year and will invite the SNN to observe future
5 archeological mitigation work that will be undertaken
6 this summer. It notes the comments and observations of
7 Dr. Berry, the SNN's witness on archaeology, and
8 confirms with Dr. Berry that the Historic Resource
9 Impact Assessment has not been completed. Alberta
10 Transportation explained that this is typical for a
11 project at this stage of the regulatory process and in
12 fact reflects the procedures under the *Historical*
13 *Resources Act*. Additional fieldwork as required by
14 Alberta Culture and Alberta Transportation intends to
15 complete this work in 2021. And as required by the
16 *Alberta Historical Resources Act*, Alberta Transportation
17 will obtain all necessary approvals from Alberta Culture
18 prior to construction.

09:05

19 In response to Dr. Berry's comments that the EIA
20 was not inclusive of SNN's perspectives and protocols on
21 land management, Alberta Transportation notes that it is
22 required to conduct work pursuant to the guidance and
23 requirements by Alberta Culture. The mitigation
24 measures and definition of significance provided by
25 Alberta Transportation is in compliance with the

09:06

1 regulatory requirements of the *Historical Resources Act*.

2 In response to Dr. Berry's statement that unlawful
3 destruction of cultural heritage is viewed as a crime
4 against humanity in the international courts, Alberta
5 Transportation notes that its work conducted on the site
6 was in accordance with its permit conditions and that it
7 reported its findings to Alberta Culture in accordance
8 with *Historical Resources Act*.

9 With respect to the submissions by Ms. Vanderjagt
10 with respect to the SNN's submission to the NRCB,
11 Exhibit 288, it's obliged to note that this report
12 appears to be prepared without consideration of the
13 information on the record of consultation and the
14 specific concerns and response table.

09:07

15 Further, Ms. Vanderjagt appeared to rely on other
16 reports, such as the NOVA Gas Transmission Ltd. reports,
17 which were prepared by others and addressed project
18 concerns in the Grande Prairie and Edson areas.

19 Ms. Vanderjagt acknowledged that the maps tendered
20 with the submission to the NRCB in this exhibit
21 pertaining to hunting and vegetation did not appear to
22 be supported by site-specific information and were
23 extracted from other projects.

09:07

24 Accordingly, Alberta Transportation submits that
25 the report is of limited value to the NRCB for its

1 review.

2 With respect to historical resources, Alberta
3 Transportation completed a Historical Resources Impact
4 Assessment for the project and no burials have been
5 identified in the PDA. Should burials be found in the
6 future, Alberta Transportation will follow the
7 provincial regulations in responding to them and is
8 prepared to contact and inform the SNN of the potential
9 to affect grave sites and archeological sites.

10 As noted, the SNN were invited to observe the
11 archeological work that took place in the fall of 2020.
12 And, as it has indicated, Alberta Transportation
13 welcomes a proposal from the SNN to participate in any
14 Historical Resources Impact Assessment to be conducted.

15 Alberta Transportation set out a number of its
16 commitments to the SNN in its opening statement which it
17 believes largely addressed those recommendations
18 identified by Mr. Snow. These are set out in Alberta
19 Transportation's reply document and its opening
20 statement.

21 Alberta Transportation also responded to other
22 requests, and in particular a letter to the Louis Bull
23 Tribe. And in it Alberta Transportation recognized
24 Louis Bull Tribe's request for post construction site
25 visits and confirmed its commitment to provide

09:08

09:09

1 opportunities to conduct site visits for the project
2 area during construction and another opportunity
3 post-construction to observe the proposed mitigation
4 measures and provide feedback.

5 These invitations will be extended to all First
6 Nations that would have an interest in doing so.

7 Alberta Transportation also committed to provide
8 opportunities for Indigenous elders to conduct site
9 field visits prior to construction to identify priority
10 areas for the harvest of traditional plants, as well to 09:10
11 allow for harvesting of medicinal and culturally
12 significant traditional needs plants prior to clearing.

13 Alberta Transportation has also committed to
14 continuing to provide the Louis Bull Tribe and other
15 engaged Indigenous groups with opportunities to provide
16 impact -- input on mitigation plans for the project,
17 including the draft vegetation and wetlands mitigation
18 and monitoring plan.

19 Alberta Transportation will welcome further input
20 and feedback from First Nations, including 09:10
21 recommendations on specific seed mix for the draft
22 vegetation plans.

23 Alberta Transportation's committed to have the
24 First Nations land use advisory committee meet on a
25 regular basis to ensure the continued inclusion of the

1 participating First Nations and the land use planning
2 for the project area. It is anticipated that the
3 format, structure, and mandate for this advisory
4 committee will be defined in a formal terms of reference
5 and be developed with participating First Nations.

6 As we referred to in the Topic 5 discussion,
7 Alberta Transportation also notes that there has been
8 extensive discussions with the SNN on the issue of
9 wildlife passage. Alberta Transportation has been alert
10 to this concern and shared with the SNN over a number of 09:11
11 occasions that wildlife movement is improved over the
12 PDA, with the removal of the extensive barbed wire
13 fencing and the fence around the perimeter of the
14 project will be wildlife friendly. Further, the
15 enhancement of the underpass under Highway 22 should
16 facilitate uninterrupted wildlife movement.

17 Alberta Transportation has encouraged First Nations
18 to be involved in reviewing the draft monitoring and
19 mitigation plans and the results of those plans,
20 including providing the draft monitoring plans, offering 09:11
21 funding to review the plans, and hosting group meetings
22 to discuss them. It welcomes continued input. And
23 these draft plans at this time include, as I said,
24 wildlife mitigation and monitoring, groundwater
25 monitoring, surface water monitoring plan, vegetation

1 and wetlands mitigation monitoring and revegetation
2 plan, the fish rescue and fish health monitoring and
3 mitigation programs, as well as the air quality and
4 management program.

5 I want to briefly speak also to some of the
6 concerns expressed by non-Indigenous interveners with
7 respect to the future land uses for the project
8 development area.

9 The SCLG and Mr. Wagner also commented on future
10 land use and, in particular, the updated draft guiding
11 principles and directions for future land use. 09:12
12 Questions were raised about hunting and firearms use,
13 access parking, the continued use of the project area
14 for grazing. The main concern appeared to be expressed
15 that remained uncertainty and the lack of clarity about
16 future land uses.

17 Mr. Chairman, Alberta Transportation emphasizes
18 that the draft guiding principles are just that: they're
19 draft, they're not final. And as the document states:
20 (as read) 09:13

21 "If the project is approved and the land
22 is acquired by the Crown, Alberta
23 Environment and Parks will continue to
24 engage First Nations and stakeholders in
25 the development of the final land use

1 plan based on those principles."

2 This was reiterated by Mr. Hebert during the hearing.

3 The questions and concerns raised by interveners
4 about future land use can and will be addressed through
5 the engagement that will be carried out by Alberta
6 Transportation and by AEP. To be clear, however, there
7 will be no unfettered or illegal hunting on the project
8 area, as suggested by any intervener.

9 Thank you, Mr. Chairman, those are my comments in
10 argument. Next I'll hand this off to my friend,
11 Mr. Fitch.

09:14

12 THE CHAIR: Thank you, Mr. Kruhlak.

13 MR. FITCH: Thank you, Mr. Kruhlak, and good
14 morning, Mr. Chair and Panel members.

15 I'm going to be delivering the balance of the
16 argument for Alberta Transportation. So that the
17 topics I'll be addressing are Topic Session 3, design
18 safety and risk; Topic Session 4, water; and Topic
19 Session 5, air and terrestrial.

20 So to begin with, design safety and risk. I'll
21 make a few introductory comments and then address the
22 various subtopics, being essentially description of the
23 project, the operating plan. And I'm going to
24 specifically address the issue of flooding downstream
25 of SR1, but upstream of the Glenmore Reservoir as that,

09:14

1 as you will recall, became quite an issue during the
2 hearing. And I will also address dam safety and risk
3 assessment, public safety, and then, finally, briefly
4 climate change.

5 So to begin, Mr. Chair, as I am sure you know by
6 now, SR1 is an off-stream reservoir that is designed to
7 mitigate floods on the Elbow River. As an off-stream
8 reservoir, it takes advantage of local topography.
9 Namely the low, broad Unnamed Creek valley that runs
10 roughly parallel to the Elbow River near Highway 22.

09:15

11 This means that the Elbow River will not be
12 permanently dammed and its flow will not be altered
13 unless SR1 needs to operate. This, in our submission,
14 reduces or eliminates all the significant adverse
15 environmental effects associated with an in-stream dam.

16 Because it is off-stream, SR1 can be operated such
17 that it is not subjected to all the flow that occurs on
18 the Elbow River, and this provides a very important
19 feature of risk management in the operation of the
20 project.

09:16

21 As you also know, Mr. Chair, SR1 will not operate
22 every year. It will only operate when flows in the
23 Elbow River exceed 160 cubic metres per second and if
24 weather forecasts warrant.

25 Based on historic records, SR1 would likely

1 operate only once every eight to ten years. When SR1
2 does need to operate, the operator, AEP, will divert
3 excess floodwater from the Elbow River into the
4 off-stream reservoir. This will be done incrementally
5 by raising the gates of the service spillway and
6 opening the gates of the diversion inlet. The water
7 will flow down the diversion channel into the
8 reservoir, where it will be impounded until it can be
9 released back into the river when conditions allow.

10 As noted by Mr. Menninger, the design of SR1 is,
11 in our submission, an elegant solution to the problem
12 of providing flood mitigation on the Elbow River.

09:17

13 As is well documented, Mr. Chair, in the EIA and
14 the many SIR responses, SR1 will consist of three basic
15 components: firstly, the diversion structure;
16 secondly, the diversion channel; and, thirdly, the dam
17 and reservoir. And within these three basic components
18 are a number of subcomponents.

19 So just beginning with the diversion structure, it
20 will consist of the service spillway, the diversion
21 inlet, the debris deflection barrier, the floodplain
22 berm, and the auxiliary spillway. The service spillway
23 is a double-gated structure located in the Elbow River
24 channel. When in operation, the gates of the service
25 spillway will be incrementally raised to control the

09:17

1 water surface elevations in the river and ultimately
2 the amount of flow that goes into the diversion
3 channel.

4 The service spillway will work in conjunction with
5 the diversion inlet, also a double-gated structure,
6 that will be constructed on riverbank left. When in
7 operation, the gates of the diversion inlet will be
8 raised, allowing water directed by the service spillway
9 to enter the diversion channel.

10 The debris deflection barrier will be located in
11 the river channel in front of the diversion inlet to,
12 as its name suggests, help block debris from entering
13 the diversion channel and promote debris passage
14 downstream.

15 The floodplain berm will be located adjacent to
16 the right bank of the river in the floodway. The
17 floodplain berm will act to constrain the Elbow River
18 and direct flow to the service spillway and diversion
19 inlet.

20 And finally with respect to the diversion
21 structure, the auxiliary spillway is a safety feature
22 built into the end of the floodplain berm adjacent to
23 the service spillway. Should water elevations in front
24 of the service spillway and diversion inlet get too
25 high, some of the water will flow over the auxiliary

09:18

09:19

1 spillway to prevent water circumventing the diversion
2 structure.

3 So those are the basic elements of the diversion
4 structure.

5 With respect to the diversion channel, it will
6 convey floodwaters from the diversion inlet to the
7 reservoir.

8 The diversion channel is designed to carry a
9 maximum flow rate of 600 cubic metres per second, and
10 this flow rate includes a safety margin of 25 percent
11 over 480 metres cubed per second, which is the flow
12 rate actually required to meet the design goal of
13 reducing flows below the Glenmore Reservoir to under
14 160 cubic metres per second during a design flood.

15 At a point approximately 1300 metres from where
16 the diversion channel enters the reservoir, the
17 emergency spillway will be located on the east side of
18 the diversion channel. As its name suggests, the
19 emergency spillway would not be used during normal
20 operations. It would only operate when the reservoir
21 is full and the diversion inlet gates fail to close.
22 It would allow water to flow out of the reservoir and
23 back toward the Elbow River to provide a margin of
24 safety at the dam.

25 So, finally, then, the dam and the reservoir, as

09:20

09:20

1 you know, Mr. Chair, the SR1 storage dam is an earthen
2 structure approximately 30 metres tall at its highest
3 point and approximately 3.3 kilometres in length. For
4 most of its length, the dam will be considerably
5 smaller than 30 metres in height.

6 The dam will impound floodwater in the reservoir
7 which is designed with active storage volume of
8 approximately 77.8 million cubic metres.

9 The storage volume includes a 10 percent margin of
10 safety over the 70 million cubic metres of storage that
11 is required to achieve the project's design goal.

12 The floodwater that is stored in the reservoir
13 will be released through the low-level outlet works at
14 the bottom of the dam. And from there, it will run
15 along the course of the Unnamed Creek and back to the
16 Elbow River.

17 The maximum flow rate to the low-level outlet is
18 27 cubic metres per second. In a design flood, the
19 low-level outlet will be able to drain the reservoir in
20 approximately 40 days.

21 With respect to the operating plan for SR1, this
22 is also clearly documented in the EIA and it bears
23 repeating that SR1 will not operate in most years.
24 This is what is referred to in the EIA as dry
25 operation. Dry operation of SR1 will consist mainly of

09:21

09:22

1 routine maintenance.

2 Flood operations will begin when flow rates in the
3 river reach 160 cubic metres per second. The basic
4 operating plan is that flow through the service
5 spillway will be maintained at 160 metres cubed per
6 second while flow rates in the river are between 160
7 and 760 metres cubed per second with the excess flow up
8 to 600 metres cubed per second directed through the
9 diversion inlet.

10 When in-flows in the river exceed 760 cubic metres
11 per second, SR1 will be operated such that the excess
12 flow will be allowed to continue downstream through the
13 service spillway by lowering the gates so as to
14 maintain a constant diversion rate into the reservoir
15 of 600 metres cubed per second until the reservoir is
16 full.

09:23

17 Alberta Transportation reiterates and emphasizes,
18 Mr. Chair, that the operating plan for SR1 is simple
19 and straightforward. And by controlling the amount of
20 floodwater that enters the reservoir, the risk
21 associated with dam operations is reduced considerably.

09:23

22 I now want to address this issue of flooding
23 downstream of SR1 but upstream of the
24 Glenmore Reservoir.

25 Mr. Chair, it is well documented in the EIA that

1 the design basis for SR1 is the reduction of flow rates
2 below the Glenmore Reservoir to 160 cubic metres per
3 second. This will afford protection to properties
4 below the reservoir based on the City of Calgary's
5 information that damage from overland flooding occurs
6 at flow rates of approximately 170 cubic metres per
7 second.

8 During the hearing, the SCLG referred at length to
9 the flood protection provided by SR1 for properties
10 downstream of the diversion, but upstream of the
11 Glenmore Reservoir. The assertion made is that SR1
12 provides "Unequal flood protection because there will
13 be residual flooding upstream of Glenmore Reservoir."

09:24

14 Mr. Chair, Alberta Transportation strongly rejects
15 this assertion.

16 The design flood for SR1 is 1240 cubic metres per
17 second. In a design flood, SR1 would operate to divert
18 up to 600 metres cubed per second, as we know, meaning
19 that 640 cubic metres per second of flow would remain
20 in the Elbow River. There is general agreement that
21 flow rate of 640 cubic metres per second on the river
22 is roughly equivalent to a 1 in 50-year flood.

09:25

23 As stated by Mr. Hebert, Mr. Wood and
24 Mr. Menninger several times, Alberta Transportation's
25 position is that SR1 will provide a substantial

1 reduction of flood risk to all downstream properties,
2 whether above or below the Glenmore Reservoir.

3 Now, Mr. Dowsett, one of the witnesses for the
4 SCLG, prepared a report which advances the argument
5 that SR1 does not provide equal protection to
6 properties upstream of the Glenmore Reservoir.

7 In Alberta Transportation's submission, very
8 little, if any, weight should be given to Mr. Dowsett's
9 evidence. First, he was a member of the SCLG, then he
10 was not; first he submitted a PowerPoint presentation,
11 then it was withdrawn. And while Mr. Dowsett had a
12 long and successful career in the field of hazard and
13 risk assessment, it all related to pipelines and wells
14 and oil and gas facilities. And, as he acknowledged,
15 Mr. Dowsett has no background in dam safety or in
16 assessing the hazards of overland flooding.

09:26

17 Nevertheless, Alberta Transportation accepts that
18 Mr. Dowsett's evidence was well intentioned, and we
19 will briefly address that evidence now.

20 In my cross-examination of Mr. Dowsett, I referred
21 to the Land Use Bylaw of Rocky View County, which I
22 provided to the Board and Mr. Secord as an aid to
23 cross-examination. Now, that aid to cross was not
24 entered into evidence but the Land Use Bylaw is
25 obviously a legal authority, and I'm going to refer to

09:26

1 it now.

2 So -- and we've provided in the written version of
3 our remarks, Mr. Chair, the actual reference to
4 the -- where you can find the Land Use Bylaw online.

5 So Part 5 of the Land Use Bylaw for Rocky View
6 County sets out general regulations that are applicable
7 to all development within the county.

8 Within Part 5 is a subsection titled "Parcels and
9 Setbacks" and within that subsection, Sections 195 to
10 203 deal with development within a flood -- sorry,
11 within flood hazard areas and flood fringe areas.

12 Part 8 of the Land Use Bylaw sets out relevant
13 definitions, and I'm going to refer to three right now.
14 Firstly, flood hazard area is defined as: (as read)

15 "The area of land bordering a
16 watercourse or water body that would be
17 affected by a design flood and includes
18 the flood fringe, floodway, and may
19 include areas of overland flow, as
20 determined by the Province of Alberta."

21 And, Mr. Chair, it is a matter of record that Alberta
22 has determined that the flood hazard area is the 1 in
23 100-year area.

24 So returning to the definitions in the Rocky View
25 County Land Use Bylaw, the next one I'm going to refer

09:27

09:28

1 to is the definition of floodway, which is defined to
2 mean: (as read)

3 "The portion of the flood hazard area
4 where the flows are deepest, fastest,
5 and most destructive, as determined by
6 the Province of Alberta. The floodway
7 typically involves the main channel of a
8 watercourse and a portion of the
9 adjacent overbank area."

10 And then, finally, the last definition I'll refer the
11 Board to is for flood fringe, which is defined to mean:
12 (as read)

09:29

13 "The portion of the flood hazard area
14 outside of the floodway, as determined
15 by the Province of Alberta. Water in
16 the flood fringe is generally shallower
17 and flows slower than in the floodway."

18 So, Mr. Chair, with those three definitions in mind,
19 Alberta Transportation would now like to direct you to
20 the following key -- what we say are the following key
21 sections in the Land Use Bylaw.

09:29

22 Firstly, Section 195 provides that all development
23 in a flood hazard area is discretionary, which, of
24 course, means there are no permitted uses.

25 Secondly, Section 196 provides that no development

1 is allowed in a floodway, except for maintenance and
2 repairs of existing or grandfathered development.

3 Section 200 provides additional development
4 restrictions specifically to properties along the
5 Elbow River, including that no development shall take
6 place in the floodway.

7 And then, finally, sections 201 to 203 deal with
8 the flood fringe area, and they provide that development
9 in the flood fringe may be approved if, in effect, a
10 property is floodproofed.

09:30

11 So, for example, the bylaw says that the first
12 floor of all buildings must be located at or above the 1
13 in 100-year flood level plus half a metre of freeboard.

14 Now, Mr. Chair, we submit that these provisions in
15 the Land Use bylaw are important because what they show
16 us is that SR1 will limit residual flooding upstream of
17 the Glenmore Reservoir to those areas where, according
18 to the County's own land use bylaw, development is not
19 supposed to occur, or if there is existing development,
20 it's supposed to be floodproofed.

09:31

21 To be clear, Mr. Chairman, Alberta Transportation
22 acknowledges and confirms that the design basis for SR1
23 was to ensure that flow rates below Glenmore Reservoir
24 do not exceed 170 cubic metres per second.

25 That said, Alberta Transportation strongly also

1 submits that by reducing downstream flows during any
2 major flood by up to 600 metres cubed per second, SR1
3 does provide a substantial reduction of flood risk above
4 Glenmore Reservoir. Mr. Chairman, if SR1 were on the
5 landscape in 2013, it could have cut flows through that
6 reach of the river by nearly half.

7 Turning now to dam safety and risk management.

8 As noted by Mr. Hebert, the design of SR1 to
9 protect public safety is of highest priority to Alberta
10 Transportation.

09:32

11 The SR1 storage dam has been designated as an
12 extreme consequence facility, and while this sounds
13 ominous, in fact what it means is that the dam must be
14 designed to the highest level of safety because of its
15 location and proximity to local population centres.

16 The designer of record for SR1 is
17 Mr. John Menninger of Stantec. Mr. Menninger was
18 supported by a team of licensed professional engineers
19 with expertise in geotechnical, hydrotechnical and
20 structural engineering when he was preparing the design
21 of SR1.

09:32

22 The design of SR1 was also subjected to an
23 experienced independent review Board that has been
24 retained by Alberta Transportation to provide an
25 independent set of eyes on the design.

1 And, finally, the design of SR1 will ultimately
2 have to be approved by AEP's director of dam safety.

3 Mr. Chair, the Board heard extensively from
4 Mr. Menninger during Topic Session 3 and also in Topic
5 Session 1. Alberta Transportation submits that
6 Mr. Menninger was a highly credible witness and the
7 Board can have a high degree of confidence in his
8 evidence, and by extension, in the design of SR1.

9 Mr. Menninger was cross-examined for several hours
10 by very able counsel, Mr. Secord, on the issues of
11 design and risk, and Alberta Transportation submits that
12 Mr. Menninger's evidence was clear and entirely
13 unimpeached by that cross-examination.

09:33

14 Now, Mr. Secord's cross-examination was largely
15 based on evidence and input from the engineering
16 consultant retained by the SCLG, Austin Engineering.
17 Austin prepared a report which was filed in this
18 proceeding as Exhibit 256.

19 Importantly, Austin does not say in its report, and
20 did not say in its testimony at the hearing, that SR1
21 has been designed such that it cannot operate safely.
22 Instead, all Austin did was provide some
23 recommendations, 24 recommendations, to improve safety.

09:34

24 As part of Alberta Transportation's reply
25 submissions, Stantec provided a detailed response to

1 Austin's report and each of those 24 recommendations.

2 Now, before discussing this part of the evidence,
3 Alberta Transportation notes that it does not take issue
4 with the qualifications of the two witnesses from
5 Austin, Mr. Austin himself, and Ms. Keyes; however, we
6 do note that their experience is primarily in B.C., not
7 Alberta, and in the case of Mr. Austin, all his
8 experience is in B.C., and he has never gone through the
9 dam-permitting process in Alberta.

10 Mr. Austin also fairly acknowledged that the first
11 time he reviewed the Alberta Dam and Canal Safety
12 Directive in detail was when he prepared his report for
13 the SCLG.

09:35

14 Now, one thing that Mr. Austin did confirm is that
15 he knows that in Alberta it is the director of dam
16 safety and AEP who is responsible ultimately for dam
17 safety, not this Board. Alberta Transportation submits,
18 therefore, that to the extent this Board believes that
19 any of Austin's recommendations may have merit, your job
20 is to bring those recommendations to the attention of
21 the director of dam safety in your report, and then the
22 director can consider what, if anything, he or she wants
23 to do about them.

09:35

24 Now, when Mr. Austin and Ms. Keyes testified, they
25 fairly acknowledged that many of Stantec's responses to

1 their report adequately addressed the concerns and
2 recommendations that they had made. The Panel will
3 recall hearing Mr. Austin list off all of the
4 recommendations which he considered had been
5 appropriately addressed by Stantec in its response.

6 That led me to ask him which concerns and issues
7 actually still remained in dispute, and Mr. Austin said
8 that he thought there were two areas where we are still
9 in a little bit of disagreement here. And those two
10 areas, Mr. Chair, are design of the emergency spillway
11 and the potential for second low-level outlet. So I
12 will now address those two concerns.

13 So first regarding the design of the emergency
14 spillway. Ms. Keyes addressed the concern -- or, sorry,
15 expressed the concern that the maximum discharge
16 capacity of the emergency spillway, which is 360 metres
17 cubed per second, is less than the maximum in-flow rate
18 into the reservoir of 600 metres cubed per second.

19 In the Austin report, Ms. Keyes asserted that this
20 does not meet the requirements of the Canadian Dam
21 Association Dam Safety Guidelines, which she
22 characterized as requiring that the spillway of the dam
23 must be able to discharge the in-stream design flood, or
24 IDF, while maintaining minimum freeboard.

25 In fact, as pointed out by Stantec in its response

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1 to the Austin report, what the Dam Safety Guidelines
2 actually require is that the spillway of a dam must be
3 able to discharge the IDF while maintaining the minimum
4 freeboard, taking into account the routing effect of the
5 reservoir. And as noted by Stantec in its response,
6 that's exactly what it did.

7 Specifically Stantec stated: (as read)

8 "The design of the SR1 emergency
9 spillway meets these criteria without
10 relying on closure of the diversion
11 inlet gates. There is no requirement to
12 pass the design flow or peak flow into a
13 reservoir without consideration of
14 routing effects of the reservoir."

15 And Stantec concluded: (as read)

16 "As presented, the emergency spillway
17 and reservoir can safely pass the
18 probable maximum flood without relying
19 on the diversion inlet gates closing and
20 while maintaining adequate freeboard.

21 This meets the CDA design guidelines and
22 industry standard of practice."

23 . Now, notwithstanding this response, in her testimony
24 Ms. Keyes stated that she was still concerned about the
25 design of the emergency spillway because, in her view,

09:38

09:38

1 the routing analysis should begin with the IDF entering
2 the reservoir when it is already full, whereas Stantec's
3 routing analysis did not do that.

4 With all due respect to Ms. Keyes, her position
5 does not make sense, and the evidence of Mr. Menninger
6 on this point should be preferred.

7 The scenario that Ms. Keyes posits is the
8 following. Firstly, you have a full reservoir, which,
9 as we know, is a condition that has a recurrence
10 interval of approximately once every 200 years. 09:39
11 Secondly, a probable maximum flood would occur right
12 after the 1 in 200-year flood. Thirdly, there would be
13 an error in operation such that the gates were open to
14 the channel, notwithstanding that the reservoir is
15 already full, which, of course, is against the operating
16 plan. And then, finally, there would be a failure of
17 the gates to close without intervention for over three
18 days, which is the amount of time it would take the
19 probable maximum flood to take place.

20 Mr. Chair, it is one thing to be conservative, it 09:40
21 is another to be unrealistic. And, with respect,
22 Ms. Keyes' position is entirely unrealistic. And in
23 fact Mr. Austin acknowledged this. He stated, yeah, I
24 agree that the loss of diversion control is a low
25 possibility, and I agree that this is an off-stream

1 reservoir and that you could defend the potential for it
2 to be empty.

3 Mr. Chair, Alberta Transportation is very confident
4 that its routing analysis for the design of the
5 emergency spillway is appropriately conservative. We
6 also note that both the Austin report and Stantec's
7 response to it have been forwarded by Alberta
8 Transportation to the AEP dam safety office.

9 Mr. Chairman, the Board can rest assured, in our
10 submission, that the director of dam safety will not
11 allow the project to proceed unless he or she is
12 satisfied that the design of the emergency spillway is
13 appropriate; and we are confident he or she will make
14 that finding.

15 With regard to the low-level outlet, Austin also
16 advocated for a second low-level outlet on the dam to
17 provide additional drainage capacity in the event of the
18 need for what it described as "Rapid dewatering of the
19 reservoir in response to a dam safety incident."

20 Stantec reviewed this recommendation and responded to it
21 in its technical memorandum that was filed as part of
22 Alberta Transportation's reply submission.

23 As noted by Stantec, the low-level outlet design
24 capacity was selected based on industry standards for
25 evacuation times for a reservoir, and Austin provided no

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09:41

1 basis for an increased capacity.

2 In his testimony, Mr. Austin stated that he
3 accepted that response, but noted that a second outlet
4 structure would result in a significant reduction of
5 risk, and he still recommended that at least
6 consideration be given to a second outlet during final
7 design.

8 And in his cross-examination of Mr. Menninger,
9 Mr. Secord suggested that without a second outlet
10 Alberta Transportation did not have any "contingencies," 09:42
11 was the word he used, to deal with the need for a rapid
12 dewatering of the reservoir in the event of a dam safety
13 incident.

14 Mr. Menninger responded by reiterating that the
15 design of the low-level outlet was based on industry
16 standards and guidelines, which take into account the
17 risk of a dam safety incident.

18 He further stated that Stantec selected the highest
19 rating to use the most conservative value, and that
20 included looking at downstream consequences. 09:43

21 Also, Mr. Menninger testified that the most likely
22 dam safety incidents that might occur at SR1 would be
23 mitigated by other interventions, not rapid dewatering
24 of the reservoir.

25 When Mr. Secord asked what dam safeties might

1 require rapid dewatering, Mr. Menninger responded that
2 he could not offer any hypothetical scenario where such
3 a response would be required.

4 Mr. Chairman, Alberta Transportation submits that
5 the SCLG, through the evidence of its consultant
6 Austin Engineering, have adduced no compelling evidence
7 that a second low-level outlet is reasonably required to
8 address dam safety.

9 The evidence of Stantec and Mr. Menninger should be
10 preferred on this point. And, again, this is a matter
11 that falls within the purview of the director of dam
12 safety.

13 Beyond these two issues I've just addressed, design
14 of the emergency spillway and the low-level outlet, no
15 intervener or expert retained by an intervener advanced
16 any evidence that the design of SR1 is anything other
17 than safe and robust. While Ms. Hunter suggested that
18 SR1 somehow constitutes a radical innovation in dam
19 engineering, this claim is not supported by the SCLG's
20 own expert, Austin Engineering, nor is it supported by
21 any other evidence.

22 Turning now to public safety and emergency
23 response.

24 Alberta Transportation submits that the evidence is
25 clear that the operator of the project, AEP, will be

09:43

09:44

1 required under Alberta's dam safety rules to have a
2 robust and effective emergency management plan for SR1.
3 The only intervener to question this was the SCLG in the
4 reports of Austin Engineering and Mr. Dowsett.

5 Returning to Austin, they made four recommendations
6 dealing with preparation of a safety management plan,
7 that was recommendation 21; preparation of emergency
8 plans and response, recommendation 22; dam break
9 inundation mapping, that was recommendation 23; and
10 operation, maintenance, and surveillance documentation,
11 and that was their recommendation 24.

09:45

12 Stantec responded to these recommendations in its
13 technical memo, and in his testimony Mr. Austin stated
14 that Austin Engineering accepted those responses.

15 So, in our submission, whatever Austin said in its
16 report about emergency response was adequately dealt
17 with, as acknowledged by Mr. Austin.

18 Further, we note that while Austin has considerable
19 experience in dam safety, and several of their
20 recommendations were fine, detailed review of dam
21 commissioning, operations and maintenance manuals,
22 emergency response, and safety management, again, are
23 all within the scope of dam safety review under of the
24 *Water Act* and the Alberta Dam and Canal Safety
25 Directive.

09:46

1 While obviously important considerations, they in
2 fact are not within the scope of review in front of this
3 Board.

4 With regard to Mr. Dowsett, section 3 of his report
5 dealt with emergency management. That section is found
6 on pages 11 and 12 of his report. You may recall,
7 Mr. Chair, that at the top of page 11 Mr. Dowsett stated
8 that he had reviewed the 2003 AEP guideline for
9 emergency preparedness for flood emergencies, and he
10 expressed the opinion that given the size of the project
11 and its proximity to Springbank, he found it a little
12 light. That's the way he described it. He then
13 suggested that the guideline might not constitute best
14 practice for emergency response.

09:46

15 Stantec again responded to this assertion in their
16 technical memorandum, in which they noted that the 2003
17 AEP guideline had been superseded by the 2018 Alberta
18 Dam and Canal Safety Directive.

19 And the Panel will recall that in his testimony
20 Mr. Dowsett stated that he had, since reading Stantec's
21 memo, reviewed the 2018 safety directive and determined
22 that it is "Comprehensive and does represent best
23 practice."

09:47

24 He then stated that, as a result, pages 11 and 12
25 of his report were redundant and didn't accurately

1 represent his testimony. In other words, Mr. Dowsett
2 withdrew his concern about emergency planning.

3 Accordingly, Mr. Chair, Alberta Transportation
4 submits that no intervener has presented evidence which
5 challenges that the emergency planning regime for this
6 project will be anything less than best practice; and at
7 least one participant, Mr. Dowsett, now agrees that in
8 fact it is best practice.

9 So, in terms of what that process is, as is
10 explained in Exhibit 327, the Alberta Dam and Canal
11 Safety Directive, which has the legal force of a
12 regulation made under the *Water Act* and the water
13 ministerial regulation, stipulates that SR1 will require
14 an emergency management plan. An emergency management
15 plan is comprised of an emergency preparedness plan, an
16 emergency response plan, and a flood action plan. All
17 of these documents have not yet been prepared for SR1.
18 They are -- the responsibility to prepare such documents
19 is that of the operator, AEP, and the timing of
20 preparation does not occur until construction
21 procurement is complete and the project is closer to the
22 commissioning phase.

23 This is because the plans require information on
24 equipment models, construction records, and other
25 details of the facility that are just not known at this

09:48

09:49

1 time.

2 AEP will begin preparation of the emergency
3 management plan following regulatory approval of SR1 and
4 in parallel with the construction process.

5 Finally, Mr. Chair, the Dam and Canal Safety
6 Directive includes review of these plans by the director
7 as part of the *Water Act* approval process, and the
8 components of the plan are required to be reviewed
9 periodically thereafter. And for high consequence dams,
10 such as SR1, they must be reviewed more often than lower
11 consequence dams, and this will be every five years.

09:49

12 In summary, Mr. Chairman, SR1 will have an
13 emergency management plan appropriate to its
14 classification as an extreme consequence facility, and
15 there is no evidence in the record to suggest otherwise.

16 Finally, with respect to sensitivity of project
17 design to climate change.

18 Some witnesses, you will recall, Mr. Chair, for the
19 SCLG argued that the design of SR1 does not take into
20 account climate change. The suggestion being that in
21 future floods -- that in the future floods will be
22 larger and, therefore, SR1 may be undersized. Alberta
23 Transportation rejects this submission and submits that
24 the design of SR1 recognizes the potential for climate
25 change to impact the size and frequency of future

09:50

1 floods.

2 In this regard we note the following: First,
3 notwithstanding that the Alberta standard for flood risk
4 is the 1 in 100-year flood, the project was increased in
5 scale from 1 in 100 to the 2013 design flood, which is
6 slightly more than 1 in 200 years. And this was done at
7 the outset of the planning process in recognition of the
8 fact that the 2013 flood is now the flood of record on
9 the Elbow River.

10 The SCLG suggested that the design of SR1 should
11 have included consideration of three large historic
12 floods on the Bow River, but the evidence about flooding
13 on the Bow is anecdotal, and there is no such evidence
14 that the Elbow River flooded to the same extent in those
15 three years.

16 SR1 has been designed to the flood of record and
17 whether there was major flooding on the Elbow River
18 during the pre-record period is speculation and does not
19 constitute information that would be suitable for use as
20 a design basis for a civil engineering project like
21 this.

22 As for the statistical frequency of the 2013 event,
23 a recent flood hazard report done by Golder Associates
24 for AEP did, we acknowledge, incorporate these historic
25 events into their flood frequency estimates, but the

09:51

09:51

1 incorporation of this information did not result in any
2 substantive change to the estimate of the 1 in 200-year
3 flood magnitude. The 2013 event is still estimated to
4 have a return period of approximately 1 in 200 years.

5 The 2013 flood was a massive flood event. The
6 design of SR1, nevertheless, meets that design basis and
7 also incorporates a factor of safety in both the
8 diversion rate of 25 percent and reservoir volume of
9 10 percent, above what is needed to achieve the 2013
10 flood design basis.

09:52

11 These factors of safety help mitigate the risk of
12 larger floods in the future, and indeed a climate change
13 assessment was prepared by Alberta Transportation in
14 response to requests made by the federal regulators.
15 And that assessment used climate change affected IDF
16 curves under what's called "RCP 8.5," which is the
17 so-called "business as usual" scenario. In other words,
18 it predicts likely outcomes if society does not make
19 concerted efforts to cut greenhouse gas emissions. That
20 assessment confirmed that projections of climate change
21 impacts up until 2050 resulted in a 12 percent increase
22 in the 200-year flood, which is well within the
23 25 percent factor of safety added to SR1.

09:53

24 Finally, Mr. Chair, Alberta Transportation notes
25 that the benefits of SR1 for flood damage reduction are

1 based on, of course, current flood risk and, therefore,
2 if floods do become more frequent, the benefits of SR1
3 will also increase.

4 Turning now to Topic Session 6 and water.

5 Mr. Chairman, you will recall Mr. Brescia
6 testifying about the comprehensive consideration given
7 by Alberta Transportation to all aspects of
8 project-related water concerns. These considerations
9 commence with preparation of the EIA and carry forward
10 through extensive SIRs and the rest of the regulatory
11 process. And you will also recall Mr. Brescia
12 concluding that this is work that continues.

09:54

13 As this proceeding has amply demonstrated, the
14 environmental assessment process is complex and
15 involved. It addresses both project related and
16 cumulative environmental effects and follows a
17 standardized framework for each valued component.

18 As you will also recall, the evidence of Mr. Hebert
19 was that Alberta Transportation's environmental
20 assessment included engagement with stakeholders and
21 Indigenous groups. Indeed such engagement was key to
22 the development of many of the mitigation and monitoring
23 plans that have been prepared for the project.

09:55

24 I will now address in turn each of the key water
25 issues associated with the project. And, Mr. Chair, as

1 you know, these are: hydrology, surface water quality,
2 fish and fish habitat, and hydrogeology.

3 Alberta Transportation submits that the work
4 carried out by our subject matter experts in each of
5 these key areas has resulted in a full and careful
6 consideration of the project's expected impacts. These
7 impacts are in the final analysis well understood, for
8 the most part temporary, and will be mitigated and
9 monitored for.

10 So starting with hydrology, Mr. Chair, you will
11 recall that Dr. David Luzi spoke to the issues of
12 hydrology, including the movement of water at the
13 surface, water quantity, geomorphology, and sediment
14 transport. Dr. Luzi also commented on the issue of
15 climate change.

09:56

16 In our submission, Mr. Chair, the evidence in this
17 proceeding is that the project will have no impact to
18 the hydrological regime when the project is not in
19 operation, and that the flow rate and flow volume in the
20 Elbow River will not be significantly impacted by the
21 project during dry operations.

09:56

22 During flood operations, there will be reduced flow
23 rates and volumes downstream. There will also be
24 changes to suspended sediment transport with sediment
25 being removed from the river, transported to the

1 reservoir and deposited. Given these changes in flow
2 associated with operations, there will also be some
3 minor changes to the Elbow River channel between the
4 outlet and the Glenmore Reservoir over the long term.

5 As I have already noted, Mr. Chair, the SCLG spent
6 some time cross-examining on the issue of climate
7 change, and I've addressed some of that in Topic
8 Session 3. I'll just now briefly address some of the
9 other points that were specifically referred to during
10 Topic Session 4.

09:57

11 Firstly, you will recall that Alberta
12 Transportation's witnesses pointed to research, current
13 research, which calls into question the generalizations
14 made by the SCLG's expert, Dr. Fennell, on the
15 implications of climate change on the project.

16 Alberta Transportation's witnesses also disputed
17 the value of using so-called paleo records in the form
18 of tree rings as a predicted measure of future peak
19 flows.

20 While noting that tree ring data is interesting,
21 Dr. Luzi testified that such data is not relevant to
22 estimating peak flow events as it does not allow for
23 sufficiently accurate extrapolation and application to
24 perspective floods.

09:58

25 Additionally, the validity of the use of such paleo

1 information is uncertain given future climate change
2 scenarios.

3 I've already briefly touched on the argument about
4 the historic floods. I'll just add to that, that simply
5 applying flood events on one river, the Bow to the
6 Elbow -- to another river, the Elbow, is a highly
7 uncertain exercise. And, moreover, the records that do
8 exist call into question whether this method is valid.
9 One need only look at the 1932 flood event on the
10 Elbow River, which did not register as a flood event on
11 the Bow River.

09:59

12 What the SCLG and Dr. Klepacki failed to appreciate
13 is that to take this approach introduces still more
14 uncertainty and removes precision from the data and
15 detailed engineering work that's required for a project
16 like SR1.

17 The SCLG also suggested that changes in climate
18 will result in greater occurrences of severe weather
19 conditions manifested in alternating periods of drought
20 and record floods.

09:59

21 Again, Dr. Luzi was unequivocal in his view that
22 such assertions cannot be made with any certainty and,
23 moreover, that the research he has looked at actually
24 suggest the opposite, that peak floods associated with
25 climate change are not expected to increase to levels

1 beyond the design flood at Calgary or along the project
2 portions of the Elbow River.

3 As was also noted by Dr. Luzi, the impacts of
4 climate change on future events is just not fully
5 understood.

6 Current research, which Dr. Klepacki and
7 Dr. Fennell did not seem to be aware of, suggests that,
8 in the project area, climate change will not result in
9 increased flood events or extreme variability. Simply
10 put, the SCLG's arguments on climate change and its
11 implications for the project are speculative. There is
12 no credible evidence supporting the assertion that SR1
13 has been underdesigned. Structures like SR1 cannot be
14 designed on the basis of uncertain and anecdotal data.

10:00

15 With respect to surface water quality, Alberta
16 Transportation undertook an assessment of the project's
17 impacts to various water parameters including
18 temperature, oxygen and total suspended sediment, or
19 TSS. Alberta Transportation's uncontroverted evidence
20 is that changes to water quality, if realized, are
21 manageable and will be monitored for.

10:00

22 With regard to TSS specifically, Alberta
23 Transportation notes that the project -- or, sorry, the
24 project operation would only occur when TSS is already
25 high, owing to the presence of an ongoing flood event.

1 The project would not change or alter this basic fact.
2 Nevertheless, to help mitigate any concerns about TSS
3 concentrations, Alberta Transportation intends to
4 release water back into the river as early as
5 practically possible.

6 Alberta Transportation's hydrology witness,
7 Mr. Darrell Jobson was asked about the risk associated
8 with the nutrient loads in waters released from the
9 reservoir, potentially giving rise to algal blooms.

10 In response, he explained the reasons why an algal
11 bloom is not expected to occur. And these include the
12 fact that such events typically only occur in permanent
13 in-stream dams and structures which hold water for far
14 greater periods of time than SR1 ever will.

15 Finally on the issue of water quality, Calalta
16 Waterworks Ltd. raised a concern with respect to
17 potential impacts to its water intake system as a result
18 of SR1 releasing water from the reservoir after a major
19 flood event. Yet, under cross-examination, Mr. Williams
20 frankly acknowledged that he has no evidence to support
21 this concern. Further, he acknowledged that Calalta's
22 system was not impacted by the 2013 flood because it is
23 well set back from the river.

24 Accordingly, Alberta Transportation submits that
25 there is no need for the Board to address this issue

10:01

10:02

1 further based on the planned release scenarios from SR1
2 after a flood. Nevertheless, Alberta Transportation
3 reiterates that it remains prepared to discuss this
4 concern with Calalta.

5 Calalta also raised a concern, you will recall,
6 with respect to possible financial impacts under its
7 franchise agreement as a result of the portion of the
8 project overlapping with this franchise area. Yet,
9 Mr. Williams acknowledged that, despite being in
10 operation for approximately 40 years, Calalta has not
11 served any lands in the vicinity of the SR1 project
12 area, which is in the west part of Calalta's franchise
13 area. Rather, Calalta's customers are at the far east
14 end of the franchise area.

10:03

15 Further, Calalta provided no evidence which
16 supports that it is probable there would be future
17 development within the SR1 project area at any time
18 within the term of the franchise agreement.

19 And, finally, there are numerous provisions in the
20 franchise agreement itself, which may give recourse to
21 Calalta if future impacts arise.

10:03

22 Therefore, given this uncertainty, and the lack of
23 evidence supporting the claim, Alberta Transportation
24 submits it would not be appropriate for the panel to
25 impose, on an approval, any conditions related to

1 Calalta's water franchise. Again, however, Alberta
2 Transportation does remain open to discussing this issue
3 further with Mr. Williams and Calalta.

4 Turning now to aquatics and fish, Mr. Chair.

5 As an off-stream dam and reservoir, SR1 will have
6 less impact on fish and fish habitat than a traditional
7 in-stream dam. This is one of the many environmental
8 benefits of the project.

9 Alberta Transportation undertook a substantial
10 amount of work to understand and assess potential
11 project impacts on fish and aquatic ecology. The
12 results of this work are contained in the EIA and many
13 SIR responses.

10:04

14 Specifically, Alberta Transportation would refer
15 the Board to Exhibit 47, which is Volume 3(b) of the EIA
16 on aquatic ecology; Exhibit 93, which is the Round 1
17 provincial SIRs on water; Exhibits 138, 140, and 141
18 through 149, which are the responses to the Round 2
19 provincial SIRs; and Exhibit 157, which is Alberta
20 Transportation's response to the Round 3 SIR from AEP.

10:05

21 In the Round 2 provincial SIR responses alone, one
22 can find many reports comprehensively dealing with the
23 fish issue. These include fish passage scenarios for
24 all fish species and life stages of the Elbow River fish
25 community; a fish habitat suitability index analysis;

1 modelling of habitat change through the use of a bedload
2 model; draft fish rescue and fish health monitoring and
3 mitigation programs; spawning suitability assessments
4 and REDD surveys from Elbow Falls to Discovery Ridge;
5 and Elbow River habitat mapping from Redwood Meadows to
6 Discovery Ridge.

7 Then there is Exhibit 157, which is the
8 December 2020 -- or which includes the December 2020
9 fish population assessment.

10 Mr. Chairman, a significant finding of that fish
11 population assessment was confirmation that the vast
12 majority of bull trout, a species at risk, in the
13 Elbow River are located upstream of SR1.

10:06

14 Bull trout were predominantly caught 20 kilometres
15 upstream of SR1 between the confluence of McLean Creek
16 and Elbow Falls. This can be clearly seen in
17 Exhibit 327 at PDF page 69, a figure that was included
18 with Alberta Transportation's reply submissions.

19 If you look at that figure, Mr. Chair, what you'll
20 see is that it shows that in the 2020 population survey,
21 there were no bull trout captured downstream of SR1,
22 there were two bull trout captured adjacent to the
23 reservoir, and over 180 were captured upstream of SR1
24 and, of note, over 150 of these were captured between
25 Elbow Falls and McLean Creek where the MC1 project would

10:07

1 be located.

2 Now, the SCLG retained Mr. Allan Locke, a respected
3 fisheries biologist who worked with AEP for many years,
4 to conduct a technical review of the scientific and
5 technical data assumptions and methods used by the
6 proponent in their environmental assessment to evaluate
7 impacts to fish and fish habitat.

8 In his report, Mr. Locke made several complimentary
9 comments about the work done by Alberta Transportation.
10 He noted that the level of effort conducted by the
11 proponent adequately addresses much of the inherent
12 uncertainty in understanding the impact to fish and fish
13 habitat.

10:08

14 He noted that his review determined that the
15 proponent describes in sufficient detail the methods and
16 analysis undertaken to assess impacts to fish and fish
17 habitat.

18 He noted that the level of effort conducted for
19 this project adequately addresses much of the inherent
20 uncertainty in the field of aquatic ecology and that the
21 work appropriately acknowledges the uncertainty typical
22 for these types of studies.

10:08

23 He noted that, overall, the EIA report and the SIR
24 responses are thorough and address required fish, fish
25 habitat and aquatic ecosystem technical data collection

1 and analysis.

2 With regard to the -- with regard to fish passage
3 at the diversion structure, he noted that the proposed
4 structures are effective at providing passage for fish
5 and, in fact, are far superior to a classic fishway.

6 And, finally, with regard to the draft fish rescue
7 plan, Mr. Locke characterized it as a reasonable plan
8 outline containing good steps moving towards a final
9 plan.

10 Notwithstanding all these many favourable comments, 10:09
11 Mr. Locke did make a couple of recommendations for
12 further analysis and investigation in terms of
13 alternative designs to further reduce project impacts to
14 fish and fish habitat.

15 On behalf of Alberta Transportation, Stantec
16 reviewed Mr. Locke's report and his recommendations and
17 prepared a technical memo in response. Mr. Locke
18 reviewed Stantec's response and testified: (as read)

19 "The response to my report by the
20 proponent is well taken and I appreciate
21 the clarification." 10:10

22 So, Mr. Chair, much has occurred with Austin Engineering
23 on the issue of design, safety and risk. By the time we
24 got to the hearing, there was actually very little left
25 in dispute between Alberta Transportation and SCLG on

1 fish.

2 At the hearing, Mr. Locke testified that his two
3 outstanding concerns were, one, that Alberta
4 Transportation should demonstrate that everything that
5 can be done is done to keep fish from becoming
6 entrained. And, second, that the impact on fish of the
7 release of water for the reservoir back into the
8 Elbow River should be further studied.

9 Now, Mr. Chairman, Alberta Transportation shares
10 Mr. Locke's concern that everything that can reasonably
11 be done to prevent fish entrainment should be done. 10:11
12 And, as stated in our reply submission, means to prevent
13 entrainment will be identified through discussions with
14 DFO.

15 As well, Alberta Transportation is open to
16 considering other suggestions, such as Mr. Locke's, that
17 a sound device be installed to deter fish from entering
18 the diversion channel.

19 With regard to the impact on fish of the release of
20 water from the reservoir back into the river, Alberta 10:11
21 Transportation appreciates Mr. Locke's comments about
22 the use of environmental flow science to determine
23 impacts on the river of different flow rates from the
24 reservoir. However, as Mr. Locke acknowledged in
25 cross-examination, his criterion of no more than a

1 10 percent increase in the instantaneous flow in the
2 Elbow River is a late release scenario. In fact, it is
3 a very late release scenario.

4 Mr. Locke agreed that he would not be surprised if
5 it resulted in water being retained in a reservoir until
6 December, assuming a flood occurs during the spring
7 flood season. He also acknowledged the DFO is strongly
8 in favour of an early release scenario.

9 So Alberta Transportation submits that while
10 Mr. Locke's suggestion related to release scenarios was
11 well intentioned the early release and late release
12 scenarios provided by Alberta Transportation are
13 appropriate bookends for an assessment. And, further,
14 it seems clear that the early release scenario is
15 strongly favored for DFO -- or, sorry, by DFO.

10:12

16 In sum, Mr. Chair, there actually is very little
17 disagreement between the experts on fish. The evidence
18 is clear that Alberta Transportation's assessment of
19 fish and fish habitat and potential project effects on
20 fish and fish habitat was robust. And, further, that
21 assessment demonstrates that the project, with
22 appropriate mitigations and offsetting in place, as will
23 be determined by DFO, will not result in significant
24 adverse effects to fish and fish habitat, including bull
25 trout.

10:13

1 Lastly on water I will discuss hydrogeology.

2 Mr. Chair, it is no understatement to say that the
3 SCLG focused the bulk of their cross-examination in
4 Topic 4 on the issue of hydrogeology.

5 Alberta Transportation submits, however, that the
6 evidence of our lead witness on hydrogeology, Mr. Dan
7 Yoshisaka, was not impeached, notwithstanding
8 Mr. Secord's sustained cross-examination. And
9 Mr. Yoshisaka's evidence should be preferred over that
10 of Dr. Fennell, who on multiple occasions stepped into
11 the role of an advocate against the project and into
12 several areas in which he did not have expertise. All
13 this in support of his argument that an alternative to
14 SR1, namely MC1, which he did not even assess, was
15 better.

16 The hydrogeological portion of the EIA involved
17 examining the potential changes to groundwater quality
18 and quantity that may be associated with the project.
19 Through the use of an extensive borehole drilling and
20 well testing program data was obtained and a numerical
21 model created to predict the implications of both dry
22 and flood operations and other factors on groundwater
23 levels, flow regime, and water quality. The models
24 showed that any effects on groundwater would be rare,
25 reversible -- sorry, reversible upon release of water

10:14

10:14

1 from the reservoir and would not extend beyond the
2 project development area, or PDA, at any magnitude that
3 would be material.

4 Briefly, in addition to the SCLG, the Stoney Nakoda
5 Nation also sought to raise the issue of hydrogeology by
6 way of a short memo from their consultant PGL and
7 through the direct evidence of Ms. Leslie Beckmann. But
8 on cross-examination Ms. Beckmann readily acknowledged
9 that she was not technically competent to opine on the
10 issue of hydrogeology and, moreover, Stoney Nakoda
11 Nation have not raised any issue with or countered the
12 comprehensive response that Alberta Transportation
13 provided in its reply submission to each and every
14 concern raised by Stoney.

10:15

15 So, then, returning to Dr. Fennell.
16 Cross-examination revealed that he and, as a result, his
17 counsel for SCLG had been operating under a
18 misunderstanding as to the location of certain
19 hydrogeologic units. Mr. Secord therefore asked
20 questions in cross-examination that turned out not to
21 have proper factual foundation.

10:16

22 In particular, Mr. Secord's line of questioning on
23 what was later shown to be erroneously perceived
24 discrepancies between the observed local geology and its
25 representation within Stantec's model was based on this

1 misunderstanding. It was shown that Dr. Fennell's
2 argument that the model was changing over time with
3 assignment of lower hydraulic conductivity values was
4 not accurate and that the model in fact did use
5 conservative assumptions.

6 Dr. Fennell's report and testimony can be
7 contrasted with the extensive work done by Stantec under
8 the direction of Mr. Yoshisaka to obtain a clear and
9 comprehensive understanding of the sub-surface.

10 As noted in evidence, Stantec reviewed 2,000
11 borehole records and drilled an additional 1450
12 boreholes at the site. This massive data was then used
13 in its modelling.

10:17

14 One thing the SCLG argued was that there was a
15 presence of surficial sands in the project development
16 area. Mr. Chair, Mr. Yoshisaka dispelled this notion by
17 noting repeatedly that in fact his model did account for
18 sand.

19 The SCLG's attempt to discredit the accuracy of
20 Stantec's model vis-à-vis surficial sand was based on a
21 region-wide and outdated academic paper. The paper was
22 clearly at odds with the reality of the project site, as
23 demonstrated by the drilling program.

10:18

24 Further, the very text on which Dr. Fennell relied
25 to support his theory of the presence of surficial sand

1 in fact indicates that the sand is located below the
2 glacial till.

3 In short, Dr. Fennell relied on a paper from the
4 1980s and disputed the results of in-depth and detailed
5 drilling program results undertaken by Stantec.

6 Dr. Fennell also raised the issue of model bias,
7 which refers to the presence of differences between
8 modelled and observed values. Mr. Yoshisaka disputed
9 this claim, and effectively testified that Stantec's
10 model does not display any systemic bias. He pointed to 10:19
11 the table in his report that plotted the so-called
12 residuals, and the absence of residuals far above or
13 below the zero line serves to establish the absence of
14 systemic bias. And this was further evidenced by the
15 table and line showing what was called perfect fit in
16 Exhibit 110, Figure 4-14, which again confirmed the
17 observed models -- sorry, the observed values and the
18 modelled values closely tracked.

19 Mr. Yoshisaka's evidence was supported by that of
20 Mr. Dan Back, who provided comment on issues of the 10:19
21 geotechnical performance of the soil formations at the
22 site. Mr. Back noted, as did Mr. Yoshisaka, that two
23 separate models were prepared: one for impacts to
24 groundwater and one for geotechnical purposes. This is
25 an important distinction as it appeared, based on

1 evidence given under cross-examination, that Dr. Fennell
2 confused these two models. It was also established in
3 cross-examination that Dr. Fennell is not a geotechnical
4 engineer, a point that he readily admitted.

5 During his cross-examination, Mr. Secord sought to
6 raise concerns regarding the presence of swelling clays,
7 suggesting that there would be impact to these clays in
8 periods of prolonged drought.

9 In response, Mr. Back noted that he and his team
10 undertook a number of sophisticated laboratory tests
11 under various conditions to determine how these impacted
12 clays would perform under load. 10:20

13 Mr. Back testified that upon reaching a solid
14 understanding of the way in which the clays would
15 respond under multiple conditions, his team was able to
16 compute and understand at what point shear slip might
17 occur. This information was then used in the design
18 process.

19 In short, once the point at which a shear slip
20 could occur was determined, factors of safety were
21 applied and a design established which, in the words of
22 Mr. Back, "Will make sure that we never get close to
23 that value." 10:21

24 There was also some discussion, Mr. Chair, about
25 seepage of water from the reservoir. And Alberta

1 Transportation's position remains that seepage will be
2 in the approximate amount of 426 cubic metres per day.
3 This is based on an assessment of the K value, or
4 conductivity factor, assigned to the underlying layers.

5 Dr. Fennell's counter-narrative that seepage would
6 be in the range of 100,000 metres cubed per day is not
7 credible. First, as Mr. Yoshisaka described, a
8 sensitivity was applied to the model which assumed that
9 the permeability of some of the units making up the
10 underlying hydraulic conductive conditions was greater
11 than -- sorry, was greater than measured value by a
12 factor of 1,000.

10:22

13 The results, while indicating some further
14 propagation, show that even with this factor of safety,
15 propagation would be limited to the local assessment
16 area.

17 Second, Dr. Fennell's back-of-the-envelope math was
18 predicated on the geometric mean of the clay and tills
19 which underlie the reservoir. As was demonstrated on
20 cross-examination, it appears Dr. Fennell was confused
21 as to the location of these materials relative to the
22 location of the reservoir and, therefore, his rough
23 calculations are highly suspect.

10:22

24 Lastly, the SCLG suggested that there was a risk of
25 groundwater contamination associated with floodwater

1 migration to the sub-surface. In response,
2 Mr. Yoshisaka noted that the groundwater flow model also
3 assessed the potential for migration of contaminants.
4 In assessing the areas that might be impacted, the model
5 used conservative assumptions. For example, it assumed
6 contaminants would move as fast as groundwater, when
7 this is generally not the case. Contaminants typically
8 move slower than groundwater. Consequently, the
9 modelling done does tend to overestimate the rate at
10 which contaminants migrate to the sub-surface.

10:23

11 Further, even with this overestimation of
12 modelling -- sorry, even with this overestimation, the
13 modelling predicted that any contaminant would not
14 extend beyond the project area in a material way, in
15 part owing to the relatively short period of time during
16 which water and, therefore, flow to sub-surface would be
17 held in the reservoir.

18 The flow would be reversed once the water is
19 drained, generally in a matter of weeks.

20 And, further, Alberta Transportation has committed
21 to monitoring area water wells.

10:24

22 Mr. Secord cross-examined on the location of some
23 of his clients' water wells, specifically Ms. Robinson
24 and Mr. Brian Copithorne, but modelling of the
25 groundwater regime has allowed Alberta Transportation to

1 gain a sound understanding of the flow regime, water
2 levels, distribution of wells, and the presence of
3 springs. This means that we have a good understanding
4 of the pathways and effects and have been able to create
5 a program to monitor those effects.

6 As Mr. Yoshisaka concluded: (as read)

7 "Should the monitoring suggest that
8 there's changes afoot that we need to
9 apply further mitigation to, then we'll
10 be able to react in kind and put those
11 measures in place."

10:24

12 Alberta Transportation has provided a draft groundwater
13 monitoring plan to evaluate potential impacts during
14 construction, dry operations, flood operations, and
15 post-flood operations, and this is described in
16 Exhibit 111. The draft groundwater monitoring plan
17 includes both quantity and quality monitoring and will
18 follow a three-tiered approach. Tier 1 monitoring wells
19 will be located adjacent to project infrastructure, like
20 the dam, the diversion inlet, and the diversion channel;
21 Tier 2 monitoring wells will be located within or very
22 near the wetted perimeter of the reservoir; and Tier 3
23 monitoring wells will be situated between the project
24 and potential receptors, such as local landowners. And
25 these will provide early detection of potential effects

10:25

1 on groundwater that may be propagating outward from the
2 local assessment area.

3 The groundwater monitoring plan, finally, also
4 includes a groundwater response plan, which describes
5 the actions that would be taken should monitoring
6 results suggest the project-related effects on
7 groundwater or quality are actually occurring. Alberta
8 Transportation is confident this monitoring plan and the
9 proposed response actions will appropriately manage
10 groundwater quality and quantity related to the project.

10:26

11 In summary, Mr. Chair, Alberta Transportation's
12 subject matter experts responsible for hydrogeology,
13 hydrology, surface water quality, and aquatic ecology
14 have each considered in great detail the project's
15 impacts and are confident that those impacts are well
16 understood, temporary, and can be monitored.

17 Finally, Mr. Chair, the last section that we can be
18 a little shorter on is air quality, human health, and
19 terrestrial.

20 Mr. Chair, as with water, Alberta Transportation's
21 assessments of air quality, human health, vegetation,
22 and impacts to wildlife and biodiversity were conducted
23 using accepted environmental assessment processes to
24 address both project-related and cumulative
25 environmental effects, and they followed a standardized

10:26

1 framework for each valued component.

2 Alberta Transportation is confident that the work
3 undertaken has resulted in a complete and detailed
4 assessment of these issues. Moreover, Alberta
5 Transportation has made commitments in various areas to
6 ensure that potential concerns or impacts are monitored
7 for and mitigated.

8 Beginning with air and human health, Mr. Chairman,
9 concerns have been expressed, we know, by interveners
10 regarding the potential for fugitive dust emissions from 10:27
11 sediment deposited in the reservoir following flood
12 operations. Alberta Transportation understands these
13 concerns, but believes it is important to place them in
14 proper context.

15 The fact is, following the completion of
16 construction, SR1 will only operate infrequently. And
17 further, the duration of fugitive dust emissions after
18 flood operations will be short.

19 And, finally, as testified by Mr. Hebert in his
20 opening statement on this topic, Alberta Transportation 10:28
21 will act quickly and proactively to implement proven
22 mitigation measures for dust control.

23 So, in short, what we're dealing with, Mr. Chair,
24 are low frequency events, short duration events, and
25 events that will be mitigated.

1 Suggestions that the project will create dust
2 storms and blast zones are frankly hyperbole and are not
3 supported by the evidence.

4 You will recall that Alberta Transportation's
5 expert on air quality, Mr. Reid Person, provided an
6 opening statement and PowerPoint presentation which set
7 out the fundamental principles underlying the assessment
8 of air quality.

9 In that presentation, Mr. Person also called into
10 question some of the assumptions and the approach taken
11 by Dr. Brian Zelt on behalf of the SCLG. 10:29

12 As discussed in Alberta Transportation's reply
13 submission, we acknowledge that our modelling shows the
14 potential for exceedances at receptors outside the PDA.
15 However, the mere existence of potential predicted
16 exceedances is not the end of the story.

17 As was discussed during Mr. Person's evidence,
18 consideration must be had for model uncertainty, model
19 conservatism and for the predicted area frequency,
20 location, and adapted mitigations in order to place
21 these potential exceedances in their proper context. 10:29

22 Alberta Transportation has done that, Mr. Chair.
23 The SCLG and its expert Dr. Zelt, on the other hand,
24 have not.

25 While experts may disagree on the finer points of a

1 model, they must also take care to be reasonable in
2 their conclusions and in the presentation of those
3 conclusions. Dr. Zelt, we submit, was neither.
4 Instead, he chose, in essence, to add layer upon layer
5 of the most conservative assumptions such that his
6 predictions are simply not representative of anticipated
7 events, and only serve to needlessly alarm.

8 For example, Dr. Zelt presents an alarmist view of
9 the potential for a dust storm-like event predicated on
10 the basis of there being absolutely no mitigations 10:30
11 applied at SR1. But, Mr. Chairman, there will be no
12 unmitigated events and, to the contrary, all events will
13 be mitigated. The sediment management plan is that
14 mitigation will begin immediately after reservoir
15 drainage. Alberta Transportation, on behalf of the
16 operator, AEP, has committed to this.

17 Other differences in the approach taken by Alberta
18 Transportation and Dr. Zelt are seen in the comparison
19 chart at Slide 10 of Mr. Person's PowerPoint. It sets
20 out in stark terms the implications of Dr. Zelt using 10:31
21 non-guideline assumptions in his model, with the result
22 of overpredictions at times in the range of 600 percent
23 that we submit are inappropriate and completely devoid
24 of reality.

25 Dr. Zelt ignored hydrological model estimates of

1 sediment area and composition provided by Alberta
2 Transportation in its materials. Instead, despite
3 readily admitting that he has no expertise in the area
4 of sediment, he adopted his own unconventional sediment
5 assumptions on the basis of a paper that he found
6 online.

7 Dr. Zelt was also cavalier in his evidence on the
8 use and effectiveness of tackifiers, a strong and proven
9 dust mitigation tool.

10 When asked by Panel member Ceroici, Alberta
11 Transportation lead vegetation ecologist Mr. De Carlo
12 testified that tackifier efficacy was in the range of 3
13 to 18 months post application subject to environmental
14 factors and that reapplication was an option.

15 Dr. Zelt, by contrast, who has no expertise in the
16 area disagreed with Mr. De Carlo on the strength of a
17 phone call that he said he had with a local supplier.
18 Neither the particulars of the call nor any analysis or
19 actual consideration of the issue was included in
20 Dr. Zelt's report. Moreover, Dr. Zelt acknowledged
21 under cross-examination that he was not familiar with
22 the discussion in the EIA pertaining to tackifier
23 application on the basis of a weight-per-hectare formula
24 depending upon the environmental conditions present.

25 Perhaps had Dr. Zelt actually read that material,

10:32

10:32

1 he would not have had to resort to making a phone call
2 to a supplier to learn about tackifiers.

3 In short, Mr. Chair, the evidence of Alberta
4 Transportation must be favoured over that of Dr. Zelt.

5 We also note that no party other than Alberta
6 Transportation led evidence regarding implications to
7 human health associated with fugitive dust. And you
8 will recall, Mr. Chair, that Ms. Noble of Stantec spoke
9 to this issue.

10 Ms. Noble holds a master's of engineering degree
11 with specific training in toxicology and has lengthy
12 experience in conducting human health risk assessments.
13 Her conclusions, which were based, in part, on the
14 modelling done by Mr. Person, were that in certain
15 circumstances, the potential for exceedance of air
16 quality standards existed.

10:33

17 However, Ms. Noble also explained that an
18 exceedance of an air quality standard or objective, in
19 and of itself, does not necessarily give rise to a human
20 health concern.

10:34

21 Again, any model exceedance would be a rare event
22 occurring infrequently and would be short in duration.
23 And, as we know, the operation of the project is itself
24 an infrequent occurrence, and so, too, are the
25 meteorological events and conditions that could give

1 rise to air quality exceedances.

2 Further, with the application of proven and
3 effective dust control methods, air quality exceedances
4 in the modelling can be proactively and effectively
5 mitigated.

6 Mr. Chairman, you will recall that in her questions
7 to Alberta Transportation's Topic 5 panel, Mr. Vance
8 noted -- or, sorry, Ms. Vance asked whether individuals
9 in the vicinity of the project would know they were
10 being exposed to PM 2.5.

10:35

11 In response, Mr. Person testified that the air
12 quality assessment done for the project was a fugitive
13 dust as a whole. Consequently, one would expect that
14 any PM 2.5 would be entrained with other larger
15 particles. These larger particles would be noticeable
16 and, therefore, act as an indication of the possible
17 presence of PM 2.5. And, further, proposed monitoring
18 will be located between the project and any nearby
19 residence such that dust levels of concern would be
20 detected prior to reaching the nearest residences.

10:35

21 So, Mr. Chair, what we are left with here is a set
22 of considerations, duration, frequency, and adaptive
23 mitigations that, when added to a robust mitigation and
24 monitoring plan, led Ms. Noble and, we submit, should
25 lead this Board, to a position of confidence the

1 potential effects to human health from dust emissions
2 will not be significant.

3 Moving to terrain and soils, Dr. Whitson of Stantec
4 testified at the hearing with respect to the
5 implications of the project and, specifically,
6 sedimentation on soil.

7 Dr. Whitson's uncontroverted evidence was that
8 while the project will have impacts to existing soil
9 conditions, these impacts will not result in the
10 sterilization of the soils' productive capabilities.

10:36

11 Dr. Whitson also commented in his testimony on the
12 change in textural distribution that was identified in
13 the revised sediment modelling. And you will recall
14 that the revised sediment modelling indicated a greater
15 presence of silt and clay particles and less sand than
16 had been originally modelled.

17 Silt and clay particles, from a soil's perspective,
18 have high water storage capacity -- higher water storage
19 capacity than sand, which Dr. Whitson characterized as a
20 good news story.

10:37

21 With respect to vegetation, Alberta
22 Transportation's lead vegetation ecologist Mr. De Carlo
23 gave evidence regarding the expected revegetation of the
24 site post flood, and the efforts that can be undertaken
25 to ensure, assist or facilitate revegetation. And he

1 also addressed the issue of weeds, a concern that was
2 raised by the SCLG.

3 As is set out in Alberta Transportation's reply
4 submission and, as was discussed by Mr. Hebert in his
5 opening remarks, Alberta Transportation has made a
6 number of commitments regarding weed management and
7 associated activities, including a commitment to
8 development of a comprehensive weed management plan.
9 This will include the use of preemptive measures and the
10 plan will include input from experienced ecologists.

10:37

11 Now, SCLG retained a weed expert, Dr. Osko, and, in
12 our submission, it is clear from Dr. Osko's direct
13 evidence that he was somewhat confused as to the nature
14 of the project's operations. For example, when he was
15 asked by Ms. Vance about his recommendation to implement
16 a filtration system on the low-level outlet to filter
17 out weed seeds and whether he was aware of a system that
18 would both remove weed seeds and allow fish to pass, he
19 acknowledged he could not think of any such system.

20 Now, Mr. Chair, as you know, SR1 is a dry dam,
21 meaning that it does not have operations outside of
22 flood events. So Dr. Osko's suggestion that during dry
23 operation you could have such a filter doesn't make any
24 sense, with all due respect. In fact, it's not feasible
25 at all. There are various technical and design matters

10:38

1 that impact the ability to place a filtration system at
2 this location, and in the context of a drawdown post
3 flood, as Ms. Vance clearly understood, it is important
4 that entrained fish be able to exit the reservoir
5 unobstructed, and a weed seed filtration system would
6 make that impossible.

7 Finally, Mr. Chair, I know I've got, I think, five
8 minutes left before 9:45. I suspect I'll be about ten
9 minutes, if that is acceptable, and then we can break?

10 THE CHAIR: Yes, please proceed, Mr. Fitch. 10:39

11 MR. FITCH: Thank you.

12 So quickly regarding wildlife and biodiversity,
13 Alberta Transportation's expert, Mr. Eliot Terry,
14 addressed questions on the issue of habitat loss in the
15 project area.

16 As he stated in his evidence, operation of the
17 project is not expected to have significant impacts in
18 terms of habitat loss, and this conclusion is unchanged
19 even with the new sediment calculations and modelling.

20 Now, the Stoney Nakoda Nations raised the issue of 10:40
21 an overpass for elk, and Mr. Kruhlak addressed it
22 briefly, and Alberta Transportation provided a response
23 by way of an undertaking, but we wish to emphasize the
24 following: Alberta Transportation reviewed this issue
25 with Stoney Nakoda Nations a number of times in

1 meetings at which Mr. Eliot attended and made
2 presentations. And as stated by Mr. Eliot in those
3 presentations, such a structure is just not necessary
4 in light of the fact that the project will allow
5 animals to transit through the project area and cross
6 Highway 22.

7 And to address this concern, the project design
8 was modified to better facilitate wildlife movement,
9 including designing the span dimensions to have a
10 10-metre height and 24-metre width -- and this is on
11 the bridge over Highway 22 -- to allow easy movement
12 under by animals including elk. And also the design
13 was modified by including vegetation on the bottom of
14 the diversion channel by covering the riprap with soil
15 to make it easier for animals to traverse.

16 Now, Mr. Wallis, on behalf of the SCLG, gave
17 evidence on biodiversity issues, and, in our
18 submission, provided what was, I think, a fairly unique
19 perspective in the context of the hearing with respect
20 to his concern for impacts on grasslands and wetlands.

21 He highlighted the concerns associated with
22 developments in environmentally sensitive areas, which
23 he acknowledged encompasses most of the land west of
24 Calgary and south of Highway 1. He also acknowledged
25 that residential development, commercial development,

10:40

10:41

1 as well as projects, such as SR1, all impact the
2 landscape.

3 Further, Mr. Wallis testified about the
4 consequence of undertaking flood mitigation projects.
5 He testified about the ecological benefits of flooding
6 to the ecosystem, in particular to riparian areas which
7 rely on periodic high water in order to flourish.

8 In effect, Mr. Wallis argued against flood
9 mitigation because of its environmental impacts. And
10 while Alberta Transportation understand these concerns, 10:42
11 we submit the need for flood mitigation is too
12 important and some environmental impacts must be
13 accepted in order to achieve this critical objective.

14 We also reiterate that the selection of an
15 off-stream structure like SR1 will result in fewer of
16 the environmental impacts on the Elbow River which
17 Mr. Wallis is concerned about than an in-stream dam
18 would.

19 In conclusion, Mr. Chair, and Board members,
20 Alberta Transportation submits that it has demonstrated 10:43
21 through its environmental impact assessment, it's
22 comprehensive responses to supplemental information
23 requests, and all the evidence prepared for and given
24 at the public hearing, that approval of the Springbank
25 Off-Stream Reservoir Project is in the public interest

1 having regard to its social, economic, and
2 environmental effects.

3 Therefore, we respectfully request that the Board
4 recommend that the Lieutenant Governor in Council issue
5 an approval of the project, subject, of course, to
6 appropriate conditions.

7 With respect to what those conditions might be,
8 Alberta Transportation notes that it has made numerous
9 commitments through the course of the Board's review of
10 the project, and we acknowledge that it may be
11 appropriate for the Board to make the fulfillment of
12 some of those commitments conditions of project
13 approval.

10:43

14 We'd just like now to highlight a few of what we
15 consider to be our key commitments. And those include
16 the development of a land use plan for the project, as
17 well as seven environmental monitoring plans, plus a
18 commitment to the development of an additional seven
19 plans prior to construction. These plans will be
20 developed, considering input from federal and
21 provincial regulators, as well as Indigenous groups and
22 other stakeholders.

10:44

23 Alberta Transportation is committed to regular and
24 transparent communications with directly impacted and
25 adjacent landowners and residents of the Springbank

1 community. This includes numerous commitments that
2 have been made to work with adjacent landowners on
3 topics of concerns such as land use, air quality,
4 impacts on water wells, shelterbelts, traffic,
5 historical resources, and project operations, among
6 others.

7 To facilitate communication, Alberta
8 Transportation will appoint a community liaison, which
9 would be a representative from Alberta Transportation
10 during construction and a representative of AEP during
11 operations, and this person will serve as a point of
12 contact with stakeholders, who can primarily
13 communicate through the community liaison and through
14 local representation for Indigenous groups, community
15 associations, local businesses, and local government
16 officials.

17 Finally, Mr. Chair, Alberta Transportation has
18 committed to continue working with Stoney Nakoda
19 Nations to ensure that it can continue to participate,
20 not only in the monitoring and identification of areas
21 of cultural significance, but also as a participant in
22 the construction of the project as part of the broader
23 Indigenous participation plan.

24 Mr. Chair, before I conclude I would be remiss, if
25 I did not on behalf of Alberta Transportation, thank

10:45

10:45

1 the Board, Board staff, the court reporters, the
2 technical support staff for their extraordinary efforts
3 in presenting a remarkably smooth and efficient virtual
4 hearing.

5 More importantly, the hearing was well run, fair,
6 and conducted in an appropriately civil tone. And for
7 that we would like also to thank the other
8 participants, including in particular our friends
9 Mr. Secord and Ms. Okoye, Mr. Rae and Ms. Loudon,
10 Mr. Cusano and Mr. Bruni, Mr. Mercer and Ms. Senek and 10:46
11 Ms. Munkittrick, and last, but not least, Mr. Kennedy
12 and Ms. Vance.

13 Mr. Chair, that concludes the closing remarks of
14 Alberta Transportation. Thank you very much.

15 THE CHAIR: Thank you, Mr. Fitch, and also
16 Mr. Kruhlak. I appreciate those comments. I know the
17 staff will as well. So thank you very much for those.

18 Let's return back -- it is time for our break, and
19 let's return back at 11:05. And that will be with
20 Mr. Cusano. 10:47

21 MR. CUSANO: Thank you, sir.

22 THE CHAIR: Thank you, and see you soon.

23 (ADJOURNMENT)

24 THE CHAIR: Mr. Cusano, it will be you
25 delivering the argument?

1 MR. CUSANO: Yes, sir.

2 THE CHAIR: Okay.

3 MR. CUSANO: Yeah.

4 THE CHAIR: Okay. Well, I think we can start
5 then. Calgary River Communities Action Group
6 represented by Mr. Cusano. We've got probably to just
7 about quarter to 12, so please proceed.

8 MR. CUSANO: We should be well within that time
9 frame, sir. Thank you very much.

10 Good morning, Mr. Chair and Board members. 11:05

11 As you know, we are counsel to the Calgary River
12 Communities Action Group, or the Action Group, and
13 Flood Free Calgary, or FFC.

14 Our clients wish to thank the Board for the
15 opportunity to participate in this critical hearing as
16 it relates to flood mitigation for the City of Calgary,
17 and to share the views and experiences of its members.
18 We hope that these views and experiences will be of
19 assistance to the Board in its public interest enquiry.

20 As noted earlier this morning, we will provide the 11:05
21 court reporter with a copy of this argument, which will
22 contain the evidentiary references and headings for
23 transcript purposes.

24 Mr. Chair, the Action Group and FFC are
25 participating in this hearing on behalf of thousands of

1 individuals and businesses in Calgary that support SR1.

2 Our clients have participated in this proceeding
3 to be the voice of the affected and those who stand to
4 be protected by SR1. As Ms. Leeds Binder stated in her
5 opening statement: (as read)

6 "We're here to tell you what it is like
7 to endure what was then Canada's worst
8 natural disaster so that you can
9 appreciate the future devastation that
10 can be avoided by SR1."

11:06

11 The Action Group and FFC support the application of
12 Alberta Transportation and urge the Board to find that
13 SR1 is in the public interest and to issue the
14 appropriate approvals.

15 Our argument today, sir, will be directed, in the
16 main, to Topic 1 issues and will address the need for
17 and viability of SR1; and the social, economic and
18 environmental benefits of the project.

19 Sir, as we reviewed the evidence and considered the
20 Board's public interest mandate, we found the Board's
21 2018 decision approving the construction and operation
22 of a debris flood retention structure on Cougar Creek in
23 Canmore, Alberta, to be instructive. The Board's
24 principal conclusions from that decision, to which we
25 will refer this morning, remain unaffected by the Board

11:07

1 's decision addendum issued in 2019 in relation to a
2 proposed updated design.

3 We want to briefly outline why the Board's analysis
4 in Cougar Creek is helpful before we move into a more
5 in-depth analysis of the relevant issues related to the
6 Board's public interest inquiry here.

7 THE CHAIR: Mr. Cusano --

8 MR. CUSANO: Yes, sir.

9 THE CHAIR: I am so sorry to interrupt. I
10 notice the court reporter I think is perhaps
11 experiencing the odd glitch in voice. Is that right,
12 Ms. Vespa? Because I am. Sometimes it might be
13 Edmonton. And it's only a word or two.

11:07

14 So, therefore, if you're going to be submitting
15 your remarks, and then we could have a peek of that,
16 perhaps have a quick review of the transcripts, we
17 could proceed.

18 It's not a lot, but I did notice a couple of times
19 Ms. Vespa is kind of reaching in as well just to get
20 the broken up word.

11:08

21 Ms. Vespa, would that work, then? It doesn't seem
22 to be very extended, so...

23 COURT REPORTER: Yes. I think I will be able to
24 figure it out if I receive the document.

25 THE CHAIR: Okay, thank you.

1 And, Mr. Cusano, you know, it's not that it's a
2 lot so don't worry about it, you're coming through very
3 clearly. Just the odd time there's a little bit of a
4 garble and we lose maybe one or two words. So I just
5 wanted to check that with the court reporter, so...

6 Thanks a lot. Please proceed. And if it's
7 anything more extended, I'll let you know.

8 MR. CUSANO: Please do, sir. Thank you very
9 much.

10 I don't seem to have any issues on my end here,
11 but, as mentioned, feel free to interrupt if it's
12 getting worse, sir.

13 THE CHAIR: Okay.

14 MR. CUSANO: So, then, sir, returning to my
15 initial discussion of the decision in Cougar Creek, in
16 Cougar Creek, the Board first considered whether the
17 project was justifiable in terms of need and viability.
18 The Board was convinced there that the project was
19 justified because the proposed high debris retention
20 structure, spillway and diversion tunnel was needed,
21 and would work as intended, to mitigate future debris
22 floods of similar or greater magnitude to the 2013
23 flood. The Board referred to the risk to human life,
24 financial losses from damage to buildings and contents,
25 and economic losses from the disruption of major

11:09

11:09

1 transportation routes as important considerations in
2 assessing need.

3 The circumstances under consideration in
4 Cougar Creek are similar to those before the Board here
5 in relation to SR1. In particular, there is without
6 doubt a similar need in this case, specifically the
7 need for flood mitigation on the Elbow River to avoid
8 devastating social, economic, and environmental impact.
9 These impacts are outlined in our clients' evidence, as
10 well as the evidence of Alberta Transportation and the
11 City of Calgary. 11:10

12 SR1, the evidence shows, will be successful in
13 providing such critical flood mitigation as it is
14 designed for a design flood equivalent to the 2013
15 flood. In our respectful submission, the evidence on
16 this record overwhelmingly supports a conclusion that
17 SR1 is needed, viable, and justified.

18 After establishing that the Cougar Creek project
19 was justifiable, the Board also considered the
20 project's social, economic, and environmental effects. 11:11
21 The Board noted that there is no fixed objective test
22 determining whether a project is in the public
23 interest.

24 And you heard that this morning from Mr. Kruhlak
25 as well. Rather, the Board must balance the economic,

1 environmental, and social interests of the project.

2 The Board found that the balance favoured approval
3 of the Cougar Creek project because of its public
4 benefit, namely the increase in public safety and
5 protection of private property and public
6 infrastructure, which the Board noted is of paramount
7 importance to Albertans.

8 At paragraph 339 of the decision, the Board stated
9 it this way: (as read)

10 "The Board finds that the town's primary
11 objective for developing the project is
12 to mitigate the effects of future flood
13 events. The project design is focused
14 on reducing the risk of loss of life and
15 protecting residences, businesses, and
16 infrastructure when flood events occur.
17 The Board finds that the mitigation of
18 potential economic losses is a key
19 consideration that favours approval of
20 the project."

11:11

11:12

21 Clearly, sir, in our submission, those circumstances and
22 considerations under review in Cougar Creek are
23 analogous to the application before the Board here. SR1
24 will also have a significant public benefit to
25 Albertans, protecting the City of Calgary and other

1 downstream communities from flooding and avoiding
2 significant social, economic, and environmental impacts,
3 impacts which were front and centre for the Board in
4 Cougar Creek.

5 And it is important to note that compensation for
6 or mitigation of any local area impacts has occurred or
7 will occur, and any such impacts are limited and
8 temporary in nature such that the balance, in our
9 respectful view, clearly favours SR1 being in the public
10 interest.

11:13

11 The Action Group and FFC therefore ask this Board
12 to approve this project, and that any conditions imposed
13 not delay construction or operation, as any delay risks
14 downstream communities being exposed to another flood.

15 We will now elaborate on the basis on which it
16 should, in our respectful view, be found that SR1 is
17 justifiable, the benefits of the project, and respond to
18 some of the positions taken by the SCLG.

19 First, let's speak about the justification for SR1
20 and why in our view it is justifiable.

11:13

21 In the Cougar Creek decision the Board determined
22 that a project is justifiable if it is needed and meets
23 its intended outcomes or, in other words, is viable.

24 SR1 addresses the critical need for flood
25 mitigation on the Elbow River. The 2013 flood is clear

1 evidence of this need.

2 Another flood on the Elbow River is inevitable.
3 Calgary is built on a floodplain at the confluence of
4 the Bow and Elbow Rivers and has historically
5 experienced flooding on several occasions, the 2013
6 flood being only its fourth largest. Climate change has
7 the potential to make matters worse, increasing the
8 flood risk.

9 This is evidence that Calgary will flood again.
10 The only question is when, how badly, and whether the
11 city will be prepared. 11:14

12 Like many other major cities located near a water
13 source, city planners in the early 1900s did not take
14 flood risk into account and Calgary was allowed to grow
15 around both of its rivers. The result is that many of
16 the river communities that flooded in 2013 were some of
17 the earliest to be established. The Action Group and
18 FFC represent many residents and businesses in these
19 communities, and our clients' evidence provides personal
20 accounts of the devastating impacts of flooding to
21 lives, livelihoods, property and businesses in the city. 11:15

22 In addition to affecting residential and commercial
23 property, the 2013 flood had a significant impact on
24 public safety and public infrastructure. We will speak
25 to these impacts in more detail shortly. But what is

1 important, and this conclusion is in our respectful view
2 self evident, is that these impacts which would be
3 avoided for a future flood if SR1 were in operation
4 establish clearly that SR1 is critically needed.

5 It is important to note that the SCLG who opposes
6 SR1 agrees that flood mitigation is needed on the
7 Elbow River. For example, Ms. Hunter and Ms. Feist both
8 stated in their opening remarks for Topic 1 that no one
9 wants to see the City of Calgary flood. And Ms. Massey
10 stated that: (as read)

11 "...we are all in total agreement,
12 folks. We all want flood control, we
13 want flood mitigation..."

14 And in fairness, Mr. Chairman, there are, of course,
15 matters on which the SCLG joins issue with Alberta
16 Transportation, and those matters are, of course, for
17 the SCLG and Alberta Transportation to address.

18 SR1 is not only needed but it is viable. SR1 is
19 designed to afford the City of Calgary protection from
20 future flooding events and, in particular, a design
21 flood, which is a flood equivalent to the 2013 flood,
22 approximately equal to a 1 in 200-year flood.

23 SR1 therefore has the capacity to satisfy the need
24 for upstream flood mitigation for the City of Calgary
25 and avoid the devastating impacts of another 2013-sized

11:16

11:16

1 flood. Specifically, SR1 will remove 600 metres cubed
2 per second of peak flow from the Elbow River, which,
3 with the contribution of storage available at the
4 Glenmore Reservoir, will protect communities downstream
5 of the reservoir on the Elbow River from a 1 in 200-year
6 flood, plus a safety factor of 25 percent.

7 SR1 also provides flood mitigation benefits to
8 other downstream communities. Particularly, SR1 will
9 significantly reduce the flood risk for communities
10 between SR1 and the Glenmore Reservoir by reducing the 11:17
11 peak flow of a 2013-sized event in half, from
12 1,240 metres cubed per second to 640 metres cubed per
13 second, and a 1 in 100-year flood event to a flow rate
14 as low as 165 metres cubed per second.

15 And, secondly, lower inflows from the Elbow River
16 into the Bow River during flood events, which will
17 provide flood mitigation benefits for communities on the
18 Bow River downstream of the confluence of the two
19 rivers.

20 In our respectful submission, sir, there can be no 11:18
21 other conclusion than this project is needed and viable
22 and, therefore, justifiable based on the evidence before
23 the Board in this proceeding.

24 Sir, the principal purpose of our clients' evidence
25 is to speak to the social, economic, and environmental

1 impacts of the 2013 flood on the City of Calgary and
2 other downstream communities. Alberta Transportation's
3 and the City's evidence speak to such impacts. The
4 evidence shows that these are the impacts that would be
5 avoided if SR1 were operational. And the avoidance of
6 these impacts is clearly a public benefit and,
7 therefore, in the public interest.

8 In the Cougar Creek decision, the public benefits
9 of mitigating flood events on Cougar Creek and the
10 social and economic benefits of public safety and damage
11 avoidance to the local area weighed heavily in favour of
12 the project's approval. 11:19

13 In our submission, the same can be said of SR1. In
14 fact, SR1 would have a greater public benefit as the
15 damage avoidance to the City of Calgary and downstream
16 communities is significantly larger in magnitude.

17 Avoiding the impacts of a design flood has
18 significant, economic, social, and environmental
19 benefits. This is without doubt and is evidenced from
20 the staggering quantifiable impacts of the 2013 flood
21 that are outlined in Section C of our clients' evidence
22 found in Exhibit 237. It is important to note that this
23 evidence is uncontroverted and stands on this record
24 without challenge. 11:19

25 We would like to share a few examples of these

1 impacts. For example, 14,500 homes were damaged in
2 Calgary, and 136 homes required reconstruction on the
3 Siksika Nation downstream of where SR1 would be located.
4 4,000 businesses and 3,000 buildings were flooded.
5 16 LRT stations were closed. 50 bus routes were
6 cancelled or detoured, and it took about 13 days to get
7 service to be fully restored. 39,837 ENMAX customers
8 were impacted and 34,000 locations were without power.
9 Evacuations occurred in 26 communities, affecting
10 110,000 people, and a state of emergency was declared
11 for 14 days.

11:20

12 These are just some of the quantifiable impacts of
13 the 2013 flood.

14 By reducing flows on the Elbow River, SR1 will
15 prevent or mitigate these negative impacts in a future
16 flood and will protect much of the historical, cultural,
17 and recreational heart of the City of Calgary. It will
18 also protect those areas of the downtown core that were
19 impacted by Elbow River flooding in 2013, and benefit
20 communities downstream of the confluence of the Elbow
21 and Bow Rivers.

11:21

22 The 2013 flood also had a significant impact on the
23 environment. For example, we know that three years'
24 worth of garbage entered the City's landfills in the
25 weeks after the 2013 flood; the province established the

1 \$10 million FISHERS program to mitigate the negative
2 impacts of the flood on fish and fish habitat; and the
3 City spent \$100 million repairing erosion damage from
4 the flood.

5 SR1 would have the added public benefit of avoiding
6 such environmental impacts.

7 In our submission, sir, in light of the weight of
8 this evidence, it is difficult to argue, let alone
9 establish, that SR1 would not create a significant
10 public benefit.

11:22

11 I will now speak to the social and economic
12 benefits of SR1 generally, and then turn to the
13 Action Group and Flood Free Calgary's evidence on the
14 specific social and economic benefits of SR1 to the
15 people and businesses it represents.

16 SR1 would have considerable social benefits. First
17 and foremost, SR1 will improve public safety, a concern
18 of paramount importance to Albertans, and, we suggest,
19 to the Board.

20 SR1 is expected to reduce the number of injuries
21 and fatalities that would be directly attributable to a
22 flood in Calgary. This is critical given that five
23 people lost their lives in the 2013 Alberta floods. The
24 Calgary Fire Department performed over 400 water rescues
25 in the first 24 hours of the flood, which likely

11:23

1 prevented further death or injuries.

2 SR1 would also have a positive effect on the City's
3 ability to respond to emergencies.

4 In the lead-up to the 2013 flood, the City had only
5 15 hours to enact its emergency response plan and
6 conduct evacuations.

7 SR1 will increase the City's response time, and
8 enhance the City's emergency response capacity which
9 will help ensure the safety of those downstream.

10 Alberta Transportation has identified that the
11 period during and after flooding causes a multitude of
12 public health and safety issues, including waterborne
13 communicable diseases, exposure to chemical
14 contaminants, as well as anxiety, depression and
15 posttraumatic stress disorder. Such impacts would be
16 avoided or significantly reduced if SR1 is operational
17 during the next flood.

11:23

18 In addition to the significant social benefits of
19 SR1, SR1 has a clear economic benefit. This is evident
20 when considering the financial damage numbers from the
21 2013 flood, the estimates for which range between 4.875
22 and \$6 billion. In addition, it is estimated that
23 5.1 million working hours were lost in southern Alberta
24 during the 2013 flood.

11:24

25 The 2017 IBI study estimates that another flood of

1 the same magnitude would cause \$4.7 billion in damages.
2 \$4.7 billion.

3 The operation of SR1 would significantly avoid
4 future flood damages, which is undoubtedly in the public
5 interest. Alberta Transportation estimates a design
6 flood on the Elbow River would cause 935 --
7 approximately, \$935 million in direct costs for
8 commercial and residential properties and 318 million
9 for infrastructure, pulling something in the range of
10 \$1.254 billion. In addition, the City of Calgary and
11 IBI group both estimate that SR1 would reduce the
12 average annual flood damage by approximately
13 \$27 million.

11:25

14 In the Cougar Creek decision, this Board recognized
15 that the 700,000 average annualized damage avoidance to
16 buildings was an important factor for determining the
17 project was in the public interest. The Board also
18 noted there that avoiding damages to public
19 infrastructure, including transportation corridors,
20 further benefits the public at large and all Albertans
21 and Canadians. On this basis, the Board concluded that
22 the economic benefits of the project were significant
23 and a material consideration weighing in favour of the
24 project being in the public interest.

11:26

25 Those considerations, we say, are equally

1 applicable here. The average annualized damage cost for
2 SR1 at \$27 million is significantly higher than the
3 \$700,000 for Cougar Creek.

4 And the loss of transportation corridors was also
5 experienced during the 2013 flood in Calgary. We have
6 already spoken to the impact of the 2013 flood on LRT
7 and bus routes. In addition, 1,000 kilometres of roads
8 were washed away as were rail lines, pedestrian bridges
9 and culverts in Calgary. A rail bridge on the Bow River
10 downstream of the Elbow River confluence also failed
11 causing a train carrying highly explosive liquids to
12 derail.

11:27

13 The \$27 million annual avoidance of damages,
14 including potential damages to transportation corridors,
15 indicate that the economic benefits of SR1 are
16 significant and demonstrate that SR1 is indeed in the
17 public interest.

18 These numbers also indicate that SR1 is a sound
19 investment. Multiple studies conclude the benefits of
20 SR1 far outweigh its costs, with the City of Calgary
21 finding that the benefit to cost ratio is 5 to 1.

11:27

22 With SR1 currently budgeted to cost \$432 million,
23 Alberta Transportation predicts that SR1 would more than
24 pay for itself after a single design flood. In fact, a
25 single design flood would pay for SR1 three times over

1 based on Alberta Transportation's \$1.254 billion
2 property and infrastructure damages estimate for the
3 next design flood.

4 In our respectful view, sir, SR1 is clearly an
5 economic benefit.

6 Sir, most important to our clients' membership and
7 supporters are the significant and social economic
8 benefits to the lives, livelihoods and properties of
9 those that were impacted by the 2013 flood, and those
10 that stand to be protected by SR1.

11:28

11 Our clients' evidence gives a voice to the people
12 behind the statistics of the flood. As Ms. Leeds Binder
13 stated in her opening statement, quote: (as read)

14 "Our members are the homeowners,
15 residents and businesses whose
16 financial, mental and physical health
17 suffered, and in many cases, continues
18 to suffer as a result of the 2013 flood.
19 These are the people whose lives,
20 livelihoods and properties stand in the
21 cross-hairs of the next inevitable flood
22 event."

11:29

23 End quote. It is devastating still to hear those words,
24 let alone speak them. The experience of the Action
25 Group's and FFC's members and other community members

1 are outlined in the letters and emails received in
2 support of SR1. These accounts describe what it is like
3 to suffer through what was then Canada's worst natural
4 disaster, all of which were shared so the Board can
5 appreciate the future devastation that could be avoided
6 by SR1.

7 Our clients received 193 letters or emails from
8 individual residents of flood-affected communities in
9 Calgary. One theme is the devastation and loss in the
10 immediate aftermath of the flood, including the loss of 11:30
11 homes and valued possessions, including family
12 heirlooms, precious mementos and other irreplaceable
13 items collected over generations.

14 The pungent odours and sounds associated with the
15 flood and its aftermath continue to be constant
16 companions for many, their memories jolted into regular
17 reminders of the devastation loss and heartache
18 suffered.

19 The video played during our clients' opening
20 statement demonstrated the harrowing experience of one 11:30
21 family that lost their home as a result of the flood.
22 Unfortunately, this was not a unique experience.
23 Several homeowners along the Elbow River in Calgary
24 similarly lost their homes as they were damaged beyond
25 repair and demolished, including 10 percent of the homes

1 in the community of Roxboro alone. Similar harrowing
2 experiences from the flood are illustrated in many of
3 the photos included in the submissions received.

4 The letters and emails speak to the immeasurable
5 and continuing impact of flooding on physical and mental
6 health and the stress, anxiety and the sense of
7 insecurity that remains following the flood. Many
8 accounts speak to the fear of another flood and the
9 anxiety felt during flood season. The added security
10 that SR1 would provide to landowners, residents and
11 businesses affected by the 2013 flood, or to those who
12 now reside or work in the flood-impacted area cannot be
13 understated. This is an important social benefit of
14 flood mitigation and the Board recognized in
15 Cougar Creek decision. How could it be argued otherwise
16 in the face of the evidence on this record? Indeed, in
17 our respectful view, it cannot.

11:31

18 Perhaps most devastating is that almost every
19 letter or email that has been included in our clients'
20 evidence, speaks to the mental health impact of the
21 flood and the lingering effects for so many. For this
22 reason, many found it too hard to write a letter and
23 this is why an online survey was created where 393
24 responses in support of SR1 were received.

11:32

25 Finally, the accounts our clients received from

1 individual residents speak to the significant costs they
2 have incurred on personal flood mitigation. For
3 example, installing sump pumps, generators, break
4 resilient glass, relocating mechanical, electrical
5 equipment, and raising water tanks, furnaces and other
6 utilities. This was done with the expectation that the
7 city and the province would do their part to protect
8 their citizens.

9 For the most part, individual efforts can only
10 reduce property loss. The reality is that only upstream
11 mitigation can actually keep the flood water out of
12 Calgary, and only the province can build such mitigation
13 infrastructure.

11:33

14 In our clients' evidence you will also find letters
15 from 10 inner city community associations which,
16 together, represent well over 43,000 residents. These
17 letters describe the physical and mental impacts of the
18 flood on their communities and the ongoing stress felt
19 each spring by residents looking anxiously at weather
20 forecasts and river levels.

11:33

21 While the impact on residential communities was
22 profound, SR1 is about more than protecting these
23 communities. SR1 is critical infrastructure to protect
24 the economy of Alberta, and most certainly Calgary.

25 As Mr. Battistella noted in his opening statement,

1 the City centre area of Calgary that was impacted by the
2 2013 flood is not only the economic engine for Calgary,
3 but also for the province.

4 Not to be forgotten are the impacts the 2013 flood
5 had on the businesses in Calgary. 4,000 businesses were
6 flooded, and 7,000 were impacted in total, a third of
7 which never re-opened after the flood. In addition to
8 losses due to direct flooding for some businesses, many
9 more were impacted by loss of business due to
10 evacuations, power outages, street closures and the
11 temporary suspension of the LRT. One example is First
12 on Colour, the locally owned and operated copier store
13 that Mr. Battistella referenced in his opening statement
14 that was forced to close for 17 days.

11:34

15 Fifteen businesses and business-related
16 organizations, such as the Calgary Chamber of Commerce,
17 Calgary Economic Development, Calgary Downtown
18 Association, and local business improvement areas, and
19 revitalization zones representing over 6,000 businesses,
20 wrote letters in support of SR1 expressing their
21 concerns about a repeat of the 2013 flood.

11:35

22 As Mr. Battistella outlined in his opening
23 statement, SR1 is a benefit to businesses for several
24 reasons, including the protection of current and future
25 assets, protection of business revenues, which, in turn,

1 protects owners and employees, reduction of business
2 operating costs such as insurance rates, and the
3 reduction of the risk profile for locating and operating
4 business in and attracting business to the downtown of
5 Calgary.

6 The social and economic benefits of SR1 that are
7 outlined in the evidence of the Action Group and Flood
8 Free Calgary and the evidence of Alberta Transportation
9 and the City of Calgary demand careful consideration,
10 for such benefits are clear and significant and, in our
11 view, overwhelmingly favour approval of SR1.

11:36

12 Let me turn now to some of the positions taken by
13 the SCLG. The SCLG is of the view that SR1 creates
14 unequal outcomes for downstream communities on the
15 Elbow River. Such a position is premised on the
16 assumption that there is a project that could create
17 equal outcomes for all downstream communities. We agree
18 with Alberta Transportation that no such project could
19 exist.

20 We do not dispute that flood protection for all
21 communities on the Elbow and Bow Rivers is in the public
22 interest and a laudable goal, our clients know all too
23 well the devastating impacts of another flood and would
24 not wish their --

11:36

25 THE CHAIR:

Mr. --

1 MR. CUSANO: Yes, sir?

2 THE CHAIR: Perhaps if you could just go back
3 about one minute. There's a fairly lengthy break
4 there. I think it was just before you indicated that
5 you agreed that flood mitigation in all communities
6 along the two rivers -- try about there.

7 Or Ms. Vespa -- Ms. Vespa, if you could maybe --
8 what was the last piece that you had?

9 THE COURT REPORTER: (as read)

10 "We do not dispute that flood protection
11 for all communities on the Elbow and
12 Bow Rivers is in the public interest
13 and...

14 MR. CUSANO: Thank you, Ms. Vespa. And thank
15 you, sir.

16 We do not dispute that flood protection for all
17 communities on the Elbow and Bow Rivers is in the
18 public interest and a laudable goal. Of all
19 participants before this Board, our clients know all
20 too well the devastating impacts of another flood and
21 would not wish their experiences on any community.

22 However, SR1 is the only project before this
23 Board, and this project is not intended to be
24 everything for everyone, nor could it be. It is not
25 intended to be flood, fire, and drought protection for

11:38

1 Calgary, Bragg Creek, and Redwood Meadows. Rather, it
2 has been designed to protect the City of Calgary from a
3 design flood on the Elbow River equivalent to the 2013
4 flood.

5 And here it is worth noting that our reference to
6 the city is a reference to not only the lives and
7 property of downstream residents but to businesses,
8 livelihoods and the economy of the province writ large,
9 as we outlined earlier. SR1 is clearly needed in our
10 view and must be built.

11:38

11 Having said that, it is worth mentioning that SR1
12 does have ancillary benefits in terms of water security
13 because it reduces the quantity of water that must be
14 drawn down on the Glenmore Reservoir during the flood
15 season, thereby increasing water supply to the City.

16 It also bears noting that SR1 and other flood
17 mitigation projects are not mutually exclusive.
18 Indeed, many other such projects have been undertaken
19 or concluded to date, and, no doubt, other such
20 projects will be pursued as the province, cities, and
21 counties act to protect their property, citizens, and
22 businesses from future floods.

11:39

23 In particular, as Alberta Transportation notes in
24 its evidence, SR1 is just one component of a larger
25 flood mitigation plan for the Bow River Basin. Other

1 components include a potential new flood control
2 structure on the Bow River, upgrades to the
3 Glenmore Reservoir and berms within the City of
4 Calgary, Bragg Creek and Redwood Meadows.

5 The building of SR1 does not preclude these other
6 components or other flood, fire, or drought mitigation,
7 nor are these other components or projects being
8 considered here relevant to the Board's determination
9 of whether SR1 is in the public interest.

10 The SCLG also takes the position that MC1 is the
11 project that would cause equal flood mitigation
12 outcomes for downstream communities. First and
13 foremost sir, and with respect, such argument is not
14 relevant because MC1 is not the reviewable project
15 before the Board as recognized by the Board in the
16 pre-hearing conference decision report. This is an
17 issue which we will revisit in a moment.

18 Despite MC1 being out of scope, we do want to
19 comment briefly on some of the evidence advanced by
20 SCLG. MC1 is upstream of SR1 and, therefore, has a
21 smaller rainfall catchment area to manage water
22 entering the Elbow River. If significant rainfall were
23 to occur downstream of MC1, as occurred, for example,
24 in the 2005 flood, this would mean the project would
25 afford less protection to communities downstream of

11:40

11:40

1 that rainfall area. In and of itself, this could
2 create unequal outcomes for different communities.

3 The SCLG's unequal outcomes' position is similar
4 to its position that alternatives like MC1 provide
5 greater benefits than SR1. This conclusion cannot be
6 justified on the evidence before this Board. MC1 was
7 considered by Alberta Transportation and ultimately not
8 chosen as an option because of its significant number
9 of adverse effects compared to SR1.

10 Mr. Hebert from Alberta Transportation provided
11 further detail on this point in his opening statement
12 for Topic Number 1. He stated that compared to MC1,
13 SR1, as an off-stream dam, is less sensitive to impacts
14 from sediment and debris; is closer to operational
15 response teams and access roads; has less environmental
16 impact; has less of an impact on the Elbow River; is
17 less vulnerable to damage during extreme weather,
18 including catastrophic failure during construction, and
19 has less impact on social, recreation, tourism and
20 commercial values.

11:41

21 Mr. Hebert also --

22 THE CHAIR: Sorry, Mr. Cusano, just go back
23 just 30 seconds. Just that last little clip there,
24 please. Thanks.

25 MR. CUSANO: Mr. Hebert from Alberta

11:42

1 Transportation provided further detail on this point in
2 his opening statement for Topic 1. He stated that
3 compared to MC1, SR1, as an off-stream dam, is less
4 sensitive to impacts from sediment and debris; is
5 closer to operational response teams and access roads;
6 has less environmental impact; has less of an impact on
7 the Elbow River; is less vulnerable to damage during
8 extreme weather, including catastrophic failure during
9 construction, and has less impact on social,
10 recreational, tourism and commercial values.

11:43

11 Mr. Hebert also noted that SR1 has a positive
12 economic impact, and perhaps, most importantly, is
13 years closer to being built than any alternative
14 project.

15 It is, therefore, in our view, clear that Alberta
16 Transportation made the right decision in choosing SR1.
17 However, all of this is not relevant to the Board's
18 public interest enquiry because it is not choosing
19 between SR1 and MC1; rather, SR1 is the only reviewable
20 project before this Board.

11:44

21 SR1 has been selected by three provincial
22 governments and in preference to other options
23 including MC1. The federal government has backed the
24 project with a significant funding commitment, and SR1
25 has also successfully navigated two environmental

1 assessment processes, one at the provincial level and
2 one at the federal level.

3 In the pre-hearing conference decision report,
4 this Board recognized that SR1 is the only reviewable
5 project before it, specifically stating that the focus
6 of this proceeding is on the social, economic and
7 environmental effects associated with SR1. This Board
8 further stated that there is no merit in the
9 expenditure of significant time and resources assessing
10 projects that are not reviewable projects under the
11 *Natural Resources Conservation Board Act*.

11:44

12 The Board showed exceptional tolerance at hearing
13 evidence from the SCLG on this point during the
14 hearing. However, at the risk of sounding like a
15 broken record, the fact remains MC1 is not the
16 reviewable project, nor does the Board have
17 jurisdiction to consider a project that has not been
18 applied for. In fact, it appears that SCLG's real
19 concern is with the government of Alberta's decision to
20 choose SR1 as the preferred option over other
21 alternatives, including MC1. However, that decision is
22 not subject to review in this proceeding.

11:45

23 Let us not forget, sir, that it has taken nearly
24 eight years to get to this point. There is no evidence
25 that the government of Alberta would pursue MC1, or any

1 other option, if SR1 were not approved, or that funding
2 from the provincial and federal government for such a
3 project would even be available, nor is there any
4 evidence that it would take any less time to get
5 another project to this stage.

6 We cannot predict with certainty the groups or
7 individuals that might oppose MC1, nor can we predict,
8 assuming an application were ever made, that the
9 project would successfully navigate the environmental
10 assessment process, the NRCB process, and ultimately
11 receive approval. All of this would be conjecture, and
12 conjecture about MC1 is not an issue before this Board
13 in this application.

11:46

14 Therefore, SR1 is the only project before this
15 Board and, most importantly, most critical, the only
16 prospect of implementing effective and needed
17 mitigation for the City of Calgary and other downstream
18 communities.

19 For all these reasons, in our respectful view, no
20 weight can or should be given to SCLG's decision about
21 alternatives with greater benefits and the relative
22 implications of such alternatives.

11:46

23 Let us now turn to briefly local area impacts of
24 SR1. This project, like many projects this Board and
25 other facility regulators consider, will not be free of

1 impacts to the local area.

2 In determining whether SR1 is in the public
3 interest, this Board must balance the social, economic,
4 and environmental impacts of the project. In this
5 case, we submit that such a balance heavily favours
6 approval of SR1.

7 The City of Calgary's evidence indicates that over
8 15,000 dwellings, over 3,000 buildings and over 34,000
9 suites stand to be protected by SR1. In comparison,
10 there are only five residences that exist within the
11 footprint needed for the project.

11:47

12 The impacts to the local area from the operation
13 of SR1 will be limited and temporary in nature. In
14 most years SR1 will not be operational, and when it is
15 operational, it will only contain water for a short
16 period of time. Furthermore, the Impact Assessment
17 Agency of Canada, in its draft environmental assessment
18 report, has concluded that SR1 is not likely to cause
19 significant adverse environmental effects when taking
20 into account the implementation of key mitigation and
21 follow-up program measures by Alberta Transportation
22 and any local impacts of SR1 are heavily outweighed by
23 the significant benefits to the City of Calgary and
24 other downstream communities from the reduced risk of
25 flooding and the avoidance of the devastating, social,

11:48

1 economic, and environmental impacts of a flood.

2 SR1, as we have noted, is designed for a 1 in
3 200-year flood plus a safety factor of 25 percent.
4 This stands in stark contrast to the City of Calgary
5 and other downstream communities that are not designed
6 to endure flooding to any degree. Furthermore, SR1
7 local area impacts can be mitigated where as the
8 impacts of a future 2013-size flood on Calgary cannot
9 be fully mitigated without upstream mitigation.

10 In terms of the mitigation of impacts of SR1,
11 Alberta Transportation has consulted with impacted
12 parties and has worked and is working to address and,
13 where possible, mitigate those impacts. Alberta
14 Transportation has proposed numerous mitigation
15 measures, and has promised to continue to listen to the
16 concerns of residents and accommodate where possible to
17 achieve further mitigation of any impacts.

18 In some circumstances where impacts could not be
19 addressed through mitigation, such as for landowners
20 whose lands are needed for the project, Alberta
21 Transportation has offered compensation. And to date,
22 Alberta Transportation has acquired approximately
23 25 percent of the lands in the project area through
24 voluntary purchases and is in the process of
25 negotiating agreements with three additional landowners

11:49

11:49

1 which would increase this number to 43 percent.

2 In the City of Calgary, the city has taken
3 significant steps in terms of local mitigation measures
4 to reduce the potential exposure of flooding, but local
5 mitigation is simply not sufficient to protect the city
6 from a 2013-size flood. Only the province of Alberta
7 can protect the city and southern Alberta from such a
8 flood.

9 The social, economic and environmental benefits of
10 SR1 heavily outweigh any such impacts to the local area
11 of the project. As the Board stated in the
12 Cougar Creek decision, public safety, protecting
13 private property and public infrastructure are of
14 paramount importance to Albertans. And like the Cougar
15 Creek project, these goals will be achieved by SR1 and
16 should weigh heavily in favour of the project's
17 approval.

11:50

18 In conclusion, sir, it is important to emphasize
19 the public benefit of this project, a project that is
20 fully supported by all three levels of government. SR1
21 will increase public safety, protect private property
22 and infrastructure, and protect the wellbeing of people
23 and businesses in the City of Calgary and other
24 downstream communities. A project of such public
25 benefit is in the best interest of all Albertans.

11:51

1 It is inevitable that the catastrophic impacts of
2 the 2013 flood will be repeated if SR1 is not approved.
3 We, therefore, ask the Board to find SR1 is in the
4 public interest and approve this project to avoid such
5 impacts in the future. A decision otherwise would be,
6 in our respectful view, in effect, a decision to leave
7 the city vulnerable to flooding indefinitely which
8 cements the intolerable status quo.

9 At this point in time, the reality is that it's
10 SR1, a viable project with significant cost/benefit
11 ratios or nothing. That is the reality.

11:52

12 Time is of the essence to ensure that SR1 is fully
13 operational before the next major flood. On this
14 point, the mayor of Calgary, Naheed Nenshi, stated the
15 following in a letter supporting SR1: (as read)

16 "...if SR1 is not approved or the
17 Province is forced to reconsider other
18 alternatives that have already been
19 dismissed as less effective, the flood
20 mitigation infrastructure Calgary
21 requires could be delayed by decades."

11:52

22 We simply cannot afford to have the City of Calgary and
23 other downstream communities remain unprotected.

24 As Mr. Morris stated in his opening statement :
25 (as read)

1 "The city will flood again, the only
2 question is, will it be ready?"

3 And with the approval and construction and operation of
4 SR1, Mr. Chair, the city and the province will indeed be
5 ready.

6 Sir, those are our submissions. We wish to echo
7 Mr. Fitch's comments regarding the efforts of the Board
8 and Board counsel and staff, the court reporters whose
9 task, no doubt, is daunting at times, also the
10 efficiencies with which this hearing was conducted, and 11:53
11 the participation of all of the parties.

12 Thank you, sir, and Panel very much for your time
13 and attention.

14 THE CHAIR: Thank you, Mr. Cusano. And thank
15 you for the kind remarks in terms of Board staff and
16 all the help that we've received in terms of conducting
17 hearings. So thank you very much.

18 City of Calgary is up next. Ms. Senek, are you
19 speaking on behalf of the City of Calgary?

20 MS. SENEK: Yes, I will be. Thank you. 11:54

21 THE CHAIR: All right. So we're at 5 to. So
22 if you still require your 40 minutes, then that's --
23 that's what was requested and approved so that would
24 take you to about 20 to or so. But, if you don't need
25 that time, that's fine, you don't have to take it but

1 just to let you know that you'd be up around 20 to 1,
2 so...

3 MS. SENEK: Okay, thank you so much. I
4 suspect I won't need the full 40 minutes that we
5 requested.

6 THE CHAIR: Thank you. Please proceed.

7 MS. SENEK: Thank you, Mr. Chair, and members
8 of the Panel. I will start by thanking counsel for
9 Alberta Transportation and for Calgary River
10 Communities Action Group and Flood Free Calgary for
11 their submissions. The City of Calgary supports their
12 remarks.

11:54

13 I'd also like to thank the Board staff and panel
14 members, court reporters and Zoom host for their
15 patience and assistance, and all parties for taking the
16 time to participate in this very important hearing.

17 Like the other parties you've heard this morning,
18 I will submit a written copy of my submissions to the
19 Board which contains references to the evidence, which
20 I will not include in my oral submissions today.

11:55

21 There has been a lot of information communicated,
22 tested and digested over the past two weeks. You've
23 heard about the need for SR1, you've heard about the
24 devastating impacts of the 2013 flood, the design flood
25 for the project, and you've heard a number of concerns

1 from some of the interveners.

2 The Board's task, under Section 2 of the *Natural*
3 *Resources Conservation Board Act* is to determine
4 whether SR1 is in the public interest, having regard to
5 the social and economic effects of the project and its
6 effects on the environment.

7 Mr. Chair, the City submits that the evidence has
8 overwhelmingly shown that SR1 is in the public interest
9 and, indeed, that the public cannot afford to wait any
10 longer for that interest to be met.

11:55

11 The City submits that the project meets its stated
12 purpose of reducing the effects of future extreme flood
13 events on the City of Calgary and downstream
14 communities. SR1 is not about protecting pockets of
15 residences along the Elbow River. It will protect
16 critical infrastructure and economic assets needed for
17 the entire region, and will potentially save lives.

18 For our closing, the City will highlight the
19 dramatic benefits SR1 offers, the conservative approach
20 to design, safety and risk incorporated into the
21 project, and why the City believes that SR1 is a
22 preferable choice to alternatives put forward. I'll
23 begin with the project need and benefits.

11:56

24 The City of Calgary is located at the confluence
25 of the Bow and Elbow River. Both of these rivers drain

1 steep, high-elevation mountain terrain that is subject
2 to heavy rainfall and rapid run-off, and both lack
3 sufficient natural storage, leaving Calgary at a unique
4 potential for severe flooding.

5 I don't need to repeat the devastating impact of
6 the 2013 floods on Calgarians. The Board has heard
7 this evidence. Some of you may have lived it and
8 nearly everyone who has spoken during this hearing has
9 recognized it. Years of technical, economic,
10 engineering and citizen engagement have shown that
11 upstream storage on both rivers is greatly needed,
12 particularly on the Elbow River.

11:57

13 The City of Calgary faces constraints in
14 addressing flooding risks from the Elbow River within
15 City limits, but it has done what it can. Since 2013,
16 it has doubled the storage capacity of
17 Glenmore Reservoir from 10 to 20 million cubic metres.
18 The city has completed stream bank and riparian erosion
19 protection improvements, gravel bar modifications,
20 rehabilitated fish habitat, replaced bridges with
21 higher flow capacity structures, and completed storm
22 water, water and waste water system improvements.
23 Mitigation efforts have reduced the flood risk to
24 Calgary by 54 percent.

11:57

25 Unfortunately, the mitigation that was possible

1 for the City to undertake on its own is not enough.

2 Unless additional mitigation is undertaken, flood
3 damages on the Elbow River will be approximately 2 to
4 \$3 billion over the next hundred years.

5 In 2014, in recognition of the City's limitations
6 respecting flood mitigation within its boundaries, it
7 was agreed that the province would lead the study and
8 configuration of resilience elements outside of city
9 limits.

10 Nearly eight years later, and after extensive
11 study and careful thoughtful design, the SR1 project is
12 before this Board. Over 1.3 million Calgarians are now
13 relying on the completion of SR1 to protect public
14 safety, private property, critical regional
15 infrastructure, including waste water treatment, road
16 and rail networks, utilities and vital services, and
17 Calgary's downtown core.

11:58

18 With SR1 in place, the likelihood of another flood
19 like that in 2013 causing widespread damage and
20 disruption is significantly reduced. SR1 will work
21 synergistically with other flood resilience measures in
22 Calgary, including the Glenmore Dam itself, to
23 virtually eliminate overland flooding in a 2013-sized
24 flood downstream of the Glenmore Reservoir.

11:59

25 SR1 will also have appreciable effects on events

1 larger than the design flood. Though overland flooding
2 cannot be eliminated in floods larger than a 1 in 200
3 event, the combined mitigation of SR1 and
4 Glenmore Reservoir offer significant attenuation of
5 larger flows. For example, after passing through SR1
6 and the Glenmore Reservoir, a 1 in 500-year event turns
7 into a 1 in 29-year event. This makes SR1 an adaptive
8 measure that offers substantial benefits should changes
9 in climate and hydrologic regime bring more frequent,
10 more severe floods.

11:59

11 Even those Calgarians upstream of the
12 Glenmore Reservoir will benefit from SR1. Discovery
13 Ridge, the only Calgary community upstream of Glenmore,
14 was regulated at the time of development to the design
15 to 1 in 100 standards, meaning that it was designed to
16 a flow rate of 883 cubic metres per second. SR1, by
17 diverting up to 600 cubic metres per second, will
18 increase the threshold for damages in this area to
19 around the 1 in 350-year range.

20 The benefits of SR1 are staggering. SR1 will
21 avert major social, environmental, and economic impacts
22 along the Elbow and Bow Rivers in Calgary, including
23 about \$1.2 billion in damages for a 1 in 100 flood and
24 \$1.9 billion in damages for 1 in 200 event. The
25 average annual damages to public and private

12:00

1 infrastructure averted by SR1 are approximately
2 \$27 million a year. The City submits that with SR1 on
3 the landscape, almost 3 billion in damages will be
4 avoided for over 100 years, resulting in a 5-to-1
5 benefit to capital cost ratio.

6 While the benefit cost analyses performed by
7 Alberta Transportation has been more conservative, all
8 benefit cost analyses have shown net benefit. It is
9 likely, as well, that the net benefits are greater than
10 those shown, given that most analyses do not account
11 for some crucial factors that are difficult to
12 monetize, such as the increased flood response
13 flexibility afforded by SR1, health and safety
14 elements, potential increased and, therefore, avoided
15 damages due to climate change, and benefits that would
16 be felt outside of the City of Calgary.

12:01

17 While upstream mitigation on the Bow River would
18 certainly have its own positive impacts on the flood
19 outlooks of the City of Calgary and other downstream
20 communities, upstream mitigation on the Bow is not
21 necessary for SR1 to provide benefits. The \$27 million
22 of average annual damages avoided by SR1 are solely
23 attributable to SR1 and are not dependent on any
24 additional projects on the Bow River.

12:01

25 Furthermore, flooding on the Bow River would have

1 a minimal impact on a mitigated Elbow River as the
2 topography of the riverbeds would not allow water to
3 travel very far upstream at the confluence of the two
4 rivers.

5 River flooding has caused at least seven
6 fatalities in southern Alberta since 2005, three of
7 which were in Calgary. It must be highlighted that any
8 further loss of human life to flooding in Calgary is
9 intolerable to the city.

10 Beyond the life safety impacts of further flood
11 mitigation along the Elbow, tens of thousands of
12 Calgarians stand to benefit from the peace of mind this
13 infrastructure will provide, particularly those still
14 impacted mentally and economically by the 2013 flood.

15 I'll move now to a discussion on safety and risk.
16 There have been many suggestions to this Board that SR1
17 is underdesigned. With respect, the City submits that
18 the evidence shows the opposite. The design approach
19 taken by Alberta Transportation and its consultants has
20 been conservative. This conservative design, combined
21 with stringent regulatory requirements, results in
22 infrastructure that has been engineered to be safe.
23 The clearest example of SR1's conservative design is
24 the design flood itself.

25 Despite the Alberta standard being mitigation to a

12:02

12:03

1 1 in 100-year event, SR1 was designed to a standard of
2 roughly 1 in 200.

3 In addition, there has been a 25 percent increase
4 from the flood of record to the maximum diversion rate
5 to allow for flexibility and maximum effectiveness
6 throughout a flood event.

7 SR1 is designed to safely withstand and pass the
8 probable maximum floods. While not SR1's intended
9 operation, it is also notable that SR1 has an available
10 incremental capacity that will bring SR1 storage
11 capacity from 77 million cubic metres up to
12 approximately 100 million cubic metres if required.

12:03

13 In addition, multiple redundancies have been built
14 into SR1's design to increase its safety, including
15 respecting debris management, mechanical and
16 operational systems and, as noted, an emergency
17 spillway that is designed to safely pass the probable
18 maximum flood.

19 SR1 will be classified as an extreme consequence
20 dam. The City owns and operates 13 classified dam
21 structures including the Glenmore Reservoir which is,
22 itself, classified as extreme consequence.

12:04

23 The City is, therefore, familiar with the
24 stringent design, surveillance, operation and
25 maintenance standard such a consequence classification

1 entails. Unlike other extreme consequence dams, SR1
2 will only be operating for periods of up to 40 days
3 following a major flood and will not hold large amounts
4 of water continuously, making the already remote chance
5 of a fair weather failure even less likely.

6 With its off-stream design, components configure
7 to meet or exceed its extreme consequence
8 classification, large storage volume capable of holding
9 back-to-back 1 in 100 floods and significant
10 operational flexibility, the City submits that SR1 has
11 a vanishingly remote chance of failure, and that these
12 remote risks are far outweighed by the benefits I've
13 already described.

14 In, addition and importantly, providing this
15 higher level of permanent flood protection on the
16 Elbow River will provide the city with more time to
17 respond to flood events. It will also allow the city
18 to eliminate over 40 percent of the emergency actions
19 in its emergency response plan in a 1 in 200-year event
20 and direct more emergency response resources during
21 such a flood to mitigate impacts on the Bow River where
22 less flood mitigation infrastructure has been completed
23 to date, increasing overall public safety and reducing
24 damages on both rivers. With this additional emergency
25 response capability, combined with the reduced flooding

12:05

12:05

1 impacts discussed earlier, it is clear from the
2 evidence, Mr. Chair, that not only is SR1 safe but it
3 increases public safety.

4 I now want to touch on the alternatives. There
5 have been numerous claims throughout this hearing that
6 MC1 ought to have been chosen by Alberta Transportation
7 over SR1.

8 The City reminds the Board that the Board's
9 mandate is limited to determining whether SR1 is in the
10 public interest. However, given that this Panel
11 indicated in its Pre-Hearing Conference Decision Report
12 that a general understanding of the relative merits
13 associated with project alternatives may be
14 contextually relevant to the Board's decision on public
15 interest, the City presents the following submissions
16 supporting SR1 as the superior choice to MC1.

17 SR1 takes advantage of a natural topographic and
18 geological feature that happens to be underlain by low
19 permeability material. The off-stream design of SR1
20 means that only intermittently, during, and for
21 relatively short periods following major floods does it
22 appreciably interact with the Elbow River's fluvial
23 system. In addition, as already discussed, SR1's
24 off-stream nature makes it less susceptible to fair
25 weather failure, giving it an advantage over MC1 in

12:06

12:06

1 terms of operational risk.

2 SR1's catchment is 28 percent larger than that of
3 MC1. The proposed position of MC1 higher in the
4 catchment means that it would not capture rainfall
5 events occurring lower down in the basin that could
6 raise flows between MC1 and the Glenmore Reservoir,
7 such as the event observed in 2005.

8 Drought management has been frequently cited by
9 the interveners opposed to this project as a reason
10 that MC1 ought to have been selected over SR1 by
11 Alberta Transportation.

12:07

12 The City's witnesses cross-examined extensively on
13 the City's water security concerns. With respect,
14 water security is not the purpose of SR1. Its purpose
15 is flood mitigation. It is an added public benefit of
16 SR1 that it does provide a modest incremental benefit
17 for water supply.

18 The existence of SR1 will allow the city the
19 flexibility of not needing to draw down
20 Glenmore Reservoir in anticipation of the flood season,
21 allowing the City to maintain higher levels in Glenmore
22 for its potable water needs.

12:08

23 The City agrees that water is a precious and
24 limited resource. The City supplies potable water to
25 almost 25 percent of Alberta's population and takes

1 water quality and supply very seriously.

2 SR1 will not negatively impact its citizens and
3 regional customers' access to water. The City does not
4 anticipate any appreciable changes to the timing and
5 availability of water in the Elbow River with SR1 in
6 place.

7 Further, as an off-stream structure, any potential
8 water quality changes in the Elbow River as a result of
9 the operation of SR1 are expected to be intermittent,
10 of short duration, reversible and manageable by the
11 water treatment infrastructure at Glenmore Reservoir
12 and the flexibility of the City's water treatment
13 strategy. Indeed, in the event of an unmitigated
14 flood, pipelines, utilities and construction materials
15 found in the urban environment are a real concern and
16 these would pose a real threat to water quality, a
17 threat that would be mitigated by SR1.

12:09

18 The City has 50 to 70-year horizon plans in place
19 to address the financial infrastructure and licensing
20 needs of the City and its regional partners, while
21 considering the regions' and basins' sustainability for
22 all water licence holders.

12:09

23 While the modest increase in water security
24 provided by SR1 is, as I mentioned, an added benefit,
25 the City does not view the Elbow River as the

1 preferable or practical source as longer-term
2 population, hydrology, treatment and climate dynamics
3 unfold.

4 The City's water licence capability on the
5 Elbow River is essentially optimized with the
6 Glenmore Reservoir, particularly since the installation
7 of the new gates.

8 As stated by Frank Frigo, the Elbow is only so
9 large of a roof. If you put a bucket at the end of
10 that roof, you're only going to get so much water off
11 of it, especially in times that are more, if you will,
12 droughty. On the Elbow, there would simply not be
13 enough water. Even a larger bucket would provide no
14 appreciable benefit in terms of water supply.

12:10

15 The Bow River is a preferable candidate for
16 upstream storage given its larger catchment, higher
17 elevation, glacier permanent snowfield, less seasonal
18 variability and higher precipitation. That said, as
19 the City has submitted repeatedly throughout these
20 proceedings, while upstream storage on the Bow River is
21 important, so is flood mitigation on the Elbow River.
22 SR1 is necessary.

12:10

23 In conclusion, there has been a lot of discussion
24 throughout these proceedings about what sort of water
25 management strategies the City wants and needs. To be

1 clear, the City is before this Board to very clearly
2 and emphatically state that what the City needs today
3 is SR1.

4 In the City's submission, SR1 is the most
5 important piece of proposed infrastructure in the
6 history of the City of Calgary and the broader Calgary
7 region. This is not a for-profit natural resources
8 project; this is critical public investment necessary
9 for the protection of human life and regional
10 infrastructure.

12:11

11 The Board has seen the evidence of SR1's economic
12 benefits. You've heard how it has been designed to
13 stringent and conservative standard, and you've heard
14 from the source that the project's construction and
15 operation will not sacrifice water quality or security.

16 If this project is completed, the residents of
17 Calgary will finally have protection from one of the
18 greatest threats currently facing the city.

19 SR1 is very much in the public interest and the
20 City urges this Board to recommend its approval.

12:12

21 And those are the City of Calgary's submissions.

22 Thank you.

23 THE CHAIR: Thank you, Ms. Senek. Much
24 appreciated. And you're right, you didn't need all of
25 your time, so we are now a little bit ahead of

1 schedule, but it is almost 12:15.

2 So let's break for -- yes, let's break for lunch.

3 If we can get back at 1:00.

4 And, Ms. Louden, will you be representing Stoney
5 Nakoda.

6 MS. LOUDEN: Yes, Mr. Chairman, I will be.

7 THE CHAIR: Okay. And 1:00, you'll be ready
8 to go?

9 MS. LOUDEN: Yes, sir, I will be.

10 THE CHAIR: Okay. Well, thank you, everyone. 12:12

11 Let's reconvene at 1:00.

12 (PROCEEDINGS ADJOURNED AT 12:12 P.M.)

13

14 PROCEEDINGS ADJOURNED TO 1:00 P.M.

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1 Volume 10
2 April 6, 2021
3 P.M. Session

4
5 (PROCEEDINGS RESUMED AT 1:01 P.M.)

6 THE CHAIR: Just before we start, Ms. Louden,
7 welcome, Ms. Gerbrandt, the court reporter for this
8 afternoon. You're a new face for us, but welcome this
9 afternoon.

10 And we now have the final argument for The City of
11 Calgary and CRCAG, so we could enter those as exhibits.

13:01

12 So, Ms. Friend, Calgary River Communities Action
13 Group, could be Exhibit Number?

14 MS. FRIEND: That would be Number 410 for the
15 final argument.

16 THE CHAIR: 410. Thank you.

17 **EXHIBIT 410 - FINAL ARGUMENT OF CRCAG**

18 **AND FFC**

19 MS. FRIEND: And they also had transcript
20 corrections.

13:02

21 THE CHAIR: Yes, that's correct. And,
22 hopefully, people have had a chance to have a peek.

23 Are there any objections to having those entered
24 as an Exhibit 411?

25 MR. SECORD: I have no objections.

1 THE CHAIR: Thank you, Mr. Secord.

2 MR. SECORD: Richard Secord here.

3 THE CHAIR: Thank you, Mr. Secord.

4 Ms. Louden?

5 MS. LOUDEN: We have no objections.

6 THE CHAIR: Okay. Hearing no others, we can
7 enter those, Ms. Friend, 411.

8 **EXHIBIT 411 - TRANSCRIPT CORRECTIONS**
9 **FROM CRCAG AND FFC**

10 THE CHAIR: And we can enter Exhibit 412,
11 then, City of Calgary's final argument from Ms. Senek.

12 MS. FRIEND: Okay. Will do.

13 **EXHIBIT 412 - FINAL ARGUMENT OF THE**
14 **CITY OF CALGARY**

15 THE CHAIR: Okay. Perfect. Thank you very
16 much, everyone, and welcome back.

17 Ms. Louden, the stage is yours. Please proceed.

18 MS. LOUDEN: Thank you, Mr. Chairman.

19 Thank you, Panel members.

20 Just to briefly note, as with the other parties,
21 which we just heard, upon concluding our arguments this
22 afternoon, we will be filing with the Board a written
23 copy of our arguments, which will include references to
24 the material that I refer to this afternoon.

25 The Stoney Nakoda Nations are comprised of the

13:02

13:03

1 Bears paw First Nation, the Chiniki First Nation, and
2 the Wesley First Nation.

3 The Stoney Nakoda, as represented by the Bears paw,
4 Chiniki, and Wesley First Nations were signatories to
5 Treaty Number 7 at Blackfoot Crossing in 1877.

6 The Stoney Nakoda have six Indian reserves. The
7 propose project is located within the Stoney Nakoda's
8 traditional territory to which they have an ongoing
9 claim for Aboriginal title and rights in the Court of
10 Queen's Bench of Alberta.

13:04

11 Woste Igit Nabi Limited is a wholly-owned company
12 of the Stoney Nakoda and owns lands in close proximity
13 to the SR1 project.

14 The purpose or benefit of the proposed project is
15 to provide flood protection for the city of Calgary.
16 However, the evidence shows there will be relatively
17 few benefits to the city of Calgary from the project
18 unless similar flood protection is not also provided on
19 the Bow River.

20 The scope of the EIA for the project should,
21 therefore, have been expanded to include the
22 proponent's projected flood protection measures on the
23 Bow River in addition to those on the Elbow River.
24 However, this did not happen, and this Board's mandate
25 is restricted to the SR1 project.

13:04

1 Nevertheless, the Stoney Nakoda submit that the
2 Board, in order to determine the public interest, must
3 still review the costs and benefits of all the flood
4 control projects proposed to protect the city of
5 Calgary from another flood similar to the 2013 flood.

6 But the public interest must also include flood
7 protection for communities upstream of the city of
8 Calgary and must recognize their riparian rights. The
9 public interest cannot assume the priority of
10 downstream urban populations over upstream rural
11 populations. Most of all, the public interest must
12 include the oldest rights holders of this land, the
13 Indigenous Peoples.

14 Both Alberta Transportation and The City of
15 Calgary have de facto agreed that SR1 is part of an
16 overall plan for the Bow River Basin, as is evidenced
17 by the voluminous evidence they have put forward that
18 relates to flood damage and flood control on the
19 Bow River.

20 The City of Calgary's models that include both SR1
21 and upstream storage reservoirs on the Bow River rank
22 highest of all of its flood mitigation options.
23 The City of Calgary expressly states that it is an
24 advocate for upstream water storage on both the Bow and
25 Elbow Rivers.

13:05

13:05

1 The City of Calgary speaks of total watershed
2 management. Calgary's preferred flood control options
3 are the SR1 project combined with a new reservoir on
4 the Bow River.

5 As stated by City of Calgary witness
6 Mr. Frank Frigo: (as read)

7 "The City of Calgary's long-term plans
8 anticipate the population growth and
9 changes in demand would likely be met
10 through incremental infrastructure
11 investment and licensed considerations
12 along the Bow River."

13:06

13 The evidence before the Board shows that the SR1 project
14 is only one piece of a combined set of projects on the
15 Bow and Elbow watersheds that would provide the
16 necessary mitigation.

17 As stated again by City of Calgary witness
18 Mr. Frank Frigo: (as read)

19 "In the case of the Bow River Basin,
20 both SR1 and any potential project on
21 the Bow River combined, would provide
22 the mitigation necessary for Calgary and
23 other communities that may benefit from
24 these projects."

13:07

25 For all these reasons, any review of the SR1 project

1 alone without a commensurate review of these other
2 projects does not serve the public interest.

3 Alberta Transportation has adopted these models
4 prepared by The City of Calgary. However, the models
5 are based on only an analysis of the financial costs and
6 benefits of flood control and mitigation measures.
7 While such analyses are valuable, ultimately, the Board
8 must determine the public interest by taking into
9 account a much broader range of criteria.

10 Value judgments must be transparent and cannot be
11 hidden with an arbitrary attempt to monetize the value
12 components that purport to constitute the make-up of the
13 cost benefit analyses.

13:07

14 Alberta Transportation should have come before this
15 Board with a comprehensive solution for both the Elbow
16 and Bow Rivers, providing various alternatives for each
17 of the rivers, and letting the NRCB choose the best
18 solution for each river from an overall perspective.
19 Such a comprehensive solution should also have
20 considered the cultural impacts on landscapes. This did
21 not happen.

13:08

22 To do so would have involved comparing the costs
23 and benefits of the various projects for each of the
24 rivers, taking into account not only the 2013 flood, but
25 also the future: Climate change, drought, fire

1 protection, recreation, and perhaps most important of
2 all, the greater Calgary area's predicted future water
3 needs for generations to come.

4 Included in any such review of the Elbow and Bow
5 projects, the rights of upstream riparian residents and
6 users must be taken into account and not simply
7 sacrificed for the greater good.

8 This Board must ask whether Alberta Transportation
9 has taken into account the ecological and conservation
10 values of rural landscapes, or did financial and other
11 benefits to urban communities simply supersede the costs
12 and benefits to the rural communities? 13:09

13 Remember, there is no legislative policy that
14 mandates the flooding of upstream landowners for the
15 benefit of downstream riparian residents.

16 The waters flowing through the traditional
17 territory of the Stoney Nakoda have been powering
18 the city of Calgary for over 100 years. Any
19 consideration of water control projects on the Bow or
20 Elbow Rivers must consider the long-standing historical
21 and cultural connections that the Stoney Nakoda have to
22 these waters. 13:09

23 Over the past two weeks, the Board has heard
24 evidence of Alberta's haphazard consultation process
25 with the Stoney Nakoda, admit the limitations created by

1 COVID-19 on Stoney Nakoda communities.

2 The Aboriginal Consultation Office confirmed that
3 it may rely on the NRCB process to fulfil the Crown's
4 duty to consult.

5 Further, the Court of Appeal of Alberta confirmed
6 in Fort McKay First Nation versus Prosper Petroleum
7 Limited that tribunals must consider the honour of the
8 Crown when making a determination about whether a
9 project is in the public interest.

10 As stated by the Court of Appeal: (as read)

13:10

11 "A project authorization that breaches
12 the constitutionally protected rights of
13 Indigenous Peoples cannot serve the
14 public interest."

15 Consultation with Indigenous groups generally is not
16 consultation with the Stoney Nakoda. Negotiations and
17 agreements with the Tsuut'ina and other distant
18 First Nations bear no relevance to the rights of the
19 Stoney Nakoda. For Alberta Transportation to imply that
20 consultation with unrelated Indigenous groups
21 constitutes consultation with the Stoney Nakoda is
22 extremely disrespectful.

13:10

23 While the Cree Nations from central Alberta and the
24 Blackfoot Nations from southern Alberta have their own
25 rights and interests, they do not speak for the Stoney

1 Nakoda.

2 The duty to consult and accommodate involves both
3 the procedural and a substantive component.

4 Procedurally, an infringement of constitutional rights
5 might occur. Indigenous peoples must have the
6 opportunity to have their views heard and considered.

7 Substantively, where adverse effects to
8 constitutional rights might occur, Indigenous Peoples
9 must have the impacts to their rights mitigated or
10 accommodated. Both the procedural and the substantive
11 components must be fulfilled. 13:11

12 The assessment of potential impacts from the SR1
13 project on the rights and interests of the Stoney Nakoda
14 has not been adequate and has not been complete. As a
15 result, the extent of potential effects, including what
16 mitigation or accommodation measures may be required to
17 reduce, mitigate, or avoid those impacts, has not yet
18 been determined. Without this information, the Board
19 cannot make a determination about whether the project is
20 in the public interest. 13:12

21 In its environmental assessment, Alberta
22 Transportation only assessed potential project effects
23 on traditional land and resource use. However,
24 traditional land and resource use is only one component
25 of Aboriginal and Treaty rights, as these rights also

1 include Stoney Nakoda cultural, social and governance
2 components.

3 For example, the right to hunt includes much more
4 than just the activity of hunting. Hunting is grounded
5 in the respect for the land and animals and is a central
6 part of Stoney Nakoda culture.

7 For the Stoney Nakoda, it is essential to be out on
8 the land to access traditional sites, for not just the
9 exercise of the right to hunt, but, also, for example,
10 the passing down of knowledge to younger generations.

13:12

11 Since there has not yet been assessment or
12 consideration of project impacts to these components of
13 Aboriginal and Treaty rights, there has not yet been a
14 complete assessment of potential effects to the rights
15 and interests of the Stoney Nakoda.

16 The oral evidence of Stoney Nakoda elders and
17 knowledge keepers in this hearing, detailed among
18 numerous other concerns, the trauma they have
19 experienced as a result of inadequate consultation and
20 engagement and the destruction of their lands, including
21 cultural, spiritual, and burial sites.

13:13

22 Elder John Snow, Jr. spoke of the trauma he still
23 feels as a result of the flooding and desecration of
24 Stoney Nakoda grave sites resulting from the Big Horn
25 Dam. Such a situation is intolerable and must not be

1 permitted to happen again.

2 Alberta Transportation asserts that the proposed
3 project, including the proposed future land use plan,
4 will provide for an enhanced opportunity for the
5 exercise of treaty rights and traditional uses.

6 However, this statement ignores the fact that the
7 project will disturb or destroy existing traditional use
8 in cultural sites of the Stoney Nakoda in the project
9 area, and that the future land use plan includes a
10 multitude of restrictions and competing uses to the
11 exercise of Aboriginal and Treaty rights. This cannot
12 be said to enhance the opportunities of the
13 Stoney Nakoda.

13:13

14 Alberta Transportation acknowledges that mitigation
15 measures should be directly proportional and responsive
16 to identified impacts. Yet, Alberta Transportation also
17 concedes that the mitigation measures it has proposed
18 for impacts to traditional land and resource use are
19 simply mitigations of biophysical components.

20 Mitigations aimed at addressing biophysical components,
21 and by proxy some of the resources used by the
22 Stoney Nakoda are not the same as accommodation of
23 impacts to Aboriginal and Treaty rights. This has been
24 confirmed by the Supreme Court of Canada.

13:14

25 For all the foregoing reasons, the Stoney Nakoda

1 therefore submits that it is premature to approve the
2 SR1 project and that the application should be denied.

3 However, in the event the Board approves the
4 project, the Stoney Nakoda submit that the construction
5 of SR1 not be permitted to commence until, and only if,
6 one, the 2016 agreement between the Province of Alberta
7 and TransAlta Utilities Limited governing water
8 management in the Ghost Reservoir not be renewed unless
9 the Stoney Nakoda Nations be made a party to that
10 agreement.

13:15

11 Two, a full assessment of all the proposed flood
12 and water control structures on the Bow River upstream
13 of the city of Calgary has been completed, including an
14 accounting of all payments to third parties. As part of
15 this assessment, the Board must mandate a fulsome
16 response to both climate change and solutions to the
17 threat of flooding facing the city of Calgary.

18 And, three, the government of Alberta has obtained
19 a full, free, and informed consent of each of the
20 Stoney Nakoda Nations to any and all flood mitigation or
21 water storage structures on the Bow River upstream of
22 the city of Calgary, regardless as to whether there is
23 projected to be any actual flooding of Stoney Nakoda
24 Indian Reserves 142, 143, and 144.

13:15

25 We would emphasize that there is no reasonable

1 reason why these conditions cannot be complied with
2 prior to the commencement of construction of SR1.
3 Further, these positions are responsive to the
4 principles under the United Nations Declaration of the
5 Rights of Indigenous Peoples, which Alberta
6 Transportation has confirmed its commitment to.

7 In the event the Board approves the SR1 project,
8 the Stoney Nakoda also asks that the following be made
9 binding and forceable conditions of any such approval:
10 We note that evidence during the hearing indicated that
11 Alberta Transportation can only make commitments for
12 itself. That is, it cannot make commitments on behalf
13 of the eventual operator of SR1, Alberta Environment and
14 Parks. The Stoney Nakoda requests that any commitments
15 by Alberta Transportation, therefore, be made conditions
16 of approval that are also binding on Alberta Environment
17 and Parks.

18 These include the following:

19 Condition 1, completion of the Stoney Nakoda
20 traditional land use assessment.

21 Prior to construction, Alberta Transportation shall
22 enable the Stoney Nakoda to complete the traditional
23 land use assessment. Alberta Transportation shall
24 review the completed traditional land use assessment and
25 meet with the Stoney Nakoda to discuss outstanding

13:16

13:17

1 issues and appropriate mitigation or accommodation
2 measures for identified impacts.

3 Alberta Transportation shall provide upfront
4 funding to the Stoney Nakoda for the completion of the
5 traditional land use assessment based on a budget to be
6 provided by the Stoney Nakoda.

7 Condition 2: Cultural awareness training.

8 Prior to construction and any further fieldwork,
9 all employees and contractors for the project must
10 undergo Stoney cultural awareness training in the
11 communities of Eden Valley, Morley, and Big Horn.
12 Alberta Transportation shall offer reasonable capacity
13 to the Stoney Nakoda for the development of the training
14 program.

13:17

15 Condition 3: Information sharing agreement.

16 Prior to further fieldwork and the completion of
17 the Stoney Nakoda traditional land use assessment
18 referred to in condition 1, Alberta Transportation must
19 engage the Stoney Nakoda on the development of an
20 information sharing agreement for the SR1 project based
21 on the First Nations' principles of ownership, control,
22 access, and possession.

13:18

23 The agreement shall include and apply to Alberta
24 Transportation, Alberta Environment and Parks, and
25 Alberta Culture, Multiculturalism, and Status of Women.

1 Alberta Transportation shall offer reasonable capacity
2 to the Stoney Nakoda for the development of the
3 agreement.

4 Condition 4: Independent Indigenous monitor.

5 Alberta Transportation shall contract an
6 independent Indigenous monitor to monitor all fieldwork
7 activities undertaken as part of the completion of the
8 Stoney Nakoda traditional land use assessment referred
9 to in condition 1. The Indigenous monitor shall be
10 mutually agreed upon between Alberta Transportation and
11 the Stoney Nakoda.

13:19

12 Condition 5: Stoney Nakoda traditional knowledge
13 monitoring committee.

14 Prior to construction and prior to the resumption
15 of fieldwork and completion of the Stoney Nakoda
16 traditional land use assessment referred to in
17 condition 1, Alberta Transportation shall offer
18 reasonable capacity for the development of the
19 Stoney Nakoda traditional knowledge monitoring
20 committee. This committee shall be in place for the
21 life of the project, and its operation shall be funded
22 by Alberta Transportation and/or Alberta Environment and
23 Parks.

13:19

24 This committee shall be engaged on
25 pre-construction, construction, operation, and

1 post-flood activities including, but not limited to:
2 Fieldwork investigations and mitigation activities
3 relating to cultural, spiritual, historical, and
4 archeological features and sites in the project area,
5 including those captured by the *Historical Resources*
6 *Act*; cultural monitoring of the project area at
7 predefined intervals including during and after ground
8 disturbance and flood events; monitoring and
9 verification of environmental assessment and mitigation
10 effectiveness including for water, fish and fish
11 habitat, wildlife and wildlife habitat, vegetation, and
12 wetlands; and cumulative effects monitoring including
13 for water, fish and fish habitat, wildlife and wildlife
14 habitat, vegetation, and wetlands.

13:20

15 Condition 6: Stoney Nakoda archeological and
16 heritage management plan.

17 Prior to further fieldwork, Alberta Transportation
18 shall offer reasonable capacity for the development of
19 an archeological and heritage management plan for any
20 structures, sites or things of historical,
21 archeological, paleontological or architectural
22 significance, or physical or cultural heritage resources
23 within the project's development area including, but not
24 limited to, sites and things subject to the
25 *Historical Resources Act*.

13:20

1 This plan shall include, but not be limited to,
2 engagement of the Stoney Nakoda traditional knowledge
3 committee, referred to in condition 5, on all future
4 fieldwork and investigations relating to sites and
5 features including those subject to the *Historical*
6 *Resources Act*; provision of reasonable capacity to the
7 Stoney Nakoda to monitor investigations and mitigation
8 activities of sites and features captured under the
9 *Historical Resources Act*, and conduct ceremonies at
10 these sites as requested; and a procedure for sites and
11 features not captured under the *Historical Resources*
12 *Act*, which provides for documentation and protection of
13 the sites and features in accordance with Stoney Nakoda
14 cultural protocols.

13:21

15 Condition 7: Previously recorded archeological and
16 historical sites.

17 Alberta Transportation shall provide the
18 Stoney Nakoda with all information and reports regarding
19 previously recorded archeological and historical sites
20 in the project area, including the findings of the
21 historical resource impact assessment undertaken for the
22 project. Alberta Transportation shall offer reasonable
23 capacity to the Stoney Nakoda to conduct site visits and
24 undertake ceremonies at these archeological and
25 historical sites.

13:22

1 Condition 8: Stoney Nakoda sacred ceremonial
2 objects, repatriation regulation.

3 Alberta Transportation shall provide reasonable
4 capacity to the Stoney Nakoda to engage the government
5 of Alberta in the development of the Stoney Nakoda
6 sacred ceremonial objects repatriation regulation under
7 the *First Nations Sacred and Ceremonial Objects*
8 *Repatriation Act*.

9 Condition 9: Wildlife overpass.

10 Alberta Transportation shall install a wildlife
11 overpass over Highway 22 to facilitate the movement of
12 culturally significant animals.

13:22

13 Condition 10: Crown land offset measures plan.

14 Alberta Transportation shall calculate the
15 permanent loss of unoccupied Crown land and private land
16 to which Indigenous groups have a right of access, and
17 based on this calculation, shall develop and provide a
18 Crown land offset measures plan to the Board and the
19 Stoney Nakoda.

20 The plan must include, at minimum, a description of
21 site-specific details and maps showing their locations
22 where unoccupied Crown land or private land to which
23 Indigenous groups have a right of access is no longer
24 available for traditional use as a result of project
25 activities, and a list of the offset or compensation

13:23

1 measures that will be implemented to address the
2 permanent loss of unoccupied Crown lands and private
3 lands to which Indigenous groups have the right of
4 access.

5 Condition 11: Water monitoring for Woste Igitic Nabi
6 Limited lands.

7 Alberta Transportation and/or Alberta Environment
8 and Parks shall monitor the water quality and quantity
9 of the Woste Igitic Nabi Limited lands prior to, during,
10 and after ground disturbance activities for the project, 13:24
11 and on an annual basis thereafter, for the life of the
12 project.

13 Should the water quality or quantity be impacted,
14 Alberta Transportation and/or Alberta Environment and
15 Parks shall provide potable water to the Woste Igitic Nabi
16 Limited lands for agricultural and other purposes.

17 Condition 12: Chair of the Indigenous advisory
18 committee.

19 A Stoney Nakoda member shall be appointed chair of
20 the proposed Indigenous advisory committee. 13:24

21 Condition 13: Stoney Nakoda communication plan.

22 Alberta Transportation shall offer reasonable
23 capacity for the development of a communication plan
24 specific to the Stoney Nakoda communities regarding, at
25 minimum, all impacts to land use resulting from the

1 project, post-flood activities and restrictions, and
2 accidents and malfunctions occurring in relation to the
3 project, including those within the project development
4 area, which may affect areas outside the project
5 development area.

6 Condition 14: Funding for participation in
7 conditions or programs.

8 Where participation of Indigenous groups is an
9 option as it relates to a project condition or follow-up
10 program, Alberta Transportation and/or Alberta
11 Environment and Parks shall offer the Stoney Nakoda a
12 reasonable amount of capacity funding to support their
13 involvement.

13:25

14 Condition 15: Funding for consultation on
15 conditions.

16 Alberta Transportation and/or Alberta Environment
17 and Parks must offer the Stoney Nakoda a reasonable
18 amount of capacity funding to support consultation
19 activities where such activities are a requirement of a
20 project condition.

13:25

21 Condition 16: Regional assessments.

22 No further flood control infrastructure will be
23 considered for approval by the NRCB until a regional
24 assessment on flood control needs and impacts has been
25 completed, either pursuant to the *Impact Assessment Act*

1 of Canada or an equivalent standard. This assessment
2 shall consider the region to be assessed to include the
3 entire Bow River system, including the Elbow River as a
4 sub basin. This assessment shall include, but not be
5 limited to, describing a baseline against which to
6 assess the incremental impact of a discrete project;
7 identifying thresholds to inform future project
8 decisions and limit unaccessible cumulative effects;
9 clarifying expected standard mitigation measures for
10 future projects; addressing potential impacts on the
11 rights and interests of the Stoney Nakoda; and providing
12 guidance for land use planning that may be undertaken by
13 various jurisdictions.

13:26

14 Thank you, Mr. Chairman and Panel members. Those
15 conclude the final arguments on behalf of the Bears paw
16 First Nation, Chiniki First Nation, Wesley First Nation,
17 and Woste Igitic Limited.

18 Thank you to the Board and to the Board staff and
19 to the other parties as well, and we appreciate the
20 opportunity to participate in these hearings.

13:27

21 Thank you.

22 THE CHAIR: Thank you, Ms. Loudon.

23 Mr. Secord.

24 MR. KRUHLAK: Mr. Chairman, it's Ron Kruhlak.

25 If I could just ask Ms. Loudon, would you be able to

1 provide us with a copy of your closing argument in the
2 next short while, just so we have an opportunity to
3 review it this evening?

4 MS. LOUDEN: Certainly, Mr. Kruhlak. We'll be
5 sending that off right away.

6 MR. KRUHLAK: Thank you very much.
7 Thank you, Mr. Chairman.

8 THE CHAIR: Thank you.

9 Sorry. Mr. Secord on behalf of SCLG.

10 MR. SECORD: Good afternoon, Mr. Chair. I have
11 circulated our argument to counsel and hearing
12 participants. So, Mr. Kruhlak, I hope you received it
13 and you'll have time to look at it.

14 So my --

15 THE CHAIR: Sorry, Mr. Secord, in terms of the
16 timing, we're just slightly ahead, so I think it would
17 take you to about 4:00, and I presume that will still
18 work.

19 MR. SECORD: I was hoping I would still get
20 that 4:15 end time, sir, but I will -- you know, I will
21 do my best.

22 As you can appreciate, there's a lot of material,
23 and actually to respond to what Mr. Kruhlak and his
24 team put together this morning in their, you know,
25 90 plus-page document, I didn't really factor that in

13:28

13:28

1 in terms of my request.

2 Anyway, I'll do my best, and maybe at 4 we can --
3 you can cut me off if need be.

4 THE CHAIR: Well, how about I'll try to give
5 you a bit of a heads-up before that. I would -- I'll
6 let you get your stuff in. We all agreed on the time.

7 MR. SECORD: Sure.

8 THE CHAIR: We're a little bit ahead of time.
9 So it's not like we're going to sort of cut people off
10 for a few minutes, but just a bit of a heads-up. 13:29

11 MR. SECORD: Sure.

12 THE CHAIR: Thank you.

13 MR. SECORD: And I'll endeavour to finish by 4.

14 THE CHAIR: Great, thank you.

15 MR. SECORD: So this is the final argument of
16 the SCLG. This argument will address the issues
17 identified by the Board in the five topic blocks.

18 To the extent that this argument does not
19 specifically address matters raised by AT, CRCAG, or
20 The City of Calgary in their final arguments today,
21 SCLG's positions remain as expressed in its previous
22 submissions and through the hearing process. 13:29

23 So my first series of remarks are going to be on
24 the public interest and how that is framed in this
25 case.

1 Is the test for whether or not the SR1 application
2 is in the public interest, is that it is "better than
3 nothing"? Is the public interest test served when only
4 a portion of the public is protected, in this case the
5 homeowners downstream of the Glenmore Reservoir in
6 Calgary? Meanwhile, the Alberta residents upstream of
7 SR1 in Redwood Meadows, in Bragg Creek are hung out to
8 flood.

9 If approved, one community wins flood protection
10 to a 1 in 200-year level, and one loses its
11 environment, its heritage, its inheritance, its
12 culture, its quality of life, and potentially its
13 future. Does this serve the public interest?

14 In the Cougar Creek decision, NR2018-01, the Board
15 stated in paragraph 345 under the heading "Public
16 Interest Test": (as read)

17 "The Board does not have a fixed
18 formula...the outcome of a Board review
19 is shaped by the nature of the project
20 under review...community support for the
21 project..."

22 And it goes on to say that:

23 "...the Board must be convinced that the
24 identified project benefits the region
25 and the province...without generating

13:31

13:31

1 unacceptable economic, social or
2 environmental impacts."

3 Cougar Creek had an estimated \$38 million construction
4 cost. Nothing like the project that you have in front
5 of you today.

6 SR1 does not have the support of the Springbank
7 community. SR1 does not benefit the region upstream of
8 SR1 and generates unacceptable economic, social, and
9 environmental impacts between SR1 and the Glenmore
10 Reservoir.

13:32

11 Is the test of public interest time specific? The
12 SR1 project will be here for hundreds of years if it is
13 approved. Is it the public interest for the next five
14 years because Calgary needs flood mitigation now and
15 this is the only project before the Board? Should not
16 consideration of the public interest on a long-lived
17 project like SR1 consider the next 50 years? The next
18 100 years? The next 200 years?

19 What if, as Dr. Fennell stated last week, the 1 in
20 500-year flood becomes the 1 in 200-year flood 50 years
21 from now. What is the responsibility of this Board to
22 consider the long-lived nature of this project?

13:33

23 Is it a test of public interest to consider whether
24 this project manages our precious water resource, the
25 Elbow River, for future generations? After all, the

1 name of this Board is the Natural Resources Conservation
2 Board, with emphasis on "conservation."

3 Is it in the public interest to invest over half a
4 billion dollars in a project that will sit idle while
5 severe drought and climate change takes hold over the
6 next hundred years.

7 Is it in the public interest to approve a project
8 that has not considered the worst-case scenarios? I
9 find it amazing listening to Alberta Transportation
10 saying, "Oh, you can't possibly take a look at the
11 floods on the Bow River in terms of, you know, what
12 might happen in the future. There's no evidence that
13 they occurred on the Elbow." From a worst-case
14 scenario, why wouldn't you do that? I mean, what are
15 you scared of?

13:35

16 Is it in the public interest to approve a project
17 where modelling changes and recalculations continue to
18 be made as late as March 2021?

19 For instance, the soil and sediment modelling
20 revisions and the air quality modelling revisions in
21 Exhibit 327.

13:35

22 Is the public interest served when material costs
23 have been hidden from public view, are uncertain, or
24 simply unavailable for review by this Panel? Is the
25 public interest served when AT explicitly refuses to

1 disclose certain material costs?

2 Is the public interest served when one community,
3 Springbank, is asked to accept fugitive dust emissions,
4 where no exposure is acceptable, on behalf of another
5 community such as Elbow Park or the Calgary Golf and
6 Country Club?

7 My next series of remarks are on Topic Block 1,
8 "Project Purpose and Need."

9 The SCLG requests that the Board pay close
10 attention to the numerous submissions made by its
11 members in Exhibit 250, the landowner statements. The
12 SCLG also requests that the Board pay close attention to
13 the viva voce evidence given by Ms. Karin Hunter,
14 Mr. Brian Copithorne, Ms. Mary Robinson, Ms. Tracey
15 Feist, Mr. Marshall Copithorne, Mr. Lee Drewry,
16 Ms. Jan Erisman, Mrs. Barbara Tegtmeyer, and
17 Dr. Karen Massey.

13:37

18 The SCLG members do not dispute that there is a
19 need for flood management or mitigation to manage high
20 consequence floods. As Marshall Copithorne put it,
21 nobody could.

13:37

22 But the SCLG disputes the need for a project such
23 as SR1 that has crucial design limitations, that creates
24 unequal outcomes, and that limits its ability to adapt
25 to a range of future flood conditions. And I would

1 refer in particular to Karin Hunter's evidence in Topic
2 Block 1.

3 Under the rubric of project purpose and need, let's
4 recall the two SCLG aids to cross-exam discussed on
5 March 22, the first day of the hearing.

6 Those exhibits, Exhibit 360 and 361, provide a
7 side-by-side comparison of SR1 to MC1. The comparison
8 demonstrates that MC1 is vastly superior to SR1 in
9 capturing peak flows.

10 The most basic test of whether SR1 should be
11 approved by this Panel is its ability to manage flood
12 risk. Exhibit 350, Transcript page 156, Mr. Wood
13 stated:

13:38

14 "It is the peak, you know, that is the
15 most important when it comes to flood
16 damages."

17 "It is the peak, you know, that is most
18 important when it comes to flood
19 damages."

20 If that is so, why were volumes used to compare SR1 and
21 MC1? The comparison has always been volumes, not flow
22 rates. MC1, as an in-stream dam, has superior outcomes
23 to SR1 for more communities and under more extreme flood
24 events.

13:39

25 If a flood surge or peak flow arrives that is not

1 captured by SR1, either because the reservoir is full,
2 due to forecasting errors or environmental conditions,
3 back-to-back storms or a short, but high-intensity
4 storm, SR1 will not be effective at capturing the
5 floodwaters and preventing damage downstream. What is
6 the point of infrastructure that may not capture the
7 peak -- the flood peak it is intended to capture?

8 Consider that we are in the middle of a
9 "hypothetical pandemic." Let's call the virus in this
10 case a "1 in 200-year flood," with a maximum flow rate
11 of 1240 cubic metres per second. 13:40

12 There is a vaccine that is 100 percent effective
13 against the virus. That is MC1.

14 There is another vaccine that is 0 percent
15 effective for the population upstream of SR1, and only
16 25 percent effective for the population downstream of
17 SR1 to the Glenmore Reservoir, to which the proponent
18 eagerly acknowledges 1 in 50-year level of protection
19 rather than the proponent's 1 in 200 target level, and
20 this SR1 vaccine is only 100 percent effective for the
21 population downstream of the Glenmore Reservoir to the
22 confluence of the Elbow and Bow Rivers. 13:41

23 Shouldn't the government of Alberta and the NRCB
24 look to protect everyone with the vaccine that is
25 100 percent effective? This vaccine is MC1.

1 Why would we choose a vaccine that has lower
2 effectiveness?

3 Using the vaccine analogy, MC1 is also effective
4 against the variants of climate change, 1 in 1,000 and
5 1 in 500-year floods; drought, water security,
6 fire-fighting protection, and recreation.

7 SR1 is useless against the variants of a 1 in 1,000
8 and 1 in 500-year flood.

9 Even the residents downstream of the Glenmore will
10 not be protected by SR1 from those events as SR1 can
11 only take the top off a flood to a maximum of
12 600 cubic metres per second.

13 SR1 is also useless against the variants of climate
14 change: Drought, water security, fire-fighting
15 protection, and recreation.

16 And SR1 has a wide range of negative side effects
17 such as PM 2.5 air pollution for the Springbank
18 residents.

19 As Marshall Copithorne stated, "It is never too
20 late to reverse course and ditch a bad decision." The
21 SCLG notes the government recently did that with a 1976
22 coal policy.

23 Marshall Copithorne stated at Transcript page 537:
24 (as read)

25 "With listening to this morning's

13:42

13:43

1 dialogue, I recognize that, with SR1 in
2 place, we do not protect Calgary. In
3 fact, 80 percent of the damage could
4 still occur in Calgary with SR1 and, to
5 me, that's ridiculous."

6 And, of course, he's referring to the fact that the Bow
7 is not looked after in this -- by SR1 and, of course,
8 there was considerable damage done to Calgary from the
9 flood of the Bow River in 2013.

10 And Mr. Copithorne went on to say: (as read)

13:44

11 "There is some things that really bother
12 me. In the presentation this morning
13 with regard to folks in Calgary, and it
14 seemed to me that private land and
15 property rights and homes in the city of
16 Calgary are more important than private
17 property out in the country. What are
18 we teaching our kids these days? That
19 bothers me. Should we let this continue
20 in our society or should someone stand
21 up and say this is enough?"

13:44

22 He went on to say: (as read)

23 "I'd like to advise the Board to the
24 fact that, whether you're in business or
25 whether you're in government, it's never

1 too late to reverse a bad idea or an
2 investment. It will enhance Alberta's
3 credibility for future generations to
4 come. Cut and move on from our
5 suffering Alberta taxpayers' sunk costs
6 into SR1. Excite anxious Albertans with
7 a better, comprehensive, multiuse plan
8 to address the longer term future of
9 this great province."

10
11 "This huge financial investment we have
12 for SR1 is good for something that might
13 happen. I know this has been clearly
14 identified and it just -- it just sticks
15 with me. Why wouldn't we put that huge
16 investment and all our resources into a
17 project that will serve this province
18 and this community for the next hundred
19 years? Next thousand years."

20 He went on to say: (as read)

21 "What's wrong with us? Why are we
22 worried about building a mud hole when
23 we could build a resource that would
24 enhance the lifestyle and the
25 productivity of the province for a long,

13:45

13:45

1 long time."

2 This application should be denied, and the government
3 should be advised by the NRCB that SR1 is not in the
4 public interest and is not the best alternative.

5 Why are we building a mud hole when we could build
6 something like MC1 that could provide lasting benefits,
7 from permanent water storage for generations to come.

8 As Jan Erisman stated, there is a reason why no one
9 is building dry dams anywhere else in the world.

10 And as Barbara Tegtmeyer has noted from personal
11 experience, the Elbow River's water flow has been
12 declining, so why aren't we looking to the future?

13 The NRCB issued a decision for the Revised Highwood
14 Diversion Plan in 2008. This is NRCB
15 Decision NR 2008-01.

16 And at pdf page 13 of that decision the Board
17 stated: (as read)

18 "Several conclusions reached by the
19 Joint Review Board in the Decision
20 Report are significant with respect to
21 the deferred items listed in NRCB Board
22 Order 9601-1. Of particular importance
23 is the Joint Review Panel's approach to
24 assessing the approached proposed
25 diversion plans. Fundamental to this

13:46

13:47

1 approach was its adoption of a
2 sustainable development frame of
3 reference to assess the proposed
4 project, based on the following
5 principles:

6 'First, water management projects must
7 respect existing riparian rights and
8 water licences, and should not result in
9 the loss or injury to existing water
10 rights.'

13:48

11 So the Board then, we submit, should adopt a sustainable
12 development frame of reference for the SR1 project as
13 well.

14 In terms of the first principle noted above, it
15 appears that AT clearly stated that the operator of SR1
16 will need a water licence from the Elbow River to
17 remediate the reservoir after flood events, water for
18 reseeding and vegetation growth. This may result in the
19 loss of water from the Elbow River for downstream
20 communities in the future.

13:48

21 Why would we do that with water being such a scarce
22 resource?

23 The second principle noted by the NRCB, and I
24 quote: (as read)

25 "Second, water management projects must

1 be able to meet basic environmental
2 criteria to avoid significant adverse
3 effects."

4 In this case, the bull trout may be extirpated from
5 certain reaches of the Elbow River as noted by Paul
6 Christensen in Exhibit 187, pdf page 3.

7 And it's interesting in this case, do we really
8 know what's going to happen to the environment when you
9 remember that AT didn't do their fish survey until
10 August. I mean, how much information do you have to
11 know what the environmental consequences will be from
12 SR1?

13:49

13 The SR1 project will have significant environmental
14 effects. Intact native grasslands will be destroyed and
15 revegetation success is unproven.

16 Mr. Wallis's report references Lancaster, et al.,
17 which confirmed that revegetation of native grasslands
18 is not successful, and the only site that recorded
19 success was an undisturbed site.

20 The third principle noted by the NRCB is, and I
21 quote: (as read)

13:50

22 "Third, water management projects must
23 be able to meet current and future needs
24 for domestic, riparian, and municipal
25 needs, and other consumptive uses."

1 SR1 is unable to meet current and future needs for
2 domestic, riparian, and municipal needs and other
3 consumptive uses. For crystal clarity, SR1 is merely a
4 diversion channel whereby contaminated water is stored
5 in a mud pit for a short period of time. There is no
6 practical and real storage application of this facility.

7 In Decision NR 2008-01 the Board stated, and I
8 quote: (as read)

9 "These environmental, social, and
10 economic considerations are basic to the
11 determination of the public interest. A
12 project must be able to meet these three
13 criteria to be worthy of detailed
14 consideration by the Panel with respect
15 to project effects."

16 The NRCB should find that the SR1 fails the sustainable
17 development frame of reference test and is not worthy of
18 being found to be in the public interest. The focus on
19 flood mitigation as the sole purpose of the project
20 created a warped decision project, narrow in scope, that
21 did not allow consideration of drought, fire
22 suppression, and potential recreation.

23 Rather than allowing this narrow scope to define
24 the Board's review, we ask the Board to consider that
25 the original scope was inappropriate for a project of

13:50

13:51

1 this magnitude.

2 In NRCB Decision NR 2008-01 the Board stated:

3 (as read)

4 "Accordingly, the Joint Review Panel
5 concluded that the proposed diversion
6 plan fails to remedy the current
7 deficits and fails to meet future needs
8 for water. The Panel concludes that the
9 applicant's proposed diversion plans are
10 not sustainable and could not remedy the
11 problems that already exist."

13:52

12 And then it goes on to say: (as read)

13 "Further, the Joint Review Panel
14 observed there were very few
15 alternatives for dealing effectively
16 with the demand for consumptive uses of
17 water during low flows."

18 And it concluded that, in the context of sustainable
19 development, there was a need for storage in the
20 Highwood Basin.

13:52

21 And then the Joint Review Panel went on to say, and
22 I quote: (as read)

23 "The Joint Review Panel also required
24 that diversion plans for management of
25 water in the Highwood River be revised

1 to meet the basic criteria of a sound
2 water management project, including..."

3 And this is the fourth bullet: (as read)

4 "Known future demands are met..."

5 And the fifth bullet:

6 "Consideration is given for reserving
7 water, if possible for future unknown
8 requirements."

9 SR1 does none of that.

10 And in relation to consideration for reserving
11 water if possible for future unknown requirements, given
12 climate change, there should be consideration given to
13 that.

13:53

14 Mr. Frigo from The City of Calgary suggested that
15 the Elbow River doesn't have the flow for a new storage
16 dam, but the Glenmore Reservoir is on the Elbow and yet
17 it was filled up.

18 Dr. Klepacki estimated you could fill MC1 four
19 times in the course of a year based on volumes from the
20 Elbow River.

13:54

21 SCLG asserts that the SR1 design is unprecedented.
22 On day 5 of the hearing, Mr. Wood testified that the
23 Pine Coulee Reservoir in southern Alberta is a
24 comparison to SR1. Mr. Wood referred to Pine Coulee as
25 an off-stream storage reservoir.

1 When asked for details of the similarities between
2 Pine Coulee and SR1, Mr. Svenson attempted to provide
3 some clarity on the similarities. He was unable to tell
4 the Panel whether Pine Coulee had a debris deflector; he
5 did not know the outlet capacity; he acknowledged that
6 the reservoir did not empty completely and had some
7 park-like amenities.

8 When you look at the NRCB Pine Coulee decision
9 report, you will see the small creek referred to by AT
10 on Friday, Willow Creek, is used for the Pine Coulee
11 Reservoir. Its maximum diversion flow is
12 8.5 cubic metres per second, and yet that reservoir is
13 50,000 dam cubed.

14 From the NRCB decision report, it states:

15 (as read)

16 "The canal would be constructed with a
17 seven metre bed width and have a flow
18 capacity of 8.5 cubic metres per
19 second."

20 Further, in Exhibit 325, AT states regarding the
21 Elbow River: (as read)

22 "The mean annual flood of the
23 Elbow River in this reach is
24 70.9 cubic metres per second."

25 This is nearly nine times the maximum Pine Coulee

13:55

13:55

1 diverse flow rate.

2 Pine Coulee Reservoir is filled by this small
3 Willow Creek, yet provides drought mitigation and
4 irrigation capabilities over the long run for the
5 surrounding and downstream communities.

6 There is very little that is similar between that
7 body of water and the SR1 plan. It is a desperate and
8 misleading attempt to make an experimental project that
9 is without precedent, SR1 seem common and normal. When
10 questioned, AT failed at drawing any direct comparisons
11 between Pine Coulee and SR1. Let's be crystal clear,
12 there is no similarity.

13 AT also refers in its reply evidence to the Miami
14 Ohio conservancy dams, which are 100 old. The Bow River
15 Basin Council Report, dated March 2014, refers to a tour
16 of the Ohio Dams by members of the Flood Recovery Task
17 Force and the Expert Panel on Flood Mitigation in
18 January 2014. From this BRBC report, I quote:
19 (as read)

20 "Compared to the Elbow River system, the
21 dry dams of the Miami Conservancy
22 District in Ohio are in a radically
23 different ecosystem and climate and have
24 a much different elevation drop in their
25 rivers, as well as differing riparian

13:56

13:57

1 ecology and species. To expect the same
2 results of a dry dam in each system may
3 be misleading. The highest rainfall
4 event in the Miami River occurred in
5 1925 at 121 millimetres in one day.
6 Over three days, 170 millimetres was
7 recorded in Bragg Creek in 2013.
8 Considering the length and drop of each
9 river, the average drop of the
10 Miami River is .6 metres per kilometre,
11 whereas the average drop of the
12 Elbow River is 8.83 metres per
13 kilometre. The runoff coefficient in
14 the Alberta East Slopes would be much
15 higher than in the Eastern Corn Belt
16 Plains Ecoregion with a dramatic
17 difference in soils and slope. In our
18 East Slopes, we would face a very
19 different issue of introducing
20 shallow-rooted, large, woody debris and
21 large boulders with significant gradient
22 and bedload movement. This will make
23 flows, timing, and debris very
24 different, as well as the associated
25 ongoing maintenance costs."

13:58

13:58

1 A further discussion of the Miami Ohio dam is available
2 in Exhibit 133.

3 Moving now to project justification - key points:
4 Storage volumes. The Deltares report included that both
5 storage facilities have sufficient SR1, MC1 storage
6 capacity for a 1 in 200-return period and can offer the
7 same level of protection.

8 As discussed throughout this hearing, the reliance
9 on storage capacity to conclude that SR1 equals MC1 is
10 erroneous. The diversion limitation of SR1 creates a
11 disproportionate reliance on river flow rate, which was
12 not explored, not discussed by AT until this very
13 hearing. This oversight is nothing less than
14 astounding.

15 Perhaps in-stream dams don't need to consider flow
16 rates if they can control their outflows up to a certain
17 storage volume. Perhaps people involved simply overlook
18 that SR1 allowed more water to bypass it in a design
19 flood than was captured by the diversion inlet. Perhaps
20 no one thought to look at the outflow of the two
21 projects side by side to assess the impacts of a capped
22 diversion. Nonetheless, when MC1's superior outcome
23 becomes apparent, it should have been broadcast far and
24 wide. This is a fundamental and critical oversight that
25 is inexcusable considering communities, properties, and

13:59

13:59

1 lives are on the line. To rely on the storage capacity
2 comparison is inexcusable.

3 We heard specifically from AT that flow rates are
4 far more important than volumes.

5 Catchment area. Another reason given for the
6 choice of SR1 over MC1 is SR1's larger catchment area.

7 AT and The City of Calgary referred to catchment
8 area repeatedly over the course of the hearing. On Day
9 1 of the hearing, Mr. Hebert noted that very thing at
10 Transcript page 158.

14:01

11 Mr. Frigo, on March 26th, offered to undertake to
12 provide details on the catchment area, which concluded
13 that SR1 was superior to MC1. The response from
14 Mr. Frigo, Exhibit 378, provided details on the
15 catchment area.

16 AT has repeatedly referred to this so-called
17 advantage of SR1 over MC1. This appears similar to a
18 reference in Exhibit 12, Table 12, page 38. This is
19 really a critical point, and clarification is required.

20 A larger catchment area, in this case square
21 kilometres, does not necessarily translate to a much
22 larger water volume or flow rate, especially considering
23 the topography of the Elbow River.

14:01

24 The City of Calgary response stated that MC1 was
25 58 percent of the catchment rather than 96 percent

1 suggested in cross-examination. This is an
2 apples-to-oranges comparison and misleads the Board by
3 falsely comparing SCLG's number of 96 percent of the
4 flow that MC1 would catch relative to the flow that SR1
5 would catch, to a drainage area based on
6 square kilometres.

7 The 96 percent is a flow rate measurement that
8 comes from the Elbow River tributary made by a graduate
9 environmental science class of the University of Calgary
10 in 2012.

14:02

11 Dr. Klepacki reviewed published flow measures of
12 the tributaries and mainstream Elbow River by Sosiak and
13 Dixon. These are the last published measurements of
14 these quantities. These measurements show that MC1
15 captures 90.4 percent of the peak flows above the
16 Glenmore Reservoir, and SR1 will have the capability of
17 a percentage of 98 percent of flows above the Glenmore,
18 if all flows were captured. However, because SR1 allows
19 some river flows to bypass the diversion, MC1 will
20 capture more than 91 percent of what SR1 captures.

14:03

21 In summary, on this point, the Elbow River, most of
22 the volume and flow rate is generated in the headwaters,
23 as would be expected in a Foothills region. This is why
24 Bragg Creek floods when Calgary floods. This is
25 intuitive.

1 The use of square kilometres to choose SR1 over MC1
2 is not appropriate and the analysis should have been to
3 a much deeper level that considered rates and volumes.

4 Catchment area is a gross oversimplification in the
5 SR1 versus MC1 context. A review of Exhibit 12 shows
6 the very high correlation between the Bragg Creek
7 station and the Combined Station/Glenmore readings over
8 time for both volumes and rates, consistent with
9 Dr. Klepacki's findings.

10 In Exhibit 252, the AEP decision report from 2015,
11 the SR1 project was chosen because it was less
12 expensive, more environmentally friendly, and could be
13 delivered in a shorter timeline.

14:04

14 In Exhibit 325, page 8, AT's response to SCLG still
15 uses these same justifications that existed in 2015.
16 The SCLG rejects all these justifications, with the
17 exception of SR1 timelines, which at this point is no
18 doubt faster.

19 SNN is less expensive. Now we know that SR1 costs
20 are well over MC1. SR1 has less environmental impact.
21 This is not backed up by science. No negative
22 environmental outcomes for SR1 were considered at all
23 until the EIA in 2018. A comparison of the two projects
24 based on science has not been done.

14:04

25 SR1 has less impact on the Elbow River. This is a

1 judgment not based on science. Now the proponent states
2 that water may be drawn from the Elbow River to water
3 the reservoir.

4 SR1 is off-stream and less sensitive to impacts
5 from sediment or debris. This is not backed up by
6 evidence. If anything, SR1 has more sediment and debris
7 issues being downstream. In fact, a debris reflector
8 wasn't added until 2018, after the EIA was submitted.
9 There is no doubt that sediment is a huge problem at
10 SR1.

14:05

11 SR1 presented less risk than MC1 during
12 construction. We have seen no evidence to support this
13 conclusion. Yet the 2017 Opus report stated that MC1 is
14 relatively easy to operate, meanwhile, the complexity of
15 operating SR1 during a flood is glaring.

16 SR1 has less impact on social recreational values.
17 This is a judgment and is reflective of continued bias
18 by the proponent against natural grasslands and their
19 environmental, social, and recreational utility.

20 There was no consideration of the community
21 surrounding the SR1 at all and no mention of any air
22 quality concerns until 2018. Air quality risks are
23 highly concerning to my clients.

14:06

24 SR1 has less impact on commercial tourism values.
25 Another judgment. There was significant focus on MC1

1 recreational attributes in the AEP decision report,
2 Exhibit 252.

3 Yet, in the Opus report of 2017, it was concluded
4 that, in fact, very few existing recreational amenities
5 were impacted (19 camp stalls, a camp store, wastewater
6 lift station, and a Ranger station.)

7 The question that the Panel needs to consider when
8 reviewing the justification for this project is whether
9 or not the proponent's conclusions are based on judgment
10 and science. Rocky View County's 2018 report on SR1,
11 Exhibit 255, stated: (as read)

14:07

12 "That in choosing the SR1 project over
13 the McLean Creek option, Alberta
14 Environment and Parks relied on
15 technical experts to make subjective
16 choices on values not linked to the
17 technical merit of either option. The
18 public should have inputs into these
19 value-based decisions, as other choices
20 are possible."

14:07

21 Regarding the Bragg Creek berms, a project upstream of
22 Bragg Creek would still benefit Bragg Creek and Redwood
23 Meadows. It would reduce groundwater flooding and
24 increase flood mitigation substantially at higher flow
25 rates, such as a 2013 flood or greater, by reducing the

1 chance that the berms are breached. There is still
2 incremental benefit to these communities from an
3 upstream alternative like MC1.

4 Under the heading of "Unequal Outcomes." Alberta
5 Transportation acknowledges that SR1 was designed to
6 protect the city of Calgary from a 1 in 200-year flood.
7 As has been shown through AT's Witness Panel Number 1's
8 responses to cross-examination questions, the SR1
9 creates unequal levels of flood protection.

10 As confirmed by Mr. Dowsett in his report, there
11 are 16 Springbank properties located directly below and
12 south of the proposed SR1 embankment reservoir that
13 experienced flooding in the 2013 flood that would not be
14 protected by this project. Mr. Dowsett highlighted this
15 during his cross at Exhibit 379, page 1405.

16 He said: (as read)

17 "The ones I'm concerned about are those
18 directly below the foot of the dam, that
19 are below the emergency spillway, and
20 I'm worried about those people and what
21 they knew and what they understood the
22 hazard was and what operational
23 decisions may be taken by the operator
24 that would increase the rates coming
25 down this river and raising numbers even

14:08

14:09

1 higher."

2 It is important to note that AT did not challenge this
3 evidence.

4 AT also agreed with Mr. Dowsett that the residual
5 flood risk of the project is similar to that of a 1 in
6 50-year flood, in Exhibit 327. This is best explained
7 by using rates. Some of these properties flooded in
8 2005 with a 300 cubic metres per second flood event.

9 In a design flood of 1240 cubic metres per second,
10 SR1 will take between 480 and 600 cubic metres per
11 second. This leaves between 640 and 780 cubic metres
12 per second going down the river. If these homes were
13 protected to a 1 in 100-year flood, that would be
14 protection to approximately 990 cubic metres per second,
15 the rate used for the design of the Bragg Creek berms.
16 Rather, these homes and businesses will flood at levels
17 well below a 1 in 100-year flood. This is inferior and
18 in contravention of the design standards in Alberta of a
19 minimum of 1 in 100-flood mitigation level.

14:10

20 The Canadian Dam Association Guidelines state a
21 minimum level of 1 in 100-year level of flood protection
22 for new projects. Similarly, the Government of Canada,
23 the Alberta government, and The City of Calgary bylaws
24 state a 1 in 100-year minimum level of flood protection.
25 Why are some communities receiving a vaccine that is not

14:10

1 100 percent effective?

2 Although AT accepted -- attempted to diminish the
3 impacts to these 16 residents by suggesting, during
4 cross-examination of Mr. Dowsett, that those residents
5 within the 1 and 100-year flood hazard are in an area
6 that Rocky View County's land use bylaw had prohibited
7 development. It is important to note, as Mr. Fitch
8 said, not only is it not an exhibit, but there's no
9 documentary evidence of Rocky View's land use bylaw on
10 the record, there's no evidence from Rocky View County
11 regarding this bylaw, their interpretation of it, and
12 its effects on existing residents. This bylaw dated
13 January 2021 is not applicable retroactively, and we
14 submit that the Board should disregard any information
15 regarding Rocky View's land use bylaw in making a
16 decision on this project. It simply doesn't apply to
17 the existing residents that are going to be affected.

14:11

18 In response to the concerns raised by the SCLG
19 about flood risk downstream of SR1, Mr. Wood in
20 Exhibit 350 stated: (as read)

14:12

21 "There are some residents, part of
22 Rocky View County, there's some golf
23 courses. It is only those who have
24 built very close to the river who may
25 get flooded. Those who are down low may

1 still have problems in a 2013 event,
2 that what they get for living near the
3 river."

4 Is this statement not diametrically opposed to the
5 entire purpose of SR1, which is to protect residents and
6 inner city locations that are next to the river?

7 Can we transpose this statement to, that's what
8 Elbow Park, Roxboro, and Rideau get for living near the
9 river, all of which are located along the river in
10 the city of Calgary.

14:13

11 As expressed by CRCAG in their submissions, the
12 Board must prioritize public health and safety.
13 Prioritization of public health and safety should
14 include consideration of impacts to residents upstream
15 of the project and directly below the project.

16 In the event of a failure of the dam or structure,
17 or in the event of flows greater than the design flood,
18 SR1's location is a serious concern. As discussed in
19 Exhibit 373, the time for the residents below the
20 reservoir to evacuate could be less than one hour. And
21 Mr. Menninger indicated there could be up to a hundred
22 fatalities as a result of a catastrophic failure of the
23 SR1 reservoir.

14:13

24 Moving now to the heading "Social and Economic
25 Project Costs and Benefits."

1 The NRCB/CEAA Joint Review Panel issued a decision
2 report in May 1998 on the Little Bow Project/Highwood
3 Diversion Plan Application to construct a water
4 management project to convey and store water diverted
5 from the Highwood River.

6 And at Section 8.9 of that decision, the Board, the
7 JRP wrote: (as read)

8 "Despite concerns about the extent to
9 which some project benefits and costs
10 were adequately quantified in the
11 economic evaluation, the Panel concludes
12 that, on balance, project benefits would
13 exceed costs."

14:14

14 They go on to say that -- they go on to say: (as read)

15 "A conclusion that the project is in the
16 public interest does not commit the
17 government of Alberta to actually -- to
18 actually investing public funds in the
19 project. Should the Panel determine
20 that a project is in the public
21 interest, it remains the responsibility
22 of the government of Alberta to actually
23 decide whether an investment of public
24 funds is warranted."

14:15

25 And it's interesting, in relation to -- in relation to

1 the project that the JRP were looking at, they said the
2 project operations would directly and indirectly lead to
3 a significant increase in reasonable employment and
4 economic activity, would provide new recreational
5 opportunities, it would further enhance the quality of
6 life in the region and become a reasonable tourist
7 attraction. But even with all of those benefits, there
8 was still this caveat that I just expressed.

9 In this case, the Board should have a great deal of
10 concern about the extent to which project benefits and
11 costs were adequately quantified in the economic
12 evaluation. The SCLG submits that the Board should
13 conclude that, on balance, project costs, including
14 ongoing operating costs, which exceed project benefits.

14:16

15 Some things are a certainty. SR1 will not improve
16 water supply conditions, like the Little Bow project.
17 SR1 will not result in irrigation expansion. SR1 will
18 not provide new recreational opportunities. The mud
19 hole will not become a regional tourist attraction and,
20 in fact, it's likely the opposite.

14:17

21 As I mentioned, the Board -- the JRP said that,
22 just because a project is in the public interest doesn't
23 commit the government of Alberta to actually invest
24 public funds in the project.

25 The SCLG hopes the Board will warn the government

1 of Alberta that this project does not meet the test of
2 sustainable development and that the money could be
3 better spent on a project like MC1 that included flood
4 protection greater than 1 in 200 for more communities,
5 as well as contemplated future water needs in the age of
6 rising temperatures, climate change and drought.

7 Alternatively, given the benefits of SR1 are
8 designed to accrue to communities downstream of the
9 Glenmore Reservoir, then perhaps some of this money for
10 SR1 is best redirected to a large-scale flood mitigation 14:18
11 project for Calgary's downtown core where most of the
12 damage occurred in 2013. The advantage to this is
13 the city of Calgary would not be beholden to adverse
14 parties from a timeline standpoint.

15 So let's examine the benefits.

16 On day 1 of the hearing, the proponent agreed that
17 the avoided damages used to arrive at a benefit cost
18 analysis for SR1 did not include any avoided damages
19 upstream of the Glenmore Reservoir and below SR1.

20 The proponent also agreed that MC1 would have 14:18
21 higher benefits as it would have protected more
22 communities to a higher level than SR1. These benefits
23 would be higher for the life of the project. The
24 increased benefits for MC1 over SR1 were not measured
25 above a 1240 cubic metres per second flood or for the

1 communities between SR1 and Glenmore, or the communities
2 upstream that would be better protected by MC1 even to a
3 1 in 1,000 flood level.

4 Capital project costs.

5 Bragg Creek, which have always been linked with
6 SR1, have increased from 209 million in 2014 to
7 263 million in the 2015 IBI report to \$580 million
8 today. The proponent refers to 432 million as the
9 project cost. This ignores costs to date and is a
10 present value or discounted number.

14:19

11 The \$580 million capital cost includes construction
12 costs of 340 million from Exhibit 159; land costs of
13 140 million, Exhibit 100; Bragg Creek berms of
14 42 million, Exhibit 254; that totals \$522 million.

15 Add to this, payments to the Rocky View County of
16 10 million cash, and 10.5 million in intersections, and
17 the 32 million grant to Tsuut'ina.

18 Add to this the newly disclosed detour road
19 upgrades to Range Road 40 and Township Road 250 of
20 3.8 million, Exhibit 385; and wetland replacement costs
21 of approximately 800,000, and you arrive at
22 \$580 million. The MC1 report, Exhibit 101, included a
23 capital cost of \$406 million.

14:20

24 Uncertain costs. In cross-examination on day 3,
25 Mr. Hebert indicated twice that access road relocation

1 for landowners was a construction cost, but in response
2 to an undertaking, the claim was made it was a land
3 acquisition cost. Which one is correct?

4 The access relocation costs were not specifically
5 mentioned in Exhibit 159. These changes are mentioned
6 at Exhibit 138, with no costing associated with the
7 changes.

8 Uncertain costs. Land. The total project budget
9 for the 3600 acres is now \$140 million. That is just
10 under 40,000 per acre, which is nearly doubled the 2017
11 cost. The original land cost used in the 2015 decision
12 was 40 million, as stated in Exhibit 100. It is unclear
13 how this land cost will settle out. The strange shape
14 of the PDA, the fingers that creates the 3600 acres is
15 nonsensical from a land acquisition standpoint and there
16 will be budgetary implications.

14:21

17 Missing costs. All other facilitation payments to
18 First Nations which AT has refused to disclose. This is
19 a public project, not a private corporation. Disclosure
20 of these payments is in the public interest to determine
21 the true cost benefit.

14:22

22 Missing costs. Kamp Kiwanis accommodation, either
23 for interrupted operations during construction,
24 relocation of the camp, or any other compensation.
25 Again, this is a cost that should be disclosed for the

1 purpose of determining the true cost benefits.

2 Missing costs. Environmental offsets, including --
3 and this was news to us -- "building replacement habitat
4 on the Bow River for habitat lost on the Elbow River" as
5 a result of SR1, as discussed in Exhibit 385 at
6 Transcript pages 1774 and 1779. This is the first time
7 that SCLG has heard of this additional cost.

8 MC1 in Exhibit 101 included 10 million for aquatic
9 habitat management plan, but there is no equivalent for
10 SR1.

14:23

11 Missing costs. AT did not provide fish passage
12 measures on the Unnamed Creek, where erosion mitigation
13 measures are proposed. Are fish not passing through the
14 conduit, into a constructed channel, and into the
15 Unnamed Creek? The proponent rejected a request to have
16 a sediment screen at the low-level outlet which would
17 impede fish passage. Is this another missing cost?

18 And I provide a transcript reference. I'm not
19 going to read the transcript references, but they're in
20 the document. And in some cases the transcript
21 reference is in the document -- in the argument.

14:24

22 Missing costs. AT has not provided a cost for
23 wetland replacement. MC1 did have a wetland offset cost
24 of 700,000 in Exhibit 101, while SR1 has no such budget,
25 despite the fact that wetlands are lost.

1 The SCLG provided an estimate of 830,000 using the
2 MC1 budget per hectare, but we look to the Panel to
3 require this detail as a direct project cost of SR1. To
4 date, AT has not provided any offsetting details aside
5 from what we heard from AT on day 9. It is possible
6 that there are more offsetting plans that weren't
7 mentioned.

8 Missing costs. CEEA conditions, Exhibit 219, for
9 embankment and diversion channel riprap, removal of
10 storage of the diversion channel substrate and reservoir
11 grading are expensive. 14:25

12 Missing costs. Dam safety recommendations are
13 costly, especially the recommendation for a second
14 outlet and increased capacity of the emergency spillway.

15 In Exhibit 327, AT states: (as read)

16 "The design of the emergency spillway is
17 underway. The need for erosion
18 protection is part of this design and
19 will be reviewed by AEP dam safety as
20 part of Alberta Transportation's
21 *Water Act* application." 14:25

22 We are unclear how unsubstantial these costs are, but
23 they should be included by the Board.

24 Missing costs. Public benefit. Parking lot,
25 pathways, any accommodations for the local community for

1 benefit.

2 Missing costs. Any upgrades required to systems or
3 infrastructure for emergency management, especially
4 considering the significance of this project on a small
5 county like Rocky View County.

6 Missing costs. Updated pipeline estimates that
7 have not changed for five years or so, 2016,
8 Exhibit 159. Mary Robinson was told by TEC, which is
9 two of the seven impacted pipelines, that their costs
10 are 24 million. That's Exhibit 357, transcript
11 pages 509 to 510.

14:26

12 The current budget in Exhibit 159 is 12.4 million
13 in totality. Again, we are seven years into this
14 project, sitting here for a final approval by the
15 regulatory body, and pipeline costs haven't been updated
16 in the past five years. If Mary Robinson is correct,
17 these costs could increase the project budget by at
18 least \$20 million.

19 Exhibit 138 lists a change of new erosion
20 management measures along the full length of the
21 Unnamed Creek: (as read)

14:27

22 "Alberta Transportation, as a result of
23 feedback from regulators, Indigenous
24 groups and stakeholders, has revised the
25 design to include measures to reduce

1 erosion along the full length of the
2 Unnamed Creek and to further mitigate
3 sediment mobilization into the
4 Unnamed Creek and reduce sediment input
5 into the Elbow River."

6 These were also referenced on day 7. The SCLG is unable
7 to find reference to these erosion reduction measures
8 along the full length of the Unnamed Creek in
9 Exhibit 159. In the change summary memo, Exhibit 160,
10 these erosion measures are not mentioned. As such, we
11 are concerned that these costs are excluded from
12 Exhibit 159. We attempted to ask about these costs on
13 day 1 of the hearing, but were unable to determine if
14 they are included and what the specific costs are.

15 Operating costs. Exhibit 159 shows annual
16 operating costs of 30,000, with no full-time staff
17 listed; no costs for fire suppression operations; no
18 costs for testing and reporting requirements for water
19 or air; no costs for wildlife management, no costs --
20 sorry -- no costs for wildlife management, including
21 surveys and reporting, mapping for migratory birds; no
22 costs for security; no costs for emergency planning
23 preparedness, including staff training; no costs for
24 flood forecasting; no costs for the proposed community
25 liaison or administration of First Nations land use

14:27

14:28

1 committee. Exhibit 159, Table 49, page 231.

2 Flood costs direct. Exhibit 159 provides some
3 estimate of flood operations and post-flood operations
4 activities. The proponent has used an average annual
5 benefit calculation for the design flood. Yet, the
6 post-flood costs appear to relate to smaller floods.
7 Reseeding, for instance, uses 25 percent of a 20-year
8 pool. Is this reflective of a design flood?

9 This appears to be inconsistent with the benefits
10 which are annualized and based on a design flood. Why
11 would benefits be based on a design flood, but costs on
12 a much smaller flood? Should benefits be based on a
13 much smaller flood, then, or should the costs be based
14 on the design flood?

15 Flood costs - direct. Dam personnel costs in a
16 flood event are estimated to be every 20 years for a
17 total of 65,000 for four dam attendants. Mr. Wood
18 stated it would be used ten times in the last hundred
19 years. Why is this cost every 20 years? Is the dam
20 going to operate itself during a 1 in 10-year flood? Do
21 these people stay at the site for 36 hours or 50 hours
22 straight during filling, or are they working shifts with
23 another crew or two? Are they on site while water is in
24 the reservoir? This is lacking all sorts of detail.

25 Flood costs - direct. Flood operations are missing

14:29

14:30

1 costs for emergency operations, including personnel for
2 road closures and security at the site of impounded
3 water. All costs of water testing and reporting, air
4 quality monitoring and reporting. There appear to be no
5 costs for the adaptive management program Mr. Hebert
6 referred to for dust suppression, which would include
7 tackifier, even the 16 months post-flood. There is no
8 budget for tackifier listed anywhere. Mr. Zelt
9 estimated that tackifiers could run into hundreds of
10 thousands of dollars for a design flood.

14:31

11 Flood costs - direct. There's additionally no cost
12 for watering the newly seeded sediment, and in an arid,
13 windy location like Springbank, during the dry summer
14 months, watering is a likely requirement, although the
15 proponent acknowledged on day 10 that water may be
16 diverted from the Elbow River for this purpose. This
17 cost -- this is a cost that could be substantial.

18 Flood costs - direct. All wildlife rescue costs in
19 the two to three days before a flood. This would be a
20 massive undertaking at significant costs which are not
21 estimated.

14:31

22 Flood costs - direct. Fish rescue costs are
23 missing. If a 30-person crew of fish rescuers,
24 including supervising biologists, is required for the
25 30 days of draining, this could run in the hundreds of

1 thousands of dollars. See day 7 of the transcript.

2 Why haven't these operating costs been estimated?

3 How can the Board make a decision without a full

4 accounting of the future expected costs? We view that

5 this lack of detail is due to the unique nature of the

6 project, which does not provide an operating model

7 anywhere in Canada. Yet, these costs are relevant to

8 the decision before this Board. All flood relating

9 operating costs should be estimated for a design flood

10 just like the benefits.

14:32

11 Post-flood costs - indirect. This includes repairs

12 to the Bragg Creek berms, Redwood Meadows berms.

13 Although the proponent states these will be borne by the

14 owner of the infrastructure, it must be clear that, had

15 MC1 been chosen, these costs would be avoided. Instead,

16 these costs are being downloaded to Rocky View County

17 and Tsuut'ina Nation.

18 Post-flood costs - indirect. Park infrastructure.

19 Park infrastructure at Highway 66 was damaged in the

20 2013 flood, pathways, parking lots, visitor amenities

21 such as washrooms. These costs would reasonably be

22 expected again in a design flood.

14:33

23 Benefit cost analysis. Until 2019, SR1 had a

24 favourable benefit cost ratio relative to MC1. All

25 figures from Exhibit 100, the May 2019 benefit cost, I

1 guess B/C update, SR1 has a benefit cost of 1.28,
2 including Bragg Creek berms of 32 million, while MC1 had
3 a benefit cost ratio of 1 to 41. MC1 is the project
4 with the better economics at this point.

5 SR1's benefit cost ratio of 1.28 is also missing
6 the 9 million of new costs of the Bragg Creek berms, now
7 at 42.2 million, and also the updated capital costs,
8 including another 17 million of capital to align with
9 the new capital costs of 340 million, versus the
10 323 million included in Exhibit 100. It is also missing
11 the road costs of 3.8 million required for the detour
12 route and all facilitation payments.

13 Each new cost added to SR1 drives this benefit cost
14 ratio lower and lower, further below the benefit cost
15 ratio of MC1. This is relevant to this Panel.

16 Simplistically, the MC1 project has higher benefits
17 due to more communities receiving a higher level of
18 protection; all communities receive the 100 percent
19 effective vaccine. It also has lower costs at this
20 point with the capital cost of 406 million, sitting
21 approximately 170 million cheaper than SR1's
22 580 million. Yes, the 580 million includes facilitation
23 payments to RVC, and to Tsuut'ina. These are costs of
24 the project. Even excluding these known payments for
25 withdrawal of opposition, generously, SR1 is sitting at

14:34

14:35

1 527 million, including construction costs from
2 Exhibit 159, Bragg Creek berms and the new roads.

3 In summary, SCLG asks that all the costs of the SR1
4 project be estimated and documented. Hidden capital
5 costs, including infrastructure repairs to upstream
6 berms, should be identified and noted. Secret
7 agreements must be brought to light. Operating costs
8 for flood events should be estimated prior to the Panel
9 ruling on this project.

10 Social costs. AT from the very beginning chose a
11 strategy that pitted stakeholder against stakeholder.
12 It has been highly divisive. In the beginning it was
13 rural landowners against Elbow River residents.
14 Rocky View against Calgary, urban against rural. There
15 was never an attempt to bring stakeholders together to
16 try and find a win/win solution. And I hope, Mr. Chair,
17 you'll address this in relation to how the consultation
18 was conducted.

19 Looking to the future, the conflict will be between
20 the landowners surrounding SR1, First Nations, and the
21 public. The SCLG did not see a satisfactory resolution
22 to this conflict looming.

23 In their opening statement on Day 1, the proponent
24 was dismissive of the impacts to Springbank and to
25 landowners. There was no mention of the

14:36

14:36

1 multi-generational ranching history, the families who
2 will be wiped out by this project. For Lee Drewry and
3 his siblings, land taken by the government when it will
4 be -- will essentially wipe out the family ranching
5 business in the area, leaving the family with the choice
6 of relocating or giving up their ranching operations.
7 That is a tough choice, but even tougher for the
8 children who will no longer have a choice to live on or
9 ranch the land of their great, great grandparents. If
10 they had to do it all over again, landowners might have
11 had their children provide evidence. Their children are
12 losing most if this project proceeds.

14:37

13 If this project gets approved, then generational
14 land will be taken. The proponent makes this sound like
15 an everyday occurrence. It is not. The taking of such
16 a huge contiguous block of land is extremely uncommon.

17 The potential for degraded air quality following
18 flood operations is an unacceptable social cost. This
19 project creates an air quality problem that will be
20 challenging to manage and that will no doubt impact the
21 quality of life of residents surrounding the reservoir
22 and downwind. The proponent contends that these periods
23 will be brief, but does not dispute that they will
24 occur. How is it possible that this Panel would
25 knowingly approve a project with this unacceptable

14:38

1 outcome when it could be avoided?

2 The SCLG asserts that the Springbank community
3 bears all of the social and also economic costs of the
4 project while the benefit is passed to residents
5 downstream of the Glenmore Reservoir in Calgary.

6 The safety and viability of our community is at
7 risk with this project over the long run. SCLG will
8 live with the impacts to water quality and quantity,
9 degraded air quality, loss of heritage and culture,
10 including the loss of pioneering families who also
11 experience loss of inheritance, and loss of their
12 natural environment. This imbalance of the distribution
13 of benefits and costs is striking. Monitoring these
14 effects is not mitigating.

15 CRCAG's closing argument mentioned disruption and
16 impacted bus routes, so, instead, these burdens are
17 passed to Springbank residents and their children on
18 school buses, who will be detoured.

19 With all due respect, CRCAG will take any project
20 that has the shortest timeline when referring to impacts
21 of lost memories collected over generations. What about
22 lost generational land due to SR1? By enthusiastically
23 supporting SR1, CRCAG is enthusiastically supporting
24 negative social and health outcomes in another
25 community.

14:39

14:39

1 CRCAG also mentions substantial economic costs for
2 flood-proofing homes. These costs are borne by upstream
3 communities too.

4 The proponents have referred to various future
5 plans that will be developed for all areas of the
6 project operations, land use, dam operations, first
7 fill, air quality monitoring, and adaptive management,
8 weed control, and more. These theoretical plans are
9 important and are required now, not after the project is
10 approved.

14:40

11 As a condition of approval, the SCLG requests the
12 Panel consider the burdens imposed by the project on the
13 local community and include a budget for community
14 benefit.

15 Alternatives considered. Despite what AT and CRCAG
16 have said in their final argument today about
17 alternatives, the Board specifically included in
18 Topic Block 1, 1.3, "Alternatives Considered" as a
19 specific subtopic in Topic Block 1.

20 As The City of Calgary correctly noted in its final
21 argument, alternatives considered are contextually
22 relevant to the Board's decision in this case.

14:41

23 And I thought I would direct your attention to the
24 May 1998 Little Bow Project decision of the NRCB. The
25 JRP stated at pdf page 37 of that decision under heading

1 3.2: (as read)

2 "As discussed in Section 2, water
3 management alternatives within the
4 Little Bow River basin have been
5 extensively examined. Twelve potential
6 water storage sites in the Little
7 Bow River were identified."

8 Contrast that to what we have in front of you. MC1 and
9 SR1 were both screening level through 2015 and maybe AT
10 could argue for conceptual design by 2017. AT has led
11 the taxpayers of Alberta and the future generations of
12 Alberta down by only taking one project through a
13 feasibility stage. In fact, when new information about
14 cost, sediment, air quality were identified, no one even
15 stopped to ask if SR1 was still the best path forward.

14:42

16 The Little Bow project offers a glaring contrast to
17 SR1. There was no extensive examination of alternatives
18 in this case, and that is a shortcoming of this
19 application.

20 At pdf page 40 of the JRP report, the JRP stated --
21 basically they were critical. They said: (as read)

14:43

22 "Consequently, the diversion plan
23 associated with the Expanded Squaw
24 Coulee project component failed to meet
25 basic conveyance needs and licence

1 requirements. This less comprehensive
2 approach to identifying alternatives
3 needed has serious implications."

4 One of the major implications is climate change in this
5 case. What if the -- what if the 1 in 500-year flood
6 becomes the 1 in 200-year flood in terms of frequency as
7 noted by Mr. Fennell. What if there is serious drought
8 in the future? The lack of a comprehensive approach in
9 identifying alternatives should result in a denial of
10 this application. Indeed, after the horse had left the
11 barn, the Opus report, basically, dated Exhibit -- dated
12 August 2017, but only brought to light in June of 2019
13 when it was filed as a result of an NRCB round 1 IR,
14 indicated that MC1 was a superior alternative to SR1.

14:44

15 So there was no extensive investigation done here.
16 AT jumped to a rapid conclusion in 2014 without any
17 serious study. It is worthwhile comparing the Bow River
18 dam projects as Karin Hunter discussed in Topic 2. SR1
19 is just now at the feasibility stage, and it is not too
20 late to take another look. On the Bow River, all three
21 dam options are going through a three-year feasibility
22 study. What a contrast. Further, public consultation
23 with affected parties on the Bow River occurred during
24 the conceptual design and will be ongoing through the
25 feasibility stage.

14:44

1 In the Rocky View County report dated December
2 2018, Exhibit 255, it stated: (as read)

3 "This report does not recommend one
4 option over another; however, in the
5 review of the literature and discussions
6 with technical experts, the County
7 believes that both the McLean Creek dam
8 and the Priddis diversion were
9 prematurely dismissed and not given a
10 thorough technical analysis so that
11 objective decisions could be made."

14:45

12 In Exhibit 358, AT stated that RVC was presented with
13 the Opus report and provided a link to an update
14 provided to RVC. However, the three pages presented on
15 the Opus report in 2017 to RVC did not show the
16 difference between SR1 and MC1 on flood effectiveness.

17 Therefore, SCLG rejects the proponent's claim that
18 RVC was aware of the superior flood mitigation outcomes
19 of MC1. The three pages were MC1 costs and timelines
20 and two MC1 illustrations.

14:46

21 And Rocky View County residents are directly harmed
22 by SR1 and would have improved outcomes -- and would
23 have improved outcomes with MC1. This outcome has never
24 been discussed by the proponent until raised by the SCLG
25 at this hearing despite the outcry from the local

1 community over the past seven years.

2 RVC residents are harmed by new provincial
3 guidelines, Exhibit 356, that will cap payouts to
4 landowners at \$500,000, one time.

5 And I've listed here in paragraphs 151 through to
6 154 a number of other harms that Rocky View County and
7 my clients, in particular, are harmed by.

8 And I think what I'll do, Mr. Chair, is, again,
9 given that I'm sort of halfway -- I think I'm more than
10 halfway through, so I'm just going to check on my -- how 14:47
11 I'm doing. So-so from a timing perspective.

12 Okay. I want to then move ahead to Crown
13 engagement with the public, and this is starting at
14 paragraph 163 of our final argument.

15 It is the position of the SCLG that AT's
16 consultation with the public, especially the directly
17 impacted landowners, is inadequate and lacking in depth
18 considering the impact these landowners -- considering
19 the impact on these landowners and the Springbank
20 community. 14:48

21 And I'm again, just to save time, I'm not going to
22 read those paragraphs line by line, but I would refer to
23 paragraph 168.

24 As pointed out by members of the SCLG, notably
25 Lee Drewry, AT's approach to consultation has not been

1 fair. The residents that are directly impacted by this
2 project have not been given the same level of
3 consideration and attention as AT has given to other
4 groups, such as CRCAG. Mr. Drewry put the issue this
5 way: (as read)

6 "So that, to me, is a theme throughout
7 this whole seven or eight-year debacle
8 that the rural communities don't seem to
9 matter as much as the urban communities,
10 and not even all communities are treated
11 equally. It seems the ones downstream
12 from the Glenmore Reservoir are treated
13 better than the rest. With regards to
14 the City of Calgary's presentation, I
15 thought it was interesting that they
16 indicated they attempted to monetize the
17 cultural and historical values created
18 within that flood zone area, and yet I'm
19 not aware of any attempt by the
20 proponent to monetize the loss of family
21 history and the agricultural history
22 that would be decimated with the
23 proposed project. So I found that a bit
24 disconcerting that there's not an equal
25 playing field in terms of valuing that

14:49

14:50

1 historical resource."

2 Even in the creation of future land use plans for the
3 reservoir area, priority is being given to
4 First Nations' exercise of their traditional rights
5 without any recognition of the multigenerational
6 ranching history of the families that will be removed by
7 the project.

8 For instance, Mary Robinson, Brian Copithorne, and
9 Lee Drewry's families have been ranching in the area
10 since the 1800s, and yet there's no recognition of that
11 history that will be wiped away. 14:50

12 And I think what I'll do is, given that I've got
13 four more topic blocks to discuss, I will just leave the
14 remaining paragraphs in my document for your perusal
15 without reading them into the record.

16 So now --

17 THE CHAIR: Excuse me, Mr. Secord, and I
18 presume, then, that other counsels, they will all
19 receive or maybe already have your final argument --

20 MR. SECORD: They have, yes. 14:51

21 THE CHAIR: -- this is perhaps a little
22 different than what would normally happen, but I mean,
23 if it's going to be accepted in as an exhibit under no
24 objection, then, unless other parties would want to
25 object now and have you either not enter

1 anything you're not sort of addressing orally or --
2 which I don't really see, but I would just like to ask
3 the question now --

4 MR. SECORD: Sure.

5 THE CHAIR: -- in terms of time, I sort of
6 appreciate the approach --

7 MR. SECORD: Sure.

8 THE CHAIR: Other counsel, any objections?

9 MR. KRUHLAK: Mr. Chairman, it's Ron Kruhlak.

10 I certainly understand Mr. Secord's position, that
11 if he has materials and feeling some time constraint to
12 not have to review everything orally, and I don't think
13 we'd have a concern if it's some minor limits, but I
14 guess I just would flag it, that if we're having what
15 might become effectively a written submission, then
16 that makes it a little more challenging, that's all.

14:52

17 But I take it, there's a few paragraphs we're
18 moving from one section to the next?

19 MR. SECORD: Right. And I'm sort of halfway
20 through my argument, so I think I'm in -- I think I
21 should be able to finish by 4. I may not read every
22 line.

14:52

23 And, of course, there's a lot of references in
24 there, which I think we agreed we wouldn't be having to
25 read transcript references.

1 So, hopefully, that will be, you know, acceptable
2 to Mr. Kruhlak.

3 MR. KRHLAK: Agreed.

4 THE CHAIR: Agreed. Okay, thank you,
5 Mr. Kruhlak. Thank you, Mr. Secord. Proceed.

6 MR. SECORD: So moving to Topic Block Number 2,
7 in terms of the future land use plan for the project
8 development area, the draft land use plan creates
9 wholesale land use changes from what was contemplated.
10 In the early days of the project, the proponent assured
11 landowners they would continue to be able to ranch the
12 land. Lee Drewry asserts landowners were regularly --
13 well, as First Nation opposition became more obvious,
14 the proponent changed gears and cut out landowner usage
15 and began to focus on making promises to First Nations
16 regarding land use.

14:53

17 This is obvious in the First Nations' consultation
18 records. Landowners were kicked to the curb and the
19 focus became traditional usage for First Nations to try
20 and bring them onside. In the hearing, the proponent
21 seemed to try to appease the public and the
22 First Nations by claims of opportunities to use the
23 lands, but essentially AT is kicking the can down the
24 road to AEP to figure out all the competing land uses
25 that AT has promised. Interestingly, landowners are

14:54

1 way down the list in terms of future land usage.

2 If SR1 is approved, AEP says it will be
3 responsible for consulting the stakeholders to develop
4 the final land use plan consistent with the Draft Use
5 Principles for the project. What does this even mean?
6 Does "consistent with the draft land use principles
7 "mean that any and all community benefit items are
8 automatically excluded because they conflict with
9 First Nations' use?

10 Additional conflicts relate to hunting.

11 Mr. Wagner is concerned about hunting for a variety of
12 reasons, including safety and concern for the elk herd.
13 First Nations support hunting. Hunting is at odds with
14 public use of this land and its location along two main
15 roads, yet even more conflicts are expected post-flood
16 with the use of tackifiers and herbicides conflict with
17 traditional use.

18 Further, the state of the reservoir, the largest
19 land use area post-flood is a completely unknown
20 outcome.

21 General management of the reservoir may also be at
22 odds with First Nation traditional use. Mowing for
23 fire suppression conflicts with traditional uses such
24 as planned collecting and may impact wildlife
25 behaviour. AT thinks that AEP can solve all these

14:55

14:55

1 issues.

2 In terms of historical resources, Mary Robinson
3 notes that there are many historical and native
4 traditional factors in this area that need to be
5 considered. As noted by Jan Erisman, this project will
6 destroy 14 historical structures, and 22 archeological
7 sites will be compromised. Such destruction of
8 historical structures and archeological sites is
9 unjustified considering there are other alternatives,
10 such as MC1, that would not involve any destruction of
11 historical resources.

14:56

12 The SCLG has requested a condition concerning
13 gathering the historical resources in the SR1 area.
14 See the discussion between Ms. Roberts and Ms. Erisman
15 relating to the gathering of historical resources at
16 Transcript page 19 -- 991.

17 In Exhibit 365 I requested that AT advise whether
18 it would accept a number of conditions arising out of
19 the land use topic block as a condition of any approval
20 that might be issued by the Board. A series of
21 undertakings were given to the SCLG by AT. The SCLG
22 requested these conditions asked for by the SCLG be
23 specifically attached to any approval that might be
24 issued by the NRCB.

14:57

25 Moving to Topic Block 3, SR1 design, safety, and

1 risk. The SCLG rely on the prefiled evidence of
2 Dr. Dave Klepacki and Ian Dowsett in this topic block.
3 See also Karin Hunter's evidence in Exhibit 254.

4 The pivotal Deltares report of 2015 stated the
5 following, which still applies to SR1 today: (as read)

6 "Temporary storage of water in detention
7 areas is not a very robust measure, in
8 the sense that it is effective up to a
9 certain design condition, but when it is
10 overcharged, its effect is reduced to
11 nil."

14:58

12 We do not believe that operating risks identified by
13 Deltares, which include the following, have been fully
14 addressed, even as this project sits before the NRCB.

15 SR1 is "very sensitive to sound operation and fast
16 response time" and "the effective storage heavily
17 depends on the expected range in possible flood
18 hydrographs, accurate forecasts, and quick operation of
19 the gates."

20 We have not seen the range of possible flood
21 hydrographs prepared by the proponent. It is expected
22 that SR1 is more sensitive for differences in flood
23 hydrograph or inaccurate forecasts than MC1.

14:58

24 We have not seen sensitivities of SR1 across
25 various forecasts and nothing over the 2013 flood except

1 for the PMF. Is this because SR1 becomes more and more
2 unfavourable at higher flow rates?

3 The AEP Draft Hydrology Assessment Report from the
4 fall of 2020, Exhibit 265, summarizes rates with
5 associated return periods and confidence intervals.
6 What happens if a downstream flood approaches the upper
7 limit of this forecast? The proponent will say SR1 will
8 bypass the balance of the flood, while the diversion
9 skims off 480 to 600 cubic metres per second. That is
10 fine for SR1, but what about the other communities
11 downstream?

14:59

12 From Decision report 2008-01 pdf 13, the Board
13 stated -- this is under Section 2.1.4: (as read)

14 "Operating plans for the facilities in
15 the high flow period were approved.
16 Operating plans for the facilities in
17 the high flow period were approved,
18 while consideration of the operation
19 plans for these works during the low
20 flow season of late July and August was
21 deferred pending receipt and review of
22 additional information."

15:00

23 It is worth noting that the NRCB specifically approved
24 the operating plans for the facilities in the high flow
25 period. Why is that not the case, or will you be

1 opining only on the operating plan to only siphon off
2 480 cubic metres to 600 cubic metres per second of a
3 1260 cubic metres per second flood of record and pass
4 the balance of the flood downstream?

5 In SR1 we have no operations manual. This to me is
6 a huge deal. So much of this project is dependent on
7 these future operating conditions. Why haven't they
8 brought operating plans for you to review as you did in
9 the 2008 decision?

10 Exhibit 2018 provides a high-level flow chart for
11 operations of SR1 during a flood. Critically, this flow
12 chart relies on several fundamental assumptions that, if
13 voided, introduce a significant operating risk.
14 Examples, all hydrometric stations are in operation and
15 priority should be to divert to SR1 over Glenmore. A
16 critique of this flow chart is available in Exhibit 199.

15:01

17 I reference Mr. Kruhlak's letter marked
18 Exhibit 172, which says that the operating plans are not
19 available. How can the NRCB approve operating plans for
20 the project when there is no operational manual to
21 review?

15:02

22 Dam safety. The SCLG relies on AEL's evidence in
23 this proceeding (Roger Austin and Ruth Keyes.) In
24 particular, the AEL would like to see -- in particular,
25 the SCLG would like to see AEL's recommendations as

1 discussed during the hearing added as conditions to any
2 approval issued by -- to AT for SR1.

3 And as I -- what I have set out in my argument,
4 then, are these three recommendations: The number one
5 recommendation was the diversion inlet maximum discharge
6 capacity be reviewed and modelled with the access bridge
7 in place. We would like to see that added as a
8 condition.

9 AEL's recommendation Number 2 was that the
10 emergency spillway maximum discharge capacity is less
11 than the diversion channel design flow. And a
12 reassessment of the emergency spillway should be
13 considered to increase the discharge capacity. We would
14 like to see that recommendation Number 2 added as a
15 condition.

16 AEL's recommendation Number 15 is as follows:
17 (as read)

18 "The low-level outlet works design
19 capacity was selected based on industry
20 standards for evaluation times for the
21 reservoir. No basis for increased
22 capacity has been provided."

23 Austin Engineering accepts this response, but we note
24 that there is no secondary means for draining the
25 reservoir should a failure of the low-level outlet

15:03

15:03

1 occur, and a significant reduction in the risk and
2 operation of the structure can be realized from the
3 addition of a second low-level outlet.

4 The Canadian Dam Association Guidelines and the
5 Alberta Dam and Canal Safety Directive do not address
6 requirements for sizing of outlet works or evacuation
7 times for reservoirs. The SCLG would like AEL's
8 recommendation Number 15 added as a condition to any
9 approval issued to AT.

10 And then AEL's recommendation Number 17 deals with
11 riprap on the upstream face of the dam. Austin
12 Engineering stated: (as read)

13 "We caution that riprap along the crest
14 of the dam would function during the
15 event where water would be required to
16 be stored within a reservoir at full
17 service level or full supply level for a
18 period of time during passage of a major
19 flood. Riprap would still provide a
20 benefit in this instance."

21 The SCLG would like AEL's recommendation Number 17 added
22 as a condition to any approval issued to AT.

23 The proponent suggests that first fill requirements
24 will be determined through the dam safety review, yet
25 when the SCLG asked for a controlled first fill, as is

15:04

15:05

1 standard in dams, the proponent said no. Is it possible
2 that the Dam Safety review recommends a first fill that
3 is at odds with the first fill during a flood event?
4 For instance, if the Dam Safety office requires limits
5 to reservoir fill level or diversion rate, all financial
6 benefits could be eroded. In that case, SR1 loses its
7 time advantage over other options.

8 The SCLG would like the NRCB approval to be
9 conditional on findings from the Dam Safety review,
10 which may impose operating conditions or significant
11 additional capital costs. How long does it usually take
12 for a first fill process? Is it common for dams to go
13 from empty to full in 50 hours, or 36 hours? Most dams
14 are filled over months or even years.

15 I know they said this is part of future
16 commissioning plan, but by my math, SR1 reservoir fills
17 at a rate of one half to three-quarters of a metre per
18 hour. How long for the water to impact the readings
19 from instrumentation? How long before you know if it's
20 okay if there's an issue? Hours? Days? Weeks?

21 Also, in my cross-examination of the 2018 Dam Canal
22 Safety Directive, I note that the SCLG is concerned that
23 AT has not considered safety of excess flows passing the
24 structure during expected operations. There are a
25 number of paragraphs of concern to the SCLG in

15:06

15:06

1 Exhibit 339.

2 And with respect to AT's final argument, the SCLG
3 makes the following points on dam safety: The reference
4 to low probability by Mr. Austin is taken out of
5 context. Even though there is a low probability of the
6 gate failing in the open position, it does not preclude
7 the design taking this into consideration.

8 (b) the point with regard to the two low-level
9 outlets is not to do with the drawdown rate. This is
10 risk management. We are talking about the only outlet 15:08
11 for the reservoir that cannot be tested until it is at
12 full service level. What if the low-level outlet fails
13 to function? It will be tested under full design head.
14 It would be prudent to include a secondary means of
15 dewatering the reservoir, as is typical with other
16 structures which have one conduit for the purpose; i.e.,
17 water supply, power generation, and a low-level outlet.

18 With regard to the emergency spillway using the US
19 Army Corps Inflow Design Floods for Dams and Reservoirs
20 suggests the initial reservoir level be taken at the 15:08
21 full supply level or the pool level after a flood, half
22 the size of the IDF.

23 Based on the operation assumptions, we cannot be
24 certain the reservoir will be near empty during routing,
25 and, as an extreme consequence dam, it must be able to

1 pass the PMF with reservoir routing starting at an
2 appropriate level.

3 If the diversion inlet gates fail open or are left
4 open when the SR1 reservoir is already at its FSL, then
5 it only takes 13 hours to overtop the storage dam. By
6 increasing the discharge capacity of the emergency
7 spillway to match the design capacity of the diversion
8 inlet, you can prevent the possibility that the storage
9 dam can be overtopped. For an extreme consequence dam,
10 this possibility, no matter how low, must be avoided.

15:09

11 And operation of the SR1 reservoir has repeatedly
12 been discussed as simple. This is not likely to be the
13 case during flood conditions as information on river
14 levels, instrumentation readings, weir settings, flood
15 forecasts, Glenmore storage volumes will all need to be
16 considered and acted upon appropriately.

17 And then, finally, both Mr. Austin and Ms. Keyes
18 have much experience with dams within Canada and the
19 application of the CDA guidelines. Their task was to
20 review the safety of the SR1 structure, and they have
21 done that. Their experience with permitting -- their
22 experience with the permitting process in Alberta is not
23 relevant to the safety of the dam.

15:09

24 In terms of risk management, the SCLG rely on
25 Exhibit 199, which is the Springbank Community

1 Association's 36-page letter to IAAC and the NRCB
2 relating to risk and the limitations to the SR1.

3 SR1 is not able to rapidly draw down its water
4 levels, which has implications for risk, and also for
5 climate change.

6 Public safety, including emergency response and
7 conditions requested. There is the potential for more
8 than a hundred lives to be lost as a result of the
9 failure of SR1. And I refer to -- I also refer to my
10 questioning on the Dam Directive, Exhibit 399, at 15:10
11 Transcript page 1132. Public safety and emergency
12 response is of great concern to the SCLG. In
13 Exhibit 373, I requested that AT accept a number of
14 public safety conditions to be attached to any approval
15 issued by the Board.

16 Mr. Fitch noted this might be a problem because AT
17 was kicking the emergency management plan to AEP. As
18 noted by the Chair and Mr. Kennedy, it would appear to
19 be commonplace for conditions to carry forward to future
20 custodians of the ownership of the project. And I refer 15:11
21 to the transcript pages. I will obviously read them.

22 It is important to the SCLG that these conditions
23 that I requested relating to public safety of the
24 Springbank community not fall through the cracks and
25 that they be added as conditions to any approval issued

1 by the Board.

2 Sensitivity of the project operation. Project
3 design, operation, and safety elements to changes are
4 viability [verbatim] in climate parameters.

5 The SCLG rely on Dr. Fennell's prefiled evidence as
6 well as his PowerPoint and viva voce evidence on
7 March 30 and 31.

8 AT suggests the protection of people and property
9 from a future event like the one we experienced in 2013
10 is the primary goal.

15:12

11 Having said that, the SCLG is quite surprised at
12 how the climate change aspect of this project has been
13 dealt with, or, more importantly, how it has not been
14 dealt with, in a manner consistent with this goal.

15 Much of the work done to support SR1 has been based
16 on an evaluation of documented events over a very
17 protracted period of time. This is a dangerous
18 limitation and one that has driven the process since the
19 beginning and, in our opinion, has led to a false sense
20 of security.

15:13

21 2013 was a significant event, but not the most
22 significant event that has occurred in this region in
23 our known history, or likely in the past. You are
24 probably familiar with the terms "known knows" and
25 "unknown knows" when speaking about situations or

1 concepts we are trying to understand. But it is often
2 the unknown knowns and, more importantly, the unknown
3 unknowns that tend to get us into trouble. And it's no
4 one's fault really, but these oversights often lead to
5 unintended consequences, sometimes catastrophic.

6 If approved, SR1 will be a rather unique and large
7 extreme consequence dam set right in the middle of a
8 quiet country residential setting. Now, you are not dam
9 engineers, but if there was an option to put something
10 like this in a safer and more beneficial location, 15:14
11 wouldn't you do that? So it's beyond the SCLG how
12 SR1 -- this SR1 option got so much traction from the
13 outset. It doesn't seem logical.

14 When it comes to climate change, this is where we
15 see -- the SCLG see us getting into trouble if we don't
16 use our imagination.

17 It is clear SR1 will only be able to deal with a
18 flood similar to 2013, and the rest of the disaster will
19 be sent downstream to other communities, with the
20 possible exception of those below the Glenmore 15:14
21 Reservoir. This focus seems to have been on preserving
22 those communities and businesses at the expense of those
23 upstream. I am sure AT has to be aware of that, and
24 there is another solution that would mitigate that risk,
25 and that risk of an even greater flood.

1 What is a bit disheartening is that when presented
2 with evidence prepared by AT themselves from the
3 benefits of MC1 option, they continue to argue the
4 merits of SR1, an arguably inferior option.

5 Maybe it's because they have come so far down this
6 road that they feel compelled to work with it, but it is
7 clear that the benefits of SR1 are limited and, in fact,
8 the full cost, and I mean the full cost, has not been
9 fully explored, only a limited version of it.

10 As taxpayers in Rocky View County, that makes my
11 clients nervous. Nevertheless, AT remains convinced
12 that it can engineer a way -- its way around these
13 limitations, but at what costs? Costs that seem to keep
14 escalating with each tweak of the design, and there have
15 been many. Is that because of failure of imagination?
16 Shouldn't we strive for something more simple, more
17 robust, more beneficial?

15:15

18 The fact that higher magnitude flood events have
19 occurred in the past but perhaps have not been measured
20 or documented is not a reason to move forward with a
21 partial solution.

15:15

22 If there was an option to address larger floods and
23 protect more people and property, we should be looking
24 at that. That is the agreed-upon goal, right, protect
25 people and property? This is no time to have a narrow

1 view.

2 All of the literature that we have read about what
3 the future hydro climate of Alberta holds for us, both
4 from a flood and drought perspective, should alarm us.
5 We cannot and should not just rely on the period of
6 record. We have to step outside conventional thinking
7 to deal with something we don't really understand or
8 totally understand.

9 This is due diligence. It should be clear to the
10 Board that higher magnitude floods of greater frequency
11 are a distinct possibility in the future when one looks
12 at the existing data in a different way. 15:16

13 If we are truly trying to assess the worst-case
14 scenario when it comes to climate change, we need to
15 step beyond the conventional, and we know that can be
16 hard for some, but if we don't, then bad decisions are
17 going to be made that will become other people's
18 problems.

19 The SCLG understands the need for standards, and
20 that much of Canada designs infrastructure with the 1 in
21 100 event in mind. In Alberta, we align with this 15:17
22 standard, and design infrastructure to withstand such an
23 event; however, SR1 is designed to address a 1 in 200
24 event. That would appear conservative, but other
25 jurisdictions are starting to see a move towards more

1 conservative than proactive design constraints.
2 Saskatchewan's recent move to incorporate the 1 in 500
3 event in their design considerations is a good example.
4 BC's adoption of the 1 in 200 as their design event is
5 another. As Dr. Fennell noted, it is clear that the
6 engineering community is beginning to understand the
7 risks related to climate change and are adapting to its
8 inevitability.

9 Given the documented limitations of SR1 to address
10 an even greater than 2013, or 1 in 200, the chance that 15:18
11 an even -- an event greater than that occurred in
12 response to climate change and the extreme consequence
13 classification makes this project a precarious one. The
14 fact that a much better option was put forward earlier
15 that protects all, and I mean all, downstream
16 communities from a flood much greater than 1 in 200, and
17 that this option was put aside is, frankly,
18 unbelievable.

19 One other aspect we would like to address is
20 drought. This was not really dealt with in the 15:18
21 application beyond some passing statements.

22 The SCLG finds it quite interesting that AT and
23 The City of Calgary is putting forward the notion that
24 SR1 will increase water security for the city of
25 Calgary. The SCLG struggles with this logic, given that

1 during an extended drought, which would include low
2 snowpacks and low seasonal rainfall, SCLG expects that
3 water levels in the Glenmore Reservoir would not be
4 lowered to the usual degree in order to preserve water
5 for the high-use season. Under such a scenario, SR1
6 would not be engaged anyway, but would instead sit there
7 generating dust for the local residents to breathe.

8 So how does SR1 enhance water security in this
9 case? It certainly doesn't enhance public health
10 security.

15:19

11 During the hearing on Thursday, April 1, Alberta
12 Transportation admitted that some of its climate change
13 data it relied on was incorrect. This had to do with a
14 role that snowpack plays in the intensifying of flood
15 risk during early spring rain-on-snow events like 2013.
16 SCLG questions whether AT has modelled the worst-case
17 scenario for climate change in coming up with its design
18 criteria for SR1.

19 In terms of reservoir capacity, why isn't the
20 diversion capacity, why isn't the diversion capacity
21 greater so that the entire peak flow can be diverted
22 into the reservoir thus providing residents downstream
23 of SR1 with the same protection as the residents
24 downstream of the Glenmore Dam.

15:20

25 MC1 has a reservoir capacity of 93,000 dam cubed in

1 a PMF. SR1 is inferior.

2 Topic Block 4. I would briefly mention Calgary's
3 water supply document, Exhibit 347. It specifically
4 notes: (as read)

5 "Water is a limited resource and our
6 water supply is changing due to climate
7 change and a growing population."

8 And we've already noted SR1 does not store any water on
9 the Elbow River.

10 In terms of hydrology, the SCLG is concerned that
11 flow from the low-level outlet is going to scour the
12 Unnamed Creek. The faster the low-level outlet drains,
13 the greater the risk to the environment and the riparian
14 areas below the low-level outlet.

15:21

15 And Ms. Robinson also has concerns about the head
16 pond from SR1 backing up floodwater onto her property.

17 And I guess another hydrological issue is, you
18 know, what happens if SR1 is on operation and you have a
19 huge flood coming down the Bow River? Will that end up,
20 you know, metres higher than the Elbow River at the
21 confluence? Will you end up seeing water backing up
22 into the Bow River and flooding those communities that
23 SR1 was supposed to protect?

15:22

24 On surface water quality, Mr. Frank Frigo suggested
25 that SR1 would sequester -- could sequester water

1 contaminated by forest fires. That was last Tuesday.
2 However, AT has done no modelling to use SR1 to hold
3 contaminated water from -- that would be coming from
4 the -- from a watershed that was on -- you know,
5 contaminated by forest fire.

6 There's also an issue with the flow coming into the
7 SR1, and if the -- and if the head pond will impact the
8 water quality on Mary's ranch. This is a concern that
9 she has, and you've heard about the number of water
10 wells that she has in her -- on her property.

15:23

11 The SCLG is also concerned that the Pirmez canal or
12 creek has not been investigated, including the
13 possibility that floodwaters from a design flood could
14 bypass the SR1 diversion structures via Pirmez Creek.
15 Mr. Wood was asked if he looked at the Pirmez canal on
16 Ms. Robinson's land, and he said that was outside of the
17 PDA and that the water would just go across Highway 22.

18 In terms of aquatics, the SCLG relied on
19 Mr. Locke's evidence, as well as his viva voce evidence.
20 They requested the recommendations set out in
21 Mr. Locke's report be attached as conditions to any
22 approval.

15:24

23 Mr. Locke's recommendations to consider alternative
24 release scenarios is based on the fact that it is far
25 better and more efficient to consider all reasonable

1 flow release scenarios now so that the findings can be
2 incorporated into the final design.

3 Mr. Locke believes it is better to invest more time
4 up front instead of more time later trying to react to
5 unintended outcomes.

6 With respect to fish entrainment and other possible
7 detriments, deterrence to fish entering the diversion
8 channel, all potential solutions should be investigated.
9 Examples of unique approaches include creating an
10 electrical field or using physical structures.

15:24

11 Mr. Locke also noted there's considerable
12 uncertainty when predicting fish entrainment and
13 headwork structures. It is unlikely a precise
14 estimate -- it is unlikely a precise estimate can be
15 calculated. However, it makes sense to try and frame
16 the estimate as best as possible in terms of a low and
17 high value for the number of fish and size of fish that
18 potentially will be entrained.

19 Based on the information provided today for this
20 project, and what is known for irrigation headworks, all
21 that is possible should be done first to first keep fish
22 out of the diversion channel; secondly, return fish
23 during lower flow diversions where it is feasible; and,
24 thirdly, to have a good fish rescue plan.

15:25

25 Finally, Mr. Locke emphasizes spending more time up

1 front will be better than spending more time later
2 reacting to unintended consequences.

3 A large amount of data has been collected and a lot
4 of modelling has been carried out making sure the
5 sideboards have been properly identified and all
6 reasonable options have been investigated should be done
7 before final dam design.

8 Regarding fish, there are really no redeeming
9 outcomes from the project and there will be much work
10 required to minimize the impacts, the best that they can 15:26
11 do is mitigate.

12 The SCLG does not consider AEP's conclusion that
13 bull trout may be extirpated to be a positive outcome of
14 SR1.

15 The SCLG would also note the absurdity of fish
16 rescue. 30 people, supervising biologists, wandering
17 around the reservoir as it drains. Again, this could be
18 an expenditure of hundreds of thousands of dollars in a
19 big flood.

20 On hydrogeology, section 4.4, the SCLG rely on 15:26
21 Dr. Fennell's prefiled evidence, as well as his
22 PowerPoint and viva voce evidence on March 30th and
23 31st.

24 An extensive cross-examination of AT was conducted
25 on hydrogeology. Mr. Yoshida -- I've got his name.

1 It's -- I have his name misspelled, my apologies -- AT's
2 hydrologist was an evasive witness, and an examination
3 of the transcript will reveal that he refused to answer
4 straightforward questions on multiple occasions.
5 Sometimes the question had to be asked three times,
6 prolonging the length of the SCLG cross-examination.

7 The SCLG submits that the evidence of Dr. Fennell
8 should be preferred over the evidence of AT's
9 hydrogeologist.

10 To recap some key points from the cross-examination
11 of AT's hydrogeologist, and others on the AT panel who
12 attempted to help him, Exhibit 110 shows that the base
13 of the reservoir is underlain by at least 5 metres of
14 lacustrine clay. The evidence also shows the top three
15 layers of the model will be -- with a low permeability
16 soil beneath the base of the SR1 footprint. The
17 lacustrine clay should be in these three layers because
18 it is in the uppermost formation. The K value in the
19 top three layers is indicated on those figures.

20 Missing from the top three layers of the model is
21 the documented sand and gravel in the Unnamed Creek
22 valley, which was indicated by AT to be anywhere from
23 1 to 7 metres thick overlain by a layer of glacial
24 material. The sand and gravel in the Unnamed Creek
25 valley should have been at least in layer 1 or 2 of the

15:27

15:28

1 model, given its proximity to the surface.

2 Sand and gravel is given the K value of up 2.8
3 times 10 to the minus 3 metres per second in the
4 previously cited Table 4.3. This configuration of soils
5 and associated K values in the model is not reflective
6 of the actual geological conditions documented beneath
7 the SR1 reservoir from the exploratory drilling
8 programs. The presence of this much lower K value layer
9 will influence the leakage from the base of the SR1
10 reservoir. It will reduce it by up to two orders of
11 magnitude. 15:29

12 Given the fact that only three measurements of
13 K values were obtained with only one for lacustrine
14 clay, the Board should have no confidence that a full
15 range of values has been obtained, including any
16 influence from fractures or other features that would
17 result in higher K values like silt layers.

18 AT indicated in testimony on March 29th that a
19 number of K tests were performed, but were not
20 documented because of slow recovery or lack of water. 15:30
21 However, we see in Exhibit 10 that samples were
22 collected for water quality analysis from up to
23 16 monitoring wells in the unconsolidated deposits. If
24 you were able to sample these wells that were obviously
25 full of water, then why were you not able to K test them

1 as well?

2 Also brought up -- AT also brought up some evidence
3 on March 29th showing very different K values for the
4 model layers, all of which are lower by orders of
5 magnitude than those indicated in Table 4.3. Why the
6 change? And how can the Board have any confidence in a
7 model that just keeps on changing and incorporating
8 lower and lower K values beneath the SR1 footprint,
9 lower K values that lack a sufficient degree of field
10 verification.

15:30

11 SR1 will increase the risk to human and ecological
12 health due to the leakage of water out of the base of
13 the reservoir when full or partially filled. This will
14 result in flushing of accumulated contaminants either
15 naturally occurring in the underlying soils or routed to
16 the reservoir during floods. It is going to be flushed
17 into the underlying groundwater and connected systems.
18 This includes the bedrock intervals, the surface water
19 in the channel outlet, and the receptors that will be
20 affected.

15:31

21 Alberta Transportation also relied heavily on
22 models to frame the hydrogeological and hydrological
23 risks of SR1, but failed to address the geochemical
24 risks.

25 I would argue that the hydrological and

1 hydrogeological modelling from the physical standpoint
2 and acknowledgement of climate change as a risk is
3 flawed to some degree.

4 The SR1 does not consider the risks that the
5 structure poses from extended drought conditions, and
6 SR1 does not increase the water security for the city of
7 Calgary contrary to what AT and The City of Calgary have
8 said.

9 Only three hydro -- only three hydraulic
10 conductivity field tests were conducted to give real
11 data, not laboratory data, to understand the leakage
12 that would occur from the structure.

15:32

13 It is real data that's giving you a better idea of
14 the real picture, as opposed to a point measurement from
15 a small core that's confined in a laboratory and tested
16 under controlled conditions.

17 One of those three field tests was a test for clay,
18 the main seal beneath the reservoir, and the other two
19 were from the till. This is hardly not enough
20 information to properly constrain the hydraulic
21 conductivity under SR1, and likely led to the very low
22 leakage estimate of 426 cubic metres per day as opposed
23 to the likely greater than 100,000 cubic metres per day
24 that Dr. Fennell calculated, considering the reservoir,
25 partially filled, during a 1 in 100 flood event.

15:32

1 AT's response to much of Dr. Fennell's groundwater
2 concerns is to monitor in order to assess the
3 information gaps. Monitoring is not mitigation, and
4 oftentimes when you detect things, it can be too late
5 and it can be very difficult, sometimes impossible to
6 remediate. So this is why we assess the worst-case
7 scenarios, but that did not happen here.

8 SCLG's concern is the proximity of the project to
9 local residents and the utter lack of assessment
10 regarding potential changes to groundwater quality and
11 impacts to human and ecological receptors. Absolutely
12 no work has been done on this aspect beyond some
13 baseline sampling and reporting.

15:33

14 I understand that AT does not believe that SR1 will
15 not create any water quality issues, but that is not
16 good enough. People need some form of evidence. Are we
17 going to just leave this up to belief?

18 In my clients' opinion, AT has in no way covered
19 off this issue. This seems to fall into that category
20 of unknowns, unknowns for them. It is abundantly clear
21 there was no qualified geochemist involved in the
22 development of this application.

15:34

23 If the NRCB Board members are being asked to
24 approve an extreme consequence structure placed in a
25 high-risk area with no real analogues to compare to

1 them, you should -- you should be given the information
2 necessary to make an informed decision. It can't simply
3 be left up to belief.

4 The SCLG has some concerns with the groundwater
5 model that has been used to support AT's impact
6 assessment. It is clear the lack of information on the
7 range of hydraulic conductivity for the underlying clay
8 and tills is impacting the results. Again, only three
9 measurements have been provided.

10 Yet AT was able to collect water from up to
11 16 wells. If these wells could yield enough water, then
12 why couldn't they have not been K tested? This is an
13 example of a discrepancy that we have been painfully
14 trying to resolve. The fact that AT thinks three
15 measurements of K value in the clay tills is sufficient
16 to constrain things is alarming.

15:35

17 This concern also extends to how the model layers
18 have been configured, which is causing some issues with
19 being able to accurately mimic the measured hydraulic
20 heads. They still refute near surface sand and gravel
21 that they admitted numerous times is there; yet it is
22 absent in the model. How is this considered
23 comprehensive and reflective of the site conditions?
24 They miss these things, yet they dig in on a flawed
25 model. Again, this is to be expected.

15:35

1 There's also the concern with the sub-surface pore
2 pressure changes once SR1 is built. This relates to
3 whether or not issues will occur in the interfaces
4 between the formations or within weak intervals.

5 It appears from the answers provided that higher
6 risk intervals of sediment may have been assessed or
7 tested. No mineralogy was performed, yet we know for a
8 fact that the tills contain swelling clays which could
9 be subject to failure.

10 Dr. Fennell stated that models are only as good as
11 the information used. How it is configured and the
12 skill of the model are to look at the output and make
13 sense of it. In the end, models are not meant to
14 replace human intelligence. They are meant to enhance
15 it; you can't just give it up to a machine.

15:36

16 If the NRCB is being asked to make a judgment on a
17 project that is heavily predicated on model results,
18 then they need to be sure they can trust them. And if I
19 was a Board member, I would be quite dubious given the
20 explanations or lack thereof provided by the applicant.
21 There are better options and simpler solutions, but,
22 unfortunately, this is the only one before us.

15:37

23 So we will just convince ourselves that we can
24 engineer our way around the limitations, unfortunately,
25 at a greater and greater cost with diminishing benefit.

1 If there is a more elegant solution, to use
2 Mr. Menninger's vernacular, then we should advance it,
3 not just work with something that is better than
4 nothing.

5 As educated professionals entrusted with protecting
6 the public good and ensuring that sound decisions are
7 being made, they have a duty to ensure that we are not
8 inadvertently creating a situation that we will later
9 regret just because we believe it is the right choice or
10 we are searching for some convenient answer.

15:38

11 Politics has no place here, particularly when we
12 are talking about people's safety, wellbeing and
13 financial security.

14 Given that everything that the SCLG have heard over
15 the past two weeks, along with volumes of support
16 materials, the overconfidence displayed by the applicant
17 during these proceedings and the magnitude of questions
18 that remain unanswered, the SCLG have a hard time seeing
19 how this project can possibly be in the public's best
20 interest when better options exist.

15:38

21 And in terms of sensitivity of the project, water
22 elements -- I've already dealt with that under Topic
23 Block 3.

24 And now turning to the final topic block -- and,
25 Mr. Chair, could I have just a brief, you know,

1 two-minute break, please, if I could?

2 THE CHAIR: Yeah, granted.

3 MR. SECORD: Thank you. Just a quick stretch.

4 THE CHAIR: We could probably all use that.

5 Thank you.

6 (ADJOURNMENT)

7 THE CHAIR: You look a little more refreshed,

8 Mr. Secord.

9 MR. SECORD: Shall I continue?

10 THE CHAIR: Yes. And just note we're just 15:42

11 about quarter to 4.

12 MR. SECORD: Right. And I have -- I'm on the
13 last topic block. Topic Block 5. Lucky there weren't
14 6, or I would be in trouble.

15 So dealing with air quality -- first of all, 5.1,
16 air quality and dust. AT has acknowledged in response
17 to Dr. Zelt's air quality report that SR1 air born
18 articulates may result in unacceptable short-term risk
19 to human health. The SCLG has raised air concerns for
20 years, and, unfortunately, their fears have turned out 15:43
21 to be well founded.

22 And I, you know, reference Exhibit 327, pdf 94,
23 where AT uses the word: (as read)

24 "Based on this certainty analysis,
25 partial mitigation to reduce fugitive

1 dust emissions, i.e. assumed dust
2 control efficiency of 84 percent, could
3 still result in an unacceptable
4 short-term risk to human health."

5 And they use the words "adaptably manage." Mr. Speller
6 went to great lengths to point out the use of the word
7 "could." SCLG agrees with "could." Could children be
8 exposed to unsafe levels of air quality and an
9 unacceptable short-term risk to human health? The
10 answer is yes.

15:44

11 In response to a question regarding school
12 locations, Mr. Speller stated that they were equally
13 alarmed. The SCLG is equally alarmed by the fact that
14 the health impacts to their community do not seem to
15 merit serious consideration in this project. There are
16 a number of schools that we have already drawn your
17 attention to: Elbow Valley Elementary, Springbank
18 Middle, Springbank High, Edge, Springbank Playschool,
19 Discovery Corner Playschool, Changemakers Charter
20 school, and a future private high school, Webber
21 Academy. There are multiple sports facilities and
22 various developments proposed downwind.

15:45

23 I asked Ms. Noble: (as read)
24 "What period of time did your education
25 designate as an acceptable period of

1 time that young children should be
2 exposed to unsafe air quality."

3 Her response was: (as read)

4 "Children should not be exposed to
5 unsafe air quality, nor should the
6 elderly, nor should members of the
7 public."

8 In terms of Dr. Zelt's review of air quality, he noted
9 that AT made a calculation error for PM 2.5, which was
10 acknowledged and corrected by Stantec. This correction
11 doubled the PM 2.5 emissions for the 100- and 200-year
12 flood scenarios.

15:45

13 And Dr. Zelt noted issues with AT's assessment
14 dealing with the meteorological data, surface roughness,
15 threshold friction velocity, sediment areas, particle
16 size distribution. AT submits that the project air
17 emissions will be adaptably managed. Where is a
18 precedent for a massive sediment reservoir? Are there
19 any other dry reservoirs in Canada that we can look to?
20 How do you know you can manage it when the best minds in
21 California can't manage it there? This adaptive
22 management plan is an attempt to instill confidence when
23 none is earned.

15:46

24 In terms of the AT argument, with regard to
25 paragraph 269 of AT's final argument, this statement is

1 not factual. Dr. Zelt's evidence was based entirely
2 upon the uncertainties that were not properly
3 recognized, nor accounted for, in the AT assessment of
4 air quality. Dr. Zelt's evidence showed both the
5 urgency required to apply controls. That is the
6 potential for the severity of air quality issues during
7 the period before air quality controls are affected and
8 the likelihood that residual air quality is likely to
9 remain poor, even with controls in place. The AT
10 assessment of air quality was based upon
11 misrepresentation of emissions area and strong bias
12 underestimating the impacts.

15:47

13 With respect to paragraph 270 of AT's final
14 argument, this statement is not factual. Dr. Zelt's
15 assessment was careful to explain that it was all too
16 easy to demonstrate unreasonable predictions.
17 Dr. Zelt's reassessment of air quality, using validated
18 sediments and validated meteorology, demonstrated that
19 air quality impacts are very likely following post air
20 drawdown and not serve serving, agency the AT assessment
21 is. Dr. Zelt carefully outlined that his
22 representations were more representative of the
23 conditions rather than favourable for the project.
24 Dr. Zelt qualified his predictions as being infrequent,
25 only during the period of larger post-flood drawdown,

15:48

1 and meteorologically dependent. However, the evidence
2 presented by Dr. Zelt clearly demonstrates the errors
3 and bias in the AT assessment as not being
4 representative of the potential for impacts.

5 With respect to paragraph 271 of AT's final
6 argument, there is a difference between results being
7 alarming and an assessment being alarmist. Dr. Zelt's
8 objective analysis may be alarming compared to the
9 improper assessment by AT, but Dr. Zelt's objective
10 consideration of each of the major components of the air 15:49
11 dispersion modelling presented by AT is factual and
12 representative of potential conditions. Therefore, it
13 is not an alarmist assessment.

14 AT's use of terms such as non-guidance assumptions
15 remain non-factual. AT's assessment made use of
16 guidance values for emissions and meteorology when the
17 conditions of their assessment were not within those
18 guidance limits. Guidance documents are minimalistic in
19 nature, setting out minimal requirements for assessment
20 and suggested values for inputs into modelling based 15:49
21 upon generalized scenarios. It is up to the assessor to
22 determine whether the guidance is acceptable for the
23 particular assessment. In this case the AT assessment
24 has been overwhelmingly simplistic and minimalistic to
25 the point where the predictions for air quality are

1 biased.

2 The particular emissions in the guide documents are
3 not representative of the conditions of the site, as
4 demonstrated by Dr. Zelt. The meteorology of the site
5 is not representative of the generalized guidance in the
6 guideline. An expert in air quality, as is Dr. Zelt,
7 recognizes when the other considerations are required
8 due to site-specific conditions.

9 With respect to paragraph 273 of AT's final
10 argument, this statement is not factual. In fact, AT's
11 air quality assessment clearly demonstrated that it did
12 not read, nor follow, their own hydrological assessment,
13 by including the larger area of sediment deposits of at
14 least 3 centimetres, as per the AT hydrological
15 assessment. The AT air quality assessment was based
16 upon an arbitrary and completely unsubstantiated use of
17 10 centimetres. The AT soils expert even testified that
18 soil and dust erosion could be based upon 3 centimetres.
19 The hydrological assessment, Exhibit 67, and updated
20 hydrological assessment in revised Exhibit 327 showed
21 the flooded area to be covered in fine particulate
22 matter, whereas the AT assessment ignored this
23 information but instead was modelled using material that
24 would be buried by the fines. AT's assessment was based
25 upon sediment material from the alluvial conditions on

15:50

15:51

1 the river's edge, which was proven to be not
2 representative of the post-flood deposits by literature
3 values presented by Mr. Zelt. AT's assessment of the
4 sediments that would be exposed over the larger project
5 area is erroneous.

6 With respect to paragraph 274 of AT's final
7 argument, Dr. Zelt presented evidence of the
8 effectiveness of tackifiers based upon research and the
9 specifications of AT suggested tackifier. Dr. Zelt
10 independently inquired about the effectiveness of the
11 tackifier longevity and was presented with similar
12 specifications. AT is basing their conclusions on
13 claims of their vegetation ecologist, that is not an
14 expert in air quality emissions modelling.

15:52

15 The presence of remnants of tackifier or patchy
16 vegetation growth is evidence of only partial fugitive
17 dust controls. As presented by Dr. Zelt's assessment,
18 even 100 percent effectiveness of controls will not be
19 sufficient to prevent impacts upon a project area under
20 the right meteorological and post-flood conditions.

15:52

21 With respect to paragraph 275 of AT's final
22 argument, Dr. Zelt is a recognized expert in air quality
23 dispersion modelling, whereas Mr. De Carlo is not.
24 Mr. De Carlo's interpretation of the cover misrepresents
25 the effectiveness of the cover to prevent air quality

1 emissions.

2 With respect to paragraph 276 of AT's final
3 argument, Dr. Zelt made inquiries into tackifiers to
4 determine the cost of application of tackifiers to
5 supplement information not provided in AT's reports.

6 With respect to 277 of AT's final argument, in
7 short, Dr. Zelt's assessment was objective and
8 impartial. Dr. Zelt clearly outlined where AT's
9 assessment of air quality was not representative of
10 site-specific conditions. AT's assessment used a
11 minimalistic approach, using guidance documents without
12 regard to the proper application of the guidance, nor
13 limitations of the guidance. The result of AT's
14 assessment is a strong bias that underpredicts the
15 potential air quality for post-flood drawdown and
16 favourable meteorology. Dr. Zelt's objective assessment
17 was based upon reasonable and site-specific conditions
18 that would be expected, and while applying emission
19 controls, as suggested by AT. Dr. Zelt showed that even
20 with highly effective controls suggested by AT, which
21 would somehow be applied pre-emptively, air quality
22 could still be expected to be degraded in the region
23 surrounding the project area and potentially impacting
24 Calgary City limits and First Nations lands.

15:53

15:54

25 With respect to paragraph 279 of AT's final

1 argument, this statement is not factual. Because the
2 air quality assessment is a necessary input into human
3 health assessment. Any change to the air quality
4 assessment is a change in the human health assessment.
5 Dr. Zelt clearly demonstrated the faults in the air
6 quality assessment.

7 With respect to paragraph 280 of AT's final
8 argument, Ms. Noble's testimony indicated that air
9 quality was a human health concern. She testified that
10 based upon AT's assessment of flood frequency and 15:55
11 meteorological frequency that the risk would be
12 acceptable. Ms. Noble's assessment is therefore flawed
13 by the fact that the human health impacts are greater
14 than she assessed because the emissions are greater than
15 presented by AT.

16 Downwind air quality concentrations are a direct
17 relationship to emissions. Therefore, if emissions are
18 greater than what was assessed, the air quality
19 concentrations downwind will be greater. Ms. Noble's
20 testimony was based upon bias and incorrect air quality 15:55
21 predictions. Further, the risk by Ms. Noble -- the risk
22 qualification by Ms. Noble is flawed because the
23 frequency of meteorology is not representative of the
24 site-specific conditions. Since the frequency of
25 exposure is expected to be greater using site-specific

1 conditions, the risks will be greater than Ms. Noble
2 presented.

3 With respect to paragraph 281 of AT's final
4 argument, AT did not provide any evidence to base their
5 claim that the meteorological conditions were rare or
6 infrequent. This comment is anecdotal at best. While
7 the operation of the project is a rare and infrequent
8 event, Dr. Zelt showed that the meteorological
9 conditions are more frequent than modelled by AT.

10 Dr. Zelt also showed that the meteorological
11 conditions relating to dry and windy scenario for high
12 emissions were much greater than AT presented. In fact,
13 AT did not provide any statistics for precipitation,
14 frequency of strong wind, periods between rain events,
15 etcetera, whereas Dr. Zelt did present such evidence.
16 This evidence suggests site-specific conditions cannot
17 be assumed to be infrequent events, as per the AT
18 assessment.

15:56

19 With respect to paragraph 282 of AT's final
20 argument, fugitive dust can be mitigated with
21 appropriate controls. However, the effectiveness of
22 those controls must be considered.

15:57

23 With respect to paragraph 284 of AT's final
24 argument, this statement is non-factual. The evidence
25 was presented that because TSP would be present in the

1 dust cloud, which is visible, than a resident could
2 visibly see when they were being impacted. There was no
3 evidence in reference to travel time. Travel time is a
4 function of wind speed. In high winds the dust
5 emissions would reach homes of 1 kilometre away from the
6 project within one to two minutes. It is not possible
7 to monitor, detect, and notify the public within this
8 limited amount of time.

9 With respect to paragraph 285 of AT's final
10 argument, this statement is not factual. What the AT
11 minimalist and biased assessment has demonstrated is
12 that AT is basing their conclusions on hope that the
13 flood does not occur, hope that they can achieve
14 complete fugitive dust emission controls, hope that they
15 can achieve complete fugitive dust controls before
16 conditions occur that lead to emissions, hope that
17 meteorological conditions don't occur, and hope that
18 people are not outdoors to be exposed. I think we can
19 do better than just hope, but actually assessment and
20 modelling of the situation to plan.

21 Conditions. In Exhibit 406 I requested that AT
22 advise whether they would accept a number of specific
23 conditions arising out of Topic Block 5 as a condition
24 to any approval. The SCLG request that these be added
25 as conditions to any approval that might be issued by

15:57

15:58

1 the Board. And I've given you the transcript reference
2 there in paragraph 361.

3 And in terms of Dr. Zelt, the cost of the tackifier
4 and time to spread it out, a condition should be to cost
5 out this and provide a timeline for the application of
6 the tackifier on this massive footprint.

7 I think I've dealt with the human health. I did
8 refer you to a number of transcript references in my
9 cross-examination of Dr. Noble, and the references are
10 there. And I've also referred to Exhibit 398 for the
11 air quality isopleths and locations of homes, schools,
12 playgrounds, and camps.

13 In terms of vegetation --

14 Mr. Chair, I realize I'm at 4. I've got about --
15 I've got about nine pages left. I just wonder whether
16 you would give me that time to just finish off these
17 last two areas.

18 THE CHAIR: And how many minutes per page is
19 that, Mr. Secord? What is your request?

20 MR. SECORD: I had kind of thought about -- I
21 was kind of going at about a minute and a half per
22 page, is what I was hoping for. I don't know that I've
23 met that time frame, but...

24 THE CHAIR: I'm not sure, but I think that
25 would take us to about ten after. So if you could wrap

16:00

16:00

1 up by ten after or so. If you could wrap up by 10
2 after or so. I mean, that's our original timeline. It
3 does give you a bit more time.

4 MR. SECORD: Thank you.

5 THE CHAIR: But, you know, it's not excessive,
6 but I would appreciate your diligence in getting
7 through by 4:10.

8 MR. SECORD: Sure.

9 THE CHAIR: Thank you.

10 MR. SECORD: 5.3 was vegetation, including 16:01
11 noxious weeds and invasive species. You'll recall that
12 my clients had testified to the increase in weed growth
13 after the 2013 flood. We retained Dr. Osko to look at
14 the impacts of weeds on the landscape.

15 As noted by Dr. Osko, weeds compete with crops and
16 native plants for space, light, and nutrients, as
17 well -- and water, as well as introduce pests and
18 diseases. This is of significant concern to the SCLG
19 members, considering that many of them are agricultural
20 producers and ranchers. 16:01

21 AT's assertions that the influence of weeds on
22 vegetation and wetlands will be located -- localized to
23 the PDA is incorrect. Mr. Osko's evidence and
24 Mr. De Carlo's responses provided to cross questions
25 confirm that the spread of weed vectors will not be

1 limited to the PDA but could spread to the surrounding
2 lands. It is therefore important that a comprehensive
3 weed management plan be put in place to prevent and
4 manage weed introduction and dispersal. The SCLG
5 submits that the Panel should include as a condition of
6 approval that AT must develop a comprehensive weed
7 management plan prior to construction of the project.
8 The SCLG further submits that the condition of approval
9 should require that the comprehensive weed management
10 plan include, at a minimum, preventative measures
11 requiring the cleaning of vehicles and equipment prior
12 to entry to the PDA; upon leaving the PDA; details on
13 how cleaning of the vehicles and equipment would be
14 achieved, including locating cleaning stations at entry
15 point and exit points; how to manage potential weed
16 transport by commuting employees; identify the source
17 of all incoming materials; the weed risk associated
18 with them; and identify the dispersal barriers to
19 employ. The plan must also assess and prioritize all
20 of the possible vectors by which weeds could be
21 transported on and off the project area.

16:02

16:03

22 The SCLG submits the Board should include a
23 further condition of approval, that AT must ensure all
24 trucks hauling excavated fill material from the
25 diversion channel to the floodplain berm between prior

1 to leaving and entering the site. Note that
2 Mr. De Carlo and Mr. Wood agreed in cross that these
3 are reasonable measures.

4 The SCLG acknowledges AT's willingness to accept
5 and implement some of the recommendations of Dr. Osko.

6 Further, it is likely that the risk of weed seeds
7 and plant seeds entering the river through the
8 low-level outlet will continue, especially in times of
9 non-flood and post-flood.

10 The SCLG submit that AT must take steps to prevent
11 the spread of weeds from the reservoir. 16:04

12 Secondly, there's no supportable basis for
13 suggesting that the filter will prevent stormwater
14 freely passing through the low level of networks during
15 dry operations. No information was presented that
16 shows the impacts that a filter might have on free
17 passage of stormwater. A filter should not
18 significantly restrict the free flow of stormwater.

19 Thirdly, it is not clear how...

20 So the SCLG submits that a refiltration system at
21 the outlet limited to operating during dry operations
22 is necessary to ensure that more weed seeds, including
23 noxious and prohibited weed seeds, are not introduced
24 into the Elbow River, resulting in likely weed
25 infestation of downstream Springbank communities. 16:05

1 The SCLG submits that this should be included as a
2 condition of approval. In the alternative, the SCLG
3 submits the Panel should require AT to inquire further
4 into this issue and conduct a model analysis of their
5 findings.

6 Under vegetation and wetlands. The Board has
7 heard and seen the submissions and oral testimonies of
8 the SCLG members and their expert witnesses. The
9 project is located in one or more landscapes of
10 conservation significance, high value landscape, 16:06
11 environmentally significant areas, areas of high
12 wildlife sensitivity, key wildlife and biodiversity
13 area, and high sensitivity watershed. This fact is not
14 disputed by AT. Much of this area is high risk.

15 AT attempts to reduce the significance of this
16 designation by asserting that the high value landscapes
17 occupy the entire landscape west of Calgary.

18 While high value landscapes may be present in
19 other locations in the project, at other locations this
20 does not reduce the significance of the impacts of the 16:06
21 project on the environment. In any event, the
22 project's impacts on the environment on which it is
23 situate is the issue and not whether there are other
24 high value landscapes present elsewhere.

25 The South Saskatchewan Regional Plan mapped some

1 of the project area as intact native grasslands, as
2 noted by Mr. Wallis in his report.

3 Section 2.1 of the NRCBA requires the Board to act
4 in accordance with any applicable ALSA regional plan.
5 By virtue of Section 2.1 of the NRCBA, the Board must
6 consider the provisions of the SSRP and act in
7 accordance with its directions in determining this
8 application. In fact, I believe that was also done in
9 the Cougar Creek decision. This means that the Board
10 must, in accordance with the guidance of the SSRP,
11 ensure that intact native grasslands within the project
12 area remain intact and in an undisturbed state. Any
13 application such as the SR1 project that would result
14 in destruction of the intact native grasslands should
15 be a factor in denying this project.

16:07

16 The SCLG notes that Appendix G of the SSRP
17 provides guidance to decision-makers that require
18 considerations of provisions in Strategy 3.7 of the
19 descriptions of the intact native grasslands, as mapped
20 at page 150 of the SSRP.

16:08

21 While acknowledging that this project will
22 intersect areas mapped as intact native grasslands, AT
23 argues it is committed to revegetation.

24 As Mr. Wallis has noted, according to Lancaster
25 et al, revegetation success of rough fescue grassland

1 has been recorded only on sites that have not been
2 disturbed.

3 It is extremely doubtful that AT will revegetate
4 the land to provide the equivalent variety of grassland
5 communities that were present before the project. This
6 outcome was acknowledged by AT in the transcript.

7 In terms of wetlands, Mr. Wallis testified that
8 the project will also directly impact 5 kilometres of
9 productive stream courses and numerous productive
10 wetlands during construction.

16:09

11 Also, other than wetlands that will be permanently
12 lost during construction, the project will impact
13 wetlands during flood operations. The alteration of
14 wetlands' functionality during flood operations means
15 that more wetlands could be lost over time.

16 And I would also refer you to Mr. Wallis's
17 evidence on the impact of downstream riparian
18 communities.

19 In relation to cumulative impacts, cumulative
20 impacts on the project on upland habitats and wetlands
21 have not been adequately addressed due to lack of
22 consideration of the degree to which foothills parkland
23 natural subregion habitat has already been heavily
24 modified. Every incremental loss of native habitat is
25 a significant loss for the natural subregion.

16:10

1 Despite the application of mitigation, impacts
2 will still remain. Mr. Wallis recommended that the
3 project not be approved in its current operating mode
4 due to the impacts on downstream riparian habitat.

5 Mr. Wallis also discussed sedimentation impacts on
6 vegetation, and we would refer you to his evidence in
7 that regard.

8 We would also refer you to the SCLG evidence on
9 wildlife and biodiversity, in particular as set out in
10 the landowners' statements in Exhibit 250 and the
11 remarks made by Dr. Klepacki and Brian Copithorne in
12 his submissions.

13 And with that, I think I should go to my
14 concluding remarks.

15 Rejecting this project should spur immediate
16 innovation and create a substantial budget for the city
17 of Calgary to pursue flood-proofing projects downtown,
18 fully within the purview of The City of Calgary. These
19 could include new floodwall-type projects that would
20 protect against the Bow and Elbow flooding. The
21 increased Glenmore Reservoir capacity is an example of
22 such a project that is already complete.

23 Approval of SR1 would be a triumph of politics
24 over process. The proponent tried to play down the
25 negative elements of SR1, including air, water, and

16:11

16:11

1 environment by stating that most floods are small and
2 big flood events are so rare. If there is no worry
3 about these big floods, what is the rush? Send this
4 project back to the drawing board.

5 The SCLG is concerned that the various secret
6 compensation agreements have resulted in a biased
7 presentation before the NRCB. Rocky View County should
8 be here as an intervener representing its residents, as
9 should the Tsuu T'ina Nation.

10 Why was Alberta Transportation trying to avoid
11 having any parties participate as an intervener in this
12 process?

16:12

13 It is not the fault of this Panel, the regulators,
14 or the Springbank residents who have raised concerns
15 that this project has dragged on for years. The
16 Ignasius report clearly points that out.

17 The responsibility for the delays falls squarely
18 on the proponent's shoulders.

19 Rejecting SR1 will create uncertainty for future
20 flood risk for the city of Calgary, but pursuing a
21 flawed and inferior project with an indefinite lifespan
22 due to anxiety about near-term flood risk is not in the
23 public interest. The SCLG requests that the Board
24 reject the SR1 application.

16:13

25 And, finally, I would like to thank the Board

1 Panel members, Board counsel and Board staff,
2 especially Ms. Friend and the document managers, the
3 hearing participants and their counsel, and, of course,
4 Ms. Vespa and Ms. DiPaolo -- and, Donna, I hope you'll
5 forgive me for speaking so quickly -- for running a
6 very efficient and collegial hearing. It was much
7 appreciated by the SCLG members and our expert
8 witnesses, Ms. Okoye and me.

9 I would also like to thank Ms. Karin Hunter for
10 her tremendous effort in assisting Ms. Okoye and me
11 with the navigation of the voluminous record relating
12 to MC1 and SR1. I relied heavily on her encyclopedic
13 memory and attention to detail and am very grateful to
14 her.

15 And thank you, Mr. Chair, for giving me those
16 extra minutes. Much appreciated.

17 THE CHAIR: Of course. Thank you, Mr. Secord,
18 and thank you to Ms. Okoye and all of the landowners
19 and members that you represented.

20 MR. SECORD: Thank you.

21 THE CHAIR: I think we should take a bio break
22 now, and we'll come back with Mr. Williams with Calalta
23 followed by Mr. Wagner.

24 And, Mr. Williams, you're there?

25 MR. WILLIAMS: Yes, I am.

16:14

16:14

1 THE CHAIR: And you're ready to go after the
2 break?

3 MR. WILLIAMS: Yes, I am.

4 THE CHAIR: Okay, thank you. So let's come
5 back at 4:30 and resume with Mr. Williams. Thank you.

6 (ADJOURNMENT)

7 THE CHAIR: So Ms. Louden had provided her
8 final argument, and that could be Exhibit Number 413,
9 with no objections. Hearing none.

10 **EXHIBIT 413 - FINAL ARGUMENT OF THE**
11 **STONEY NAKODA NATIONS**

16:30

12 THE CHAIR: And Mr. Secord's exhibit -- or,
13 sorry, final argument would be Exhibit 414.

14 MR. SECORD: Thank you.

15 THE CHAIR: And any objections? I know that
16 you skipped over a few paragraphs here and there and it
17 was -- I think, Mr. Kruhlak, you weighed in. Do you
18 want to at least have a peek at what happened? Before
19 you sort of said "no problem," but are there objections
20 or have you had a chance to review?

16:30

21 MR. KRUHLAK: Well, I guess, Mr. Chairman, we
22 have the opportunity to reply tomorrow, so we may do it
23 then. I can't say that the document shouldn't be
24 marked in some fashion. I guess our caution is that
25 there was more than a paragraph or two. There were

1 some large components of this argument that was almost
2 getting close to a written argument that was simply
3 tendered with the Board.

4 So our caveat would be that we'll address --
5 perhaps it's best addressed through the weight to
6 provide certain components of the argument that were
7 not orally highlighted for the Board.

8 THE CHAIR: Okay.

9 MR. KRUHLAK: But with that we won't object to
10 it being marked and we'll speak to it tomorrow.

16:31

11 MR. SECORD: And I'm fine with that, Mr. Chair.
12 I mean, I didn't -- because of time I had to skip over
13 the soils and terrain components, so I didn't put that
14 on the record. I tried to use my time up efficiently.
15 So Mr. Kruhlak is right, and I'm sure he'll be fair in
16 his response.

17 THE CHAIR: Well, and the Board will for sure
18 be reading the entirety of the -- of your exhibit, of
19 your final argument, Mr. Secord, and of course will be
20 interested in any reply you might have tomorrow,
21 Mr. Kruhlak, so thank you for that.

16:32

22 So that's 414, the exhibit number.

23 **EXHIBIT 414 - FINAL ARGUMENT OF SCLG**

24 THE CHAIR: And I do believe Mr. Williams has
25 already submitted his final argument to Ms. Friend, and

1 that could be entered as Exhibit 415. Now, that may
2 have just been distributed. If parties would rather
3 wait until either later -- last thing of the day or
4 first thing tomorrow when we re-adjourn, we can do
5 that, unless you're prepared to allow that to stand as
6 Exhibit 415 now with no objection.

7 So any preference on that, parties? Mr. Kruhlak?

8 MR. KRULAK: Well, I haven't -- Mr. Chairman, I
9 haven't had a chance yet to look at it. I don't know
10 if Mr. Williams will confirm it's going to be just
11 essentially a written version of what he'll say or
12 whether it's to supplement it in some fashion. If it
13 is, then perhaps we should defer it until we've had a
14 look at it.

16:32

15 MR. WILLIAMS: It's just -- Mr. Chairman, it's
16 Mr. Williams. It's basically verbatim of what we will
17 say.

18 THE CHAIR: Okay. With that caveat, let's
19 enter it then. Thank you. Yeah.

20 **EXHIBIT 415 - FINAL ARGUMENT OF CALALTA**
21 **WATERWORKS AND CALAWAY PARK**

16:33

22 THE CHAIR: Okay, Mr. Williams, if you're
23 ready to go, please proceed.

24 MR. WILLIAMS: I'm ready to go. Okay.

25 Good afternoon to Mr. Chairman, the Board, and to

1 all hearing participants. The overview that I will
2 present today of our closing comments will be in the
3 fashion of introduction, our three objections, and then
4 a conclusion.

5 Starting with the introduction. Calalta
6 Amusements Ltd., Calaway Park has been in operation for
7 40 years. We are proud to be one of Alberta's top
8 tourism destinations, employing 650 seasonal and
9 40 permanent year-round jobs. We have worked hard to
10 achieve what we have without any provincial, municipal, 16:33
11 or federal capital funding. We did receive a small
12 grant for our campground development in 1990.

13 Calalta Waterworks Ltd. has operated and provided
14 safe drinking, potable water to the Springbank
15 community; the Springbank elementary, middle, high
16 school; Edge School; Springbank Park for all seasons;
17 Springbank Heritage Club; Commercial Court, which is
18 approximately 18 businesses; and soon to be
19 developments of Bingham Crossing, Pradera Springs, and
20 River Edge, as well as Calaway Park for the last 16:34
21 40 years.

22 In 1992, the addition of five intake wells; in
23 2014, a half million gallon aboveground water
24 reservoir, and in 2015, a \$6 million investment into an
25 ultra membrane water treatment plant; and in 2020, the

1 franchise agreement. We have proven our commitment and
2 responsibility to Alberta Environment, the Springbank
3 community, and Rocky View County.

4 Safety is a priority for Calaway Park and
5 Calalta Waterworks. We are held accountable by a
6 number of regulatory standards and believe that Alberta
7 Transportation, Alberta Environment, and Stantec should
8 be held accountable to these same standards.

9 As in our presentation in Topic area 1,
10 Exhibit Number 372, we have three objections that the
11 NRCB has given us standing on, which are. And I will
12 proceed to share that information now.

16:35

13 Objection 1: air quality, ambient air,
14 atmospheric environment. As shared in our evidence, we
15 are sensitive to the dust and the ambient air quality.
16 The concern in our evidence, Exhibit 372, Slide 3, is
17 that SR1 will take three summer seasons to construct.
18 Calaway will potentially experience consequences and
19 negative impacts of construction dust and/or ambient
20 air to our guest experience, team members, rising
21 equipment, PLCs, and the sensitivity extends beyond the
22 construction of the dam for the foreseeable future and
23 years in the future.

16:36

24 A great question was asked on April 1,
25 Exhibit Number 406, by Ms. Vance in regards to ambient

1 air and PM 2.5 and whether we would notice this amount.
2 It is even more evident on the answer that was
3 submitted that the monitoring stations are necessary.
4 During construction post air quality will be a minimum
5 standard for human safety PM 2.5, or 27 percent
6 micrograms fugitive dust. Pausing construction could
7 be a mediation action if required.

8 Westerly winds and chinook winds are what the
9 community experiences. This should be taken into
10 consideration. Alberta Transportation Matthew Hebert 16:37
11 has had conversations with Calalta on our concerns. As
12 this is higher level conversations, we are requesting
13 that the NRCB Board make the monitoring stations on the
14 Calalta property and that all reporting will be
15 available to Calalta on a weekly basis during our in
16 season and monthly offseason to be a condition of
17 approval and that mediating actions to be determined
18 and approved by both parties prior to construction.

19 In Alberta Transportation's closing argument,
20 Exhibit Number 409, page 80.286, agrees to the 16:37
21 monitoring station and to the results being shared with
22 Calalta. Further to this, Alberta Transportation
23 cites: (as read)

24 "If data from the station indicate
25 exceedances of applicable air quality

1 objectives, Alberta Transportation will
2 undertake appropriate mitigation."

3 They go on to say that Calalta's request has been
4 adequately addressed.

5 We appreciate Alberta Transportation's mediation
6 implementations. We do, however, disagree that our
7 requests have been adequately addressed. As an
8 undertaking provided by Alberta Transportation on our
9 request of insurance, in the event of Calaway, Calalta
10 Waterworks would be forced to close, Alberta
11 Transportation is not contemplating the insurance
12 coverage as we requested. Our insurer will not provide
13 coverage for the events that are not related to property
14 peril. Calalta is requesting that the Board add to the
15 condition of approval compensation for any business
16 interruption caused by the SR1 project.

16:38

17 Aside from this, it was brought to our attention
18 that information that we provided, which is not an
19 undertaking, regarding the Springbank Airport states
20 that the Springbank Airport is the second busiest
21 airport in Canada, and one states it is the seventh
22 busiest based on touchdowns and takeoffs, not on
23 passenger traffic. And this is information that was
24 requested that we submit.

16:39

25 Objection Number 2: Surface water sediment back

1 into the Elbow River. In One City One Water document,
2 Exhibit Number 345, that The City of Calgary submitted
3 stated water security is essential. And we agree.

4 Separate from the Calalta operation there are
5 approximately 2100 school children to consider, plus
6 20 businesses, residences, community, and senior
7 centres. Calalta submitted evidence,
8 Exhibit Number 372, Slide 4, with concerns raised in the
9 NRCB supplement information report, Exhibit Number 84,
10 page 91, indicating that a sediment dump could have
11 perils on the Calalta water intake, water treatment
12 plant filtration system.

16:40

13 Sensitivity of the diversion barrier causing
14 downstream's sweepers piling up causing diversion of the
15 river of the natural -- of the river's natural course.
16 Who will monitor this? What is the procedure?

17 The current solution being discussed with Alberta
18 Transportation is that in the event of a flood, where
19 SR1 is used, it is understood that an agreed third party
20 will assess damages caused to the Calalta water intake
21 well system and our water treatment plant filtration
22 system. The third party will work with Calalta and
23 Alberta Transportation to ensure and resolve
24 compensation required for any damages. Nowhere in
25 Alberta Transportation's closing argument,

16:40

1 Exhibit Number 409, do they agree to this third-party
2 condition to assess damage, as we have previously
3 discussed.

4 As stated, Alberta Transportation this morning,
5 Exhibit Number 409, page 63.223, yes, our intake wells
6 are set back from the Elbow River and we did not
7 experience damage as a result of the 2013 flood. But,
8 despite this, this does not discount the possibility of
9 a future flood event causing significant damage, and
10 release of water from the usage of SR1 would be
11 significantly different than consistent water flow due
12 to the risks of sediment buildup.

16:41

13 We are requesting the NRCB put in place a condition
14 of approval that Alberta Transportation determines the
15 detail of mediation prior to construction that both
16 parties are in agreement.

17 Objection Number 3: franchise agreement. I will
18 address many of Mr. Kruhlak's cross questions. I cannot
19 assume, yet only use my intuition to the intent of his
20 cross questions.

16:42

21 Mr. Kruhlak brought up Calalta's 10-inch waterline
22 along Range Road 33. The lines shown did not show the
23 lines into Commercial Court, 18 businesses, and some
24 residential developments that are tied onto the primary
25 line and secondary line. Exhibit Number 362, page 65.

1 Future waterlines that are built are development
2 driven, as identified in the evidence Mr. Kruhlak
3 submitted, being our franchise agreement,
4 Exhibit Number 362. Mr. Kruhlak identified the aspect
5 of water licence availability. Currently the water
6 plant has seven water licences, and Calalta owns five of
7 them. There is an additional licence in the area, that
8 we stated, for water and land, as we shared, which is
9 well documented. Exhibit 362, page 89.

10 We do not need to own the licence. In essence,
11 water licence capacity for potable water is available
12 for future growth.

16:43

13 The County recognized the utility and the
14 infrastructure that exists. They have included it in
15 both the north and south ASP plans as being one of the
16 regional solutions. In these documents provided are
17 exclusive franchise area, Exhibit Number 362. The same
18 as the evidence we provided on February 25th,
19 Exhibit Number 221, is there.

20 For the Board's information, the franchise
21 agreement document is in excess of a hundred pages. I
22 believe it's 104 to be exact, but I could be slightly
23 incorrect. Mr. Kruhlak has brought up the date of the
24 franchise agreement of February 25th, 2020, first
25 reading. As with this process being seven years to

16:43

1 date, the deliberation of the franchise agreement
2 started in the fall of 2009, when Rocky View County
3 considered the concept of the aqueduct for the county.
4 The franchise agreement is, and was, a public process,
5 no different than this one that we're currently
6 experiencing, which input was ascertained by the AUC and
7 the Rocky View County. Exhibit Number 362, page 6.

8 The evidence of this map we shared in our
9 Objection 3, and several maps of evidence of other
10 participants in this process, Exhibit Numbers 372,
11 Slide 5, clearly shows that the proposed dam is adjacent
12 to a major thoroughway: the TransCanada Highway,
13 Highway 8, Highway 22, and Springbank Road. The exact
14 location is a premier opportunity for future
15 development, being residential or business commercial.

16 And one other point I would say is that that
17 intersection or interchange of 22 and TransCanada is a
18 future of cluster for many potential businesses in the
19 area.

20 The Board must consider why this area was included
21 in our exclusive franchise area. The answer is for its
22 potential opportunity of future development and to
23 provide the utility service for the future.

24 Mr. Kruhlak brought up evidence that I was
25 referring to the Bow River TransAlta agreement; and,

16:44

16:45

1 yes, he was correct in this reference. In this
2 reference it states: (as read)

3 "Compensation paid to TransAlta is
4 intended to offset the end estimated
5 commercial loss."

6 Exhibit Number 363. This is the same as the lost
7 sterilized land for SR1 for Calalta Waterworks Ltd.

8 We would applaud Mr. Frigo and The City of Calgary
9 on the One City One Water document, Exhibit Number 345.
10 It shares what in our mind is the importance of water
11 security for both flood, drought, and water supply
12 sustainability.

13 As in our evidence, Exhibit Number 372, Slide 6,
14 Rocky View County has been compensated \$10 million;
15 Tsuut'ina Nation has been compensated for \$32 million.
16 Not in the evidence, but in Mr. Secord's cross, the
17 Ermineskin First Nations, amount not disclosed; Kainai
18 Blood Tribe amount not disclosed; and the landowners on
19 expropriation of land, the total is unknown for us.

20 We have a formal legal franchise agreement,
21 Exhibit Number 362, in which we agree to ensure and
22 secure safe potable drinking water. This agreement
23 identifies an exclusive boundary area for the potential
24 future development of the utility. Exhibit Number 362,
25 page 65.

16:46

16:47

1 We entered into this agreement, with further
2 regulatory oversight on us, for the opportunity to tie
3 on future development and growth. As stated in our
4 presentation, 62 percent of the 3600 acres of our right
5 has been sterilized. If a legal binding agreement with
6 AUC and Rocky View County is recognized for them, then
7 this bylaw enforced agreement needs to be recognized for
8 us. Alberta Transportation compensated and recognized
9 other agreements.

10 In Alberta Transportation's closing arguments,
11 Exhibit Number 408, page 63 and 4 and points 224/225,
12 they state that the given -- the uncertainty and the
13 lack of evidence supporting this claim, Alberta
14 Transportation submits it would not be appropriate for
15 the Panel to impose on approval conditions with respect
16 to Calalta's water franchise.

17 We appreciate the open conversation with Alberta
18 Transportation. However, we feel they have discounted
19 this franchise agreement. Alberta Transportation sees
20 this as a commercial business. This is partially
21 correct. This is a utility that serves the community at
22 large and, like The City of Calgary, water
23 sustainability is a priority. We disagree. Our
24 beneficial right has been taken away.

25 We are asking Alberta Transportation to recognize

16:48

16:48

1 and compensate for the lands that are sterilized for the
2 life of this agreement and our beneficial right. We are
3 requesting the Board make this an objection, a condition
4 of approval.

5 Conclusion. Our concern about safety is the
6 unintentional incident, which no one can know at this
7 time. It is the unintentional incident that has
8 consequences. As this project serves the masses, we are
9 protecting our livelihood that we have built over the
10 last 40 years. This protection of 660 summer seasonal
11 jobs, 40 permanent positions, and safe potable drinking
12 water for the local community.

13 Flood mitigation for the city of Calgary is
14 critical. We wholly understand this as we witnessed the
15 2013 flood. Calalta Amusements Ltd., Calaway Park,
16 Calalta Waterworks, and myself want to thank the
17 following: All the participants that have been involved
18 in this hearing: Karin Hunter, our community president
19 for all that she does for the community; the NRCB Board
20 members; you, Mr. Chairman; specifically Laura Friend
21 and Bill Kennedy for guidance and helping us understand
22 the process, and our participation in this process; to
23 the court reporters, staff, and team members that
24 assisted the NRCB in this position; to Elders Holloway,
25 Wesley, and Snow for their spiritual prayers.

16:49

16:50

1 Thank you once again for the standing of our
2 objections and for the opportunity for us to present
3 them. I/we have learnt a lot.

4 We ask the Board to consider the evidence and
5 presentation in regards to our three objections. We ask
6 the three conditions of approval for our three
7 objections to be a condition of approval for this
8 project.

9 We look forward to the final report from the NRCB
10 on this matter, and thank you very much.

16:51

11 And that would conclude, Mr. Chairman, my closing
12 arguments.

13 THE CHAIR: Thank you, Mr. Williams, and
14 thank you for your participation throughout these
15 proceedings. It's very much appreciated, and you've
16 done a nice job of it.

17 MR. WILLIAMS: Thank you.

18 THE CHAIR: Mr. Wagner, are you online?

19 MR. WAGNER: I am.

20 THE CHAIR: Okay. And if you're in the same
21 location, we can give it a try in terms of video. I
22 know that often it locks, but once your audio is on, it
23 has seemed to work flawlessly throughout the
24 proceeding, so...

16:51

25 MR. WAGNER: Well, hopefully -- I exchanged a

1 few settings, so maybe it will work a bit better, but
2 it is still in the country.

3 Good afternoon, Panel, participants and observers.

4 As a successful business owner, my best decisions
5 have always been bottom up. That is, gather the
6 information on alternatives and being informed prior to
7 making a final decision. I always ask for alternatives
8 as well. I never wanted to be left with a single
9 alternative and an answer of yes or no.

10 As noted in the NRCB hearing over the past two
11 weeks, the Bow River alternatives being examined appear
12 to be this improved process. However, SR1 has all the
13 makings of a top-down process.

16:52

14 SR1 was chosen without prior public study, and now
15 an army of 18 employees and consultants are tasked with
16 justifying that decision. I don't envy the AT group.
17 They have a job to do, and obviously have been given
18 marching orders. If only they would have been involved
19 in the beginning to evaluate alternatives.

20 The SR1 process has been totally upside down, and
21 the results are showing. Costs have escalated, budgets
22 are out of date, money is being borrowed from other
23 areas, and corners are being cut on the ultimate
24 solution. The scramble is on.

16:53

25 The budget sits at 432 million, which is over

1 double the initial estimate, and there have been many
2 areas that were discussed in the past two weeks that
3 would grow this cost greatly. By AT's own submission,
4 many budget items have not been updated.

5 Some payments to stakeholders have been published
6 up until recently, and now they have been increasingly
7 NDA. It is reasonable to total at least a hundred
8 million and growing. And this number will escalate as
9 many stakeholder payments have yet to be fully
10 negotiated.

16:54

11 As for cutting corners, I will hit my two biggest
12 on my thought process.

13 I was unable to find a single earthen dam without
14 riprap.

15 And why 600 cubic metres per second? Why not 800?
16 Why not 1,000? Why not 1500? Why not 2,000? I heard
17 2800 cubic metres per second as a potential thousand
18 year. All would have been available if MC1 would have
19 been chosen. Most engineers I know prefer to
20 overdesign rather than meet minimum requirements. I
21 can only assume that engineers were not present from
22 the initial specification. Road costs, pipeline costs,
23 ongoing operating costs, updated budget all seem to
24 have costs shortcomings.

16:55

25 In 2018, the Auditor General of Canada sent the

1 federal government back to the drawing board for
2 misrepresenting the complete costs of the new fighter
3 jets. SR1 looks no different to me.

4 Landowners were shocked by the SR1 announcement in
5 the Calgary Herald, and AT took nearly six months after
6 the news release to accept an initial meeting upon our
7 request.

8 Consultants with AT and landowners have been very
9 much one-way: AT telling and landowner opinions not
10 required.

16:56

11 I'm personally struggling with an understanding of
12 how AT is going to keep water, sewer, and swelling clay
13 from destroying my house.

14 After seven years we have no engineering
15 solutions. In fact, we have no engineering assistance
16 at all, and are left with a whole lot of questions.

17 Furthermore, the first archeological dig, which
18 was in a very odd location, was not well executed, and
19 I am left with questions of whether the GoA is capable
20 of caring.

16:56

21 We have been left with the comment that has been
22 burned into my brain that we can have "a newer, smaller
23 house." This does not seem like a party that is
24 interested in landowner input.

25 Safety. It appears as though the GoA is willing

1 to put my family and any visitor to our house or casual
2 weekend walker within the SR1 footprint in the
3 crosshairs of a rifle. Further complicating the issue
4 is the fact that driving in and out on our laneway is
5 within the rifle hunting zone.

6 No less concerning will be the high possibility of
7 having a deer or an elk being killed on our lawn;
8 hopefully, by an arrow because a rifle would be
9 technically illegal.

10 Mr. Kruhlak, in this morning's presentation by AT,
11 stated that there will be no unfettered hunting.
12 However, the AT plan is the exact opposite.

16:57

13 My only request in the hearings to make SR1 a no
14 hunting zone was rejected by AT. Therefore, I contend
15 that AT's comments are inconsistent.

16 As a rural landowner -- as any rural landowner
17 knows, dealing with hunters is a challenging vocation,
18 and AT's response to date has been that local knowledge
19 is not required.

20 The distance from Calgary and the presence of elk
21 magnifies the SR1 location risk.

16:58

22 Without NRCB hunting clarification, SR1 will be a
23 safety risk for both public and residents, and the elk
24 and grizzly bear populations. Help.

25 We have two people at our location with

1 respiratory considerations, and given that we are
2 within metres of the waterline, confined sediment is
3 what we should expect. Air quality does not look good
4 for us.

5 While I agree that this may only happen on a
6 design flood at our location, it is an event that would
7 be real. It is not our choosing.

8 I must say I had quite a chuckle when it was
9 suggested at a recent CEAA forum that the frogs would
10 be rounded up. I was not sp amused when a frog pond
11 was chosen for the first archeological dig.

12 As for elk and grizzly bear, the GoA has, in my
13 humble opinion, thrown wildlife under the bus, as they
14 have not addressed the concerns about unfettered
15 hunting, these issues have been raised before and
16 continue to be ignored or dismissed by AT.

17 I have dealt with the federal government as a
18 business owner. I admit I have limited dealing with
19 the Alberta government.

20 Having said this, the NRCB submission would be
21 unique in all of my dealings, having only one solution
22 or sole sourcing was not accepted by any government
23 department I dealt with.

24 I have submitted a few recommendations, but here
25 are my top three, after listening over two weeks.

16:59

17:00

1 My first one: Send the project back to the
2 drawing board and compel AT to have MC1 as an
3 alternative in the second application.

4 As a condition of approval, compel the AT to
5 renegotiate hunting rights to make SR1 a no hunting
6 zone, or at the very least, a no rifle zone.

7 As a condition of approval, Number 3, compel AT to
8 deal with landowners, as they have stated in their very
9 own SR1 submission, with respect and consultation and
10 negotiate in good faith.

17:01

11 Finally, I would very much like to thank the
12 Panel, support staff, and Alberta Transportation for
13 indulging me.

14 This has been my first process that I have gone
15 through, and I've learned a lot, and I look forward to
16 potentially being involved in another one at some
17 point.

18 Take care and stay safe.

19 THE CHAIR: Well, thank you, Mr. Wagner. And
20 the Board does recognize that this is particularly
21 difficult for those folks that aren't represented by
22 legal counsel and for those folks that are new to the
23 process, to the hearing process, which you just
24 indicated.

17:02

25 So we appreciate your participation and we

1 understand that, you know, it can be a challenge for
2 those folks that aren't familiar.

3 So thank you once again and good for you for
4 stepping up.

5 MR. WAGNER: Thank you again, Mr. Chair.

6 MR. KENNEDY: Mr. Chair, Mr. Wagner did submit a
7 copy of his final argument. We should enter that.

8 THE CHAIR: Thank you. And that is what
9 number? And also --

10 MR. KENNEDY: 416. 17:02

11 THE CHAIR: 416. I'm not sure if anybody has
12 had a chance to review it. It was submitted while he
13 was talking, of course. Probably not.

14 Mr. Kruhlak, perhaps under the same caveat?

15 MR. KRUHLAK: We have no objection, sir. We've
16 had a look at it. Thank you.

17 THE CHAIR: Okay.

18 MR. WAGNER: Mr. Chair, it was basically a read
19 submission.

20 THE CHAIR: Okay, thank you. 17:03

21 So hearing none.

22 **EXHIBIT 416 - FINAL ARGUMENT OF MR. S.**

23 **WAGNER**

24 THE CHAIR: I would like to thank everyone for
25 today, and I do appreciate the fact that many of you

1 used up a long weekend working on these submissions,
2 the Panel recognizes that, and we do appreciate all the
3 work that's been put in to final argument over the
4 weekend largely, we expect.

5 And we also appreciate the fact that you were
6 respectful of the time. It was a long day, but we were
7 able to get all final arguments in today, which allows
8 us to complete the hearing tomorrow with Alberta
9 Transportation's reply.

10 And I'll have additional closing comments tomorrow
11 at the close of the hearing, so I won't go into those
12 now.

13 We can adjourn for the evening and get back
14 tomorrow morning, but I will have some closing remarks
15 tomorrow following Alberta Transportation's reply.

16 So, once again, thank you to everyone. It's much
17 appreciated.

18 Thank you, Ms. Gerbrandt. I know these final
19 argument days are probably a little tougher on
20 court reporters than on other days, so thank you very
21 much.

22 Thank you, Mr. Wiebe.

23 Are there any other matters that anybody wanted
24 dealt with before we open tomorrow?

25 Okay, hearing none, tomorrow morning we start at 9

17:03

17:04

1 with an 8:30 sign-in to Zoom.

2 So thank you once again and we'll see you tomorrow
3 morning.

4 MR. KRHLAK: Thank you, good night.

5 THE CHAIR: Good night.

6 (PROCEEDINGS ADJOURNED AT 5:04 P.M.)

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8 PROCEEDINGS ADJOURNED TO 8:30 A.M., APRIL 7, 2021

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1 Certificate of Transcript

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3 We, the undersigned, hereby certify that the foregoing
4 pages 2491 to 2809 are a complete and accurate transcript
5 of the proceedings taken down by us in shorthand and
6 transcribed from our shorthand notes to the best of our
7 skill and ability.

8 Dated at the City of Calgary, Province of Alberta, on
9 April 6, 2021.

10

11

12

"Lorelee Vespa"

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Lorelee Vespa, CSR(A) RPR CRR

14

Official Court Reporter

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"Donna Gerbrandt"

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Donna Gerbrandt, CSR(A)

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Official Court Reporter

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- I N D E X -

VOLUME 10EXHIBITS

EXHIBIT 407 - AT RESPONSES TO UNDERTAKINGS 34, 44, 2495
AND 46 THROUGH 59

EXHIBIT 408 - MARCH 29 TO APRIL 1 AT TRANSCRIPT 2495
CORRECTIONS

EXHIBIT 409 - FINAL ARGUMENT OF ALBERTA 2496
TRANSPORTATION

EXHIBIT 410 - FINAL ARGUMENT OF CRCAG AND FFC 2659

EXHIBIT 411 - TRANSCRIPT CORRECTIONS FROM CRCAG 2660
AND FFC

EXHIBIT 412 - FINAL ARGUMENT OF THE CITY OF 2660
CALGARY

1 EXHIBIT 413 - FINAL ARGUMENT OF THE STONEY NAKODA 2785
2 NATIONS

3

4 EXHIBIT 414 - FINAL ARGUMENT OF SCLG 2786

5

6 EXHIBIT 415 - FINAL ARGUMENT OF CALALTA WATERWORKS 2787
7 AND CALAWAY PARK

8

9 EXHIBIT 416 - FINAL ARGUMENT OF MR. S. WAGNER 2806

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NRCB 1701, Volume 10, April 6, 2021

\$	2598:19; 2627:25; 2629:15; 2646:17; 2659:1; 2676:13; 2713:16; 2715:8; 2720:15; 2757:3, 21; 2769:17; 2776:1 10-inch [1] - 2793:21 10-metre [1] - 2605:10 10-year [2] - 2515:10; 2719:20 10.5 [1] - 2713:16 100 [24] - 2515:1, 5; 2572:5; 2648:15, 23; 2649:4; 2651:12; 2652:9; 2665:18; 2683:18; 2687:12, 20, 25; 2698:14; 2708:1; 2713:13; 2714:12; 2721:25; 2722:10, 18; 2749:21; 2759:25; 2766:11; 2770:18 100,000 [2] - 2592:6; 2759:23 100-flood [1] - 2707:19 100-year [10] - 2556:23; 2558:13; 2572:4; 2619:13; 2651:1; 2707:13, 17, 21, 24; 2708:5 101 [3] - 2713:22; 2715:8, 24 104 [1] - 2794:22 10:45 [1] - 2499:4 11 [4] - 2569:6, 24; 2677:5 110 [2] - 2590:16; 2756:12 110,000 [1] - 2621:10 111 [1] - 2594:16 1132 [1] - 2745:11 11:05 [1] - 2609:19 12 [9] - 2524:24; 2569:6, 24; 2573:21; 2610:7; 2677:17; 2701:18; 2703:5 12.4 [1] - 2717:12 121 [1] - 2699:5 1240 [4] - 2554:16; 2687:11; 2707:9; 2712:25 1260 [1] - 2739:3 12:12 [1] - 2658:12 12:15 [1] - 2658:1 13 [7] - 2539:12; 2621:6; 2651:20; 2677:21; 2691:16; 2738:12; 2744:5 1300 [1] - 2551:15 133 [1] - 2700:2 136 [1] - 2621:2 138 [3] - 2581:17; 2714:6; 2717:19 14 [3] - 2621:11; 2678:6; 2736:6 14,500 [2] - 2511:3; 2621:1 140 [2] - 2581:17; 2713:13 1405 [1] - 2706:15 141 [1] - 2581:17 142 [1] - 2670:24 143 [1] - 2670:24 144 [1] - 2670:24 1450 [1] - 2589:11 149 [1] - 2581:18 15 [4] - 2623:5; 2678:14; 2740:16; 2741:8	15,000 [1] - 2639:8 150 [3] - 2499:2; 2582:24; 2780:20 1500 [1] - 2801:16 151 [1] - 2730:5 153 [1] - 2530:8 154 [1] - 2730:6 156 [1] - 2686:12 157 [2] - 2581:19; 2582:7 158 [1] - 2701:10 159 [10] - 2713:12; 2714:5; 2717:8, 12; 2718:9, 12, 15; 2719:1; 2723:2 16 [7] - 2621:5; 2678:21; 2706:11; 2708:3; 2720:7; 2757:23; 2761:11 160 [7] - 2548:23; 2551:14; 2553:3, 5-6; 2554:2; 2718:9 163 [1] - 2730:14 165 [1] - 2619:14 168 [1] - 2730:23 17 [4] - 2630:14; 2722:8; 2741:10, 21 17.6 [1] - 2511:25 170 [4] - 2554:6; 2558:24; 2699:6; 2722:21 1701 [1] - 2493:10 172 [1] - 2739:18 1774 [1] - 2715:6 1779 [1] - 2715:6 18 [5] - 2523:11; 2599:13; 2788:18; 2793:23; 2800:15 180 [1] - 2582:23 1800s [2] - 2532:25; 2732:10 187 [1] - 2693:6 1877 [1] - 2661:5 19 [2] - 2705:5; 2736:16 1900s [1] - 2617:13 1925 [1] - 2699:5 193 [1] - 2627:7 1932 [1] - 2577:9 195 [2] - 2556:9; 2557:22 196 [1] - 2557:25 1976 [1] - 2688:21 1980s [1] - 2590:4 199 [2] - 2739:16; 2744:25 1990 [1] - 2788:12 1992 [1] - 2788:22 1998 [2] - 2710:2; 2726:24 1:00 [4] - 2658:3, 7, 11, 14 1:01 [1] - 2659:5 1st [1] - 2508:25	2 2 [13] - 2581:18, 21; 2594:21; 2645:2; 2647:3; 2672:7; 2727:2; 2728:18; 2734:6; 2740:9, 14; 2756:25; 2791:25 2,000 [2] - 2589:10; 2801:16 2.1 [2] - 2780:3, 5 2.1.4 [1] - 2738:13 2.5 [8] - 2601:10, 14, 17; 2688:17; 2766:9, 11; 2790:1, 5	2.8 [1] - 2757:2 20 [7] - 2582:14; 2643:24; 2644:1; 2646:17; 2719:16, 19; 2792:6 20-year [1] - 2719:7 200 [14] - 2558:3; 2564:10; 2572:6; 2573:4; 2648:2, 24; 2651:2; 2683:18; 2687:19; 2712:4; 2749:23; 2750:4, 10, 16 200-return [1] - 2700:6 200-year [13] - 2564:12; 2573:2, 22; 2618:22; 2619:5; 2640:3; 2652:19; 2682:10; 2683:20; 2687:10; 2706:6; 2728:6; 2766:11 2003 [2] - 2569:8, 16 2005 [4] - 2634:24; 2650:6; 2654:7; 2707:8 2008 [2] - 2691:14; 2739:9 2008-01 [4] - 2691:15; 2694:7; 2695:2; 2738:12 2009 [1] - 2795:2 201 [1] - 2558:7 2012 [2] - 2509:3; 2702:10 2013 [64] - 2510:4, 8; 2511:1, 8, 13; 2512:2; 2559:5; 2572:5, 8, 22; 2573:3, 5, 9; 2579:22; 2613:22; 2614:14; 2616:25; 2617:5, 16, 23; 2618:21; 2620:1, 20; 2621:13, 19, 22, 25; 2622:23; 2623:4, 21, 24; 2625:5; 2626:9, 18; 2628:11; 2630:2, 4, 21; 2633:3; 2642:2; 2644:24; 2646:6, 15; 2647:19; 2650:14; 2662:5; 2664:24; 2689:9; 2699:7; 2705:25; 2706:13; 2709:1; 2712:12; 2721:20; 2737:25; 2746:9, 21; 2747:18; 2750:10; 2751:15; 2776:13; 2793:7; 2798:15 2013-size [2] - 2640:8; 2641:6 2013-sized [4] - 2512:22; 2618:25; 2619:11; 2647:23 2013-type [1] - 2516:14 2014 [9] - 2522:19; 2523:11; 2530:11; 2647:5; 2698:15, 18; 2713:6; 2728:16; 2788:23 2015 [9] - 2506:24; 2523:22; 2703:10, 15; 2713:7; 2714:11; 2727:9; 2737:4; 2788:24 2016 [6] - 2524:7; 2538:10; 2540:1; 2670:6; 2717:7 2017 [11] - 2507:9; 2517:11; 2524:12, 15;	2623:25; 2704:13; 2705:3; 2714:10; 2727:10; 2728:12; 2729:15 2018 [14] - 2507:10; 2524:16; 2535:12; 2569:17, 21; 2611:21; 2703:23; 2704:8, 22; 2705:10; 2729:2; 2739:10; 2742:21; 2801:25 2019 [9] - 2507:18; 2509:6; 2524:21; 2525:11; 2534:8; 2612:1; 2721:23, 25; 2728:12 2020 [12] - 2508:7-9; 2517:12; 2525:12; 2543:11; 2582:8, 20; 2738:4; 2788:25; 2794:24 2021 [10] - 2492:5; 2508:25; 2531:8; 2537:10; 2540:5; 2541:15; 2659:2; 2684:18; 2708:13; 2808:8 203 [2] - 2556:10; 2558:7 2050 [1] - 2573:21 209 [1] - 2713:6 21 [1] - 2568:7 2100 [1] - 2792:5 219 [1] - 2716:8 22 [11] - 2545:15; 2548:10; 2568:8; 2605:6, 11; 2676:11; 2686:5; 2736:6; 2753:17; 2795:13, 17 221 [1] - 2794:19 224/225 [1] - 2797:11 23 [1] - 2568:9 231 [1] - 2719:1 237 [1] - 2620:22 24 [6] - 2515:16; 2560:23; 2561:1; 2568:11; 2622:25; 2717:10 24-metre [1] - 2605:10 25 [10] - 2551:10; 2573:8, 23; 2619:6; 2640:3, 23; 2651:3; 2654:25; 2687:16; 2719:7 250 [3] - 2685:11; 2713:19; 2782:10 252 [2] - 2703:10; 2705:2 254 [2] - 2713:14; 2737:3 255 [2] - 2705:11; 2729:2 256 [1] - 2560:18 25th [3] - 2517:12; 2794:18, 24 26 [2] - 2524:8; 2621:9 263 [1] - 2713:7 265 [1] - 2738:4 269 [1] - 2766:25 26th [1] - 2701:11 27 [2] - 2552:18; 2790:5 270 [1] - 2767:13 271 [1] - 2768:5 273 [1] - 2769:9 274 [1] - 2770:6 275 [1] - 2770:21 276 [1] - 2771:2
0	'18 [1] - 2524:12 'first [1] - 2692:6				
1	0 [1] - 2687:14				
1	1 [88] - 2495:20; 2515:10; 2554:22; 2556:22; 2558:12; 2560:5; 2564:12; 2572:4-6; 2573:2, 4; 2581:16; 2594:18; 2605:24; 2611:16; 2618:8, 22; 2619:5, 13; 2625:21; 2635:12; 2636:2; 2640:2; 2644:1; 2648:2, 6-7, 15, 19, 23-24; 2651:1; 2652:9, 19; 2671:19; 2672:18; 2673:9, 17; 2682:10; 2683:19; 2685:7; 2686:2; 2687:10, 18-19; 2688:4, 7-8; 2700:6; 2701:9; 2706:6; 2707:5, 13, 17, 19, 21, 24; 2708:5; 2712:4, 16; 2713:3; 2718:13; 2719:20; 2722:3; 2723:23; 2726:18; 2728:5, 13; 2749:20, 23; 2750:2, 4, 10, 16; 2751:11; 2756:23, 25; 2759:25; 2774:5; 2789:9, 13, 24 1's [1] - 2706:7 1,000 [6] - 2592:12; 2625:7; 2688:4, 7; 2713:3; 2801:16 1,240 [1] - 2619:12 1.2 [1] - 2648:23 1.28 [2] - 2722:1, 5 1.3 [2] - 2647:12; 2726:18 1.5 [4] - 2512:1, 5, 18; 2516:15 1.9 [1] - 2648:24 10 [18] - 2492:4; 2499:4; 2552:9; 2573:9; 2586:1;				
2					

<p>277 [1] - 2771:6 279 [1] - 2771:25 28 [1] - 2654:2 280 [1] - 2772:7 2800 [1] - 2801:17 281 [1] - 2773:3 282 [1] - 2773:19 284 [1] - 2773:23 285 [1] - 2774:9 288 [1] - 2542:11 29 [1] - 2495:20 29-year [1] - 2648:7 29th [2] - 2757:18; 2758:3</p>	<p>357 [1] - 2717:10 358 [1] - 2729:12 36 [2] - 2719:21; 2742:13 36-page [1] - 2745:1 360 [2] - 2562:16; 2686:6 3600 [3] - 2714:9, 14; 2797:4 361 [2] - 2686:6; 2775:2 362 [7] - 2793:25; 2794:4, 9, 17; 2795:7; 2796:21, 24 363 [1] - 2796:6 365 [1] - 2736:17 37 [1] - 2726:25 372 [5] - 2789:10, 16; 2792:8; 2795:10; 2796:13 373 [2] - 2709:19; 2745:13 378 [1] - 2701:14 379 [1] - 2706:15 38 [2] - 2513:8; 2701:18 385 [2] - 2713:20; 2715:5 39,837 [1] - 2621:7 392 [1] - 2501:8 393 [1] - 2628:23 398 [1] - 2775:10 399 [1] - 2745:10 3rd [3] - 2523:22; 2531:8; 2537:10</p>	<p>42.2 [1] - 2722:7 426 [2] - 2592:2; 2759:22 43 [1] - 2641:1 43,000 [1] - 2629:16 432 [2] - 2713:8; 2800:25 44 [2] - 2494:23; 2495:6 45-minute [1] - 2493:21 46 [2] - 2494:24; 2495:6 47 [1] - 2581:15 480 [4] - 2551:11; 2707:10; 2738:9; 2739:2 49 [1] - 2719:1 4:00 [1] - 2680:17 4:10 [1] - 2776:7 4:15 [1] - 2680:20 4:30 [1] - 2785:5 4th [1] - 2495:9</p>	<p>62 [1] - 2797:4 63 [1] - 2797:11 63,223 [1] - 2793:5 640 [4] - 2554:19, 21; 2619:12; 2707:11 65 [2] - 2793:25; 2796:25 65,000 [1] - 2719:17 650 [1] - 2788:8 66 [1] - 2721:19 660 [1] - 2798:10 67 [1] - 2769:19 69 [1] - 2582:17</p>	A
3			7	
<p>3 [22] - 2494:24; 2547:17; 2560:4; 2569:4; 2576:8; 2581:20; 2594:22; 2599:12; 2647:4; 2649:3; 2672:15; 2693:6; 2713:24; 2736:25; 2757:3; 2763:23; 2769:14, 18; 2789:16; 2793:17; 2795:9; 2805:7 3(b) [1] - 2581:15 3,000 [2] - 2621:4; 2639:8 3.2 [1] - 2727:1 3.3 [1] - 2552:3 3.7 [1] - 2780:18 3.8 [2] - 2713:20; 2722:11 30 [6] - 2552:2, 5; 2635:23; 2720:25; 2746:7; 2755:16 30,000 [1] - 2718:16 30-person [1] - 2720:23 300 [1] - 2707:8 30th [1] - 2755:22 31 [1] - 2746:7 318 [1] - 2624:8 31st [2] - 2517:11; 2755:23 32 [2] - 2713:17; 2722:2 320 [1] - 2530:8 323 [1] - 2722:10 324 [2] - 2500:17; 2536:8 325 [3] - 2500:13; 2697:20; 2703:14 327 [8] - 2500:15; 2570:10; 2582:17; 2684:21; 2707:6; 2716:15; 2764:22; 2769:20 33 [1] - 2793:22 339 [2] - 2615:8; 2743:1 34 [2] - 2494:23; 2495:6 34,000 [2] - 2621:8; 2639:8 340 [2] - 2713:12; 2722:9 345 [3] - 2682:15; 2792:2; 2796:9 347 [1] - 2752:3 35 [2] - 2531:18; 2537:1 350 [2] - 2686:12; 2708:20 350-year [1] - 2648:19 356 [1] - 2730:3</p>			<p>7 [10] - 2507:9; 2529:24; 2530:10, 17; 2661:5; 2675:15; 2718:6; 2721:1; 2756:23; 2808:8 7,000 [1] - 2630:6 7.1 [1] - 2518:23 70 [1] - 2552:10 70-year [1] - 2655:18 70.9 [1] - 2697:24 700,000 [2] - 2624:15; 2715:24 74 [1] - 2509:15 760 [2] - 2553:7, 10 77 [1] - 2651:11 77.8 [1] - 2552:8 780 [1] - 2707:11</p>	
	4		8	
	<p>4 [12] - 2547:18; 2576:10; 2587:4; 2673:4; 2681:2, 13; 2733:21; 2752:2; 2764:11; 2775:14; 2792:8; 2797:11 4,000 [3] - 2511:4; 2621:4; 2630:5 4-14 [1] - 2590:16 4.3 [2] - 2757:4; 2758:5 4.4 [1] - 2755:20 4.7 [2] - 2624:1 4.875 [1] - 2623:21 40 [15] - 2523:5; 2552:20; 2580:10; 2643:22; 2644:4; 2652:2, 18; 2713:19; 2714:12; 2727:20; 2788:7, 9, 21; 2798:10 40,000 [1] - 2714:10 400 [1] - 2622:24 406 [3] - 2722:20; 2774:21; 2789:25 407 [2] - 2495:4 408 [3] - 2495:19; 2797:11 409 [6] - 2496:10, 13; 2790:20; 2793:1, 5 41 [1] - 2722:3 410 [3] - 2659:14, 16 411 [3] - 2659:24; 2660:7 412 [2] - 2660:10, 13 413 [2] - 2785:8, 10 414 [3] - 2785:13; 2786:22 415 [3] - 2787:1, 6, 20 416 [3] - 2806:10, 22 42 [1] - 2713:14</p>		<p>8 [4] - 2556:12; 2676:1; 2703:14; 2795:13 8.5 [3] - 2573:16; 2697:12, 18 8.83 [1] - 2699:12 8.9 [1] - 2710:6 80 [1] - 2689:3 80,286 [1] - 2790:20 800 [1] - 2801:15 800,000 [1] - 2713:21 830,000 [1] - 2716:1 84 [2] - 2765:2; 2792:9 88,000 [1] - 2511:2 883 [1] - 2648:16 89 [1] - 2794:9 8:00 [1] - 2493:8 8:15 [2] - 2494:18; 2499:5 8:30 [2] - 2808:1, 8</p>	
		5	9	
		<p>5 [17] - 2501:8; 2511:2; 2545:6; 2547:19; 2556:5, 8; 2601:7; 2625:21; 2643:21; 2673:12; 2675:3; 2696:22; 2756:13; 2764:13; 2774:23; 2781:8; 2795:11 5-to-1 [1] - 2649:4 5.1 [2] - 2623:23; 2764:15 5.3 [1] - 2776:10 50 [6] - 2621:5; 2655:18; 2683:17, 20; 2719:21; 2742:13 50,000 [1] - 2697:13 50-year [3] - 2554:22; 2687:18; 2707:6 500 [1] - 2750:2 500-year [5] - 2648:6; 2683:20; 2688:5, 8; 2728:5 509 [1] - 2717:11 510 [1] - 2717:11 527 [1] - 2723:1 537 [1] - 2688:23 54 [1] - 2646:24 56 [1] - 2513:8 58 [1] - 2701:25 580 [2] - 2722:22 59 [2] - 2494:24; 2495:6 5:04 [1] - 2808:6 5:30 [1] - 2493:22 5th [1] - 2506:24</p>	<p>9 [4] - 2676:9; 2716:5; 2722:6; 2807:25 90 [1] - 2680:25 90.4 [1] - 2702:15 91 [2] - 2702:20; 2792:10 93 [1] - 2581:16 93,000 [1] - 2751:25 935 [1] - 2624:6 94 [1] - 2764:22 96 [3] - 2701:25; 2702:3, 7 9601-1 [1] - 2691:22 98 [1] - 2702:17 990 [1] - 2707:14 991 [1] - 2736:16 9:45 [1] - 2604:8</p>	
		6		<p>A.M [2] - 2493:8; 2808:8 ability [4] - 2604:1; 2623:3; 2685:24; 2686:11 able [26] - 2512:15; 2513:25; 2531:23; 2552:19; 2560:10; 2562:23; 2563:3; 2591:15; 2594:4, 10; 2604:4; 2612:23; 2679:25; 2693:1, 23; 2694:12; 2733:21; 2734:11; 2743:25; 2745:3; 2747:17; 2757:24; 2761:10, 19; 2807:7 Aboriginal [7] - 2529:20; 2661:9; 2666:2; 2667:25; 2668:13; 2669:11, 23 aboveground [1] - 2788:23 absence [2] - 2590:12 absent [1] - 2761:22 absolutely [2] - 2598:10; 2760:11 absurdity [1] - 2755:15 abundantly [1] - 2760:20 academic [1] - 2589:21 Academy [1] - 2765:21 accept [6] - 2685:3; 2736:18; 2745:13; 2774:22; 2778:4; 2802:6 acceptable [7] - 2516:1; 2604:9; 2685:4; 2734:1; 2765:25; 2768:22; 2772:12 acceptance [1] - 2507:24 accepted [7] - 2566:3; 2568:14; 2595:23; 2606:13; 2708:2; 2732:23; 2804:22 accepts [3] - 2522:3; 2555:17; 2740:23 access [17] - 2504:22; 2511:6; 2533:4; 2538:11, 18; 2546:13; 2635:15; 2636:5; 2655:3; 2668:8; 2672:22; 2676:16, 23; 2677:4; 2713:25; 2714:4; 2740:6 accessible [1] - 2535:1 accidents [1] - 2678:2 accommodate [3] - 2529:12; 2640:16; 2667:2 accommodated [1] - 2667:10 accommodation [5] - 2530:4; 2667:16; 2669:22; 2672:1; 2714:22 accommodations</p>

<p>[1] - 2716:25 accompanying [1] - 2515:23 accordance [7] - 2530:25; 2542:6; 2675:13; 2780:4, 7, 10 according [2] - 2558:17; 2780:24 accordingly [4] - 2542:24; 2570:3; 2579:24; 2695:4 account [13] - 2500:24; 2508:20; 2563:4; 2566:16; 2571:20; 2589:17; 2617:14; 2639:20; 2649:10; 2664:9, 24; 2665:6, 9 accountable [2] - 2789:5, 8 accounted [1] - 2767:3 accounting [2] - 2670:14; 2721:4 accounts [4] - 2617:20; 2627:2; 2628:8, 25 accrue [1] - 2712:8 accumulated [1] - 2758:14 accuracy [2] - 2526:8; 2589:19 accurate [4] - 2526:10; 2576:23; 2589:4; 2737:18 accurately [2] - 2569:25; 2761:19 achieve [7] - 2552:11; 2573:9; 2606:13; 2640:17; 2774:13, 15; 2788:10 achieved [2] - 2641:15; 2777:14 achieving [1] - 2520:14 acknowledge [3] - 2572:24; 2597:13; 2607:10 acknowledged [23] - 2527:1, 5; 2542:19; 2555:14; 2561:10, 25; 2564:23; 2568:17; 2579:20; 2580:9; 2585:24; 2586:7; 2588:8; 2599:20; 2603:19; 2605:23; 2697:5; 2720:15; 2764:16; 2766:10; 2781:6 acknowledgement [1] - 2759:2 acknowledges [7] - 2502:22; 2558:22; 2583:21; 2669:14; 2687:18; 2706:5; 2778:4 acknowledging [1] - 2780:21 ACO [12] - 2529:21, 24; 2530:11, 13, 17, 20, 22; 2531:8, 11, 14; 2537:10 ACO's [1] - 2531:1 acquire [2] - 2517:21; 2522:15 acquired [2] - 2546:22; 2640:22 acquires [1] - 2533:7 acquisition [6] -</p>	<p>2516:21; 2517:18; 2518:8; 2714:3, 15 acre [1] - 2714:10 acres [3] - 2714:9, 14; 2797:4 Act [40] - 2505:18; 2506:15, 19, 23; 2507:16-18, 20; 2508:3, 6, 10, 18; 2509:7, 12, 15, 19, 21; 2517:23; 2530:14; 2531:7, 19; 2541:13, 16; 2542:1, 8; 2568:24; 2570:12; 2571:7; 2637:11; 2645:3; 2674:6, 25; 2675:6, 9, 12; 2676:8; 2678:25; 2716:21 act [6] - 2550:17; 2596:21; 2601:16; 2633:21; 2780:3, 6 acted [1] - 2744:16 action [2] - 2570:16; 2790:7 Action [14] - 2492:20; 2505:8; 2610:5, 12, 24; 2611:11; 2616:11; 2617:17; 2622:13; 2626:24; 2631:7; 2644:10; 2659:12 actions [4] - 2595:5, 9; 2652:18; 2790:17 active [1] - 2552:7 activities [16] - 2507:20; 2509:8, 15; 2530:18; 2533:11; 2603:7; 2673:7; 2674:1; 2675:8; 2676:25; 2677:10; 2678:1, 19; 2719:4 activity [2] - 2668:4; 2711:4 actual [6] - 2500:13; 2533:11; 2556:3; 2599:19; 2670:23; 2757:6 adapt [1] - 2685:24 adaptably [2] - 2765:5; 2766:17 adapted [1] - 2597:20 adapting [1] - 2750:7 adaptive [5] - 2601:22; 2648:7; 2720:5; 2726:7; 2766:21 add [5] - 2577:4; 2598:4; 2713:15, 18; 2791:14 added [15] - 2573:23; 2601:23; 2622:5; 2628:9; 2654:15; 2655:24; 2704:8; 2722:13; 2740:1, 7, 14; 2741:8, 21; 2745:25; 2774:24 addendum [1] - 2612:1 addition [20] - 2501:14; 2505:12; 2509:4; 2517:16; 2532:13; 2534:1; 2588:4; 2617:22; 2623:18, 22; 2624:10; 2625:7; 2630:7; 2651:3, 13; 2652:14; 2653:23; 2661:23; 2741:3; 2788:22 additional [22] -</p>	<p>2517:5, 7; 2533:13; 2539:18, 21; 2540:1; 2541:13; 2558:3; 2565:17; 2589:11; 2607:18; 2640:25; 2647:2; 2649:24; 2652:24; 2715:7; 2735:10; 2738:22; 2742:11; 2794:7; 2807:10 additionally [3] - 2513:10; 2576:25; 2720:11 address [38] - 2494:21; 2511:16; 2514:5, 21; 2518:13, 21; 2529:2; 2538:24; 2547:21, 24; 2548:2; 2553:22; 2555:19; 2562:12; 2567:8; 2574:24; 2576:8; 2579:25; 2583:24; 2595:24; 2605:7; 2611:16; 2618:17; 2640:12; 2655:19; 2677:1; 2681:16, 19; 2690:8; 2723:17; 2741:5; 2748:22; 2749:23; 2750:9, 19; 2758:23; 2786:4; 2793:18 addressed [21] - 2502:19; 2533:24; 2535:17; 2542:17; 2543:17; 2547:4; 2562:1, 5, 14; 2567:13; 2576:7; 2603:1; 2604:14, 21; 2640:19; 2737:14; 2781:21; 2786:5; 2791:4, 7; 2804:14 addresses [4] - 2574:15; 2583:11, 19; 2616:24 addressing [6] - 2502:1; 2547:17; 2646:14; 2669:20; 2679:10; 2733:1 adduced [1] - 2567:6 adequacy [6] - 2530:3, 13, 22-23; 2531:2; 2534:15 adequate [4] - 2525:19; 2535:20; 2563:20; 2667:14 adequately [10] - 2522:5; 2562:1; 2568:16; 2583:11, 19; 2710:10; 2711:11; 2781:21; 2791:4, 7 adjacent [9] - 2522:20; 2550:15, 22; 2557:9; 2582:22; 2594:19; 2607:25; 2608:2; 2795:11 adjourn [2] - 2787:4; 2807:13 ADJOURNED [4] - 2658:12, 14; 2808:6, 8 ADJOURNMENT [3] - 2609:23; 2764:6; 2785:6 administration [2] - 2528:23; 2718:25 admit [2] - 2665:25; 2804:18 admitted [3] - 2591:4; 2751:12; 2761:21</p>	<p>admitting [1] - 2599:3 adopt [1] - 2692:11 adopted [2] - 2599:4; 2664:3 adoption [2] - 2692:1; 2750:4 advance [1] - 2763:2 advanced [6] - 2502:4; 2504:3; 2517:1; 2534:9; 2567:15; 2634:19 advancement [1] - 2523:19 advances [1] - 2555:4 advancing [1] - 2505:14 advantage [6] - 2548:8; 2653:17, 25; 2701:17; 2712:12; 2742:7 adverse [10] - 2501:25; 2508:23; 2531:17; 2548:14; 2586:24; 2635:9; 2639:19; 2667:7; 2693:2; 2712:13 advise [1] - 2531:10 advise [4] - 2500:21; 2689:23; 2736:17; 2774:22 advised [3] - 2523:15; 2524:2; 2691:3 Advisory [1] - 2533:24 advisory [4] - 2544:24; 2545:3; 2677:17, 20 advocacy [1] - 2528:3 advocate [3] - 2502:16; 2587:11; 2662:24 advocated [1] - 2565:16 advocates [1] - 2502:23 AEL [1] - 2739:24 AEL's [7] - 2739:22, 25; 2740:9, 16; 2741:7, 10, 21 AEP [27] - 2506:25; 2507:12; 2528:18; 2531:3; 2532:19; 2547:6; 2549:2; 2561:16; 2565:8; 2567:25; 2569:8, 17; 2570:19; 2571:2; 2572:24; 2581:20; 2583:3; 2598:16; 2608:10; 2703:10; 2705:1; 2716:19; 2734:24; 2735:2, 25; 2738:3; 2745:17 AEP's [4] - 2507:18, 24; 2560:2; 2755:12 affect [4] - 2507:21; 2536:25; 2543:9; 2678:4 affected [12] - 2518:17; 2522:14, 20; 2556:17; 2573:15; 2611:3; 2627:8; 2628:11; 2708:17; 2728:23; 2758:20; 2767:7 affecting [2] - 2617:22; 2621:9</p>	<p>affection [1] - 2518:2 afford [5] - 2554:3; 2618:19; 2634:25; 2642:22; 2645:9 afforded [1] - 2649:13 afoot [1] - 2594:8 aftermath [3] - 2510:4; 2627:10, 15 afternoon [9] - 2494:1; 2498:23; 2659:8; 2660:22, 24; 2680:10; 2787:25; 2800:3 afternoon's [1] - 2498:2 age [1] - 2712:5 agency [1] - 2767:20 Agency [2] - 2507:12; 2639:17 ago [2] - 2495:24; 2525:11 agree [8] - 2527:17; 2564:24; 2631:17; 2792:3; 2793:1; 2796:21; 2804:5 agreed [17] - 2493:17, 24; 2586:4; 2632:5; 2647:7; 2662:15; 2673:10; 2681:6; 2707:4; 2712:16, 20; 2733:24; 2734:3; 2748:24; 2778:2; 2792:19 agreed-upon [1] - 2748:24 agreement [27] - 2554:20; 2580:7, 18, 20; 2618:11; 2670:6, 10; 2672:15, 20, 23; 2673:3; 2789:1; 2793:16; 2794:3, 21, 24; 2795:1, 4, 25; 2796:20, 22; 2797:1, 5, 7, 19; 2798:2 agreements [6] - 2538:18; 2640:25; 2666:17; 2723:7; 2783:6; 2797:9 agrees [5] - 2570:7; 2618:6; 2654:23; 2765:7; 2790:20 agriculture [3] - 2677:16; 2731:21; 2776:19 agriculture [1] - 2532:24 ahead [4] - 2657:25; 2680:16; 2681:8; 2730:12 aid [2] - 2555:22 aids [1] - 2686:4 aimed [2] - 2520:1; 2669:20 air [71] - 2507:2; 2546:3; 2547:19; 2595:18, 21; 2596:8; 2597:5, 8; 2600:15, 18; 2601:1, 3, 11; 2608:3; 2684:20; 2688:17; 2704:21; 2718:19; 2720:3; 2724:17, 19; 2725:9; 2726:7; 2727:14; 2764:15-17, 19; 2765:8; 2766:2, 5, 8, 16; 2767:4, 6-8, 10, 17, 19; 2768:10, 25; 2769:6, 11, 15; 2770:14, 22, 25;</p>
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<p>2771:9, 15, 21; 2772:2, 5, 8, 16, 18, 20; 2775:11; 2782:25; 2789:13, 15, 20; 2790:1, 4, 25; 2804:3 Airport [2] - 2791:19 airport [1] - 2791:21 al [2] - 2693:16; 2780:25 alarm [2] - 2598:7; 2749:4 alarmed [2] - 2765:13 alarming [3] - 2761:16; 2768:7 alarmist [3] - 2598:8; 2768:7, 13 ALBERTA [1] - 2496:13 Alberta [397] - 2492:2, 16; 2494:12; 2496:24; 2499:2, 15; 2500:5, 9, 12; 2501:2, 10, 20, 22; 2502:5, 12; 2504:6, 16; 2505:20; 2506:15, 21, 24; 2507:11, 17, 23; 2508:3; 2509:4, 6, 11, 14, 23; 2510:5; 2513:12; 2514:14, 17; 2515:2, 20; 2516:5, 23; 2517:18, 20, 24; 2518:4, 6, 11, 18, 24; 2519:1, 6, 13; 2520:11; 2521:2, 14, 23, 25; 2522:3, 8, 11, 14, 19; 2523:3, 12, 22; 2524:1, 8, 16, 23; 2525:7, 18, 23; 2526:1, 9; 2527:16, 24; 2528:6, 11, 15, 17; 2529:10, 14, 18, 20; 2530:2, 5, 8, 12, 15, 17, 20; 2531:5, 14, 22; 2532:3, 10; 2533:1, 20; 2534:1, 6, 18; 2535:1, 7, 18; 2536:2, 7, 9, 13, 17; 2537:2, 5, 12, 15, 24; 2538:7, 14, 21, 23-24; 2539:4, 15, 23-24; 2540:2, 6, 14, 17, 19; 2541:2, 9, 14, 16-17, 21, 23, 25; 2542:4, 7, 24; 2543:2, 6, 12, 15, 18, 21, 23; 2544:7, 13, 19, 23; 2545:7, 9, 17; 2546:17, 22; 2547:5, 16; 2553:17; 2554:14, 24; 2555:7, 17; 2556:20; 2557:6, 15, 19; 2558:21, 25; 2559:9, 24; 2560:5, 11, 24; 2561:3, 7, 9, 11, 15, 17; 2565:3, 7, 22; 2566:10; 2567:4, 24; 2568:24; 2569:17; 2570:3, 10; 2571:22; 2572:3; 2573:13, 24; 2574:7, 19; 2575:3; 2576:11, 16; 2578:15, 19, 22; 2579:3, 6, 24; 2580:2, 23; 2581:1, 9, 14, 19; 2582:18; 2583:9; 2584:15, 25; 2585:3, 9, 15, 20; 2586:9, 12, 18; 2587:5; 2588:12; 2591:25; 2593:20, 25; 2594:12; 2595:7, 11,</p>	<p>20; 2596:2, 4, 12, 20; 2597:4, 12, 22; 2598:15, 17; 2599:1, 10; 2600:3, 5; 2601:7; 2602:21; 2603:3, 5; 2604:13, 22, 24; 2606:10, 20; 2607:8, 23; 2608:7, 9, 17, 25; 2609:14; 2611:12, 23; 2614:10; 2618:15, 17; 2620:2; 2622:23; 2623:10, 23; 2624:5; 2625:23; 2626:1; 2629:24; 2631:8, 18; 2633:23; 2635:7, 10, 25; 2636:15; 2637:25; 2639:21; 2640:11, 13, 20, 22; 2641:6; 2644:9; 2649:7; 2650:6, 19, 25; 2653:6; 2654:11; 2661:10; 2662:14; 2664:3, 14; 2665:8; 2666:5, 19, 23-24; 2667:21; 2669:2, 14, 16; 2670:6, 18; 2671:5, 11, 13, 15-16, 21, 23; 2672:3, 12, 18, 23-25; 2673:1, 5, 10, 17, 22; 2674:17; 2675:17, 22; 2676:3, 5, 10, 14; 2677:7, 14, 22; 2678:10, 16; 2682:6; 2684:9; 2687:23; 2690:5; 2696:23; 2699:14; 2705:13; 2706:4; 2707:18, 23; 2710:17, 22; 2711:23; 2712:1; 2716:20; 2717:22; 2727:11; 2741:5; 2744:22; 2749:3, 21; 2751:11; 2758:21; 2783:10; 2789:2, 6-7; 2790:10, 19, 22; 2791:1, 5, 8, 10; 2792:17, 23, 25; 2793:4, 14; 2797:8, 10, 13, 17, 19, 25; 2804:19; 2805:12; 2807:8, 15 Alberta's [10] - 2516:4; 2529:5; 2531:1, 20; 2568:1; 2637:19; 2654:25; 2665:24; 2690:2; 2788:7 Albertans [9] - 2512:8, 10; 2615:7, 25; 2622:18; 2624:20; 2641:14, 25; 2690:6 alert [1] - 2545:9 algal [2] - 2579:9 align [2] - 2722:8; 2749:21 Allan [1] - 2583:2 allow [15] - 2533:8; 2544:11; 2549:9; 2551:22; 2565:11; 2576:22; 2603:18; 2605:4, 11; 2650:2; 2651:5; 2652:17; 2654:18; 2694:21; 2787:5 allowed [5] - 2553:12; 2558:1; 2593:25; 2617:14; 2700:18 allowing [3] - 2550:8; 2654:21;</p>	<p>2694:23 allows [2] - 2702:18; 2807:7 alluvial [1] - 2769:25 almost [10] - 2502:13; 2511:12; 2512:5; 2515:7; 2520:1; 2628:18; 2649:3; 2654:25; 2658:1; 2786:1 alone [6] - 2512:18; 2581:21; 2622:8; 2626:24; 2628:1; 2664:1 ALSA [1] - 2780:4 alter [1] - 2579:1 alteration [2] - 2509:9; 2781:13 altered [1] - 2548:12 alternating [1] - 2577:19 alternative [14] - 2502:18; 2503:24; 2505:5; 2519:6; 2584:13; 2587:13; 2636:13; 2691:4; 2706:3; 2728:14; 2753:23; 2779:2; 2800:9; 2805:3 alternatively [1] - 2712:7 alternatives [35] - 2502:24; 2503:8, 17; 2514:13, 16; 2518:21, 25; 2519:2, 9, 15; 2521:24; 2522:2, 5; 2635:4; 2637:21; 2638:21; 2642:18; 2645:22; 2653:4, 13; 2664:16; 2695:15; 2726:15, 17, 21; 2727:3, 17; 2728:2, 9; 2736:9; 2800:6, 11, 19 Alternatives [1] - 2726:18 Amanda [1] - 2492:14 amazing [1] - 2684:9 ambient [4] - 2789:13, 15, 19, 25 amenities [3] - 2697:7; 2705:4; 2721:20 amount [13] - 2527:23; 2550:2; 2553:19; 2564:18; 2581:10; 2592:2; 2678:12, 18; 2755:3; 2774:8; 2790:1; 2796:17 amounts [1] - 2652:3 amply [1] - 2574:13 amused [1] - 2804:10 Amusements [3] - 2493:3; 2788:6; 2798:15 analogous [1] - 2615:23 analogues [1] - 2760:25 analogy [1] - 2688:3 analyses [5] - 2649:6, 8, 10; 2664:7, 13 analysis [23] - 2512:17; 2519:4; 2523:21; 2564:1, 3; 2565:4; 2575:7;</p>	<p>2581:25; 2583:16; 2584:1, 12; 2599:18; 2612:3, 5; 2664:5; 2703:2; 2712:18; 2721:23; 2729:10; 2757:22; 2764:24; 2768:8; 2779:4 ancillary [1] - 2633:12 AND [4] - 2495:6; 2659:18; 2660:9; 2787:21 and.. [1] - 2632:13 anecdotal [3] - 2572:13; 2578:14; 2773:6 animals [5] - 2605:5, 12, 15; 2668:5; 2676:12 announcement [1] - 2802:4 annual [8] - 2624:12; 2625:13; 2648:25; 2649:22; 2677:11; 2697:22; 2718:15; 2719:4 annualized [3] - 2624:15; 2625:1; 2719:10 answer [7] - 2522:23; 2756:3; 2763:10; 2765:10; 2790:2; 2795:21; 2800:9 answers [2] - 2528:10; 2762:5 anticipate [2] - 2655:4; 2663:8 anticipated [3] - 2518:7; 2545:2; 2598:6 anticipates [1] - 2533:22 anticipation [1] - 2654:20 anxiety [4] - 2623:14; 2628:6, 9; 2783:22 anxious [1] - 2690:6 anxiously [1] - 2629:19 anyway [2] - 2681:2; 2751:6 apologies [1] - 2756:1 apparent [1] - 2700:23 Appeal [2] - 2666:5, 10 appear [6] - 2542:21; 2719:6; 2720:4; 2745:18; 2749:24; 2800:11 appeared [4] - 2536:10; 2542:15; 2546:14; 2590:25 appease [1] - 2734:21 Appendices [1] - 2500:17 appendices [1] - 2508:9 Appendix [4] - 2500:14; 2536:7; 2780:16 applaud [1] - 2796:8 apples [1] - 2702:2 apples-to-oranges [1] - 2702:2 applicable [6] - 2506:14; 2556:6;</p>	<p>2625:1; 2708:13; 2780:4; 2790:25 applicant [3] - 2503:2; 2762:20; 2763:16 applicant's [1] - 2695:9 Application [1] - 2710:3 application [30] - 2508:6; 2514:3, 7; 2530:9; 2576:23; 2599:13, 23; 2601:2; 2611:11; 2615:23; 2638:8, 13; 2670:2; 2682:1; 2691:2; 2694:6; 2716:21; 2727:19; 2728:10; 2744:19; 2750:21; 2760:22; 2771:4, 12; 2775:5; 2780:8, 13; 2782:1; 2783:24; 2805:3 applications [1] - 2531:4 applied [5] - 2591:21; 2592:8; 2598:11; 2637:18; 2771:21 applies [1] - 2737:5 apply [4] - 2594:9; 2672:23; 2708:16; 2767:5 applying [4] - 2509:6, 11; 2577:5; 2771:18 appoint [1] - 2608:8 appointed [1] - 2677:19 appointing [1] - 2528:16 appraisals [1] - 2518:5 appraisers [1] - 2517:23 appreciable [3] - 2647:25; 2655:4; 2656:14 appreciably [1] - 2653:22 appreciate [16] - 2494:8; 2577:12; 2584:20; 2609:16; 2611:9; 2627:5; 2679:19; 2680:22; 2733:6; 2776:6; 2791:5; 2797:17; 2805:25; 2806:25; 2807:2, 5 appreciated [6] - 2527:2; 2657:24; 2784:7, 16; 2799:15; 2807:17 appreciates [1] - 2585:21 approach [15] - 2497:15; 2533:21; 2577:13; 2594:18; 2597:10; 2598:17; 2645:19; 2650:18; 2691:23; 2692:1; 2728:2, 8; 2730:25; 2733:6; 2771:11 approached [1] - 2691:24 approaches [2] - 2738:6; 2754:9 appropriate [17] - 2508:4; 2522:9; 2540:25; 2565:13;</p>
---	---	---	--	--

<p>2571:13; 2580:24; 2586:13, 22; 2607:6, 11; 2611:14; 2672:1; 2703:2; 2744:2; 2773:21; 2791:2; 2797:14</p> <p>appropriately [6] - 2562:5; 2565:5; 2583:21; 2595:9; 2609:6; 2744:16</p> <p>approval [49] - 2507:20, 22; 2521:18; 2525:9; 2571:3, 7; 2580:25; 2606:24; 2607:5, 13; 2615:2, 19; 2620:12; 2631:11; 2638:11; 2639:6; 2641:17; 2643:3; 2657:20; 2671:9, 16; 2678:23; 2717:14; 2726:11; 2736:19, 23; 2740:2; 2741:9, 22; 2742:8; 2745:14, 25; 2753:22; 2774:24; 2777:6, 8, 23; 2779:2; 2782:23; 2790:17; 2791:15; 2793:14; 2797:15; 2798:4; 2799:6; 2805:4, 7</p> <p>approvals [11] - 2507:15, 18-19; 2508:4, 11; 2530:14; 2531:7; 2533:16; 2541:17; 2611:14</p> <p>approve [8] - 2616:12; 2642:4; 2670:1; 2684:7, 16; 2724:25; 2739:19; 2760:24</p> <p>approved [23] - 2515:21; 2532:21; 2534:4; 2539:24; 2546:21; 2558:9; 2560:2; 2638:1; 2642:2, 16; 2643:23; 2682:9; 2683:13; 2686:11; 2724:13; 2726:10; 2735:2; 2738:15, 17, 23; 2747:6; 2782:3; 2790:18</p> <p>approves [2] - 2670:3; 2671:7</p> <p>approving [1] - 2611:21</p> <p>approximate [1] - 2592:2</p> <p>April [7] - 2492:5; 2494:24; 2495:9; 2508:25; 2659:2; 2751:11; 2789:24</p> <p>APRIL [2] - 2495:20; 2808:8</p> <p>aquatic [8] - 2507:21; 2509:16; 2581:11, 16; 2583:20, 25; 2595:13; 2715:8</p> <p>aquatics [2] - 2581:4; 2753:18</p> <p>aqueduct [1] - 2795:3</p> <p>arbitrary [2] - 2664:11; 2769:16</p> <p>archaeology [2] - 2539:13; 2541:7</p> <p>archeological [16] - 2524:11; 2541:3, 5; 2543:9, 11; 2674:4, 15, 19, 21; 2675:15, 19, 24; 2736:6, 8;</p>	<p>2802:17; 2804:11</p> <p>architectural [1] - 2674:21</p> <p>area [92] - 2504:12; 2508:15; 2525:4; 2536:15; 2544:2; 2545:2; 2546:8, 13; 2547:8; 2556:14, 22-23; 2557:3, 9, 13, 23; 2558:8; 2578:8; 2580:8, 12-14, 17; 2588:2; 2589:16; 2592:16; 2593:14, 21; 2595:2; 2597:19; 2599:1, 3, 16; 2604:15; 2605:5; 2616:6; 2620:11; 2628:12; 2630:1; 2634:21; 2635:1; 2638:23; 2639:1, 12; 2640:7, 23; 2641:10; 2648:18; 2669:9; 2674:4, 6, 23; 2675:20; 2678:4; 2701:5, 8, 12, 15, 20; 2702:5; 2703:4; 2708:5; 2724:5; 2731:18; 2732:3, 9; 2734:8; 2735:19; 2736:4, 13; 2760:25; 2767:11; 2769:13, 21; 2770:5, 19; 2771:23; 2777:21; 2779:13; 2780:1, 12; 2789:9; 2794:7, 17; 2795:19-21; 2796:23</p> <p>area's [1] - 2665:2</p> <p>areas [28] - 2542:18; 2544:10; 2556:11, 19; 2558:17; 2562:8, 10; 2575:5; 2587:12; 2593:4; 2596:5; 2605:22; 2606:6; 2608:20; 2621:18; 2630:18; 2678:4; 2726:5; 2737:7; 2752:14; 2766:15; 2775:17; 2779:11; 2780:22; 2800:23; 2801:2</p> <p>arguably [1] - 2748:4</p> <p>argue [5] - 2519:22; 2622:8; 2727:10; 2748:3; 2758:25</p> <p>argued [5] - 2521:25; 2571:19; 2589:14; 2606:8; 2628:15</p> <p>argues [1] [1] - 2780:23</p> <p>arguing [2] - 2519:21; 2520:1</p> <p>ARGUMENT [7] - 2496:13; 2659:17; 2660:13; 2785:10; 2786:23; 2787:20; 2806:22</p> <p>argument [68] - 2494:3; 2496:1, 3, 22; 2497:6, 18-19; 2499:14; 2501:15; 2520:11, 23, 25; 2528:3; 2529:4; 2547:10, 16; 2555:4; 2577:3; 2587:13; 2589:2; 2609:25; 2610:21; 2611:15; 2634:13; 2659:10, 15; 2660:11; 2680:1, 11; 2681:15, 18; 2715:21; 2725:15; 2726:16, 21; 2730:14; 2732:19;</p>	<p>2733:20; 2740:3; 2743:2; 2766:24; 2767:14; 2768:6; 2769:10; 2770:7, 22; 2771:3, 6; 2772:1, 8; 2773:4, 20, 24; 2774:10; 2785:8, 13; 2786:1, 6, 19, 25; 2790:19; 2792:25; 2806:7; 2807:3, 19</p> <p>arguments [8] - 2578:10; 2660:21, 23; 2679:15; 2681:20; 2797:10; 2799:12; 2807:7</p> <p>arid [1] - 2720:12</p> <p>arise [2] - 2506:9; 2580:21</p> <p>arising [2] - 2736:18; 2774:23</p> <p>army [1] - 2800:15</p> <p>Army [1] - 2743:19</p> <p>arranging [1] - 2540:18</p> <p>arrive [2] - 2712:17; 2713:21</p> <p>arrives [2] - 2513:22; 2686:25</p> <p>arrow [1] - 2803:8</p> <p>articulates [1] - 2764:18</p> <p>ascertained [1] - 2795:6</p> <p>aside [3] - 2716:4; 2750:17; 2791:17</p> <p>ASP [1] - 2794:15</p> <p>aspect [5] - 2511:16; 2746:12; 2750:19; 2760:12; 2794:4</p> <p>aspects [5] - 2500:18; 2502:14; 2530:24; 2540:5; 2574:7</p> <p>asserted [1] - 2562:19</p> <p>asserting [1] - 2779:16</p> <p>assertion [4] - 2554:11, 15; 2569:15; 2578:12</p> <p>assertions [2] - 2577:22; 2776:21</p> <p>asserts [4] - 2669:2; 2696:21; 2725:2; 2734:12</p> <p>assess [13] - 2522:1; 2581:10; 2583:16; 2587:14; 2679:6; 2692:3; 2700:21; 2749:13; 2760:2, 6; 2777:19; 2792:20; 2793:2</p> <p>assessed [9] - 2521:20; 2522:5; 2540:11; 2593:3; 2667:22; 2679:2; 2762:6; 2772:14, 18</p> <p>assessing [6] - 2503:21; 2555:16; 2593:4; 2614:2; 2637:9; 2691:24</p> <p>assessment [98] - 2506:22; 2508:17; 2519:3; 2523:20; 2524:14; 2530:23; 2535:10; 2536:22; 2538:2; 2539:6, 10-11, 17; 2548:3; 2555:13; 2573:13, 15, 20; 2574:14, 20;</p>	<p>2578:16; 2582:9, 11; 2583:6; 2586:13, 18, 21; 2592:3, 15; 2595:2, 23; 2596:4; 2597:7; 2601:12; 2606:21; 2637:1; 2638:10; 2639:17; 2667:12, 21; 2668:11, 14; 2670:11, 15; 2671:20, 23-24; 2672:5, 17; 2673:8, 16; 2674:9; 2675:21; 2678:24; 2679:1, 4; 2760:9; 2761:6; 2766:13; 2767:3, 10, 15, 20; 2768:3, 7, 9, 13, 15, 17, 19, 23; 2769:11, 15, 19-20, 22, 24; 2770:3, 17; 2771:7, 9-10, 14, 16; 2772:2-4, 6, 10, 12; 2773:18; 2774:11, 19</p> <p>Assessment [9] - 2507:12; 2508:7, 18; 2541:9; 2543:4, 14; 2639:16; 2678:25; 2738:3</p> <p>assessments [7] - 2519:7; 2520:9; 2538:13; 2582:3; 2595:21; 2600:12; 2678:21</p> <p>assessor [1] - 2768:21</p> <p>assets [2] - 2630:25; 2645:16</p> <p>assign [1] - 2496:10</p> <p>assigned [1] - 2592:4</p> <p>assignment [1] - 2589:3</p> <p>assist [2] - 2537:14; 2602:25</p> <p>assistance [4] - 2496:5; 2610:19; 2644:15; 2802:15</p> <p>assisted [1] - 2798:24</p> <p>assisting [1] - 2784:10</p> <p>associated [25] - 2503:7, 13; 2508:9; 2514:24; 2518:14; 2548:15; 2553:21; 2574:25; 2576:2; 2577:24; 2579:7; 2587:18; 2592:25; 2600:7; 2603:7; 2605:21; 2627:14; 2637:7; 2653:13; 2699:24; 2714:6; 2727:23; 2738:5; 2757:5; 2777:17</p> <p>Associates [1] - 2572:23</p> <p>Association [8] - 2505:7; 2525:14; 2526:18; 2527:13; 2562:21; 2630:18; 2707:20; 2741:4</p> <p>Association's [1] - 2745:1</p> <p>associations [3] - 2528:22; 2608:15; 2629:15</p> <p>assume [3] - 2662:9; 2793:19; 2801:21</p> <p>assumed [4] - 2592:8; 2593:5; 2765:1; 2773:17</p>	<p>assuming [2] - 2586:6; 2638:8</p> <p>assumption [1] - 2631:16</p> <p>assumptions [11] - 2538:3; 2583:5; 2589:5; 2593:5; 2597:10; 2598:5, 21; 2599:5; 2739:12; 2743:23; 2768:14</p> <p>assured [2] - 2565:9; 2734:10</p> <p>astounding [1] - 2700:14</p> <p>AT [113] - 2493:8; 2495:5, 21; 2523:11; 2658:12; 2659:5; 2681:19; 2684:25; 2692:15; 2693:9; 2697:9, 20; 2698:10, 13; 2700:12; 2701:3, 7, 16; 2707:2, 4; 2708:2; 2714:18; 2715:11, 22; 2716:4, 15; 2723:10; 2726:15; 2727:9; 2728:16; 2729:12; 2731:3; 2734:23, 25; 2735:25; 2736:17, 21; 2740:2; 2741:9, 22; 2742:23; 2745:13, 16; 2746:8; 2747:23; 2748:2, 11; 2750:22; 2751:16; 2753:2; 2755:24; 2756:11, 22; 2757:18; 2758:2; 2759:7; 2760:14, 18; 2761:10, 14; 2764:16, 23; 2766:9, 16, 24; 2767:3, 9, 20; 2768:3, 9, 11, 23; 2769:14, 17, 22; 2770:9, 12; 2771:19; 2772:15; 2773:4, 9, 12-13, 17; 2774:10, 12, 21; 2777:6, 23; 2778:10; 2779:3, 14-15; 2780:22; 2781:3, 6; 2800:16; 2802:5, 8-9, 12; 2803:10, 12, 14; 2804:16; 2805:2, 4, 7; 2808:6</p> <p>AT's [40] - 2703:14; 2706:7; 2730:15, 25; 2743:2; 2756:1, 8, 11; 2760:1; 2761:5; 2766:13, 25; 2767:13; 2768:5, 14-15; 2769:9, 24; 2770:3, 6, 21; 2771:2, 5-6, 8, 10, 13, 25; 2772:7, 10; 2773:3, 19, 23; 2774:9; 2776:21; 2778:4; 2801:3; 2803:15, 18</p> <p>atmospheric [1] - 2789:14</p> <p>attached [4] - 2496:1; 2736:23; 2745:14; 2753:21</p> <p>attempt [6] - 2589:19; 2664:11; 2698:8; 2723:15; 2731:19; 2766:22</p> <p>attempted [5] - 2697:2; 2708:2; 2718:12; 2731:16; 2756:12</p> <p>attempts [2] - 2535:19; 2779:15</p>
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<p>attend [2] - 2498:4; 2538:11</p> <p>attendants [1] - 2719:17</p> <p>attended [1] - 2605:21</p> <p>attending [1] - 2539:8</p> <p>attention [12] - 2503:1; 2523:7; 2538:21; 2561:20; 2643:13; 2685:10, 12; 2726:23; 2731:3; 2765:17; 2784:13; 2791:17</p> <p>attenuation [1] - 2648:4</p> <p>attracting [1] - 2631:4</p> <p>attraction [2] - 2711:7, 19</p> <p>attributable [2] - 2622:21; 2649:23</p> <p>attributes [2] - 2504:17; 2705:1</p> <p>AUC [2] - 2795:6; 2797:6</p> <p>audio [1] - 2799:22</p> <p>Auditor [1] - 2801:25</p> <p>August [5] - 2508:8; 2530:11; 2693:10; 2728:12; 2738:20</p> <p>Austin [34] - 2560:16, 19, 22; 2561:5, 7, 10, 14, 24; 2562:3, 7, 19; 2563:1; 2564:23; 2565:6, 15, 25; 2566:2; 2567:6, 20; 2568:4, 13-15, 17-18; 2584:22; 2739:23; 2740:23; 2741:11; 2743:4; 2744:17</p> <p>Austin's [2] - 2561:1, 19</p> <p>authority [1] - 2555:25</p> <p>authorization [5] - 2509:7, 12, 20-21; 2666:11</p> <p>authorized [1] - 2509:17</p> <p>automatically [1] - 2735:8</p> <p>auxiliary [3] - 2549:22; 2550:21, 25</p> <p>availability [2] - 2655:5; 2794:5</p> <p>available [12] - 2515:13; 2531:3; 2619:3; 2638:3; 2651:9; 2676:24; 2700:1; 2739:16, 19; 2790:15; 2794:11; 2801:18</p> <p>average [8] - 2624:12, 15; 2625:1; 2648:25; 2649:22; 2699:9, 11; 2719:4</p> <p>avert [1] - 2648:21</p> <p>averted [1] - 2649:1</p> <p>avoid [11] - 2513:11; 2514:5; 2532:7; 2540:13; 2614:7; 2618:25; 2624:3; 2642:4; 2667:17; 2693:2; 2783:10</p> <p>avoidance [7] - 2512:4; 2620:5, 11, 15; 2624:15; 2625:13; 2639:25</p>	<p>avoided [14] - 2516:15; 2611:10; 2618:3; 2620:5; 2623:16; 2627:5; 2649:4, 14, 22; 2712:17; 2721:15; 2725:1; 2744:10</p> <p>avoiding [4] - 2616:1; 2620:17; 2622:5; 2624:18</p> <p>aware [7] - 2507:8; 2508:16; 2578:7; 2603:17; 2729:18; 2731:19; 2747:23</p> <p>awareness [2] - 2672:7, 10</p>	<p>24; 2770:8; 2771:17; 2772:10, 20; 2791:22</p> <p>baseline [2] - 2679:5; 2760:13</p> <p>basic [10] - 2549:14, 17; 2551:3; 2553:3; 2579:1; 2686:10; 2693:1; 2694:10; 2696:1; 2727:25</p> <p>basin [3] - 2654:5; 2679:4; 2727:4</p> <p>Basin [8] - 2502:24; 2521:5, 11; 2633:25; 2662:16; 2663:19; 2695:20; 2698:15</p> <p>basing [2] - 2770:12; 2774:12</p> <p>basins' [1] - 2655:21</p> <p>basis [17] - 2544:25; 2554:1; 2558:22; 2566:1; 2572:20; 2573:6, 10; 2578:14; 2598:10; 2599:5, 23; 2616:15; 2624:21; 2677:11; 2740:21; 2778:12; 2790:15</p> <p>Battistella [3] - 2629:25; 2630:13, 22</p> <p>BC's [1] - 2750:4</p> <p>bear [3] - 2666:18; 2803:24; 2804:12</p> <p>bears [3] - 2552:22; 2633:16; 2725:3</p> <p>Bears paw [3] - 2661:1, 3; 2679:15</p> <p>became [3] - 2548:1; 2734:13, 19</p> <p>Beckmann [2] - 2588:7</p> <p>become [5] - 2574:2; 2711:6, 19; 2733:15; 2749:17</p> <p>becomes [4] - 2683:20; 2700:23; 2728:6; 2738:1</p> <p>becoming [1] - 2585:5</p> <p>bed [1] - 2697:17</p> <p>bedload [2] - 2582:1; 2699:22</p> <p>bedrock [1] - 2758:18</p> <p>began [2] - 2518:4; 2734:15</p> <p>begin [8] - 2529:4; 2547:20; 2548:5; 2553:2; 2564:1; 2571:2; 2598:14; 2645:23</p> <p>beginning [8] - 2522:19; 2549:19; 2596:8; 2723:10, 12; 2746:19; 2750:6; 2800:19</p> <p>behalf [12] - 2499:15; 2584:15; 2597:11; 2598:15; 2605:16; 2608:25; 2610:25; 2643:19; 2671:12; 2679:15; 2680:9; 2685:4</p> <p>behaviour [1] - 2735:25</p> <p>behind [1] - 2626:12</p> <p>beholden [1] - 2712:13</p> <p>belief [2] - 2760:17; 2761:3</p> <p>believes [7] - 2531:25; 2543:17;</p>	<p>2561:18; 2596:13; 2645:21; 2729:7; 2754:3</p> <p>below [18] - 2510:19; 2551:13; 2554:2, 4; 2555:2; 2558:23; 2590:1, 13; 2706:11, 18-19; 2707:17; 2709:15, 19; 2712:19; 2722:14; 2747:20; 2752:14</p> <p>Belt [1] - 2699:15</p> <p>Bench [1] - 2661:10</p> <p>beneath [4] - 2756:16; 2757:6; 2758:8; 2759:18</p> <p>beneficial [4] - 2747:10; 2748:17; 2797:24; 2798:2</p> <p>benefit [54] - 2510:15; 2512:10; 2514:2; 2519:3; 2523:21; 2615:4, 24; 2620:6, 14; 2621:19; 2622:5, 10; 2623:19; 2625:21; 2626:5; 2628:13; 2630:23; 2641:19, 25; 2648:12; 2649:5, 8; 2650:12; 2654:15; 2655:24; 2656:14; 2661:14; 2663:23; 2664:13; 2665:15; 2683:7; 2705:22; 2706:2; 2712:17; 2714:21; 2716:24; 2717:1; 2719:5; 2721:23-25; 2722:1, 3, 5, 13-14; 2725:4; 2726:14; 2735:7; 2741:20; 2762:25</p> <p>Benefits [1] - 2709:25</p> <p>benefits [77] - 2506:13; 2511:17, 19; 2512:4; 2513:3, 7; 2514:14; 2516:8; 2518:14, 19; 2519:21, 23; 2520:12; 2573:25; 2574:2; 2581:8; 2606:5; 2611:18; 2616:17; 2619:7, 17; 2620:8, 10, 19; 2622:12, 14, 16; 2623:18; 2624:20, 22; 2625:15, 19; 2626:8; 2631:6, 10; 2633:12; 2635:5; 2638:21; 2639:23; 2641:9; 2645:19, 23; 2648:8, 20; 2649:9, 15, 21; 2652:12; 2657:12; 2661:17; 2662:3; 2664:6, 23; 2665:11; 2682:24; 2691:6; 2710:9, 12; 2711:7, 10, 14; 2712:7, 15, 21-22, 24; 2715:1; 2719:9, 11-12; 2721:10; 2722:16; 2725:13; 2742:6; 2748:3, 7</p> <p>berm [5] - 2549:22; 2550:15, 17, 22; 2777:25</p> <p>berms [13] - 2521:6; 2634:3; 2705:21; 2706:1; 2707:15; 2713:13; 2721:12; 2722:2, 6; 2723:2, 6</p>	<p>Berry [2] - 2541:7</p> <p>Berry's [2] - 2541:19; 2542:2</p> <p>best [21] - 2494:9; 2514:18; 2569:13, 22; 2570:6, 8; 2641:25; 2664:17; 2680:21; 2681:2; 2691:4; 2707:6; 2712:10; 2727:15; 2754:16; 2755:10; 2763:19; 2766:20; 2773:6; 2786:5; 2800:4</p> <p>better [22] - 2518:7; 2520:24; 2521:1; 2525:5; 2587:15; 2605:8; 2682:2; 2690:7; 2712:3; 2713:2; 2722:4; 2731:13; 2750:14; 2753:25; 2754:3; 2755:1; 2759:13; 2762:21; 2763:3, 20; 2774:19; 2800:1</p> <p>between [33] - 2512:12; 2517:10; 2553:6; 2576:3; 2582:15, 24; 2584:25; 2586:17; 2588:24; 2590:7; 2594:23; 2601:18; 2619:10; 2623:21; 2636:19; 2654:6; 2670:6; 2673:10; 2683:9; 2697:1; 2698:6, 11; 2703:6; 2707:10; 2713:1; 2723:19; 2729:16; 2736:14; 2762:4; 2768:6; 2773:14; 2777:25</p> <p>beyond [12] - 2511:11; 2567:13; 2578:1; 2588:1; 2593:14; 2627:24; 2650:10; 2747:11; 2749:15; 2750:21; 2760:12; 2789:21</p> <p>bias [8] - 2590:6, 10, 14; 2704:17; 2767:11; 2768:3; 2771:14; 2772:20</p> <p>biased [2] - 2769:1; 2774:11</p> <p>biased [1] - 2783:6</p> <p>Big [2] - 2668:24; 2672:11</p> <p>big [3] - 2755:19; 2783:2</p> <p>biggest [1] - 2801:11</p> <p>bill [1] - 2539:9</p> <p>Bill [1] - 2798:21</p> <p>billion [15] - 2511:2; 2512:1, 5, 18; 2516:15; 2623:22; 2624:1, 10; 2626:1; 2647:4; 2648:23; 2649:3; 2684:4</p> <p>bimonthly [1] - 2530:18</p> <p>Binder [2] - 2611:4; 2626:12</p> <p>binding [3] - 2671:9, 16; 2797:5</p> <p>Bingham [1] - 2788:19</p> <p>bio [1] - 2784:21</p> <p>biodiversity [6] - 2507:4; 2595:22; 2604:12; 2605:17; 2779:12; 2782:9</p>
B				
<p>B.C [2] - 2561:6, 8</p> <p>B/C [1] - 2722:1</p> <p>back-of-the-envelope [1] - 2592:17</p> <p>back-to-back [2] - 2652:9; 2687:3</p> <p>backed [3] - 2636:23; 2703:21; 2704:5</p> <p>background [1] - 2555:15</p> <p>backing [2] - 2752:16, 21</p> <p>bad [3] - 2688:20; 2690:1; 2749:16</p> <p>badly [1] - 2617:10</p> <p>balance [10] - 2547:15; 2614:25; 2615:2; 2616:8; 2639:3, 5; 2710:12; 2711:13; 2738:8; 2739:4</p> <p>balances [1] - 2506:7</p> <p>bank [2] - 2550:16; 2646:18</p> <p>bar [1] - 2646:19</p> <p>Barbara [2] - 2685:16; 2691:10</p> <p>barbed [1] - 2545:12</p> <p>Barbero [2] - 2492:17; 2499:8</p> <p>barn [1] - 2728:11</p> <p>barrier [4] - 2517:15; 2549:21; 2550:10; 2792:13</p> <p>barriers [1] - 2777:18</p> <p>base [5] - 2756:12, 16; 2757:9; 2758:12; 2773:4</p> <p>based [55] - 2512:13, 16; 2516:19; 2517:3, 25; 2529:17; 2530:4; 2531:8; 2547:1; 2548:25; 2554:4; 2560:15; 2565:24; 2566:15; 2574:1; 2580:1; 2588:25; 2589:20; 2590:25; 2592:3; 2600:13; 2619:22; 2626:1; 2664:5; 2672:5, 20; 2676:17; 2692:4; 2696:19; 2702:5; 2703:24; 2704:1; 2705:9, 19; 2719:10-13; 2740:19; 2743:23; 2746:15; 2753:24; 2754:19; 2764:24; 2767:1, 10; 2768:20; 2769:15, 18,</p>				

<p>biologist [1] - 2583:3 biologists [2] - 2720:24; 2755:16 biophysical [2] - 2669:19 birds [1] - 2718:21 bit [12] - 2499:5; 2562:9; 2613:3; 2657:25; 2681:5, 8, 10; 2731:23; 2748:1; 2776:3; 2800:1 Blackfoot [2] - 2661:5; 2666:24 blast [1] - 2597:2 Block [10] - 2685:7; 2686:2; 2726:18; 2734:6; 2736:25; 2752:2; 2763:23; 2764:13; 2774:23 block [6] - 2550:12; 2724:16; 2736:19; 2737:2; 2763:24; 2764:13 blocks [2] - 2681:17; 2732:13 Blood [1] - 2796:18 bloom [1] - 2579:11 blooms [1] - 2579:9 Board [180] - 2492:1; 2494:25; 2499:25; 2500:20, 25; 2501:3, 12-13; 2502:11, 17, 20; 2503:14, 19; 2504:9; 2505:25; 2506:3, 6, 11; 2507:8, 13; 2514:4, 16; 2519:16; 2520:5; 2525:10; 2526:10; 2530:9; 2532:2; 2537:6; 2555:22; 2557:11; 2559:23; 2560:3, 7; 2561:17; 2565:9; 2569:3; 2579:25; 2581:15; 2601:25; 2606:19; 2607:3, 11; 2609:1; 2610:10, 14, 19; 2611:12, 25; 2613:16, 18, 23; 2614:4, 19, 21, 25; 2615:2, 6, 8, 10, 17, 23; 2616:3, 11, 21; 2619:23; 2622:19; 2624:14, 17, 21; 2627:4; 2628:14; 2632:19, 23; 2634:15; 2635:6; 2636:20; 2637:4, 7, 11-12, 16; 2638:12, 15, 24; 2639:3; 2641:11; 2642:3; 2643:7, 15; 2644:13, 19; 2645:3; 2646:6; 2647:12; 2650:16; 2653:8; 2657:1, 11, 20; 2660:22; 2662:2; 2663:13; 2664:7, 15; 2665:8, 23; 2667:18; 2670:3, 15; 2671:7; 2676:18; 2679:18; 2681:17; 2682:14, 17-18, 23; 2683:15, 21; 2684:1; 2685:9, 12; 2689:23; 2691:16, 19, 21; 2692:11; 2694:7, 24; 2695:2; 2702:2; 2708:14; 2709:12; 2710:6; 2711:9, 12, 21, 25; 2716:23; 2721:3, 8; 2726:17; 2736:20;</p>	<p>2738:12; 2745:15; 2746:1; 2749:10; 2757:14; 2758:6; 2760:23; 2762:19; 2775:1; 2777:22; 2779:6; 2780:3, 5, 9; 2783:23, 25; 2784:1; 2786:3, 7, 17; 2787:25; 2790:13; 2791:14; 2795:20; 2798:3, 19; 2799:4; 2805:20 board [3] - 2783:4; 2802:1; 2805:2 Board's [24] - 2499:22; 2503:2; 2505:21; 2506:10; 2519:19; 2522:3; 2523:7; 2524:24; 2534:14; 2607:9; 2611:20, 23; 2612:3, 6; 2634:8; 2636:17; 2645:2; 2653:8, 14; 2661:24; 2694:24; 2726:22; 2794:20 Bob [1] - 2493:3 body [3] - 2556:16; 2698:7; 2717:15 bookends [1] - 2586:13 bordering [1] - 2556:15 borehole [2] - 2587:9; 2589:11 boreholes [1] - 2589:12 born [1] - 2764:17 borne [3] - 2513:12; 2721:13; 2726:2 borrowed [1] - 2800:22 bother [1] - 2689:11 bothers [1] - 2689:19 bottom [3] - 2552:14; 2605:13; 2800:5 boulders [1] - 2699:21 boundaries [1] - 2647:6 boundary [1] - 2796:23 Bow [68] - 2512:12, 16, 22; 2521:4, 8, 11, 20; 2536:11; 2572:12; 2577:5, 11; 2617:4; 2619:16, 18; 2621:21; 2625:9; 2631:21; 2632:12, 17; 2633:25; 2634:2; 2645:25; 2648:22; 2649:17, 20, 24-25; 2652:21; 2656:15, 20; 2661:19, 23; 2662:16, 19, 21, 24; 2663:4, 12, 15, 19, 21; 2664:16; 2665:4, 19; 2670:12, 21; 2679:3; 2684:11; 2687:22; 2689:6, 9; 2698:14; 2710:2; 2711:16; 2715:4; 2726:24; 2727:4, 7, 16; 2728:17, 20, 23; 2752:19, 22; 2782:20; 2795:25; 2800:11 Bragg [17] - 2521:7; 2633:1; 2634:4; 2682:7; 2699:7; 2702:24; 2703:6; 2705:21; 2707:15; 2713:5, 13; 2721:12;</p>	<p>2722:2, 6; 2723:2 brain [1] - 2802:22 BRBC [1] - 2698:18 breached [1] - 2706:1 breaches [1] - 2666:11 break [11] - 2498:23; 2568:8; 2604:9; 2609:18; 2629:3; 2632:3; 2658:2; 2764:1; 2784:21; 2785:2 breathe [1] - 2751:7 Brescia [3] - 2515:3; 2574:5, 11 Brian [5] - 2593:24; 2597:11; 2685:14; 2732:8; 2782:11 bridge [3] - 2605:11; 2625:9; 2740:6 bridges [2] - 2625:8; 2646:20 brief [3] - 2495:9; 2724:23; 2763:25 briefing [1] - 2524:13 briefly [15] - 2499:18, 22; 2507:14; 2546:5; 2548:3; 2555:19; 2576:8; 2577:3; 2588:4; 2604:22; 2612:3; 2634:19; 2638:23; 2660:20; 2752:2 bring [7] - 2523:7; 2538:20; 2561:20; 2648:9; 2651:10; 2723:15; 2734:20 bringing [1] - 2496:21 broad [1] - 2548:9 broadcast [1] - 2700:23 broaden [3] - 2608:22; 2657:6; 2664:9 broken [2] - 2612:20; 2637:15 brought [9] - 2723:7; 2728:12; 2739:8; 2758:2; 2791:17; 2793:21; 2794:23; 2795:24 Bruni [3] - 2492:20; 2498:15; 2609:10 Buchanan [2] - 2534:16; 2535:6 bucket [2] - 2656:9, 13 budget [15] - 2516:3; 2539:24; 2540:3; 2672:5; 2714:8; 2715:24; 2716:2; 2717:12, 17; 2720:8; 2726:13; 2782:16; 2800:25; 2801:4, 23 budgetary [1] - 2714:16 budgeted [1] - 2625:22 budgets [1] - 2800:21 build [3] - 2629:12; 2690:23; 2691:5 building [7] - 2512:14; 2634:5; 2690:22; 2691:5, 9; 2715:3 buildings [5] - 2558:12; 2613:24;</p>	<p>2621:4; 2624:16; 2639:8 buildup [1] - 2793:12 built [11] - 2501:18; 2505:4; 2550:22; 2617:3; 2633:10; 2636:13; 2651:13; 2708:24; 2762:2; 2794:1; 2798:9 bulk [1] - 2587:3 bull [9] - 2509:13, 17; 2582:12, 14, 21-22; 2586:24; 2693:4; 2755:13 Bull [3] - 2543:22, 24; 2544:14 bullet [2] - 2696:3, 5 burdens [2] - 2725:16; 2726:12 burial [1] - 2668:21 burials [2] - 2543:4 buried [1] - 2769:24 burned [1] - 2802:22 bus [4] - 2621:5; 2625:7; 2725:16; 2804:13 buses [1] - 2725:18 busiest [2] - 2791:20, 22 business [17] - 2513:2; 2534:10; 2573:17; 2630:9, 15, 18, 25; 2631:1, 4; 2689:24; 2724:5; 2791:15; 2795:15; 2797:20; 2800:4; 2804:18 business-related [1] - 2630:15 businesses [29] - 2511:4; 2515:23; 2518:18; 2528:23; 2534:11; 2608:15; 2611:1; 2615:15; 2617:18, 21; 2621:4; 2622:15; 2626:15; 2628:11; 2630:5, 8, 15, 19, 23; 2633:7, 22; 2641:23; 2707:16; 2747:22; 2788:18; 2792:6; 2793:23; 2795:18 busy [1] - 2497:12 but... [1] - 2775:23 Bylaw [7] - 2555:21, 24; 2556:4, 12, 25; 2557:21 bylaw [9] - 2558:11, 15, 18; 2708:6, 9, 11-12, 15; 2797:7 bylaws [1] - 2707:23 bypass [4] - 2700:18; 2702:19; 2738:8; 2753:14</p>	<p>2581:1; 2791:3; 2793:21; 2797:16 CALAWAY [1] - 2787:21 Calaway [6] - 2788:6, 20; 2789:4, 18; 2791:9; 2798:15 calculate [1] - 2676:14 calculated [4] - 2512:13, 18; 2754:15; 2759:24 calculation [3] - 2676:17; 2719:5; 2766:9 calculations [2] - 2592:23; 2604:19 Calgarians [5] - 2511:3; 2646:6; 2647:12; 2648:11; 2650:12 Calgary [143] - 2492:2, 18, 20-21; 2497:23; 2505:7-11; 2510:23; 2511:20, 24; 2513:6; 2514:10; 2521:6; 2523:17; 2578:1; 2605:24; 2610:5, 11, 13, 16; 2611:1; 2614:11; 2615:25; 2617:3, 9, 14; 2618:9, 19, 24; 2620:1, 15; 2621:2, 17; 2622:22, 24; 2624:10; 2625:5, 9, 20; 2627:9, 23; 2629:12, 24; 2630:1, 5, 16-17; 2631:5, 8-9; 2633:1; 2634:4; 2638:17; 2639:23; 2640:4, 8; 2641:2, 23; 2642:14, 20, 22; 2643:18; 2644:9-11; 2645:13, 24; 2646:3, 13, 24; 2647:22; 2648:13, 22; 2649:16, 19; 2650:7; 2657:6, 17; 2659:11; 2661:15, 17; 2662:5, 8, 15, 23; 2663:1, 5, 7, 12; 2664:4; 2665:2, 18; 2670:13, 17, 22; 2681:20; 2682:6; 2683:14; 2685:5; 2689:2, 4, 8, 13, 16; 2696:14; 2701:7, 24; 2702:9, 24; 2706:6; 2707:23; 2709:10; 2712:13; 2723:14; 2725:5; 2726:20; 2750:23, 25; 2759:7; 2771:24; 2779:17; 2782:17; 2783:20; 2792:2; 2796:8; 2797:22; 2798:13; 2802:5; 2803:20 CALGARY [1] - 2660:14 Calgary's [14] - 2511:4; 2512:21; 2554:4; 2622:13; 2639:7; 2647:17; 2657:21; 2660:11; 2662:20; 2663:2, 7; 2712:11; 2731:14; 2752:2 California [1] - 2766:21 camp [3] - 2705:5; 2714:24</p>
C				
		<p>CALALTA [1] - 2787:20 Calalta [28] - 2493:3; 2579:15; 2580:4, 10, 15, 21; 2581:3; 2784:22; 2788:5, 13; 2789:5; 2790:11, 14-15, 22; 2791:9, 14; 2792:4, 7, 11, 20, 22; 2794:6; 2796:7; 2798:15 Calalta's [7] - 2579:21; 2580:12;</p>		

<p>campground [1] - 2788:12 camps [1] - 2775:12 Canada [12] - 2507:13; 2509:5; 2639:17; 2669:24; 2679:1; 2707:22; 2721:7; 2744:18; 2749:20; 2766:19; 2791:21; 2801:25 Canada's [2] - 2611:7; 2627:3 Canadian [4] - 2508:18; 2562:20; 2707:20; 2741:4 Canadians [1] - 2624:21 Canal [7] - 2561:11; 2568:24; 2569:18; 2570:10; 2571:5; 2741:5; 2742:21 canal [3] - 2697:16; 2753:11, 15 cancelled [1] - 2621:6 candidate [1] - 2656:15 Canmore [1] - 2611:23 cannot [26] - 2521:25; 2528:13; 2560:21; 2577:22; 2578:13; 2628:12, 17; 2635:5; 2638:6; 2640:8; 2642:22; 2645:9; 2648:2; 2662:9; 2664:10; 2666:13; 2667:19; 2669:11; 2671:1, 12; 2743:11, 23; 2749:5; 2773:16; 2793:18 cap [1] - 2730:3 capabilities [2] - 2602:10; 2698:4 capability [3] - 2652:25; 2656:4; 2702:16 capable [2] - 2652:8; 2802:19 capacity [42] - 2525:13; 2562:16; 2565:17, 24; 2566:1; 2602:18; 2618:23; 2623:8; 2646:16, 21; 2651:10; 2672:12; 2673:1, 18; 2674:18; 2675:6, 23; 2676:4; 2677:23; 2678:12, 18; 2697:5, 18; 2700:6, 9; 2701:1; 2716:14; 2740:6, 10, 13, 19, 22; 2744:6; 2751:19, 25; 2782:21; 2794:11 capital [12] - 2516:4; 2649:5; 2713:4, 11, 23; 2722:7-9, 20; 2723:4; 2742:11; 2788:11 capped [1] - 2700:21 capture [5] - 2504:20; 2654:4; 2687:6; 2702:20 captured [10] - 2582:21-24; 2674:5; 2675:8, 11; 2687:1; 2700:19; 2702:18 captures [2] - 2702:15, 20 capturing [3] - 2496:6; 2686:9;</p>	<p>2687:4 care [2] - 2598:1; 2805:18 career [1] - 2555:12 careful [4] - 2575:5; 2631:9; 2647:11; 2767:15 carefully [2] - 2525:23; 2767:21 Carina [1] - 2492:13 caring [1] - 2802:20 Carlo [5] - 2599:11, 16; 2602:22; 2770:23; 2778:2 Carlo's [2] - 2770:24; 2776:24 carried [4] - 2530:25; 2547:5; 2575:4; 2755:4 carry [3] - 2551:8; 2574:9; 2745:19 carrying [3] - 2519:3; 2524:3; 2625:11 case [31] - 2500:9; 2503:4; 2516:14; 2519:18; 2527:9; 2538:12; 2561:7; 2593:7; 2614:6; 2639:5; 2663:19; 2681:25; 2682:4; 2684:8, 13; 2687:10; 2693:4, 7; 2701:20; 2711:9; 2726:22; 2727:18; 2728:5; 2738:25; 2742:6; 2744:13; 2749:13; 2751:9, 16; 2760:6; 2768:23 cases [2] - 2626:17; 2715:20 cash [1] - 2713:16 casual [1] - 2803:1 catastrophic [6] - 2504:25; 2635:18; 2636:8; 2642:1; 2709:22; 2747:5 catch [2] - 2702:4 catchment [12] - 2634:21; 2654:2, 4; 2656:16; 2701:5-7, 12, 15, 20, 25; 2703:4 category [1] - 2760:19 caught [1] - 2582:14 caused [5] - 2510:25; 2517:13; 2650:5; 2791:16; 2792:20 causes [1] - 2623:11 causing [6] - 2625:11; 2647:19; 2761:18; 2792:13; 2793:9 caution [2] - 2741:13; 2785:24 cavalier [1] - 2599:7 caveat [4] - 2711:8; 2786:4; 2787:18; 2806:14 CDA [2] - 2563:21; 2744:19 CEAA [3] - 2509:3; 2716:8; 2804:9 cements [1] - 2642:8 centimetres [3] - 2769:14, 17 central [2] - 2666:23; 2668:5 centre [2] - 2616:3; 2630:1</p>	<p>Centre [1] - 2524:15 centres [2] - 2559:15; 2792:7 ceremonial [2] - 2676:1, 6 Ceremonial [1] - 2676:7 ceremonies [2] - 2675:9, 24 Ceroici [2] - 2492:8; 2599:10 certain [10] - 2503:25; 2513:20; 2588:18; 2600:14; 2685:1; 2693:5; 2700:16; 2737:9; 2743:24; 2786:6 certainly [7] - 2493:11, 16; 2629:24; 2649:18; 2680:4; 2733:10; 2751:9 certainty [5] - 2517:7; 2577:22; 2638:6; 2711:15; 2764:24 chair [11] - 2677:17, 19; 2680:10; 2723:16; 2730:8; 2763:25; 2775:14; 2786:11; 2806:5, 18 Chair [55] - 2492:7; 2547:14; 2548:5, 21; 2549:13; 2552:1; 2553:18, 25; 2554:14; 2556:3, 21; 2557:18; 2558:14; 2560:3; 2562:10; 2564:20; 2565:3; 2569:7; 2570:3; 2571:5, 18; 2573:24; 2574:25; 2575:10, 16; 2576:5; 2581:4; 2582:19; 2584:22; 2586:16; 2587:2; 2589:16; 2591:24; 2595:11, 17, 20; 2596:23; 2597:22; 2600:3, 8; 2601:21; 2603:20; 2604:7; 2606:19; 2608:17, 24; 2609:13; 2610:10, 24; 2643:4; 2644:7; 2645:7; 2653:2; 2745:18; 2784:15 CHAIR [83] - 2493:9; 2495:2, 13, 16; 2496:7, 11, 15; 2497:3, 13, 21; 2498:1, 21, 25; 2547:12; 2604:10; 2609:15, 22, 24; 2610:2, 4; 2612:7, 9, 25; 2613:13; 2631:25; 2632:2; 2635:22; 2643:14, 21; 2644:6; 2657:23; 2658:7, 10; 2659:6, 16, 21; 2660:1, 3, 6, 10, 15; 2679:22; 2680:8, 15; 2681:4, 8, 12, 14; 2732:17, 21; 2733:5, 8; 2734:4; 2764:2, 4, 7, 10; 2775:18, 24; 2776:5, 9; 2784:17, 21; 2785:1, 4, 7, 12, 15; 2786:8, 17, 24; 2787:18, 22; 2799:13, 18, 20; 2805:19; 2806:8, 11, 17, 20, 24; 2808:5 Chairman [36] -</p>	<p>2494:21; 2495:7; 2499:13; 2502:9; 2508:10; 2511:11; 2518:14; 2520:23; 2522:6; 2525:16; 2528:5, 15; 2546:17; 2547:9; 2558:21; 2559:4; 2565:9; 2567:4; 2571:12; 2574:5; 2582:10; 2585:9; 2596:8; 2598:11; 2601:6; 2618:14; 2658:6; 2660:18; 2679:14, 24; 2680:7; 2733:9; 2785:21; 2787:8, 25; 2799:11 chairman [2] - 2787:15; 2798:20 challenge [3] - 2620:24; 2707:2; 2806:1 challenges [1] - 2570:5 challenging [3] - 2724:20; 2733:16; 2803:17 Chamber [2] - 2505:10; 2630:16 chance [8] - 2652:4, 11; 2659:22; 2706:1; 2793:10; 2785:20; 2787:9; 2806:12 change [44] - 2548:4; 2571:17, 20, 25; 2573:2, 12, 15, 20; 2575:15; 2576:7, 15; 2577:1, 25; 2578:4, 8, 10; 2579:1; 2582:1; 2602:12; 2617:6; 2649:15; 2664:25; 2670:16; 2684:5; 2688:4, 14; 2696:12; 2712:6; 2717:19; 2718:9; 2728:4; 2745:5; 2746:12; 2747:14; 2749:14; 2750:7, 12; 2751:12, 17; 2752:7; 2758:6; 2759:2; 2772:3 changed [3] - 2527:24; 2717:7; 2734:14 Changemakers [1] - 2765:19 changes [23] - 2517:4, 13; 2518:10; 2532:15; 2575:24; 2576:1, 3; 2577:17; 2578:20; 2587:17; 2594:8; 2648:8; 2655:4, 8; 2663:9; 2684:17; 2714:5, 7; 2734:9; 2746:3; 2760:10; 2762:2 changing [3] - 2589:2; 2752:6; 2758:7 channel [28] - 2508:15; 2517:17; 2549:7, 16, 24; 2550:3, 9, 11, 13; 2551:5, 8, 16, 18; 2557:7; 2564:14; 2576:3; 2585:18; 2594:20; 2605:14; 2694:4; 2715:14; 2716:9; 2740:11; 2754:8, 22; 2758:19; 2777:25</p>	<p>characterized [3] - 2562:22; 2584:7; 2602:19 chart [4] - 2598:19; 2739:10, 12, 16 Charter [1] - 2765:19 cheaper [1] - 2722:21 check [3] - 2496:20; 2613:5; 2730:10 chemical [1] - 2623:13 children [8] - 2724:8, 11; 2725:17; 2765:7; 2766:1, 4; 2792:5 Chiniki [3] - 2661:1, 4; 2679:16 chinook [1] - 2790:8 choice [7] - 2645:22; 2653:16; 2701:6; 2724:5, 7-8; 2763:9 choices [2] - 2705:16, 19 choose [4] - 2637:20; 2664:17; 2688:1; 2703:1 choosing [4] - 2636:16, 18; 2705:12; 2804:7 chose [2] - 2598:4; 2723:10 chosen [9] - 2520:7; 2532:1; 2635:8; 2653:6; 2703:11; 2721:15; 2800:14; 2801:19; 2804:11 Christensen [1] - 2693:6 chronology [4] - 2523:6; 2526:3, 9, 12 chuckle [1] - 2804:8 circulate [1] - 2498:15 circulated [1] - 2680:11 circumstances [5] - 2538:15; 2600:15; 2614:3; 2615:21; 2640:18 circumventing [1] - 2551:1 cited [2] - 2654:8; 2757:4 cites [1] - 2790:23 cities [2] - 2617:12; 2633:20 citizen [1] - 2646:10 citizens [3] - 2629:8; 2633:21; 2655:2 City [99] - 2492:18; 2497:22, 24; 2505:7; 2510:23; 2511:20, 23; 2512:20; 2513:6; 2514:10; 2521:6; 2554:4; 2610:16; 2614:11; 2615:25; 2618:9, 19, 24; 2620:1, 15; 2621:17; 2622:3; 2623:4; 2624:10; 2625:20; 2630:1; 2631:9; 2633:2, 15; 2634:3; 2638:17; 2639:7, 23; 2640:4; 2641:2, 23; 2642:22; 2643:18; 2644:11; 2645:7, 11, 13, 18, 21, 24; 2646:13, 15; 2647:1; 2649:2, 16, 19; 2650:17; 2651:20, 23;</p>
---	--	--	--	--

<p>2652:10; 2653:8, 15; 2654:21, 23-24; 2655:3, 18, 20, 25; 2656:19, 25; 2657:1, 6, 20-21; 2659:10; 2660:11; 2662:14, 20, 23; 2663:1, 5, 7, 17; 2664:4; 2681:20; 2696:14; 2701:7, 24; 2707:23; 2726:20; 2731:14; 2750:23; 2759:7; 2771:24; 2782:18; 2792:1; 2796:8; 2797:22</p> <p>CITY [1] - 2660:14 city [37] - 2617:11, 13, 21; 2629:7, 15; 2633:6; 2641:2, 5, 7; 2642:7; 2643:1, 4; 2646:18; 2647:8; 2650:9; 2652:16; 2654:18; 2657:18; 2661:15, 17; 2662:4, 7; 2665:18; 2670:13, 17, 22; 2689:15; 2706:6; 2709:6, 10; 2712:13; 2750:24; 2759:6; 2782:16; 2783:20; 2798:13</p> <p>City's [11] - 2620:3; 2621:24; 2623:2, 7-8; 2647:5; 2654:12; 2655:12; 2656:4; 2657:4</p> <p>civil [2] - 2572:20; 2609:6</p> <p>claim [8] - 2567:19; 2580:23; 2590:9; 2661:9; 2714:2; 2729:17; 2773:5; 2797:13</p> <p>claims [3] - 2653:5; 2734:22; 2770:13</p> <p>clarification [3] - 2584:21; 2701:19; 2803:22</p> <p>clarifying [1] - 2679:9</p> <p>clarity [3] - 2546:15; 2694:3; 2697:3</p> <p>class [1] - 2702:9</p> <p>classic [1] - 2584:5</p> <p>classification [4] - 2571:14; 2651:25; 2652:8; 2750:13</p> <p>classified [3] - 2651:19, 22</p> <p>clay [10] - 2592:18; 2602:15, 17; 2756:14, 17; 2757:14; 2759:17; 2761:7, 15; 2802:12</p> <p>clays [5] - 2591:6, 12, 14; 2762:8</p> <p>cleaning [3] - 2777:11, 13</p> <p>cleanup [1] - 2513:14</p> <p>clear [26] - 2502:5; 2512:21; 2519:19; 2547:6; 2558:21; 2560:12; 2567:25; 2586:14, 18; 2589:8; 2603:12; 2616:25; 2623:19; 2631:10; 2636:15; 2653:1; 2657:1; 2698:11; 2721:14; 2747:17; 2748:7; 2749:9; 2750:5; 2760:20; 2761:6; 2778:19</p>	<p>cleared [1] - 2494:14</p> <p>clearest [1] - 2650:23</p> <p>clearing [1] - 2544:12</p> <p>clearly [24] - 2501:17; 2506:19; 2518:19; 2527:22; 2552:22; 2582:16; 2589:22; 2604:3; 2613:3; 2615:21; 2616:9; 2618:4; 2620:6; 2626:4; 2633:9; 2657:1; 2690:13; 2692:15; 2768:2; 2769:11; 2771:8; 2772:5; 2783:16; 2795:11</p> <p>clients [10] - 2610:14; 2611:2; 2627:7; 2628:25; 2631:22; 2632:19; 2704:23; 2730:7; 2748:11; 2776:12</p> <p>clients' [11] - 2593:23; 2614:9; 2617:19; 2619:24; 2620:21; 2626:6, 11; 2627:19; 2628:19; 2629:14; 2760:18</p> <p>climate [41] - 2548:4; 2571:17, 20, 24; 2573:12, 15, 20; 2575:15; 2576:6, 15; 2577:1, 17, 25; 2578:4, 8, 10; 2617:6; 2648:9; 2649:15; 2656:2; 2664:25; 2670:16; 2684:5; 2688:4, 13; 2696:12; 2698:23; 2712:6; 2728:4; 2745:5; 2746:4, 12; 2747:14; 2749:3, 14; 2750:7, 12; 2751:12, 17; 2752:6; 2759:2</p> <p>clip [1] - 2635:23</p> <p>close [12] - 2531:6; 2551:21; 2564:17; 2591:22; 2630:14; 2661:12; 2685:9, 12; 2708:24; 2786:2; 2791:10; 2807:11</p> <p>closed [1] - 2621:5</p> <p>closely [3] - 2516:17; 2536:2; 2590:18</p> <p>closer [7] - 2499:6; 2504:21; 2505:4; 2570:21; 2635:14; 2636:5, 13</p> <p>closing [14] - 2501:15; 2530:21; 2563:19; 2609:13; 2645:18; 2680:1; 2725:15; 2788:2; 2790:19; 2792:25; 2797:10; 2799:11; 2807:10, 14</p> <p>closure [1] - 2563:10</p> <p>closures [2] - 2630:10; 2720:2</p> <p>cloud [1] - 2774:1</p> <p>Club [2] - 2685:6; 2788:17</p> <p>cluster [1] - 2795:18</p> <p>coal [1] - 2688:22</p> <p>coefficient [1] - 2699:13</p> <p>cognizant [2] - 2494:6, 8</p>	<p>collaborative [1] - 2533:21</p> <p>collect [1] - 2761:10</p> <p>collected [4] - 2627:13; 2725:21; 2755:3; 2757:22</p> <p>collecting [1] - 2735:24</p> <p>collection [1] - 2583:25</p> <p>collegial [1] - 2784:6</p> <p>Colour [1] - 2630:12</p> <p>combined [6] - 2648:3; 2650:20; 2652:25; 2663:3, 14, 21</p> <p>Combined [1] - 2703:7</p> <p>coming [6] - 2613:2; 2706:24; 2751:17; 2752:19; 2753:3, 6</p> <p>commemorate [1] - 2541:1</p> <p>commence [2] - 2574:9; 2670:5</p> <p>COMMENCED [1] - 2493:8</p> <p>commencement [2] - 2510:12; 2671:2</p> <p>commensurate [1] - 2664:1</p> <p>comment [7] - 2526:12; 2529:8; 2530:19; 2590:20; 2634:19; 2773:6; 2802:21</p> <p>commented [5] - 2526:15; 2534:17; 2546:9; 2575:14; 2602:11</p> <p>comments [19] - 2496:6; 2499:21; 2504:8; 2524:22; 2532:6; 2534:16; 2538:8; 2541:6, 19; 2547:9, 21; 2583:9; 2584:10; 2585:21; 2609:16; 2643:7; 2788:2; 2803:15; 2807:10</p> <p>Commerce [2] - 2505:11; 2630:16</p> <p>Commercial [2] - 2788:17; 2793:23</p> <p>commercial [10] - 2505:2; 2605:25; 2617:22; 2624:8; 2635:20; 2636:10; 2704:24; 2795:15; 2796:5; 2797:20</p> <p>Commission [11] - 2492:8</p> <p>commissioning [3] - 2568:21; 2570:22; 2742:16</p> <p>commit [2] - 2710:16; 2711:23</p> <p>commitment [6] - 2543:25; 2603:7; 2607:18; 2636:24; 2671:6; 2789:1</p> <p>commitments [12] - 2529:10; 2535:22; 2543:16; 2596:5; 2603:6; 2607:9, 12, 15; 2608:1; 2671:11, 14</p> <p>committed [15] - 2501:22; 2528:16; 2534:2; 2538:25;</p>	<p>2540:6, 14, 17; 2544:7, 13, 23; 2593:20; 2598:16; 2607:23; 2608:18; 2780:23</p> <p>Committee [1] - 2533:25</p> <p>committee [10] - 2544:24; 2545:4; 2673:13, 20, 24; 2675:3; 2677:18, 20; 2719:1</p> <p>common [2] - 2698:9; 2742:12</p> <p>commonplace [1] - 2745:19</p> <p>communicable [1] - 2623:13</p> <p>communicate [2] - 2528:21; 2608:13</p> <p>communicated [1] - 2644:21</p> <p>communication [3] - 2608:7; 2677:21, 23</p> <p>communications [2] - 2526:14; 2607:24</p> <p>communities [68] - 2511:21, 24; 2521:11; 2529:14; 2616:1, 14; 2617:16, 19; 2619:4, 8-9, 17; 2620:2, 16; 2621:9, 20; 2627:8; 2629:18, 21, 23; 2631:14, 17, 21; 2632:5, 11, 17; 2634:12, 25; 2635:2; 2638:18; 2639:24; 2640:5; 2641:24; 2642:23; 2645:14; 2649:20; 2662:7; 2663:23; 2665:11; 2666:1; 2672:11; 2677:24; 2686:23; 2692:20; 2698:5; 2700:25; 2706:2; 2707:25; 2712:4, 8, 22; 2713:1; 2722:17; 2726:3; 2731:8-10; 2738:10; 2747:19, 22; 2750:16; 2752:22; 2778:25; 2781:5, 18</p> <p>Communities [6] - 2492:20; 2505:8; 2610:5, 12; 2644:10; 2659:12</p> <p>Community [5] - 2505:7; 2525:14; 2526:18; 2527:12; 2744:25</p> <p>community [47] - 2514:23; 2515:16; 2522:16; 2524:4, 25; 2525:1; 2528:16, 20, 22, 25; 2581:25; 2608:1, 8, 13-14; 2626:25; 2628:1; 2629:15; 2632:21; 2648:13; 2682:9; 2683:7; 2685:2, 5; 2690:18; 2704:20; 2716:25; 2718:24; 2725:2, 6, 25; 2726:13; 2730:1, 20; 2735:7; 2745:24; 2750:6; 2765:14; 2788:15; 2789:3; 2790:9; 2792:6; 2797:21; 2798:12, 18</p> <p>commuting [1] - 2777:16</p>	<p>companions [1] - 2627:16</p> <p>company [1] - 2661:11</p> <p>compare [3] - 2520:8; 2686:20; 2760:25</p> <p>compared [7] - 2519:21; 2533:3; 2635:9, 12; 2636:3; 2698:20; 2768:8</p> <p>comparing [4] - 2516:24; 2664:22; 2702:3; 2728:17</p> <p>comparison [9] - 2598:18; 2639:9; 2686:7, 21; 2696:24; 2701:2; 2702:2; 2703:23</p> <p>comparisons [1] - 2698:10</p> <p>compel [3] - 2805:2, 4, 7</p> <p>compelled [1] - 2748:6</p> <p>compelling [1] - 2567:6</p> <p>compensate [1] - 2798:1</p> <p>compensated [4] - 2517:22; 2796:14; 2797:8</p> <p>compensation [9] - 2517:25; 2616:5; 2640:21; 2676:25; 2714:24; 2783:6; 2791:15; 2792:24; 2796:3</p> <p>compete [1] - 2776:15</p> <p>competent [1] - 2588:9</p> <p>competing [2] - 2669:10; 2734:24</p> <p>competitive [1] - 2516:20</p> <p>complained [1] - 2523:9</p> <p>complaints [2] - 2525:25; 2528:24</p> <p>complete [15] - 2521:16; 2539:6, 19; 2540:4; 2541:15; 2570:21; 2596:3; 2667:14; 2668:14; 2671:22; 2774:14; 2782:22; 2802:2; 2807:8</p> <p>completed [11] - 2502:13; 2515:17; 2541:9; 2543:3; 2646:18, 21; 2652:22; 2657:16; 2670:13; 2671:24; 2678:25</p> <p>completely [4] - 2598:23; 2697:6; 2735:19; 2769:16</p> <p>completeness [1] - 2530:15</p> <p>completion [8] - 2516:20; 2596:15; 2647:13; 2671:19; 2672:4, 16; 2673:7, 15</p> <p>complex [1] - 2574:14</p> <p>complexity [1] - 2704:14</p> <p>compliance [1] - 2541:25</p>
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<p>complicating [1] - 2803:3</p> <p>complied [1] - 2671:1</p> <p>complimentary [1] - 2583:8</p> <p>component [8] - 2513:16; 2521:4; 2574:17; 2596:1; 2633:24; 2667:3, 24; 2727:24</p> <p>components [20] - 2500:15; 2521:5, 16; 2549:15, 17; 2571:8; 2634:1, 6-7; 2652:6; 2664:12; 2667:11; 2668:2, 12; 2669:19; 2768:10; 2786:1, 6, 13</p> <p>composition [1] - 2599:1</p> <p>comprehensive [17] - 2500:10; 2507:1; 2569:22; 2574:6; 2588:12; 2589:9; 2603:8; 2606:22; 2664:15, 19; 2690:7; 2728:1, 8; 2761:23; 2777:2, 6, 9</p> <p>comprehensively [1] - 2581:22</p> <p>comprised [2] - 2570:15; 2660:25</p> <p>compromised [1] - 2736:7</p> <p>compute [1] - 2591:16</p> <p>concedes [1] - 2669:17</p> <p>concentrations [3] - 2579:3; 2772:16, 19</p> <p>concept [1] - 2795:3</p> <p>concepts [1] - 2747:1</p> <p>conceptual [4] - 2520:16; 2523:20; 2727:10; 2728:24</p> <p>concern [33] - 2545:10; 2546:14; 2562:14; 2570:2; 2579:16, 21; 2580:4; 2585:10; 2588:14; 2600:20; 2601:19; 2603:1; 2605:7, 20; 2622:17; 2637:19; 2655:15; 2709:18; 2711:10; 2733:13; 2735:12; 2742:25; 2745:12; 2753:8; 2760:8; 2761:17; 2762:1; 2772:9; 2776:18; 2789:16; 2798:5</p> <p>Concerned [1] - 2493:1</p> <p>concerned [10] - 2538:7; 2563:24; 2606:17; 2706:17; 2718:11; 2735:11; 2742:22; 2752:10; 2753:11; 2783:5</p> <p>concerning [4] - 2522:10; 2704:23; 2736:12; 2803:6</p> <p>concerns [49] - 2505:13; 2518:12; 2522:17; 2525:5, 17; 2528:9; 2531:24; 2532:6, 16; 2533:14; 2535:4, 16, 24;</p>	<p>2536:25; 2538:21; 2540:9; 2542:14, 18; 2546:6; 2547:3; 2562:1, 6, 12; 2574:8; 2579:2; 2585:3; 2591:6; 2596:6, 9, 13; 2605:21; 2606:10; 2608:3; 2630:21; 2640:16; 2644:25; 2654:13; 2668:18; 2704:22; 2708:18; 2710:8; 2752:15; 2760:2; 2761:4; 2764:19; 2783:14; 2790:11; 2792:8; 2804:14</p> <p>concerted [1] - 2573:19</p> <p>conclude [6] - 2608:24; 2625:19; 2679:15; 2700:9; 2711:13; 2799:11</p> <p>concluded [9] - 2563:15; 2594:6; 2624:21; 2633:19; 2639:18; 2695:5, 18; 2701:12; 2705:3</p> <p>concludes [3] - 2609:13; 2695:8; 2710:11</p> <p>concluding [3] - 2574:12; 2660:21; 2782:14</p> <p>conclusion [15] - 2501:17; 2604:18; 2606:19; 2614:16; 2618:1; 2619:21; 2635:5; 2641:18; 2656:23; 2704:13; 2710:15; 2728:16; 2755:12; 2788:4; 2798:5</p> <p>conclusions [8] - 2598:2; 2600:13; 2611:24; 2691:18; 2705:9; 2770:12; 2774:12</p> <p>condition [45] - 2564:9; 2671:19; 2672:7, 15, 18; 2673:4, 9, 12, 17; 2674:15; 2675:3, 15; 2676:1, 9, 13; 2677:5, 17, 21; 2678:6, 9, 14, 20-21; 2726:11; 2736:12, 19; 2737:9; 2740:8, 15; 2741:8, 22; 2774:23; 2775:4; 2777:5, 8, 23; 2779:2; 2790:16; 2791:15; 2793:2, 13; 2798:3; 2799:7; 2805:4, 7</p> <p>conditional [1] - 2742:9</p> <p>conditions [64] - 2516:21; 2517:9; 2533:4; 2542:6; 2549:9; 2577:19; 2580:25; 2591:11, 15; 2592:10; 2599:24; 2600:25; 2602:9; 2607:6, 12; 2616:12; 2671:1, 9, 15; 2678:7, 15; 2685:25; 2687:2; 2711:16; 2716:8; 2736:18, 22; 2739:7; 2740:1; 2742:10; 2744:13; 2745:7, 14, 19, 22, 25; 2753:21; 2757:6; 2759:5, 16;</p>	<p>2761:23; 2767:23; 2768:12, 17; 2769:3, 8, 25; 2770:20; 2771:10, 17; 2772:24; 2773:1, 5, 9, 11, 16; 2774:16, 21, 23, 25; 2797:15; 2799:6</p> <p>conduct [12] - 2507:20; 2529:16; 2530:22; 2536:20; 2541:22; 2544:1, 8; 2583:4; 2623:6; 2675:9, 23; 2779:4</p> <p>conducted [13] - 2508:16; 2534:19; 2538:9; 2542:5; 2543:14; 2583:10, 18; 2595:22; 2609:6; 2643:10; 2723:18; 2755:24; 2759:10</p> <p>conducting [4] - 2505:16; 2538:17; 2600:12; 2643:16</p> <p>conductive [1] - 2592:10</p> <p>conductivity [5] - 2589:3; 2592:4; 2759:10, 21; 2761:7</p> <p>conduit [2] - 2715:14; 2743:16</p> <p>Conference [1] - 2653:11</p> <p>conference [3] - 2524:24; 2634:16; 2637:3</p> <p>confidence [6] - 2560:7; 2601:25; 2738:5; 2757:14; 2758:6; 2766:22</p> <p>confident [5] - 2565:3, 13; 2595:8, 15; 2596:2</p> <p>configuration [2] - 2647:8; 2757:4</p> <p>configure [1] - 2652:6</p> <p>configured [2] - 2761:18; 2762:11</p> <p>confined [1] - 2759:15; 2804:2</p> <p>confirm [6] - 2508:4; 2530:23; 2538:3; 2561:14; 2776:25; 2787:10</p> <p>confirmation [1] - 2582:11</p> <p>confirmed [12] - 2505:25; 2515:3; 2523:17; 2543:25; 2573:20; 2590:16; 2666:2, 5; 2669:24; 2671:6; 2693:17; 2706:10</p> <p>confirms [2] - 2541:8; 2558:22</p> <p>conflict [4] - 2723:19, 22; 2735:8, 16</p> <p>conflicts [4] - 2525:22; 2735:10, 15, 23</p> <p>confluence [10] - 2519:5; 2582:15; 2617:3; 2619:18; 2621:20; 2625:10; 2645:24; 2650:3; 2687:22; 2752:21</p> <p>confused [3] - 2591:2; 2592:20; 2603:13</p>	<p>conjecture [3] - 2504:8; 2638:11</p> <p>conjunction [1] - 2550:4</p> <p>connected [1] - 2758:17</p> <p>connections [1] - 2665:21</p> <p>consent [2] - 2533:5; 2670:19</p> <p>consequence [17] - 2507:25; 2559:12; 2606:4; 2651:19, 22, 25; 2652:1, 7; 2685:20; 2743:25; 2744:9; 2747:7; 2750:12; 2760:24</p> <p>consequences [6] - 2566:20; 2693:11; 2747:5; 2755:2; 2789:18; 2798:8</p> <p>consequently [4] - 2520:23; 2593:8; 2601:13; 2727:22</p> <p>conservancy [1] - 2698:14</p> <p>Conservancy [1] - 2698:21</p> <p>Conservation [4] - 2492:1; 2637:11; 2645:3; 2684:1</p> <p>conservation [3] - 2665:9; 2684:2; 2779:10</p> <p>conservatism [1] - 2597:19</p> <p>conservative [14] - 2564:20; 2565:5; 2566:19; 2589:5; 2593:5; 2598:5; 2645:19; 2649:7; 2650:20, 23; 2657:13; 2749:24; 2750:1</p> <p>consider [29] - 2501:3; 2519:2; 2522:4; 2526:15; 2534:15; 2540:9; 2561:22; 2607:15; 2637:17; 2638:25; 2665:20; 2666:7; 2679:2; 2683:17, 22-23; 2687:8; 2694:24; 2700:15; 2705:7; 2726:12; 2753:23, 25; 2755:12; 2759:4; 2780:6; 2792:5; 2795:20; 2799:4</p> <p>considerable [7] - 2511:18; 2519:2; 2537:16; 2568:18; 2622:16; 2689:8; 2754:11</p> <p>considerably [2] - 2552:4; 2553:21</p> <p>consideration [32] - 2522:2; 2533:18; 2534:14; 2542:12; 2563:13; 2566:6; 2572:11; 2574:6; 2575:6; 2597:18; 2599:19; 2614:3; 2615:19; 2624:23; 2631:9; 2665:19; 2668:12; 2683:16; 2694:14, 21; 2696:6, 10, 12; 2704:20; 2709:14; 2731:3; 2738:18; 2743:7;</p>	<p>2765:15; 2768:10; 2781:22; 2790:10</p> <p>considerations [13] - 2503:16; 2569:1; 2574:8; 2601:22; 2614:1; 2615:22; 2624:25; 2663:11; 2694:10; 2750:3; 2769:7; 2780:18; 2804:1</p> <p>Considered [1] - 2726:18</p> <p>considered [25] - 2518:22, 25; 2521:24; 2562:4; 2595:14; 2611:19; 2613:16; 2614:19; 2634:8; 2635:7; 2664:20; 2667:6; 2678:23; 2684:8; 2703:3, 22; 2726:15, 21; 2736:5; 2740:13; 2742:23; 2744:16; 2761:22; 2773:22; 2795:3</p> <p>considering [14] - 2500:20; 2585:16; 2607:20; 2623:20; 2655:21; 2699:8; 2700:25; 2701:22; 2717:4; 2730:18; 2736:9; 2759:24; 2776:19</p> <p>considers [2] - 2526:21, 24</p> <p>consist [4] - 2500:12; 2549:14, 20; 2552:25</p> <p>consistent [6] - 2506:14; 2703:8; 2735:4, 6; 2746:14; 2793:11</p> <p>constant [2] - 2553:14; 2627:15</p> <p>constitute [5] - 2526:20, 24; 2569:13; 2572:19; 2664:12</p> <p>constitutes [2] - 2567:18; 2666:21</p> <p>Constitution [1] - 2531:19</p> <p>constitutional [2] - 2667:4, 8</p> <p>constitutionally [1] - 2666:12</p> <p>constrain [3] - 2550:17; 2759:20; 2761:16</p> <p>constraint [1] - 2733:11</p> <p>constraints [2] - 2646:13; 2750:1</p> <p>construct [2] - 2710:3; 2789:17</p> <p>constructed [4] - 2508:2; 2550:6; 2697:16; 2715:14</p> <p>constructing [1] - 2504:11</p> <p>construction [54] - 2505:1; 2508:11; 2513:3; 2514:23; 2515:17; 2516:20; 2517:8; 2528:18, 25; 2529:1; 2534:3, 12; 2541:18; 2543:24; 2544:2, 9; 2570:20, 24; 2571:4; 2594:14; 2596:16; 2607:19; 2608:10, 22; 2611:21; 2616:13; 2635:18;</p>
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<p>2636:9; 2643:3; 2655:14; 2657:14; 2670:4; 2671:2, 21; 2672:8; 2673:14, 25; 2683:3; 2704:12; 2713:11; 2714:1, 23; 2723:1; 2777:7; 2781:10, 12; 2789:19, 22; 2790:4, 6, 18; 2793:15 consult [7] - 2529:12, 24; 2531:16; 2537:9, 14; 2666:4; 2667:2 consultant [3] - 2560:16; 2567:5; 2588:6 consultants [3] - 2650:19; 2800:15; 2802:8 consultation [51] - 2517:2; 2522:11; 2523:5; 2525:19; 2526:16, 20, 24-25; 2527:23; 2528:5; 2529:2, 5; 2530:3, 6-7, 10, 12, 18-19, 21-23, 25; 2531:2, 6, 12, 20; 2534:15, 20; 2535:20; 2536:5, 12; 2537:12, 18; 2539:9; 2542:13; 2665:24; 2666:15, 20-21; 2668:19; 2678:14, 18; 2723:17; 2728:22; 2730:16, 25; 2734:17; 2805:9 Consultation [2] - 2529:20; 2666:2 consulted [2] - 2523:10; 2640:11 consulting [1] - 2735:3 consumptive [3] - 2693:25; 2694:3; 2695:16 contact [5] - 2524:22; 2525:12; 2528:19; 2543:8; 2608:12 contain [3] - 2610:22; 2639:15; 2762:8 contained [1] - 2581:12 containing [1] - 2584:8 contains [1] - 2644:19 contaminant [1] - 2593:13 contaminants [6] - 2593:3, 6-7, 10; 2623:14; 2758:14 contaminated [4] - 2694:4; 2753:1, 3, 5 contamination [1] - 2592:25 contemplated [2] - 2712:5; 2734:9 contemplating [1] - 2791:11 contend [1] - 2803:14 contents [1] - 2724:22 contents [1] - 2613:24 context [10] - 2499:21; 2500:3;</p>	<p>2506:8; 2596:14; 2597:21; 2604:2; 2605:19; 2695:18; 2703:5; 2743:5 contextual [2] - 2502:3; 2503:9 contextual-type [1] - 2502:3 contextually [2] - 2653:14; 2726:21 contiguous [1] - 2724:16 contingencies [1] - 2566:10 contingent [1] - 2533:4 continue [15] - 2515:21; 2525:7; 2546:23; 2553:12; 2608:18; 2627:15; 2640:15; 2684:17; 2689:19; 2734:11; 2748:3; 2764:9; 2778:8; 2804:16 continued [7] - 2523:18; 2524:1; 2535:23; 2544:25; 2545:22; 2546:13; 2704:17 continues [3] - 2509:23; 2574:12; 2626:17 continuing [2] - 2544:14; 2628:5 continuously [1] - 2652:4 contract [1] - 2673:5 contracting [1] - 2534:4 contractor [1] - 2529:1 contractors [2] - 2534:11; 2672:9 contrary [2] - 2598:12; 2759:7 contrast [5] - 2599:15; 2640:4; 2727:8, 16; 2728:22 contrasted [1] - 2589:7 contravention [1] - 2707:18 contribute [1] - 2503:8 contribution [1] - 2619:3 control [22] - 2502:24; 2513:20; 2521:8, 19; 2549:25; 2564:24; 2596:22; 2601:3; 2618:12; 2634:1; 2662:4, 18; 2663:2; 2664:6; 2665:19; 2670:12; 2672:21; 2678:22, 24; 2700:16; 2726:8; 2765:2 controlled [2] - 2741:25; 2759:16 controlling [1] - 2553:19 controls [11] - 2767:5, 7, 9; 2770:17; 2771:19; 2773:21; 2774:14 convenient [1] - 2763:10 conventional [2] - 2749:6, 15 conversation [1] -</p>	<p>2797:17 conversations [2] - 2790:11 converts [1] - 2533:7 convey [2] - 2551:6; 2710:4 conveyance [1] - 2727:25 convince [1] - 2762:23 convinced [4] - 2506:12; 2613:18; 2682:23; 2748:11 copier [1] - 2630:12 Copithorne [9] - 2593:24; 2685:14, 20; 2688:19, 23; 2689:10; 2732:8; 2782:11 copy [7] - 2496:22; 2497:17; 2610:21; 2644:18; 2660:23; 2680:1; 2806:7 core [5] - 2511:5; 2621:18; 2647:17; 2712:11; 2759:15 Corn [1] - 2699:15 Corner [1] - 2765:19 corners [2] - 2800:23; 2801:11 corporation [1] - 2714:19 corporations [1] - 2510:10 Corps [1] - 2743:19 correct [6] - 2526:22; 2659:21; 2714:3; 2717:16; 2796:1; 2797:21 corrected [1] - 2766:10 correction [1] - 2766:10 CORRECTIONS [2] - 2495:21; 2660:8 corrections [2] - 2498:14; 2659:20 correctly [1] - 2726:20 correlation [1] - 2703:6 correspondence [2] - 2534:22; 2537:2 corridors [3] - 2624:19; 2625:4, 14 cost [52] - 2516:16; 2517:3; 2519:3; 2523:21; 2625:1, 21-22; 2649:5, 8; 2664:13; 2683:4; 2712:17; 2713:9, 11, 23; 2714:1, 3, 11, 13, 21, 25; 2715:1, 7, 17, 22-23; 2716:3; 2719:19; 2720:11, 17; 2721:23-25; 2722:1, 3, 5, 13-14, 20; 2724:18; 2727:14; 2748:8; 2762:25; 2771:4; 2775:3; 2801:3 cost/benefit [1] - 2642:10 costing [1] - 2714:6 costly [2] - 2512:9; 2716:13 costs [120] - 2510:10, 25; 2511:17; 2513:12; 2514:21; 2516:2, 19, 24; 2517:14, 18; 2518:8,</p>	<p>10, 16, 20; 2624:7; 2625:20; 2629:1; 2631:2; 2662:3; 2664:5, 22; 2665:11; 2684:22; 2685:1; 2690:5; 2699:25; 2703:19; 2710:9, 13; 2711:11, 13-14; 2713:4, 9, 12, 20, 24; 2714:4, 8, 17, 22; 2715:2, 11, 22; 2716:8, 12, 22, 24; 2717:2, 6, 9, 15, 17; 2718:11, 14-20, 22-24; 2719:2, 6, 11, 13, 15, 25; 2720:1, 3, 5, 11, 18, 20, 22; 2721:2, 4, 7, 9, 11, 15-16, 18, 21; 2722:6, 9, 11, 19, 23; 2723:1, 3, 5, 7, 10; 2725:3, 13; 2726:1; 2729:19; 2742:11; 2748:13; 2800:21; 2801:22-24; 2802:2 Costs [1] - 2709:25 Cougar [21] - 2506:3; 2611:22; 2612:4; 2613:15; 2614:4, 18; 2615:3, 22; 2616:4, 21; 2620:8; 2624:14; 2625:3; 2628:15; 2641:12, 14; 2682:14; 2683:3; 2780:9 Coulee [10] - 2696:23; 2697:2, 4, 8, 10, 25; 2698:2, 11; 2727:24 Council [2] - 2607:4; 2698:15 counsel [14] - 2495:14; 2498:15, 18; 2517:24; 2560:10; 2588:17; 2610:11; 2643:8; 2644:8; 2680:11; 2733:8; 2784:1, 3; 2805:22 Counsel [2] - 2492:10 counsels [2] - 2496:16; 2732:18 counter [1] - 2592:5 counter-narrative [1] - 2592:5 countered [1] - 2588:11 counties [1] - 2633:21 country [4] - 2504:13; 2689:17; 2747:8; 2800:2 Country [1] - 2685:6 county [3] - 2556:7; 2717:5; 2795:3 County [23] - 2505:13; 2513:1, 5; 2555:21; 2556:6, 25; 2708:10, 22; 2713:15; 2717:5; 2721:16; 2729:1, 6, 21; 2730:6; 2748:10; 2783:7; 2789:3; 2794:13; 2795:2, 7; 2796:14; 2797:6 County's [3] - 2558:18; 2705:10; 2708:6 couple [4] - 2498:10; 2523:8; 2584:11; 2612:18</p>	<p>course [22] - 2497:18; 2498:20; 2502:9; 2552:15; 2557:24; 2564:15; 2574:1; 2607:5, 9; 2618:14, 16; 2688:20; 2689:6; 2696:19; 2701:8; 2733:23; 2784:3, 17; 2786:19; 2792:15; 2806:13 courses [2] - 2708:23; 2781:9 court [111] - 2494:6; 2497:18; 2609:1; 2610:21; 2612:10; 2613:5; 2643:8; 2644:14; 2733:23; 2798:23; 2807:20 Court [7] - 2493:5; 2661:9; 2666:5, 10; 2669:24; 2788:17; 2793:23 COURT [2] - 2612:23; 2632:9 courts [1] - 2542:4 cover [2] - 2770:24 coverage [2] - 2791:12 covered [2] - 2760:18; 2769:21 covering [1] - 2605:14 COVID-19 [1] - 2666:1 cracks [1] - 2745:24 CRAG [11] - 2510:24; 2659:11, 17; 2660:9; 2681:19; 2709:11; 2725:19, 23; 2726:1, 15; 2731:4 CRAG's [1] - 2725:15 create [8] - 2594:4; 2597:1; 2622:9; 2631:16; 2635:2; 2760:15; 2782:16; 2783:19 created [5] - 2587:21; 2628:23; 2665:25; 2694:20; 2731:17 creates [8] - 2533:6; 2631:13; 2685:23; 2700:10; 2706:9; 2714:14; 2724:19; 2734:8 creating [2] - 2754:9; 2763:8 creation [1] - 2732:2 credibility [1] - 2690:3 credible [3] - 2560:6; 2578:12; 2592:7 Cree [1] - 2666:23 creek [2] - 2697:9; 2753:12 Creek [58] - 2502:25; 2506:3; 2519:5; 2521:7; 2548:9; 2552:15; 2582:15, 25; 2611:22; 2612:4; 2613:15; 2614:4, 18; 2615:3, 22; 2616:4, 21; 2620:8; 2624:14; 2625:3; 2628:15; 2633:1; 2634:4; 2641:12, 15; 2682:7, 14; 2683:3; 2697:10; 2698:3; 2699:7; 2702:24; 2703:6;</p>
---	--	---	--	---

<p>2705:13, 21-22; 2707:15; 2713:5, 13; 2715:12, 15; 2717:21; 2718:2, 4, 8; 2721:12; 2722:2, 6; 2723:2; 2729:7; 2752:12; 2753:14; 2756:21, 24; 2780:9 crest [1] - 2741:13 crew [2] - 2719:23; 2720:23 crime [1] - 2542:3 criteria [6] - 2563:9; 2664:9; 2693:2; 2694:13; 2696:1; 2751:18 criteron [1] - 2585:25 critical [17] - 2514:5; 2516:7; 2606:13; 2610:15; 2614:13; 2616:24; 2622:22; 2629:23; 2638:15; 2645:16; 2647:14; 2657:8; 2700:24; 2701:19; 2727:21; 2798:14 critically [2] - 2618:4; 2739:11 critique [1] - 2739:16 crops [1] - 2776:15 cross [42] - 2526:19; 2536:9; 2555:20, 23; 2560:9, 13-14; 2566:8; 2576:6; 2579:19; 2585:25; 2587:3, 8; 2588:8, 16, 20; 2591:1, 3, 5; 2592:20; 2593:22; 2599:21; 2605:5; 2626:21; 2654:12; 2686:4; 2702:1; 2706:8, 15; 2708:4; 2713:24; 2742:21; 2755:24; 2756:6, 10; 2775:9; 2776:24; 2778:2; 2793:18, 20; 2796:16 cross-exam [1] - 2686:4 cross-examination [28] - 2526:19; 2536:9; 2555:20, 23; 2560:13; 2566:8; 2579:19; 2585:25; 2587:3, 8; 2588:8, 16, 20; 2591:1, 3, 5; 2592:20; 2599:21; 2702:1; 2706:8; 2708:4; 2713:24; 2742:21; 2755:24; 2756:6, 10; 2775:9 cross-examined [3] - 2560:9; 2593:22; 2654:12 cross-examining [1] - 2576:6 cross-hairs [1] - 2626:21 crosshairs [1] - 2803:3 Crossing [2] - 2661:5; 2788:19 Crown [14] - 2515:12; 2522:7; 2529:2; 2531:17; 2533:7; 2538:17; 2546:22; 2666:8; 2676:13, 15, 18, 22; 2677:2; 2730:12</p>	<p>Crown's [2] - 2537:8; 2666:3 CRR [1] - 2493:5 crucial [2] - 2649:11; 2685:23 crystal [2] - 2694:3; 2698:11 CSR(A) [2] - 2493:5 cubed [16] - 2551:11; 2553:5, 7-8, 15; 2554:18; 2559:2; 2562:17; 2592:6; 2619:1, 12, 14; 2697:13; 2751:25 cubic [39] - 2548:23; 2551:9, 14; 2552:8, 10, 18; 2553:3, 10; 2554:2, 6, 16, 19, 21; 2558:24; 2592:2; 2646:17; 2648:16; 2651:11; 2687:11; 2688:12; 2697:12, 18, 24; 2707:8-11, 14; 2712:25; 2738:9; 2739:2; 2759:22; 2801:15, 17 cultural [18] - 2539:10, 13; 2540:20; 2542:3; 2608:21; 2621:16; 2664:20; 2665:21; 2668:1, 21; 2669:8; 2672:7, 10; 2674:3, 6, 22; 2675:14; 2731:17 culturally [2] - 2544:11; 2676:12 Culture [6] - 2540:19; 2541:14, 17, 23; 2542:7; 2672:25 culture [3] - 2668:6; 2682:12; 2725:9 culverts [1] - 2625:9 cumulative [6] - 2574:16; 2595:24; 2674:12; 2679:8; 2781:19 Cundliffe [3] - 2492:14; 2496:16; 2498:6 Cunningham [1] - 2492:12 curb [1] - 2734:18 current [12] - 2516:3, 24; 2574:1; 2576:12; 2578:6; 2630:24; 2693:23; 2694:1; 2695:6; 2717:12; 2782:3; 2792:17 curves [1] - 2573:16 CUSANO [13] - 2497:15; 2498:13, 24; 2609:21; 2610:1, 3, 8; 2612:8; 2613:8, 14; 2632:1, 14; 2635:25 Cusano [10] - 2492:20; 2497:13; 2609:10, 20, 24; 2610:6; 2612:7; 2613:1; 2635:22; 2643:14 custodians [1] - 2745:20 customers [2] - 2580:13; 2621:7 customers' [1] - 2655:3 cut [7] - 2559:5; 2573:19; 2681:3, 9; 2690:4; 2734:14; 2800:23</p>	<p>cutting [1] - 2801:11</p> <p style="text-align:center">D</p> <p>Dam [20] - 2524:5; 2561:11; 2562:20; 2563:1; 2568:24; 2569:18; 2570:10; 2571:5; 2647:22; 2668:25; 2707:20; 2741:4; 2742:2, 4, 9, 21; 2745:10; 2751:24 dam [86] - 2504:11, 18-19; 2507:2, 24-25; 2520:20; 2548:2, 15; 2549:16; 2551:24; 2552:1, 4, 6, 14; 2553:21; 2555:15; 2559:7, 11, 13; 2560:2; 2561:9, 15-16, 21; 2562:22; 2563:2; 2565:8, 10, 16, 19; 2566:12, 17, 22, 25; 2567:8, 11, 18; 2568:1, 8, 19-20, 23; 2581:5, 7; 2594:20; 2603:20; 2606:17; 2635:13; 2636:3; 2651:20; 2686:22; 2696:16; 2697:13; 2699:2; 2700:1; 2706:18; 2709:16; 2716:12, 19; 2719:15, 17, 19; 2726:6; 2728:18, 21; 2729:7; 2739:22; 2741:11, 14, 24; 2743:3, 25; 2744:5, 9, 23; 2747:7; 2751:25; 2755:7; 2789:22; 2795:11; 2801:13 dam-permitting [1] - 2561:9 damage [26] - 2504:24; 2510:21; 2511:3; 2512:4, 15; 2554:5; 2573:25; 2613:24; 2620:10, 15; 2622:3; 2623:20; 2624:12, 15; 2625:1; 2635:17; 2636:7; 2647:19; 2662:18; 2687:5; 2689:3, 8; 2712:12; 2793:2, 7, 9 damaged [4] - 2511:6; 2621:1; 2627:24; 2721:19 damages [28] - 2511:2; 2512:9, 12, 14; 2516:15; 2518:1; 2624:1, 4, 18; 2625:13; 2626:2; 2647:3; 2648:18, 23-25; 2649:3, 15, 22; 2652:24; 2686:16, 19; 2712:17; 2792:20, 24 dammed [1] - 2548:12 dams [12] - 2571:9, 11; 2579:13; 2652:1; 2691:9; 2698:14, 21; 2700:15; 2742:1, 12-13; 2744:18 Dams [2] - 2698:16; 2743:19 Dan [2] - 2587:6; 2590:20 dangerous [1] - 2746:17 Daniel [1] - 2492:9</p>	<p>Darrell [1] - 2579:7 data [16] - 2576:20; 2577:14; 2578:14; 2583:5, 25; 2587:20; 2589:12; 2749:12; 2751:13; 2755:3; 2759:11, 13; 2766:14; 2790:24 date [10] - 2524:23; 2633:19; 2640:21; 2652:23; 2713:9; 2716:4; 2794:23; 2795:1; 2800:22; 2803:18 dated [5] - 2698:15; 2708:12; 2728:11; 2729:1 daunting [1] - 2643:9 Dave [2] - 2515:3; 2737:2 David [3] - 2492:19; 2512:11; 2575:11 days [16] - 2511:5; 2515:17; 2552:20; 2564:18; 2621:6, 11; 2630:14; 2652:2; 2689:18; 2699:6; 2720:19, 25; 2734:10; 2742:20; 2807:19 De [6] - 2599:11, 16; 2602:22; 2770:23; 2776:24 de [2] - 2662:15; 2778:2 deadlines [2] - 2527:15; 2528:1 deal [10] - 2498:1, 22; 2556:10; 2558:7; 2566:11; 2711:9; 2739:6; 2747:17; 2749:7; 2805:8 dealing [8] - 2568:6; 2581:22; 2596:23; 2695:15; 2764:15; 2766:14; 2803:17; 2804:18 dealings [1] - 2804:21 deals [1] - 2741:10 dealt [10] - 2568:16; 2569:5; 2746:13; 2750:20; 2763:22; 2775:7; 2804:17, 23; 2807:24 death [2] - 2509:10; 2623:1 debacle [1] - 2731:7 debate [1] - 2504:7 debris [19] - 2504:20; 2517:15; 2532:13; 2549:21; 2550:10, 12-13; 2611:22; 2613:19, 21; 2635:14; 2636:4; 2651:15; 2697:4; 2699:20, 23; 2704:5 decades [1] - 2642:21 December [5] - 2508:9; 2582:8; 2586:6; 2729:1 decent [1] - 2493:15 decide [1] - 2710:23 decimated [1] - 2731:22 decision [55] - 2502:21; 2503:10; 2506:3; 2509:2; 2519:8, 14; 2520:3; 2530:13, 15; 2531:2,</p>	<p>5, 16; 2611:21, 24; 2612:1; 2613:15; 2615:8; 2616:21; 2620:8; 2624:14; 2628:15; 2634:16; 2636:16; 2637:3, 19, 21; 2638:20; 2641:12; 2642:5; 2653:14; 2682:14; 2688:20; 2691:13, 16; 2694:20; 2697:8, 14; 2703:10; 2705:1; 2708:16; 2710:1, 6; 2714:11; 2721:3, 8; 2726:22, 24-25; 2739:9; 2761:2; 2780:9, 17; 2800:7, 17 Decision [6] - 2653:11; 2691:15, 19; 2694:7; 2695:2; 2738:12 decision-makers [1] - 2780:17 decision-making [2] - 2520:3; 2531:5 decisions [8] - 2505:25; 2679:8; 2705:19; 2706:23; 2729:11; 2749:16; 2763:6; 2800:4 Declaration [1] - 2671:4 declared [1] - 2621:10 declining [1] - 2691:12 deeper [1] - 2703:3 deepest [1] - 2557:4 deer [1] - 2803:7 defend [1] - 2565:1 defer [1] - 2787:13 deferred [2] - 2691:21; 2738:21 deficits [2] - 2513:23; 2695:7 define [1] - 2694:23 defined [6] - 2506:20; 2531:20; 2545:4; 2556:14; 2557:1, 11 definition [3] - 2541:24; 2557:1, 10 definitions [3] - 2556:13, 24; 2557:18 deflection [3] - 2517:15; 2549:21; 2550:10 deflector [2] - 2532:13; 2697:4 degraded [3] - 2724:17; 2725:9; 2771:22 degree [9] - 2513:20; 2517:1; 2560:7; 2600:10; 2640:6; 2751:4; 2758:9; 2759:3; 2781:22 delay [2] - 2616:13 delayed [1] - 2642:21 delays [1] - 2783:17 delegated [1] - 2530:24 deliberation [1] - 2795:1 deliberations [1] - 2501:14 delineate [1] - 2512:15 deliver [1] - 2510:14 delivered [2] -</p>
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<p>2516:18; 2703:13 delivering [2] - 2547:15; 2609:25 delivery [1] - 2494:8 Deltares [3] - 2700:4; 2737:4, 13 demand [3] - 2631:9; 2663:9; 2695:16 demands [1] - 2696:4 demolished [1] - 2627:25 demonstrate [3] - 2585:4; 2625:16; 2767:16 demonstrated [13] - 2516:7, 13; 2534:18; 2574:13; 2589:23; 2592:19; 2606:20; 2627:20; 2767:18; 2769:4, 11; 2772:5; 2774:11 demonstrates [4] - 2537:6; 2586:21; 2686:8; 2768:2 denial [1] - 2728:9 denied [2] - 2670:2; 2691:2 denying [1] - 2780:15 Department [1] - 2622:24 department [2] - 2502:5; 2804:23 dependent [3] - 2649:23; 2739:6; 2768:1 deposited [2] - 2576:1; 2596:11 deposits [3] - 2757:23; 2769:13; 2770:2 depression [1] - 2623:14 depth [3] - 2590:4; 2612:5; 2730:17 derail [1] - 2625:12 describe [3] - 2518:24; 2627:2; 2629:17 described [8] - 2520:13; 2521:23; 2532:3; 2565:18; 2569:12; 2592:7; 2594:15; 2652:13 describes [2] - 2583:15; 2595:4 describing [1] - 2679:5 description [2] - 2547:22; 2676:20 descriptions [1] - 2780:19 desecration [1] - 2668:23 design [12] - 2507:25; 2508:4; 2512:5; 2516:20; 2517:1, 4-5, 7; 2522:23; 2523:16, 20; 2547:17, 20; 2549:10; 2551:12, 14; 2552:11, 18; 2554:1, 16-17; 2556:17; 2558:22; 2559:8, 20, 22, 25; 2560:1, 8, 11; 2562:10, 13, 23; 2563:8, 12, 21, 25; 2565:4, 12, 23; 2566:7, 15; 2567:13,</p>	<p>16; 2571:17, 19, 24; 2572:5, 10, 20; 2573:6, 10; 2578:1; 2584:23; 2591:17, 21; 2603:25; 2605:7, 12; 2612:2; 2614:14; 2615:13; 2618:20; 2620:17; 2624:5; 2625:24; 2626:3; 2633:3; 2644:24; 2645:20; 2647:11; 2648:1, 14; 2650:18, 20, 23-24; 2651:14, 24; 2652:6; 2653:19; 2685:23; 2696:21; 2700:18; 2707:9, 15, 18; 2709:17; 2716:16, 18; 2717:25; 2719:5, 8, 10-11, 14; 2720:10; 2721:9, 22; 2727:10; 2728:24; 2736:25; 2737:9; 2740:11, 18; 2743:7, 13; 2744:7; 2746:3; 2748:14; 2749:22; 2750:1, 3-4; 2751:17; 2753:13; 2754:2; 2755:7; 2804:6 Design [4] - 2508:8; 2517:11; 2743:19 designate [1] - 2765:25 designated [1] - 2559:11 designation [1] - 2779:16 designed [24] - 2508:1; 2520:20; 2521:1; 2529:18; 2548:6; 2551:8; 2552:7; 2559:14; 2560:21; 2572:16; 2578:14; 2614:14; 2618:19; 2633:2; 2640:2, 5; 2648:15; 2651:1, 7, 17; 2657:12; 2706:5; 2712:8; 2749:23 designer [1] - 2559:16 designing [1] - 2605:9 designs [2] - 2584:13; 2749:20 desperate [1] - 2698:7 despite [12] - 2502:4; 2503:24; 2580:9; 2599:2; 2634:18; 2650:25; 2710:8; 2715:25; 2726:15; 2729:25; 2782:1; 2793:8 destinations [1] - 2788:8 destroy [2] - 2669:7; 2736:6 destroyed [1] - 2693:14 destroying [1] - 2802:13 destruction [6] - 2509:9; 2542:3; 2668:20; 2736:7, 10; 2780:14 destructive [1] - 2557:5 detail [12] - 2525:11; 2561:12; 2583:15; 2595:14; 2617:25;</p>	<p>2635:11; 2636:1; 2716:3; 2719:24; 2721:5; 2784:13; 2793:15 detailed [13] - 2513:7; 2517:7; 2520:4; 2523:3, 16; 2526:14; 2560:25; 2568:20; 2577:15; 2590:4; 2596:3; 2668:17; 2694:13 details [8] - 2521:23; 2570:25; 2676:21; 2697:1; 2701:12, 14; 2716:4; 2777:12 detect [2] - 2760:4; 2774:7 detected [1] - 2601:20 detection [1] - 2594:25 detention [1] - 2737:6 deter [1] - 2585:17 determination [8] - 2501:13; 2503:9, 18; 2506:6; 2634:8; 2666:8; 2667:19; 2694:11 determine [12] - 2505:20; 2520:6; 2585:22; 2591:11; 2645:3; 2662:2; 2664:8; 2710:19; 2714:20; 2718:13; 2768:22; 2771:4 determined [12] - 2556:20, 22; 2557:5, 14; 2569:21; 2583:14; 2586:23; 2591:20; 2616:21; 2667:18; 2741:24; 2790:17 determines [1] - 2793:14 determining [9] - 2503:3; 2506:1; 2519:17; 2614:22; 2624:16; 2639:2; 2653:9; 2715:1; 2780:7 deterrence [1] - 2754:7 detour [2] - 2713:18; 2722:11 detoured [2] - 2621:6; 2725:18 detriments [1] - 2754:7 devastating [1] - 2510:4; 2614:8; 2617:20; 2618:25; 2626:23; 2628:18; 2631:23; 2632:20; 2639:25; 2644:24; 2646:5 devastation [4] - 2611:9; 2627:5, 9, 17 develop [3] - 2676:17; 2735:3; 2777:6 developed [6] - 2520:14; 2533:18; 2534:6; 2545:5; 2607:20; 2726:5 developing [2] - 2532:20; 2615:11 Development [2] - 2505:10; 2630:17 development [49] - 2532:16; 2533:21;</p>	<p>2536:15; 2546:8, 25; 2556:7, 10; 2557:22, 25; 2558:2, 5, 8, 18-19; 2574:22; 2580:17; 2588:2; 2589:15; 2603:8; 2605:25; 2607:16, 18; 2648:14; 2672:13, 19; 2673:2, 18; 2674:18, 23; 2676:5; 2677:23; 2678:3, 5; 2692:2, 12; 2694:17; 2695:19; 2708:7; 2712:2; 2734:8; 2760:22; 2788:12; 2794:1; 2795:15, 22; 2796:24; 2797:3 developments [4] - 2605:22; 2765:22; 2788:19; 2793:24 device [1] - 2585:17 devoid [1] - 2598:23 dewatering [5] - 2565:18; 2566:12, 23; 2567:1; 2743:15 DFO [8] - 2509:5, 20, 24; 2585:14; 2586:7, 15, 23 dialogue [1] - 2689:1 diametrically [1] - 2709:4 difference [3] - 2699:17; 2729:16; 2768:6 differences [3] - 2590:7; 2598:17; 2737:22 different [12] - 2585:23; 2635:2; 2698:23; 2699:19, 24; 2732:22; 2749:12; 2758:3; 2793:11; 2795:5; 2802:3 differing [1] - 2698:25 difficult [4] - 2622:8; 2649:11; 2760:5; 2805:21 dig [3] - 2761:24; 2802:17; 2804:11 digested [1] - 2644:22 diligence [2] - 2749:9; 2776:6 dimensions [1] - 2605:9 diminish [1] - 2708:2 diminishing [1] - 2762:25 DiPaolo [1] - 2784:4 direct [19] - 2510:8; 2513:15; 2550:18; 2557:19; 2588:7; 2603:12; 2624:7; 2630:8; 2652:20; 2698:10; 2716:3; 2719:2, 15, 25; 2720:11, 18, 22; 2726:23; 2772:16 directed [6] - 2528:25; 2529:23; 2530:11; 2550:8; 2553:8; 2611:15 direction [5] - 2502:20; 2503:24; 2519:19; 2529:19; 2589:8 Direction [1] - 2532:17 directions [2] -</p>	<p>2546:11; 2780:7 Directive [8] - 2561:12; 2568:25; 2569:18; 2570:11; 2571:6; 2741:5; 2742:22; 2745:10 directive [1] - 2569:21 directly [14] - 2502:17; 2513:4; 2522:20; 2607:24; 2622:21; 2669:15; 2706:11, 18; 2709:15; 2711:2; 2729:21; 2730:16; 2731:1; 2781:8 director [9] - 2504:16; 2507:24; 2560:2; 2561:15, 21-22; 2565:10; 2567:11; 2571:6 directors [1] - 2531:4 disagree [3] - 2597:25; 2791:6; 2797:23 disagreed [1] - 2599:16 disagreement [2] - 2562:9; 2586:17 disaster [4] - 2512:6; 2611:8; 2627:4; 2747:18 discharge [7] - 2562:15, 23; 2563:3; 2740:5, 10, 13; 2744:6 disclose [2] - 2685:1; 2714:18 disclosed [4] - 2713:18; 2714:25; 2796:17 disclosure [1] - 2714:19 disconcerting [1] - 2731:24 discount [1] - 2793:8 discounted [2] - 2713:10; 2797:18 Discovery [4] - 2582:4, 6; 2648:12; 2765:19 discredit [1] - 2589:19 discrepancies [1] - 2588:24 discrepancy [1] - 2761:13 discrete [1] - 2679:6 discretionary [1] - 2557:23 discuss [7] - 2499:22; 2535:15; 2545:22; 2580:3; 2587:1; 2671:25; 2732:13 discussed [22] - 2502:2; 2521:19; 2525:11; 2597:12, 17; 2603:4; 2653:1, 23; 2686:4; 2700:8, 12; 2709:18; 2715:5; 2727:2; 2728:18; 2729:24; 2740:1; 2744:12; 2782:5; 2792:17; 2793:3; 2801:2 discussing [3] - 2529:5; 2561:2; 2581:2</p>
---	---	--	--	--

<p>discussion [8] - 2545:6; 2591:24; 2599:22; 2613:15; 2650:15; 2656:23; 2700:1; 2736:14</p> <p>discussions [5] - 2508:3; 2509:24; 2545:8; 2585:13; 2729:5</p> <p>diseases [2] - 2623:13; 2776:18</p> <p>disheartening [1] - 2748:1</p> <p>dismissed [3] - 2642:19; 2729:9; 2804:16</p> <p>dismissive [1] - 2723:24</p> <p>disorder [1] - 2623:15</p> <p>dispelled [1] - 2589:16</p> <p>dispersal [2] - 2777:4, 18</p> <p>dispersion [2] - 2768:11; 2770:23</p> <p>displacement [1] - 2511:2</p> <p>display [1] - 2590:10</p> <p>displayed [1] - 2763:16</p> <p>disproportionate [1] - 2700:11</p> <p>dispute [7] - 2562:7; 2584:25; 2631:20; 2632:10, 16; 2685:18; 2724:23</p> <p>disputed [4] - 2576:16; 2590:4, 8; 2779:14</p> <p>disputes [1] - 2685:22</p> <p>disregard [1] - 2708:14</p> <p>disrespectful [1] - 2666:22</p> <p>disruption [4] - 2509:9; 2613:25; 2647:20; 2725:15</p> <p>distance [1] - 2803:20</p> <p>distant [1] - 2666:17</p> <p>distinct [1] - 2749:11</p> <p>distinction [1] - 2590:25</p> <p>distributed [2] - 2494:25; 2787:2</p> <p>distribution [5] - 2498:20; 2594:2; 2602:12; 2725:12; 2766:16</p> <p>District [1] - 2698:22</p> <p>disturb [2] - 2507:22; 2669:7</p> <p>disturbance [3] - 2518:1; 2674:8; 2677:10</p> <p>disturbed [1] - 2781:2</p> <p>ditch [1] - 2688:20</p> <p>diverse [2] - 2507:2; 2698:1</p> <p>diversion [67] - 2507:22; 2517:17; 2549:6, 15-16, 19-20; 2550:2, 5, 7, 9, 11, 13, 18, 20, 24; 2551:1, 3, 5-6, 8, 16, 18, 21; 2553:9, 14; 2554:10; 2563:10, 19;</p>	<p>2564:24; 2573:8; 2584:3; 2585:18; 2594:20; 2605:14; 2613:20; 2651:4; 2691:25; 2694:4; 2695:5, 9, 24; 2697:11; 2700:10, 19, 22; 2702:19; 2716:9; 2727:22; 2729:8; 2738:8; 2740:5, 11; 2742:5; 2744:3, 7; 2751:20; 2753:14; 2754:7, 22; 2777:25; 2792:13</p> <p>Diversion [2] - 2691:14; 2710:3</p> <p>diversions [1] - 2754:23</p> <p>divert [3] - 2549:2; 2554:17; 2739:15</p> <p>diverted [3] - 2710:4; 2720:16; 2751:21</p> <p>diverting [1] - 2648:17</p> <p>divided [1] - 2512:12</p> <p>divisive [1] - 2723:12</p> <p>Dixon [1] - 2702:13</p> <p>document [19] - 2496:17; 2497:10; 2498:3; 2532:18; 2539:16; 2543:19; 2546:19; 2612:24; 2680:25; 2715:20; 2732:14; 2752:3; 2784:2; 2785:23; 2792:1; 2794:21; 2796:9</p> <p>documentary [1] - 2708:9</p> <p>documentation [2] - 2568:10; 2675:12</p> <p>documented [12] - 2530:7; 2549:13; 2552:22; 2553:25; 2723:4; 2746:16; 2748:20; 2750:9; 2756:21; 2757:6, 20; 2794:9</p> <p>documents [14] - 2496:18, 21, 23; 2497:1, 5, 17; 2500:6, 13; 2570:17; 2768:18; 2769:2; 2771:11; 2794:16</p> <p>dollars [4] - 2684:4; 2720:10; 2721:1; 2755:18</p> <p>domestic [2] - 2693:24; 2694:2</p> <p>done [30] - 2494:18; 2498:9; 2509:1; 2520:9; 2549:4; 2572:6, 23; 2583:9; 2585:5, 11; 2589:7; 2593:9; 2597:22; 2600:14; 2601:12; 2629:6; 2646:15; 2689:8; 2703:24; 2728:15; 2744:21; 2746:15; 2753:2; 2754:21; 2755:6; 2760:12; 2780:8; 2799:16</p> <p>Donna [2] - 2493:6; 2784:4</p> <p>double [3] - 2549:23; 2550:5; 2801:1</p> <p>double-gated [2] - 2549:23; 2550:5</p> <p>doubled [3] -</p>	<p>2646:16; 2714:10; 2766:11</p> <p>doubt [7] - 2614:6; 2620:19; 2633:19; 2643:9; 2703:18; 2704:9; 2724:20</p> <p>doubtful [1] - 2781:3</p> <p>Douglas [1] - 2492:22</p> <p>down [21] - 2494:3, 7, 10; 2513:21; 2549:7; 2633:14; 2654:5, 19; 2668:10; 2706:25; 2707:12; 2708:25; 2727:12; 2734:23; 2735:1; 2745:3; 2748:5; 2752:19; 2782:24; 2800:13, 20</p> <p>downloaded [1] - 2721:16</p> <p>downstream [65] - 2504:21; 2511:21, 24; 2515:22; 2516:11; 2518:17; 2547:24; 2550:14; 2553:12, 23; 2554:10; 2555:1; 2559:1; 2566:20; 2575:23; 2582:21; 2616:1, 14; 2619:4, 8, 18; 2620:2, 15; 2621:3, 20; 2623:9; 2625:10; 2631:14, 17; 2633:7; 2634:12, 23, 25; 2638:17; 2639:24; 2640:5; 2641:24; 2642:23; 2645:13; 2647:24; 2649:19; 2662:10; 2665:15; 2682:5; 2687:5, 16, 21; 2688:9; 2692:19; 2698:5; 2704:7; 2708:19; 2712:8; 2725:5; 2731:11; 2738:6, 11; 2739:4; 2747:19; 2750:15; 2751:22, 24; 2778:25; 2781:17; 2782:4</p> <p>downstream's [1] - 2792:14</p> <p>downtown [6] - 2511:4; 2621:18; 2631:4; 2647:17; 2712:11; 2782:17</p> <p>Downtown [1] - 2630:17</p> <p>downwind [4] - 2724:22; 2765:22; 2772:16, 19</p> <p>Dowsett [15] - 2555:3, 11, 15, 20; 2568:4; 2569:4, 7, 20; 2570:1, 7; 2706:10, 14; 2707:4; 2708:4; 2737:2</p> <p>Dowsett's [2] - 2555:8, 18</p> <p>Dr [94] - 2524:18; 2534:16; 2535:6; 2541:7, 19; 2542:2; 2575:11, 14; 2576:14, 21; 2577:12, 21; 2578:3, 6-7; 2587:10; 2588:15; 2589:1, 6, 24; 2590:3, 6; 2591:1, 3; 2592:5, 17, 20; 2597:11, 23; 2598:3, 8, 18, 20, 25; 2599:7, 15, 20, 25; 2600:4; 2602:3, 7, 11, 19;</p>	<p>2603:11, 22; 2683:19; 2685:17; 2696:18; 2702:11; 2703:9; 2737:2; 2746:5; 2750:5; 2755:21; 2756:7; 2759:24; 2760:1; 2762:10; 2764:17; 2766:8, 13; 2767:1, 4, 14, 17, 21, 24; 2768:2, 7, 9; 2769:4, 6; 2770:7, 9, 17, 22; 2771:3, 7-8, 16, 19; 2772:5; 2773:8, 10, 15; 2775:3, 9; 2776:13, 15; 2778:5; 2782:11</p> <p>Draft [5] - 2532:16; 2533:12; 2534:6; 2735:4; 2738:3</p> <p>draft [20] - 2508:20, 24; 2534:9; 2535:8; 2536:21; 2544:17, 21; 2545:18, 20, 23; 2546:10, 18-19; 2582:2; 2584:6; 2594:12, 16; 2639:17; 2734:8; 2735:6</p> <p>dragged [1] - 2783:15</p> <p>drain [2] - 2552:19; 2645:25</p> <p>drainage [3] - 2565:17; 2598:15; 2702:5</p> <p>drained [1] - 2593:19</p> <p>draining [2] - 2720:25; 2740:24</p> <p>drains [2] - 2752:12; 2755:17</p> <p>dramatic [2] - 2645:19; 2699:16</p> <p>draw [2] - 2654:19; 2745:3</p> <p>drawdown [5] - 2604:2; 2743:9; 2767:20, 25; 2771:15</p> <p>drawing [5] - 2513:21; 2698:10; 2783:4; 2802:1; 2805:2</p> <p>drawn [3] - 2633:14; 2704:2; 2765:16</p> <p>Drewry [5] - 2685:15; 2724:2; 2730:25; 2731:4; 2734:12</p> <p>Drewry's [1] - 2732:9</p> <p>drilled [1] - 2589:11</p> <p>drilling [4] - 2587:19; 2589:23; 2590:5; 2757:7</p> <p>drinking [3] - 2788:14; 2796:22; 2798:11</p> <p>driven [2] - 2746:18; 2794:2</p> <p>drives [1] - 2722:13</p> <p>driving [1] - 2803:4</p> <p>drop [5] - 2523:1; 2698:24; 2699:8, 11</p> <p>drop-offs [1] - 2523:1</p> <p>drought [22] - 2514:7, 11; 2519:23; 2520:15; 2577:19; 2591:8; 2632:25; 2634:6; 2654:8; 2664:25; 2684:5; 2688:5, 14; 2694:21; 2698:3; 2712:6; 2728:7; 2749:4;</p>	<p>2750:20; 2751:1; 2759:5; 2796:11</p> <p>droughty [1] - 2656:12</p> <p>dry [15] - 2552:24; 2575:21; 2587:21; 2594:14; 2603:20, 22; 2691:9; 2698:21; 2699:2; 2720:13; 2766:19; 2773:11; 2778:15, 21</p> <p>dubious [1] - 2762:19</p> <p>due [23] - 2504:21; 2511:5, 7; 2512:1; 2513:5; 2564:4; 2603:24; 2630:8; 2649:15; 2687:2; 2721:5; 2722:17; 2725:19, 22; 2749:9; 2752:6; 2758:12; 2769:8; 2781:21; 2782:4; 2783:22; 2793:11</p> <p>dump [1] - 2792:10</p> <p>duration [5] - 2596:17, 24; 2600:22; 2601:22; 2655:10</p> <p>during [90] - 2497:18; 2501:14; 2502:2; 2504:7, 24-25; 2513:2, 10; 2515:18; 2525:11; 2528:18, 24; 2538:8; 2544:2; 2547:2; 2548:1; 2551:14, 19; 2554:8; 2559:1; 2560:4; 2566:6; 2572:18; 2575:21; 2576:9; 2586:6; 2591:5; 2593:15; 2594:13; 2597:17; 2603:22; 2608:10; 2619:16; 2623:11, 17, 24; 2625:5; 2627:19; 2628:9; 2633:14; 2635:17; 2636:7; 2637:13; 2646:8; 2652:20; 2653:20; 2671:10; 2674:7; 2677:9; 2695:17; 2704:11, 15; 2706:15; 2708:3; 2714:23; 2719:20, 22; 2720:13; 2728:23; 2738:19; 2739:11; 2740:1; 2741:14, 18; 2742:3, 24; 2743:24; 2744:13; 2751:1, 11, 15; 2754:23; 2758:16; 2759:25; 2763:17; 2767:6, 25; 2778:14, 21; 2781:10, 12-14; 2790:4, 15</p> <p>dust [27] - 2596:10, 17, 22; 2597:1; 2598:9; 2599:9; 2600:7; 2601:3, 13, 19; 2602:1; 2685:3; 2720:6; 2751:7; 2764:16; 2765:1; 2769:18; 2770:17; 2773:20; 2774:1, 4, 14-15; 2789:15, 19; 2790:6</p> <p>duty [6] - 2531:16; 2537:9, 14; 2666:4; 2667:2; 2763:7</p> <p>dwelling [1] - 2639:8</p>
---	---	--	--	--

dynamics [1] - 2656:2	2492:2; 2493:13; 2612:13	2703:23; 2704:8	2763:22; 2782:25	2743:24
E	Edson [1] - 2542:18	eight [7] - 2511:12, 14; 2529:25; 2549:1; 2637:24; 2647:10; 2731:7	elevation [3] - 2646:1; 2656:17; 2698:24	enable [1] - 2671:22
eagerly [1] - 2687:18	educated [1] - 2763:5	eight-year [1] - 2731:7	elevations [2] - 2550:1, 23	enact [1] - 2623:5
earliest [1] - 2617:17	education [1] - 2765:24	either [9] - 2498:22; 2513:11; 2678:25; 2687:1; 2705:17; 2714:22; 2732:25; 2758:14; 2787:3	eliminate [2] - 2647:23; 2652:18	encompasses [1] - 2605:23
early [13] - 2498:18; 2516:25; 2523:10; 2530:10; 2579:4; 2586:8, 11, 14; 2594:25; 2617:13; 2734:10; 2751:15	effect [9] - 2505:19, 23; 2518:15; 2558:9; 2563:4; 2606:8; 2623:2; 2642:6; 2737:10	elaborate [1] - 2616:15	eliminated [1] - 2648:2	encourage [1] - 2501:13
earned [1] - 2766:23	effective [19] - 2514:19; 2516:19; 2568:2; 2584:4; 2601:3; 2638:16; 2642:19; 2687:4, 12, 15-16, 20, 25; 2688:3; 2708:1; 2722:19; 2737:8, 16; 2771:20	Elbow [132] - 2502:23; 2504:12, 24; 2508:14; 2510:5, 16; 2511:14, 20; 2512:2, 5, 12, 16-17; 2513:17, 25; 2514:6, 10, 20; 2516:10; 2519:4; 2521:25; 2548:7, 10-11, 18, 23; 2549:3, 12, 23; 2550:17; 2551:23; 2552:16; 2554:20; 2558:5; 2572:9, 14, 17; 2575:20; 2576:3; 2577:6, 10; 2578:2; 2581:24; 2582:4, 13, 16, 25; 2585:8; 2586:2; 2606:16; 2614:7; 2616:25; 2617:2, 4; 2618:7; 2619:2, 5, 15; 2621:14, 19-20; 2624:6; 2625:10; 2627:23; 2631:15, 21; 2632:11, 17; 2633:3; 2634:22; 2635:16; 2636:7; 2645:15, 25; 2646:12, 14; 2647:3; 2648:22; 2650:1, 11; 2652:16; 2653:22; 2655:5, 8, 25; 2656:5, 8, 12, 21; 2661:23; 2662:25; 2663:15; 2664:15; 2665:4, 20; 2679:3; 2683:25; 2684:13; 2685:5; 2687:22; 2691:11; 2692:16, 19; 2693:5; 2696:15, 20; 2697:21, 23; 2698:20; 2699:12; 2701:23; 2702:8, 12, 21; 2703:25; 2704:2; 2709:8; 2715:4; 2718:5; 2720:16; 2723:13; 2752:9, 20; 2765:17; 2778:24; 2782:20; 2792:1; 2793:6	eliminates [1] - 2548:14	encouraged [1] - 2545:17
earnest [1] - 2535:2	effectively [5] - 2514:1; 2590:9; 2601:4; 2695:15; 2733:15	elder [1] - 2668:22	Eliot [3] - 2604:13; 2605:1	encyclopedic [1] - 2784:12
earthen [2] - 2552:1; 2801:13	effectiveness [10] - 2599:8; 2651:5; 2674:10; 2688:2; 2729:16; 2770:8, 10, 18, 25; 2773:21	elderly [1] - 2766:6	elk [7] - 2604:21; 2605:12; 2735:12; 2803:7, 20, 23; 2804:12	End [1] - 2626:23
easier [1] - 2605:15	effects [54] - 2501:25; 2503:12; 2505:23; 2507:7; 2508:5, 23; 2509:13, 16; 2511:22; 2512:6; 2515:25; 2522:13; 2532:7; 2535:4, 10; 2536:19; 2540:10, 13; 2548:15; 2563:14; 2574:16; 2586:19, 24; 2587:24; 2594:4, 25; 2595:6, 25; 2602:1; 2607:2; 2614:20; 2615:12; 2628:21; 2635:9; 2637:7; 2639:19; 2645:5, 12; 2647:25; 2667:7, 15, 22; 2668:14; 2674:12; 2679:8; 2688:16; 2693:3, 14; 2694:15; 2708:12; 2725:14	elders [5] - 2538:8, 17; 2539:7; 2544:8; 2668:16	elsewhere [1] - 2779:24	end [13] - 2524:16; 2535:22; 2540:5; 2550:22; 2580:14; 2597:16; 2613:10; 2656:9; 2680:20; 2752:19, 21; 2762:13; 2796:4
East [2] - 2699:14, 18	efficacy [1] - 2599:12	elect [1] - 2522:21	email [3] - 2525:14; 2526:14; 2628:19	ended [1] - 2508:25
east [2] - 2551:17; 2580:13	efficiencies [1] - 2643:10	electrical [2] - 2629:4; 2754:10	emails [8] - 2523:1; 2526:16, 20, 23; 2627:1, 7; 2628:4	endure [2] - 2611:7; 2640:6
Easter [1] - 2493:12	efficiency [1] - 2765:2	elegant [2] - 2549:11; 2763:1	emergencies [2] - 2569:9; 2623:3	enforced [1] - 2797:7
Eastern [1] - 2699:15	efficient [3] - 2609:3; 2753:25; 2784:6	elementary [1] - 2788:15	emergency [49] - 2507:25; 2551:17, 19; 2562:10, 13, 16; 2563:8, 16, 25; 2565:5, 12; 2567:14, 22; 2568:2, 7, 16, 22; 2569:5, 9, 14; 2570:2, 5, 14-16; 2571:2, 13; 2621:10; 2623:5, 8; 2651:16; 2652:18-20, 24; 2706:19; 2716:14, 16; 2717:3; 2718:22; 2720:1; 2740:10, 12; 2743:18; 2744:6; 2745:6, 11, 17	engage [9] - 2504:7; 2525:8; 2527:15; 2528:14; 2529:25; 2531:12; 2546:24; 2672:19; 2676:4
easy [3] - 2605:11; 2704:14; 2767:16	efficiently [1] - 2786:14	elementary [1] - 2765:17	emergencies [2] - 2569:9; 2623:3	engaged [6] - 2522:19; 2525:20; 2529:13; 2544:15; 2673:24; 2751:6
echo [1] - 2643:6	effluent [1] - 2515:15	elements [6] - 2551:3; 2647:8; 2649:14; 2746:3;	emergency [49] - 2507:25; 2551:17, 19; 2562:10, 13, 16; 2563:8, 16, 25; 2565:5, 12; 2567:14, 22; 2568:2, 7, 16, 22; 2569:5, 9, 14; 2570:2, 5, 14-16; 2571:2, 13; 2621:10; 2623:5, 8; 2651:16; 2652:18-20, 24; 2706:19; 2716:14, 16; 2717:3; 2718:22; 2720:1; 2740:10, 12; 2743:18; 2744:6; 2745:6, 11, 17	engagement [23] - 2517:2; 2522:7, 9, 11; 2523:2; 2525:18; 2526:1, 3, 11; 2527:24; 2529:15, 17; 2531:23; 2533:13; 2535:20, 23; 2547:5; 2574:20; 2646:10; 2668:20; 2675:2; 2730:13
ecological [5] - 2507:5; 2606:5; 2665:9; 2758:11; 2760:11	effort [5] - 2530:6; 2535:3; 2583:10, 18; 2784:10	elder [1] - 2668:22	emission [2] - 2771:18; 2774:14	engine [1] - 2630:2
ecologist [3] - 2599:11; 2602:22; 2770:13	efforts [9] - 2522:17; 2529:16; 2535:18; 2573:19; 2602:24; 2609:2; 2629:9; 2643:7; 2646:23	elderly [1] - 2766:6	emissions [20] - 2515:15; 2573:19; 2596:10, 17; 2602:1; 2685:3; 2765:1; 2766:11, 17; 2767:11; 2768:16; 2769:2; 2770:14; 2771:1; 2772:14, 17; 2773:12; 2774:5, 16	engineer [3] - 2591:4; 2748:12; 2762:24
ecologists [1] - 2603:10	EIA [29] - 2502:10; 2506:25; 2507:8; 2511:25; 2513:9; 2518:23; 2521:22; 2524:3; 2530:15; 2535:11, 17; 2536:13; 2538:4; 2540:11; 2541:19; 2549:13; 2552:22, 24; 2553:25; 2574:9; 2581:12, 15; 2583:23; 2587:16; 2599:22; 2661:20;	elders [5] - 2538:8, 17; 2539:7; 2544:8; 2668:16	emphasize [3] - 2604:23; 2641:18; 2670:25	engineered [1] - 2650:22
ecology [5] - 2581:11, 16; 2583:20; 2595:13; 2699:1	effort [5] - 2530:6; 2535:3; 2583:10, 18; 2784:10	Elders [1] - 2798:24	emphasizes [3] - 2546:17; 2553:17; 2754:25	Engineering [8] - 2560:16; 2567:6, 20; 2568:4, 14; 2584:22; 2740:23; 2741:12
Economic [3] - 2505:10; 2630:17; 2709:24	effort [5] - 2530:6; 2535:3; 2583:10, 18; 2784:10	elect [1] - 2522:21	emphatically [1] - 2657:2	enhance [9] - 2533:2; 2623:8; 2669:12; 2690:2, 24; 2711:5; 2751:8; 2762:14
economic [54] - 2503:12; 2505:3, 22; 2506:7, 17; 2510:9, 25; 2511:17, 19; 2512:6, 25; 2513:3, 7, 12; 2518:16; 2522:12; 2607:1; 2611:17; 2613:25; 2614:8, 20, 25; 2615:18; 2616:2; 2619:25; 2620:10, 18; 2622:11, 14; 2623:19; 2624:22; 2625:15; 2626:5, 7; 2630:2; 2631:6; 2636:12; 2637:6; 2639:3; 2640:1; 2641:9; 2645:5, 16; 2646:9; 2648:21; 2657:11; 2683:1, 8; 2694:10; 2710:11; 2711:4, 11; 2725:3; 2726:1	effort [5] - 2530:6; 2535:3; 2583:10, 18; 2784:10	electrical [2] - 2629:4; 2754:10	emphasis [1] - 2684:2	enhanced [2] - 2521:10; 2669:4
economically [1] - 2650:14	effort [5] - 2530:6; 2535:3; 2583:10, 18; 2784:10	elementary [1] - 2788:15	emphases [3] - 2604:23; 2641:18; 2670:25	enhancement [1] - 2545:15
economics [1] - 2722:4	effort [5] - 2530:6; 2535:3; 2583:10, 18; 2784:10	elementary [1] - 2765:17	emphasize [3] - 2604:23; 2641:18; 2670:25	Enhancement [1] - 2506:23
economy [3] - 2513:8; 2629:24; 2633:8	effort [5] - 2530:6; 2535:3; 2583:10, 18; 2784:10	elements [6] - 2551:3; 2647:8; 2649:14; 2746:3;	emphasizes [3] - 2546:17; 2553:17; 2754:25	enjoyable [1] - 2493:11
Ecoregion [1] - 2699:16	effort [5] - 2530:6; 2535:3; 2583:10, 18; 2784:10	empty [4] - 2565:2; 2697:6; 2742:13;	emphatically [1] - 2657:2	ENMAX [1] - 2621:7
ecosystem [3] - 2583:25; 2606:6; 2698:23	effort [5] - 2530:6; 2535:3; 2583:10, 18; 2784:10		employ [1] - 2777:19	enquiry [2] - 2610:19; 2636:18
Eden [1] - 2672:11	effort [5] - 2530:6; 2535:3; 2583:10, 18; 2784:10		employees [4] - 2631:1; 2672:9; 2777:16; 2800:15	
Edge [3] - 2765:18; 2788:16, 20	effort [5] - 2530:6; 2535:3; 2583:10, 18; 2784:10		employing [1] - 2788:8	
edge [1] - 2770:1	effort [5] - 2530:6; 2535:3; 2583:10, 18; 2784:10		employment [4] - 2513:2, 8; 2534:4; 2711:3	
Edmonton [3] -	effort [5] - 2530:6; 2535:3; 2583:10, 18; 2784:10		emptily [1] - 2771:21	

<p>ensure [18] - 2508:1; 2516:17; 2533:13; 2535:19; 2540:25; 2544:25; 2558:23; 2596:6; 2602:25; 2608:19; 2623:9; 2642:12; 2763:7; 2777:23; 2778:22; 2780:11; 2792:23; 2796:21</p> <p>ensuring [2] - 2535:8; 2763:6</p> <p>entails [1] - 2652:1</p> <p>enter [7] - 2550:9; 2659:11; 2660:7, 10; 2732:25; 2787:19; 2806:7</p> <p>entered [5] - 2555:24; 2621:24; 2659:23; 2787:1; 2797:1</p> <p>entering [7] - 2550:12; 2564:1; 2585:17; 2634:22; 2754:7; 2778:1, 7</p> <p>enters [2] - 2551:16; 2553:20</p> <p>entertain [1] - 2503:15</p> <p>enthusiastically [2] - 2725:22</p> <p>entire [6] - 2499:12; 2645:17; 2679:3; 2709:5; 2751:21; 2779:17</p> <p>entirely [4] - 2520:1; 2560:12; 2564:22; 2767:1</p> <p>entirety [1] - 2786:18</p> <p>entitled [3] - 2517:21, 23, 25</p> <p>entrained [4] - 2585:6; 2601:14; 2604:4; 2754:18</p> <p>entrainment [4] - 2585:11, 13; 2754:6, 12</p> <p>entrance [1] - 2524:6</p> <p>entries [2] - 2526:13; 2534:21</p> <p>entrusted [1] - 2763:5</p> <p>entry [2] - 2777:12, 14</p> <p>envelope [1] - 2592:17</p> <p>environment [13] - 2505:24; 2507:21; 2621:23; 2645:6; 2655:15; 2682:11; 2693:8; 2725:12; 2752:13; 2779:21; 2783:1; 2789:14</p> <p>Environment [16] - 2506:24; 2523:12, 23; 2530:16; 2546:23; 2671:13, 16; 2672:24; 2673:22; 2677:7, 14; 2678:11, 16; 2705:14; 2789:2, 7</p> <p>environmental [61] - 2501:25; 2503:12; 2504:23; 2506:7, 17, 22; 2508:5, 17; 2510:25; 2522:13; 2524:14; 2548:15; 2574:14, 16, 19; 2581:7; 2583:6; 2585:22; 2595:23, 25; 2599:13, 24; 2606:9,</p>	<p>12, 16, 21; 2607:2, 17; 2611:18; 2614:8, 20; 2615:1; 2616:2; 2619:25; 2620:18; 2622:6; 2635:15; 2636:6, 25; 2637:7; 2638:9; 2639:4, 17, 19; 2640:1; 2641:9; 2648:21; 2667:21; 2674:9; 2683:2, 9; 2687:2; 2693:1, 11, 13; 2694:9; 2702:9; 2703:20, 22; 2704:19; 2715:2</p> <p>Environmental [2] - 2506:22; 2508:18</p> <p>environmentally [3] - 2605:22; 2703:12; 2779:11</p> <p>envy [1] - 2800:16</p> <p>equal [5] - 2555:5; 2618:22; 2631:17; 2634:11; 2731:24</p> <p>equally [4] - 2624:25; 2731:11; 2765:12</p> <p>equals [1] - 2700:9</p> <p>equipment [5] - 2570:24; 2629:5; 2777:11, 13; 2789:21</p> <p>equivalent [7] - 2554:22; 2614:14; 2618:21; 2633:3; 2679:1; 2715:9; 2781:4</p> <p>Erisman [4] - 2685:16; 2691:8; 2736:5, 14</p> <p>Erlton [1] - 2505:7</p> <p>Ermineskin [1] - 2796:17</p> <p>eroded [1] - 2742:6</p> <p>erosion [9] - 2622:3; 2646:18; 2715:12; 2716:17; 2717:19; 2718:1, 7, 10; 2769:18</p> <p>erroneous [2] - 2700:10; 2770:5</p> <p>erroneously [1] - 2588:23</p> <p>error [2] - 2564:13; 2766:9</p> <p>errors [2] - 2687:2; 2768:2</p> <p>escalate [1] - 2801:8</p> <p>escalated [1] - 2800:21</p> <p>escalating [1] - 2748:14</p> <p>especially [7] - 2656:11; 2701:22; 2716:13; 2717:3; 2730:16; 2778:8; 2784:2</p> <p>essence [3] - 2598:4; 2642:12; 2794:10</p> <p>essential [2] - 2668:7; 2792:3</p> <p>essentially [5] - 2547:22; 2656:5; 2724:4; 2734:23; 2787:11</p> <p>establish [3] - 2590:13; 2618:4; 2622:9</p> <p>established [4] - 2591:2, 21; 2617:17; 2621:25</p> <p>establishing [1] -</p>	<p>2614:18</p> <p>estimate [10] - 2573:2; 2624:11; 2626:2; 2716:1; 2719:3; 2754:14, 16; 2759:22; 2801:1</p> <p>estimated [14] - 2511:25; 2516:24; 2573:3; 2623:22; 2683:3; 2696:18; 2719:16; 2720:9, 21; 2721:2, 9; 2723:4, 8; 2796:4</p> <p>estimates [10] - 2516:16, 25; 2517:14; 2518:9; 2572:25; 2598:25; 2623:21, 25; 2624:5; 2717:6</p> <p>estimating [1] - 2576:22</p> <p>et [2] - 2693:16; 2780:25</p> <p>etcetera [1] - 2773:15</p> <p>evacuate [1] - 2709:20</p> <p>evacuation [2] - 2565:25; 2741:6</p> <p>evacuations [3] - 2621:9; 2623:6; 2630:10</p> <p>evaluate [3] - 2583:6; 2594:13; 2800:19</p> <p>evaluation [4] - 2710:11; 2711:12; 2740:20; 2746:16</p> <p>evasive [1] - 2756:2</p> <p>eve [1] - 2538:22</p> <p>evening [2] - 2680:3; 2807:13</p> <p>event [53] - 2511:9; 2512:22; 2513:10; 2514:3; 2565:17; 2566:12; 2572:22; 2573:3, 5; 2577:9; 2578:25; 2579:19; 2598:9; 2600:21; 2619:11, 13; 2626:22; 2648:3, 6-7, 24; 2651:1, 6; 2652:19; 2654:7; 2655:13; 2670:3; 2671:7; 2699:4; 2707:8; 2709:1, 16-17; 2719:16; 2741:15; 2742:3; 2746:9, 21-22; 2749:21, 23-24; 2750:3, 11; 2759:25; 2773:8; 2779:21; 2791:9; 2792:18; 2793:9; 2804:6</p> <p>events [37] - 2511:22; 2515:8; 2572:25; 2576:22; 2577:5; 2578:4, 9; 2579:12; 2596:24; 2598:7, 12; 2600:25; 2603:22; 2615:13, 16; 2618:20; 2619:16; 2620:9; 2645:13; 2647:25; 2652:17; 2654:5; 2674:8; 2686:24; 2688:10; 2692:17; 2723:8; 2746:16; 2748:18; 2751:15; 2773:14, 17; 2783:2; 2791:13</p> <p>eventual [1] -</p>	<p>2671:13</p> <p>everyday [1] - 2724:15</p> <p>evidence [155] - 2496:2; 2500:16, 18, 25; 2501:17; 2510:23; 2512:21; 2513:16, 18; 2514:9, 18; 2515:4; 2518:3; 2523:6, 10; 2525:24; 2528:4; 2530:4; 2536:3; 2555:9, 18-19, 24; 2560:8, 12, 15; 2561:2; 2564:5; 2567:5, 9, 16, 21, 24; 2570:4; 2571:15; 2572:12; 2574:18; 2575:16; 2578:12, 19; 2579:20; 2580:15, 23; 2586:17; 2587:6, 9; 2588:7; 2589:10; 2590:19; 2591:1; 2597:3, 17; 2599:7; 2600:3, 6; 2602:7, 23; 2603:13; 2604:16; 2605:17; 2606:23; 2611:19; 2614:9, 12, 15; 2617:1, 9, 19; 2619:22, 24; 2620:3, 21, 23; 2622:8, 13; 2626:11; 2628:16, 20; 2629:14; 2631:7; 2633:24; 2634:19; 2635:6; 2637:13, 24; 2638:4; 2639:7; 2644:19; 2645:7; 2646:7; 2650:18; 2653:2; 2657:11; 2661:16; 2662:17; 2663:13; 2665:24; 2668:16; 2671:10; 2684:12; 2685:13; 2686:1; 2698:13; 2704:6, 12; 2707:3; 2708:9; 2724:11; 2737:1, 3; 2739:22; 2746:5; 2748:2; 2753:19; 2755:21; 2756:7, 14; 2758:2; 2760:16; 2767:1, 4; 2768:1; 2770:7, 16; 2773:4, 15-16, 24; 2774:3; 2776:23; 2781:17; 2782:6, 8; 2789:14, 16; 2792:7; 2794:2, 18; 2795:8, 24; 2796:13, 16; 2797:13; 2799:4</p> <p>evidenced [3] - 2590:14; 2620:19; 2662:16</p> <p>evident [3] - 2618:2; 2623:19; 2790:2</p> <p>evidentiary [1] - 2610:22</p> <p>evolution [1] - 2517:6</p> <p>exact [3] - 2794:22; 2795:13; 2803:12</p> <p>exactly [1] - 2563:6</p> <p>exam [1] - 2686:4</p> <p>examination [30] - 2526:19; 2536:9; 2555:20, 23; 2560:13; 2566:8; 2579:19; 2585:25; 2587:3, 8; 2588:8, 16, 20; 2591:1, 3, 5; 2592:20; 2599:21; 2702:1; 2706:8; 2708:4;</p>	<p>2713:24; 2727:17; 2742:21; 2755:24; 2756:2, 6, 10; 2775:9</p> <p>examine [1] - 2712:15</p> <p>examined [5] - 2560:9; 2593:22; 2654:12; 2727:5; 2800:11</p> <p>examining [2] - 2576:6; 2587:17</p> <p>example [18] - 2517:10; 2558:11; 2593:5; 2598:8; 2603:14; 2618:7; 2621:1, 23; 2629:3; 2630:11; 2634:23; 2648:5; 2650:23; 2668:3, 9; 2750:3; 2761:13; 2782:21</p> <p>examples [3] - 2620:25; 2739:14; 2754:9</p> <p>excavated [1] - 2777:24</p> <p>excceed [6] - 2548:23; 2553:10; 2558:24; 2652:7; 2710:13; 2711:14</p> <p>exceedance [3] - 2600:15, 18, 21</p> <p>exceedances [6] - 2597:14, 16, 21; 2601:1, 3; 2790:25</p> <p>except [2] - 2558:1; 2737:25</p> <p>exception [3] - 2526:8; 2703:17; 2747:20</p> <p>exceptional [2] - 2535:8; 2637:12</p> <p>exceptions [1] - 2501:24</p> <p>excess [5] - 2549:3; 2553:7, 11; 2742:23; 2794:21</p> <p>executive [1] - 2776:5</p> <p>exchanged [1] - 2799:25</p> <p>excite [1] - 2690:6</p> <p>excluded [2] - 2718:11; 2735:8</p> <p>excluding [1] - 2722:24</p> <p>exclusive [4] - 2633:17; 2794:17; 2795:21; 2796:23</p> <p>excuse [1] - 2732:17</p> <p>executed [1] - 2802:18</p> <p>executive [1] - 2504:15</p> <p>exercise [9] - 2531:18; 2533:2; 2536:25; 2537:3; 2577:7; 2668:9; 2669:5, 11; 2732:4</p> <p>Exhibit [114] - 2495:4; 2496:10; 2500:13, 15, 17; 2501:8; 2536:8; 2542:11; 2560:18; 2570:10; 2581:15, 19; 2582:7, 17; 2590:16; 2594:16; 2620:22; 2659:13, 24; 2660:10; 2684:21; 2685:11; 2686:6, 12; 2693:6; 2697:20; 2700:2;</p>
---	---	---	---	---

<p>2701:14, 18; 2703:5, 10, 14; 2705:2, 11; 2706:15; 2707:6; 2708:20; 2709:19; 2713:12-14, 20, 22; 2714:5, 12; 2715:5, 8, 24; 2716:8, 15; 2717:8, 10, 12, 19; 2718:9, 12, 15; 2719:1; 2721:25; 2722:10; 2723:2; 2728:11; 2729:2, 12; 2730:3; 2736:17; 2737:3; 2738:4; 2739:10, 16, 18; 2743:1; 2744:25; 2745:10, 13; 2752:3; 2756:12; 2757:21; 2764:22; 2769:19; 2774:21; 2775:10; 2782:10; 2785:8, 13; 2787:1, 6; 2789:10, 16, 25; 2790:20; 2792:2, 8-9; 2793:1, 5, 25; 2794:4, 9, 17, 19; 2795:7, 10; 2796:6, 9, 13, 21, 24; 2797:11</p> <p>EXHIBIT [10] - 2495:5, 20; 2496:13; 2659:17; 2660:8, 13; 2785:10; 2786:23; 2787:20; 2806:22</p> <p>exhibit [9] - 2496:3; 2497:19; 2498:17; 2542:20; 2708:8; 2732:23; 2785:12; 2786:18, 22</p> <p>exhibited [1] - 2501:7</p> <p>Exhibits [3] - 2513:8; 2530:8; 2581:17</p> <p>exhibits [5] - 2494:16; 2496:19; 2500:8; 2659:11; 2686:6</p> <p>exist [5] - 2577:8; 2631:19; 2639:10; 2695:11; 2763:20</p> <p>existed [2] - 2600:16; 2703:15</p> <p>existence [2] - 2597:15; 2654:18</p> <p>existing [11] - 2533:4; 2558:2, 19; 2602:8; 2669:7; 2692:7, 9; 2705:4; 2708:12, 17; 2749:12</p> <p>exists [2] - 2500:3; 2794:14</p> <p>exit [2] - 2604:4; 2777:15</p> <p>expanded [1] - 2661:21</p> <p>Expanded [1] - 2727:23</p> <p>expansion [1] - 2711:17</p> <p>expect [6] - 2496:18; 2497:11; 2601:13; 2699:1; 2804:3; 2807:4</p> <p>expectation [1] - 2629:6</p> <p>expectations [2] - 2522:10; 2527:9</p> <p>expected [20] - 2511:14; 2575:6; 2577:25; 2579:11; 2602:23; 2604:17;</p>	<p>2622:20; 2655:9; 2679:9; 2702:23; 2721:4, 22; 2735:15; 2737:17, 21; 2742:24; 2761:25; 2771:18, 22; 2772:25</p> <p>expects [1] - 2751:2</p> <p>expenditure [3] - 2503:20; 2637:9; 2755:18</p> <p>expenditures [1] - 2513:13</p> <p>expense [3] - 2515:24; 2517:24; 2747:22</p> <p>expenses [1] - 2512:9</p> <p>expensive [3] - 2703:12, 19; 2716:11</p> <p>experience [16] - 2534:16; 2561:6, 8; 2568:19; 2600:12; 2626:24; 2627:20, 22; 2691:11; 2725:11; 2744:18, 21-22; 2789:18, 20; 2793:7</p> <p>experienced [8] - 2515:16; 2559:23; 2603:10; 2617:5; 2625:5; 2668:19; 2706:13; 2746:9</p> <p>experiences [6] - 2538:8; 2610:17; 2628:2; 2632:21; 2790:9</p> <p>experiencing [2] - 2612:11; 2795:6</p> <p>experimental [1] - 2698:8</p> <p>expert [13] - 2567:15, 20; 2576:14; 2597:5, 23; 2603:11; 2604:13; 2769:6, 17; 2770:14, 22; 2779:8; 2784:7</p> <p>Expert [1] - 2698:17</p> <p>expertise [4] - 2559:19; 2587:12; 2599:3, 15</p> <p>experts [7] - 2500:16; 2575:4; 2586:17; 2595:12; 2597:25; 2705:15; 2729:6</p> <p>explain [1] - 2767:15</p> <p>explained [9] - 2512:11; 2513:18; 2522:12; 2527:7; 2541:10; 2570:10; 2579:10; 2600:17; 2707:6</p> <p>explains [1] - 2528:2</p> <p>explanations [1] - 2762:20</p> <p>explicitly [1] - 2684:25</p> <p>exploratory [1] - 2757:7</p> <p>explored [2] - 2700:12; 2748:9</p> <p>explosive [1] - 2625:11</p> <p>exposed [7] - 2601:10; 2616:14; 2765:8; 2766:2, 4; 2770:4; 2774:18</p> <p>exposure [4] - 2623:13; 2641:4; 2685:4; 2772:25</p> <p>express [2] - 2528:9; 2533:14</p>	<p>expressed [10] - 2505:6; 2522:18; 2546:6, 14; 2562:15; 2569:10; 2596:9; 2681:21; 2709:11; 2711:8</p> <p>expressing [1] - 2630:20</p> <p>expression [1] - 2539:5</p> <p>expressly [1] - 2662:23</p> <p>Expropriation [1] - 2517:22</p> <p>expropriation [1] - 2796:19</p> <p>extend [2] - 2588:1; 2593:14</p> <p>extended [5] - 2544:5; 2612:22; 2613:7; 2751:1; 2759:5</p> <p>extends [2] - 2761:17; 2789:21</p> <p>extension [1] - 2560:8</p> <p>extensive [14] - 2507:10; 2510:24; 2520:9; 2522:16; 2534:16; 2545:8, 12; 2574:10; 2587:19; 2589:7; 2647:10; 2727:17; 2728:15; 2755:24</p> <p>extensively [3] - 2560:3; 2654:12; 2727:5</p> <p>extent [7] - 2538:5; 2561:18; 2572:14; 2667:15; 2681:18; 2710:8; 2711:10</p> <p>extirpated [2] - 2693:4; 2755:13</p> <p>extra [1] - 2784:16</p> <p>extracted [1] - 2542:23</p> <p>extracts [1] - 2536:6</p> <p>extraordinary [1] - 2609:2</p> <p>extrapolation [1] - 2576:23</p> <p>extreme [18] - 2504:25; 2511:22; 2559:12; 2571:14; 2578:9; 2635:17; 2636:8; 2645:12; 2651:19, 22; 2652:1, 7; 2686:23; 2743:25; 2744:9; 2747:7; 2750:12; 2760:24</p> <p>extremely [3] - 2666:22; 2724:16; 2781:3</p> <p>eyes [1] - 2559:25</p>	<p>2555:14; 2700:5; 2738:14, 16, 24; 2765:21</p> <p>facility [7] - 2514:1; 2515:15; 2559:12; 2570:25; 2571:14; 2638:25; 2694:6</p> <p>facing [2] - 2657:18; 2670:17</p> <p>fact [54] - 2494:6, 9; 2516:13; 2525:16; 2526:16; 2532:1; 2536:8; 2541:12; 2559:13; 2562:25; 2564:23; 2569:2; 2570:8; 2572:8; 2579:1, 12; 2584:5; 2586:2; 2589:4, 17; 2590:1; 2596:15; 2603:24; 2605:4; 2620:14; 2625:24; 2637:15, 18; 2669:6; 2689:3, 6, 24; 2704:7; 2705:4; 2711:20; 2715:25; 2727:13; 2748:7, 18; 2750:14; 2753:24; 2757:12; 2761:14; 2762:8; 2765:13; 2769:10; 2772:13; 2773:12; 2779:13; 2780:8; 2802:15; 2803:4; 2806:25; 2807:5</p> <p>facto [1] - 2662:15</p> <p>factor [10] - 2573:7, 23; 2592:4, 12, 14; 2619:6; 2624:16; 2640:3; 2680:25; 2780:15</p> <p>factors [6] - 2573:11; 2587:22; 2591:20; 2599:14; 2649:11; 2736:4</p> <p>factual [9] - 2588:21; 2767:1, 14; 2768:11, 15; 2769:10; 2772:1; 2773:24; 2774:10</p> <p>fail [2] - 2551:21; 2744:3</p> <p>failed [5] - 2577:12; 2625:10; 2698:10; 2727:24; 2758:23</p> <p>failing [1] - 2743:6</p> <p>fails [4] - 2694:16; 2695:6; 2743:12</p> <p>failure [13] - 2504:25; 2564:16; 2635:18; 2636:8; 2652:5, 11; 2653:25; 2709:16, 22; 2740:25; 2745:9; 2748:15; 2762:9</p> <p>fair [6] - 2517:25; 2609:5; 2652:5; 2653:24; 2731:1; 2786:15</p> <p>fairly [5] - 2517:22; 2561:10, 25; 2605:18; 2632:3</p> <p>fairness [1] - 2618:14</p> <p>faith [3] - 2525:21; 2528:11; 2805:10</p> <p>fall [6] - 2521:12; 2543:11; 2738:4; 2745:24; 2760:19; 2795:2</p> <p>falls [2] - 2567:11; 2783:17</p> <p>Falls [3] - 2582:4, 16, 25</p>	<p>false [1] - 2746:19</p> <p>falsely [1] - 2702:3</p> <p>familiar [4] - 2599:21; 2651:23; 2746:24; 2806:2</p> <p>families [4] - 2724:1; 2725:10; 2732:6, 9</p> <p>family [6] - 2627:11, 21; 2724:4; 2731:20; 2803:1</p> <p>far [12] - 2512:7; 2579:13; 2580:13; 2584:5; 2590:12; 2625:20; 2650:3; 2652:12; 2700:23; 2701:4; 2748:5; 2753:24</p> <p>far-reaching [1] - 2512:7</p> <p>fashion [3] - 2785:24; 2787:12; 2788:3</p> <p>fast [2] - 2593:6; 2737:15</p> <p>faster [2] - 2703:18; 2752:12</p> <p>fastest [1] - 2557:4</p> <p>fatalities [4] - 2511:1; 2622:21; 2650:6; 2709:22</p> <p>fault [2] - 2747:4; 2783:13</p> <p>faults [1] - 2772:5</p> <p>favoured [1] - 2586:15</p> <p>favour [5] - 2586:8; 2620:11; 2624:23; 2631:11; 2641:16</p> <p>favourable [4] - 2584:10; 2721:24; 2767:23; 2771:16</p> <p>favoured [2] - 2600:4; 2615:2</p> <p>favours [3] - 2615:19; 2616:9; 2639:5</p> <p>fear [1] - 2628:8</p> <p>fears [1] - 2764:20</p> <p>feasibility [4] - 2727:13; 2728:19, 21, 25</p> <p>feasible [2] - 2603:24; 2754:23</p> <p>feature [3] - 2548:19; 2550:21; 2653:18</p> <p>features [6] - 2674:4; 2675:5, 8, 11, 13; 2757:16</p> <p>February [3] - 2506:24; 2794:18, 24</p> <p>federal [15] - 2509:2, 7, 12, 18; 2524:14; 2529:19; 2537:8; 2573:14; 2607:20; 2636:23; 2637:2; 2638:2; 2788:11; 2802:1; 2804:17</p> <p>feedback [9] - 2522:24; 2532:8; 2537:3; 2540:15; 2544:4, 20; 2717:23</p> <p>Feist [2] - 2618:7; 2685:15</p> <p>felt [3] - 2628:9; 2629:18; 2649:16</p> <p>fence [1] - 2545:13</p> <p>fencing [1] - 2545:13</p> <p>Fennell [16] - 2576:14; 2578:7; 2587:10; 2588:15; 2589:24; 2590:3, 6;</p>
F				
<p>face [4] - 2628:16; 2659:8; 2699:18; 2741:11</p> <p>faces [1] - 2646:13</p> <p>facilitate [6] - 2539:1; 2545:16; 2602:25; 2605:8; 2608:7; 2676:11</p> <p>facilitating [1] - 2539:19</p> <p>facilitation [3] - 2714:17; 2722:12, 22</p> <p>facilities [6] -</p>				

<p>2591:1, 3; 2592:20; 2683:19; 2728:7; 2750:5; 2756:7; 2759:24; 2762:10 Fennell's [7] - 2589:1, 6; 2592:5, 17; 2746:5; 2755:21; 2760:1 fescue [1] - 2780:25 few [14] - 2494:11; 2495:24; 2501:23; 2547:21; 2607:14; 2620:25; 2661:17; 2681:10; 2695:14; 2705:4; 2733:17; 2785:16; 2800:1; 2804:24 fewer [1] - 2606:15 FFC [8] - 2510:24; 2610:13, 24; 2611:11; 2616:11; 2617:18; 2659:18; 2660:9 FFC's [1] - 2626:25 field [8] - 2544:9; 2555:12; 2583:20; 2731:25; 2754:10; 2758:9; 2759:10, 17 fieldwork [9] - 2517:5; 2541:13; 2672:8, 16; 2673:6, 15; 2674:2, 17; 2675:4 Fifteen [1] - 2630:15 fifth [1] - 2696:5 fighter [1] - 2802:2 fighting [2] - 2688:6, 14 Figure [1] - 2590:16 figure [4] - 2582:17, 19; 2612:24; 2734:24 figures [2] - 2721:25; 2756:19 filed [7] - 2494:15; 2500:9; 2502:10; 2515:2; 2560:17; 2565:21; 2728:13 filing [2] - 2535:11; 2660:22 fill [9] - 2696:18; 2726:7; 2741:23, 25; 2742:2, 5, 12; 2777:24 filled [5] - 2696:17; 2698:2; 2742:14; 2758:13; 2759:25 filling [1] - 2719:22 fills [1] - 2742:16 filter [5] - 2603:16, 23; 2778:13, 16 filtration [5] - 2603:16; 2604:1, 5; 2792:12, 21 FINAL [7] - 2496:13; 2659:17; 2660:13; 2785:10; 2786:22; 2787:20; 2806:22 final [57] - 2494:3; 2496:1, 22; 2499:14; 2506:25; 2516:19; 2532:20; 2533:17; 2539:6, 17; 2540:7; 2546:19, 25; 2566:6; 2575:7; 2584:8; 2659:10, 15; 2660:11; 2679:15; 2681:15, 20; 2717:14; 2726:16, 20; 2730:14; 2732:19; 2735:4; 2743:2; 2754:2; 2755:7; 2763:24; 2766:25;</p>	<p>2767:13; 2768:5; 2769:9; 2770:6, 21; 2771:2, 6, 25; 2772:7; 2773:3, 19, 23; 2774:9; 2785:8, 13; 2786:19, 25; 2799:9; 2800:7; 2806:7; 2807:3, 7, 18 finalization [1] - 2533:15 finalized [1] - 2509:1 Finally [1] - 2754:25 finally [24] - 2508:16; 2548:3; 2550:20; 2551:25; 2557:10; 2558:7; 2560:1; 2564:16; 2571:5, 16; 2573:24; 2579:15; 2580:19; 2584:6; 2595:3, 17; 2596:19; 2604:7; 2608:17; 2628:25; 2657:17; 2744:17; 2783:25; 2805:11 financial [10] - 2580:6; 2613:24; 2623:20; 2626:16; 2655:19; 2664:5; 2665:10; 2690:11; 2742:5; 2763:13 findings [6] - 2542:7; 2675:20; 2703:9; 2742:9; 2754:1; 2779:5 fine [5] - 2568:20; 2643:25; 2738:10; 2769:21; 2786:11 finer [1] - 2597:25 finest [1] - 2769:24 fingers [1] - 2714:14 finish [4] - 2493:22; 2681:13; 2733:21; 2775:16 Fiona [1] - 2492:10 fire [9] - 2632:25; 2634:6; 2664:25; 2688:6, 14; 2694:21; 2718:17; 2735:23; 2753:5 Fire [1] - 2622:24 fire-fighting [2] - 2688:6, 14 firearms [1] - 2546:12 firefighting [2] - 2519:24; 2520:16 fires [1] - 2753:1 first [35] - 2496:25; 2499:2; 2502:4; 2504:14; 2555:9; 2558:11; 2561:10; 2562:13; 2572:2; 2592:7; 2613:16; 2616:19; 2622:16, 25; 2634:12; 2681:23; 2686:5; 2692:14; 2715:6; 2726:6; 2741:23, 25; 2742:2, 12; 2754:21; 2764:15; 2787:4; 2794:24; 2802:17; 2804:11; 2805:1, 14 First [48] - 2515:13; 2521:13; 2529:12, 24; 2530:11; 2531:13, 20; 2532:1, 15; 2533:2, 8, 19, 23-24; 2534:12; 2544:5, 20, 24; 2545:1, 5, 17; 2546:24; 2630:11;</p>	<p>2661:1, 4; 2666:6, 18; 2672:21; 2676:7; 2679:16; 2714:18; 2718:25; 2723:20; 2732:4; 2734:13, 15, 17, 19, 22; 2735:9, 13, 22; 2771:24; 2796:17 firstly [5] - 2549:15; 2556:14; 2557:22; 2564:8; 2576:11 fish [73] - 2509:9, 25; 2532:11; 2546:2; 2575:2; 2581:4, 6, 11, 23-25; 2582:2, 9-10; 2583:7, 12, 16, 24; 2584:2, 4, 6, 14; 2585:1, 5-6, 11, 17, 19; 2586:17, 19-20, 24; 2603:18; 2604:4; 2622:2; 2646:20; 2674:10, 13; 2693:9; 2715:11, 13, 17; 2720:22; 2754:6, 12, 17, 21-22, 24; 2755:8, 15 fisheries [1] - 2583:3 Fisheries [4] - 2509:5, 7, 19, 21 FISHES [1] - 2622:1 fishway [1] - 2584:5 fit [1] - 2590:15 Fitch [9] - 2492:16; 2496:2; 2499:8, 18; 2547:11; 2604:10; 2609:15; 2708:7; 2745:16 FITCH [2] - 2547:13; 2604:11 Fitch's [1] - 2643:7 five [33] - 2501:6; 2511:1; 2529:24; 2571:11; 2604:7; 2622:22; 2639:10; 2681:17; 2683:13; 2717:7, 16; 2788:22; 2794:6 fixed [5] - 2506:1, 5; 2527:23; 2614:21; 2682:17 flag [1] - 2733:14 flawed [6] - 2520:3; 2759:3; 2761:24; 2772:12, 22; 2783:21 flawlessly [1] - 2799:23 Fleck [1] - 2492:13 flexibility [5] - 2649:13; 2651:5; 2652:10; 2654:19; 2655:12 Flood [8] - 2492:20; 2505:8; 2610:13; 2622:13; 2631:7; 2644:10; 2698:16 flood [401] - 2502:24; 2510:4, 8, 15; 2511:1, 8, 13, 19, 22; 2512:2-5, 9, 22; 2513:3, 5, 10, 13, 20, 22, 24; 2514:4, 6, 19; 2515:8-10, 19; 2516:14, 17; 2518:25; 2520:17; 2521:4, 8, 10, 19, 24; 2533:11; 2536:10; 2549:12; 2551:14; 2552:18; 2553:2; 2554:9, 12, 16-17, 22; 2555:1; 2556:10, 14, 17-18,</p>	<p>22; 2557:3, 11, 13, 16, 23; 2558:8, 13; 2559:2; 2562:23; 2563:18; 2564:11, 19; 2569:9; 2570:16; 2572:3-5, 8, 16, 23, 25; 2573:3, 5, 10, 22, 25; 2574:1; 2575:22; 2577:5, 9-10; 2578:1, 9, 25; 2579:19, 22; 2580:2; 2586:6; 2587:22; 2594:14; 2596:11, 18; 2602:24; 2603:22; 2604:3; 2606:4, 8, 11; 2610:16; 2611:22; 2613:23; 2614:7, 13-15; 2615:12, 16; 2616:14, 24-25; 2617:2, 6, 8-9, 14, 23; 2618:3, 6, 9, 12-13, 21-22, 24; 2619:1, 6-7, 9, 13, 16-17; 2620:1, 9, 17, 20; 2621:13, 16, 22, 25; 2622:2, 4, 22, 25; 2623:4, 17, 21, 24-25; 2624:4, 6, 12; 2625:5, 24-25; 2626:3, 9, 12, 18, 21; 2627:8, 10, 15, 21; 2628:2, 7-9, 11-12, 14, 21; 2629:2, 11, 18; 2630:2, 4, 7, 21; 2631:20, 23; 2632:5, 10, 16, 20, 25; 2633:3, 14, 16, 25; 2634:1, 6, 11, 24; 2640:1, 3, 8; 2641:6, 8; 2642:2, 13, 19; 2643:1; 2644:24; 2645:12; 2646:23; 2647:2, 6, 18, 21, 24; 2648:1, 23; 2649:12, 18; 2650:10, 14, 24; 2651:4, 6, 18; 2652:3, 15, 17, 21-22; 2654:15, 20; 2655:14; 2656:21; 2661:15, 18, 22; 2662:3, 5-6, 18, 22; 2663:2; 2664:6, 24; 2670:11, 20; 2674:1, 8; 2678:1, 22, 24; 2682:8; 2683:14, 20; 2685:19, 25; 2686:11, 15, 18, 23, 25; 2687:7, 10; 2688:8, 11; 2689:9; 2692:17; 2694:19; 2697:22; 2700:19; 2704:15; 2705:24; 2706:6, 9, 13; 2707:5, 8-9, 13, 16-17, 21, 24; 2708:5, 19; 2709:17; 2712:3, 10, 25; 2713:3; 2718:24; 2719:2, 5-6, 8, 10-16, 20, 25; 2720:7, 10-11, 18-19, 22; 2721:8, 11, 18, 20, 22; 2723:8; 2724:18; 2726:2; 2728:5; 2729:16, 18; 2731:18; 2735:15, 19; 2737:17, 20, 22, 25; 2738:6, 8; 2739:3, 11; 2741:19; 2742:3; 2743:21; 2744:13; 2747:18, 25; 2748:18; 2749:4; 2750:16; 2751:14; 2752:19; 2753:13; 2755:19;</p>	<p>2759:25; 2766:12; 2767:25; 2770:2, 20; 2771:15; 2772:10; 2774:13; 2776:13; 2778:9; 2781:13; 2782:17; 2783:2, 20, 22; 2792:18; 2793:7, 9; 2796:11; 2798:13, 15; 2804:6 flood-affected [1] - 2627:8 flood-impacted [1] - 2628:12 flood-proofing [2] - 2726:2; 2782:17 flooded [7] - 2572:14; 2617:16; 2621:4; 2630:6; 2707:7; 2708:25; 2769:21 flooding [44] - 2510:19; 2511:4; 2512:1, 17, 20; 2515:22; 2516:9; 2547:24; 2553:22; 2554:5, 13; 2555:16; 2558:16; 2572:12, 17; 2606:5; 2616:1; 2617:5, 20; 2618:20; 2621:19; 2623:11; 2628:5; 2630:8; 2639:25; 2640:6; 2641:4; 2642:7; 2646:4, 14; 2647:23; 2648:1; 2649:25; 2650:5, 8; 2652:25; 2665:14; 2668:23; 2670:17, 23; 2705:23; 2706:13; 2752:22; 2782:20 floodplain [6] - 2549:21; 2550:15, 17, 22; 2617:3; 2777:25 floodproofed [2] - 2558:10, 20 floods [31] - 2548:7; 2571:21; 2572:1, 12; 2573:12; 2574:2; 2576:24; 2577:4, 20, 24; 2613:22; 2622:23; 2633:22; 2646:6; 2648:2, 10; 2651:8; 2652:9; 2653:21; 2684:11; 2685:20; 2688:5; 2702:24; 2719:6; 2748:22; 2749:10; 2758:16; 2783:1, 3 Floods [1] - 2743:19 floodwall [1] - 2782:19 floodwall-type [1] - 2782:19 floodwater [7] - 2513:22; 2549:3; 2552:6, 12; 2553:20; 2592:25; 2752:16 floodwaters [4] - 2504:20; 2551:6; 2687:5; 2753:13 floodway [8] - 2550:16; 2556:18; 2557:1, 6, 14, 17; 2558:1, 6 floor [2] - 2499:8; 2558:12 flourish [1] - 2606:7 flow [77] - 2548:12, 17; 2549:7; 2550:2, 18, 25; 2551:9-11, 22;</p>
---	--	---	---	---

2552:17; 2553:2, 4, 6-7, 12; 2554:1, 6, 19, 21; 2556:19; 2558:23; 2562:17; 2563:12; 2575:19, 22; 2576:1, 22; 2585:22; 2586:1; 2587:23; 2593:2, 16, 18; 2594:1; 2619:2, 11, 13; 2646:21; 2648:16; 2686:21, 25; 2687:10; 2691:11; 2696:15; 2697:11, 17; 2698:1; 2700:11, 15; 2701:3, 22; 2702:4, 7, 11, 22; 2705:24; 2738:2, 15, 17, 20, 24; 2739:10, 16; 2740:11; 2751:21; 2752:11; 2753:6; 2754:1, 23; 2778:18; 2793:11 flowing [1] - 2665:16 flows [20] - 2548:22; 2551:13; 2553:10; 2557:4, 17; 2559:1, 5; 2576:19; 2621:14; 2648:5; 2654:6; 2686:9; 2695:17; 2699:23; 2702:15, 17-19; 2709:17; 2742:23 flushed [1] - 2758:16 flushing [1] - 2758:14 fluvial [1] - 2653:22 focus [8] - 2503:11; 2536:10; 2637:5; 2694:18; 2704:25; 2734:15, 19; 2747:21 focused [4] - 2520:17; 2539:12; 2587:3; 2615:13 folks [8] - 2493:13; 2496:20, 25; 2618:12; 2689:13; 2805:21; 2806:2 follow [8] - 2508:21; 2531:23; 2538:25; 2543:6; 2594:18; 2639:21; 2678:9; 2769:12 follow-up [4] - 2508:21; 2531:23; 2639:21; 2678:9 followed [3] - 2529:18; 2595:25; 2784:23 following [25] - 2502:20; 2507:19; 2557:20; 2564:8; 2571:3; 2572:2; 2596:11, 15; 2604:24; 2628:7; 2642:15; 2652:3; 2653:15, 21; 2671:8, 18; 2692:4; 2724:17; 2737:5, 13; 2743:3; 2767:19; 2798:17; 2807:15 follows [2] - 2574:16; 2740:16 foot [1] - 2706:18 foothills [1] - 2702:23 foothills [1] - 2781:22 footprint [5] - 2639:11; 2756:16; 2758:8; 2775:6; 2803:2 for-profit [1] - 2657:7	Force [1] - 2698:17 force [3] - 2528:13; 2570:11 forceable [1] - 2671:9 forced [3] - 2630:14; 2642:17; 2791:10 forecast [1] - 2738:7 forecasting [2] - 2687:2; 2718:24 forecasts [6] - 2548:24; 2629:20; 2737:18, 23, 25; 2744:15 foregoing [1] - 2669:25 foremost [2] - 2622:17; 2634:13 foreseeable [1] - 2789:22 forest [2] - 2753:1, 5 forget [1] - 2637:23 forgive [1] - 2784:5 forgotten [1] - 2630:4 form [3] - 2500:7; 2576:17; 2760:16 formal [3] - 2531:11; 2545:4; 2796:20 format [2] - 2535:1; 2545:3 formation [1] - 2756:18 formations [2] - 2590:21; 2762:4 formula [2] - 2506:1; 2599:23 formula...the [1] - 2682:18 Fort [1] - 2666:6 forum [1] - 2804:9 forward [12] - 2523:18; 2535:23; 2574:9; 2645:22; 2662:17; 2727:15; 2745:19; 2748:20; 2750:14, 23; 2799:9; 2805:15 forwarded [2] - 2509:2; 2565:7 foundation [1] - 2588:21 founded [1] - 2764:21 four [5] - 2524:20; 2568:5; 2696:18; 2719:17; 2732:13 fourth [2] - 2617:6; 2696:3 fractures [1] - 2757:16 frame [7] - 2610:9; 2692:2, 12; 2694:17; 2754:15; 2758:22; 2775:23 framed [1] - 2681:24 framework [4] - 2499:22; 2505:15; 2574:17; 2596:1 franchise [19] - 2580:7, 12, 14, 18, 20; 2581:1; 2789:1; 2793:17; 2794:3, 17, 20, 24; 2795:1, 4, 21; 2796:20; 2797:16, 19 Frank [4] - 2656:8; 2663:6, 18; 2752:24 frankly [3] - 2579:20; 2597:2; 2750:17 Free [6] - 2492:20;	2505:8; 2610:13; 2622:13; 2631:8; 2644:10 free [5] - 2613:11; 2638:25; 2670:19; 2778:16, 18 freeboard [4] - 2558:13; 2562:24; 2563:4, 20 freely [1] - 2778:14 frequency [13] - 2571:25; 2572:22, 25; 2596:24; 2597:19; 2601:22; 2728:6; 2749:10; 2772:10, 23-24; 2773:14 frequent [3] - 2574:2; 2648:9; 2773:9 frequently [1] - 2654:8 friction [1] - 2766:15 Friday [1] - 2697:10 Friend [8] - 2492:11; 2493:18; 2495:2, 22, 24; 2497:7; 2786:25; 2798:20 friend [4] - 2547:10; 2659:12; 2660:7; 2784:2 FRIEND [6] - 2495:3, 18; 2496:12; 2659:14, 19; 2660:12 friendly [2] - 2545:14; 2703:12 friends [1] - 2609:8 Frigo [9] - 2514:9; 2656:8; 2663:6, 18; 2696:14; 2701:11, 14; 2752:24; 2796:8 fringe [6] - 2556:11, 18; 2557:11, 16; 2558:8 frog [1] - 2804:10 frogs [1] - 2804:9 FROM [1] - 2660:9 front [8] - 2550:11, 23; 2569:2; 2616:3; 2683:4; 2727:8; 2754:4; 2755:1 FSL [1] - 2744:4 fugitive [1] - 2596:10, 17; 2600:7; 2601:12; 2685:3; 2764:25; 2770:16; 2773:20; 2774:14; 2790:6 fulfil [1] - 2666:3 fulfill [1] - 2537:8 fulfilled [2] - 2528:12; 2667:11 fulfillment [2] - 2530:24; 2607:11 full [26] - 2551:21; 2553:16; 2564:2, 8, 15; 2575:5; 2644:4; 2670:11, 19; 2687:1; 2717:20; 2718:1, 8, 16; 2721:3; 2741:16; 2742:13; 2743:12, 21; 2748:8; 2757:14, 25; 2758:13 full-time [1] - 2718:16 fully [1] - 2517:22; 2530:7; 2578:4; 2621:7; 2640:9; 2641:20; 2642:12; 2737:13; 2748:9; 2782:18; 2801:9	fulsome [3] - 2504:9; 2530:6; 2670:15 function [3] - 2741:14; 2743:13; 2774:4 functionality [1] - 2781:14 functioning [1] - 2505:5 fundamental [4] - 2597:7; 2691:25; 2700:24; 2739:12 fundamentally [1] - 2527:17 funded [1] - 2673:21 funding [14] - 2534:23; 2536:20; 2537:19; 2539:22; 2540:1; 2545:21; 2636:24; 2638:1; 2672:4; 2678:6, 12, 14, 18; 2788:11 funds [4] - 2539:24; 2710:18, 24; 2711:24 furnaces [1] - 2629:5 furthermore [4] - 2639:16; 2640:6; 2649:25; 2802:17 future [85] - 2511:22; 2512:1, 8; 2516:9; 2532:18; 2533:8; 2541:4; 2543:6; 2546:7, 9, 11, 16; 2547:4; 2571:21, 25; 2573:12; 2576:18; 2577:1; 2578:4; 2580:16, 21; 2611:9; 2613:21; 2615:12; 2618:3, 20; 2621:15; 2624:4; 2627:5; 2630:24; 2633:22; 2640:8; 2642:5; 2645:12; 2664:25; 2665:2; 2669:3, 9; 2675:3; 2679:7, 10; 2682:13; 2683:25; 2684:12; 2685:25; 2690:3, 8; 2691:12; 2692:20; 2693:23; 2694:1; 2695:7; 2696:4, 7, 11; 2712:5; 2721:4; 2723:19; 2726:4; 2727:11; 2728:8; 2732:2; 2734:7; 2735:1; 2739:7; 2742:15; 2745:19; 2746:9; 2749:3, 11; 2765:20; 2783:19; 2789:22; 2793:9; 2794:1, 12; 2795:14, 18, 22-23; 2796:24; 2797:3 Future [1] - 2532:17	gates [13] - 2549:5, 24; 2550:7; 2551:21; 2553:13; 2563:11, 19; 2564:13, 17; 2656:7; 2737:19; 2744:3 gather [1] - 2800:5 gathering [2] - 2736:13, 15 Gavin [1] - 2492:16 gears [1] - 2734:14 general [5] - 2503:6; 2554:20; 2556:6; 2653:12; 2735:21 General [1] - 2801:25 generalizations [1] - 2576:13 generalized [3] - 2513:11; 2768:21; 2769:5 generally [6] - 2529:6; 2557:16; 2593:7, 19; 2622:12; 2666:15 generated [1] - 2702:22 generates [1] - 2683:8 generating [5] - 2506:16; 2515:15; 2520:19; 2682:25; 2751:7 generation [1] - 2743:17 generational [3] - 2724:1, 13; 2725:22 generations [8] - 2627:13; 2665:3; 2668:10; 2683:25; 2690:3; 2691:7; 2725:21; 2727:11 generators [1] - 2629:3 generously [1] - 2722:25 geochemical [1] - 2758:23 geochemist [1] - 2760:21 geological [2] - 2653:18; 2757:6 geology [1] - 2588:24 geometric [1] - 2592:18 geomorphology [1] - 2575:13 geotechnical [4] - 2559:19; 2590:21, 24; 2591:3 Gerbrandt [4] - 2493:6; 2494:1; 2659:7; 2807:18 Ghost [1] - 2670:8 Gino [1] - 2492:20 given [43] - 2502:16; 2520:9; 2538:10; 2555:8; 2566:6; 2569:10; 2574:6; 2576:1; 2577:1; 2580:22; 2591:1; 2606:23; 2622:22; 2638:20; 2649:10; 2653:10; 2656:16; 2685:13; 2696:6, 11-12; 2701:5; 2712:7; 2729:9; 2730:9; 2731:2; 2732:3, 12; 2736:21; 2750:9, 25; 2757:1,
G				
gain [2] - 2540:21; 2594:1 gained [1] - 2518:7 gallon [1] - 2788:23 gaps [1] - 2760:3 garbage [1] - 2621:24 garble [1] - 2613:4 Gas [1] - 2542:16 gas [2] - 2555:14; 2573:19 gate [1] - 2743:6 gated [2] - 2549:23; 2550:5				

12; 2761:1; 2762:19; 2763:14; 2775:1; 2789:11; 2797:12; 2800:17; 2804:1 glacial [2] - 2590:2; 2756:23 glacier [1] - 2656:17 glaring [2] - 2704:15; 2727:16 glass [1] - 2629:4 Glenmore [52] - 2510:18; 2513:19, 25; 2521:6; 2547:25; 2551:13; 2553:24; 2554:2, 11, 13; 2555:2, 6; 2558:17, 23; 2559:4; 2576:4; 2619:4, 10; 2633:14; 2634:3; 2646:17; 2647:22, 24; 2648:4, 6, 12-13; 2651:21; 2654:6, 20-21; 2655:11; 2656:6; 2682:5; 2683:9; 2687:17, 21; 2688:9; 2696:16; 2702:16; 2712:9, 19; 2713:1; 2725:5; 2731:12; 2739:15; 2744:15; 2747:20; 2751:3, 24; 2782:21 glitch [1] - 2612:11 GoA [3] - 2802:19, 25; 2804:12 goal [8] - 2520:14; 2551:12; 2552:11; 2631:22; 2632:18; 2746:10, 14; 2748:24 goals [1] - 2641:15 Golder [1] - 2572:23 Golf [1] - 2685:5 golf [1] - 2708:22 governance [1] - 2668:1 governing [1] - 2670:7 government [29] - 2502:5; 2510:5; 2513:13; 2516:4; 2528:23; 2533:20; 2608:15; 2636:23; 2637:19, 25; 2638:2; 2641:20; 2670:18; 2676:4; 2687:23; 2688:21; 2689:25; 2691:2; 2707:23; 2710:17, 22; 2711:23, 25; 2724:3; 2802:1; 2804:17, 19, 22 Government [1] - 2707:22 government's [3] - 2510:7; 2519:14; 2529:20 governments [1] - 2636:22 Governor [1] - 2607:4 gradient [1] - 2699:21 grading [1] - 2716:11 graduate [1] - 2702:8 Grande [1] - 2542:18 grandfathered [1] - 2558:2 grandparents [1] - 2724:9 grant [2] - 2713:17; 2788:12 granted [2] - 2525:9;	2764:2 grassland [2] - 2780:25; 2781:4 grasslands [9] - 2605:20; 2693:14, 17; 2704:18; 2780:1, 11, 14, 19, 22 grateful [1] - 2784:13 grave [2] - 2543:9; 2668:24 gravel [5] - 2646:19; 2756:21, 24; 2757:2; 2761:20 grazing [1] - 2546:14 Great [1] - 2496:8 great [12] - 2493:13; 2521:23; 2522:1; 2595:14; 2681:14; 2690:9; 2711:9; 2724:9; 2745:12; 2765:6; 2789:24 greater [33] - 2514:14; 2577:18; 2579:14; 2592:10; 2602:14; 2613:22; 2620:14; 2635:5; 2638:21; 2649:9; 2665:2, 7; 2705:25; 2709:17; 2712:4; 2747:25; 2749:10; 2750:10, 16; 2751:21; 2752:13; 2759:23; 2762:25; 2772:13, 18-19, 25; 2773:1, 12 greatest [1] - 2657:18 greatly [3] - 2513:11; 2646:11; 2801:3 greenhouse [1] - 2573:19 grizzly [2] - 2803:24; 2804:12 gross [1] - 2703:4 ground [2] - 2674:7; 2677:10 grounded [1] - 2668:4 groundwater [22] - 2545:24; 2587:17, 22, 24; 2590:24; 2592:25; 2593:2, 6, 8, 25; 2594:12, 16; 2595:1, 3-4, 7, 10; 2705:23; 2758:17; 2760:1, 10; 2761:4 Group [14] - 2492:20; 2493:1; 2505:8; 2610:5, 12, 24; 2611:11; 2616:11; 2617:17; 2622:13; 2631:7; 2644:10; 2659:13 group [6] - 2524:4; 2532:5; 2545:21; 2624:11; 2800:16 Group's [1] - 2626:25 groups [26] - 2502:7; 2505:12; 2513:1; 2522:21; 2528:22; 2530:1; 2531:25; 2532:8; 2534:7, 9; 2535:2, 11, 13; 2544:15; 2574:21; 2607:21; 2608:14; 2638:6; 2666:15, 20; 2676:16, 23; 2677:3; 2678:8; 2717:24; 2731:4 groups' [1] - 2529:22	grow [2] - 2617:14; 2801:3 growing [2] - 2752:7; 2801:8 growth [6] - 2663:8; 2692:18; 2770:16; 2776:12; 2794:12; 2797:3 guess [5] - 2722:1; 2733:14; 2752:17; 2785:21, 24 guest [1] - 2789:20 guidance [15] - 2532:18; 2541:22; 2679:12; 2768:14, 16, 18, 22; 2769:5; 2771:11-13; 2780:10, 17; 2798:21 guide [1] - 2769:2 guideline [5] - 2569:8, 13, 17; 2598:21; 2769:6 Guidelines [4] - 2562:21; 2563:1; 2707:20; 2741:4 guidelines [7] - 2529:19; 2531:1, 21; 2563:21; 2566:16; 2730:3; 2744:19 Guiding [2] - 2532:17; 2533:12 guiding [2] - 2546:10, 18	2555:16 head [3] - 2743:13; 2752:15; 2753:7 heading [4] - 2682:15; 2706:4; 2709:24; 2726:25 headings [1] - 2610:22 heads [5] - 2498:3; 2499:6; 2681:5, 10; 2761:20 heads-up [4] - 2498:3; 2499:6; 2681:5, 10 headwaters [1] - 2702:22 headwork [1] - 2754:13 headworks [1] - 2754:20 health [30] - 2507:6; 2515:23; 2546:2; 2582:2; 2595:18, 21; 2596:8; 2600:7, 12, 20; 2602:1; 2623:12; 2626:16; 2628:6, 20; 2649:13; 2709:12; 2725:24; 2751:9; 2758:12; 2764:19; 2765:4, 9, 14; 2772:3, 9, 13; 2775:7 Heaney [1] - 2492:9 hear [3] - 2497:6; 2538:7; 2626:23 heard [30] - 2500:25; 2505:9; 2510:23; 2513:16; 2516:2; 2523:10; 2525:2; 2529:23; 2532:14; 2534:1; 2535:21; 2560:3; 2614:24; 2644:17, 23, 25; 2646:6; 2657:12; 2660:21; 2665:23; 2667:6; 2701:3; 2715:7; 2716:5; 2753:9; 2763:14; 2779:7; 2801:16 Hearing [1] - 2653:11 hearing [68] - 2493:10; 2495:11, 17; 2498:9; 2499:1; 2502:2, 14, 19, 21; 2504:7, 10, 15; 2510:13, 22; 2524:24; 2526:8; 2535:22; 2538:23; 2547:2; 2548:2; 2554:8; 2560:20; 2562:3; 2584:24; 2585:2; 2602:4; 2605:19; 2606:24; 2609:4; 2610:15, 25; 2634:16; 2637:3, 12, 14; 2643:10; 2644:16; 2646:8; 2653:5; 2660:6; 2668:17; 2671:10; 2680:11; 2681:22; 2686:5; 2696:22; 2700:8, 13; 2701:8; 2712:16; 2718:13; 2729:25; 2734:20; 2740:1; 2751:11; 2784:3, 6; 2785:9; 2788:1; 2798:18; 2800:10; 2805:23; 2806:21; 2807:8, 11, 25 hearings [5] -	2532:2; 2537:20; 2643:17; 2679:20; 2803:13 heart [1] - 2621:17 heartache [1] - 2627:17 heavily [10] - 2620:11; 2639:5, 22; 2641:10, 16; 2737:16; 2758:21; 2762:17; 2781:23; 2784:12 heavy [1] - 2646:2 Hebert [29] - 2501:4; 2504:15; 2508:19; 2510:11, 23; 2511:8; 2516:16; 2519:10; 2525:6, 12; 2526:14, 17; 2527:19; 2529:23; 2535:21; 2547:2; 2554:23; 2559:8; 2574:18; 2596:19; 2603:4; 2635:10, 21, 25; 2636:11; 2701:9; 2713:25; 2720:5; 2790:10 Hebert's [5] - 2516:3; 2525:2; 2527:1, 3, 6 hectare [2] - 2599:23; 2716:2 height [2] - 2552:5; 2605:10 heirlooms [1] - 2627:12 held [7] - 2524:3, 7, 15, 25; 2593:17; 2789:5, 8 help [7] - 2550:12; 2573:11; 2579:2; 2623:9; 2643:16; 2756:12; 2803:24 helpful [1] - 2612:4 helping [1] - 2798:21 Henry [1] - 2539:7 Herald [1] - 2802:5 herbicides [1] - 2735:16 herd [1] - 2735:12 heritage [6] - 2542:3; 2674:16, 19, 22; 2682:11; 2725:9 Heritage [1] - 2788:17 hidden [3] - 2664:11; 2684:23; 2723:4 high [31] - 2502:3; 2550:25; 2560:7; 2571:9; 2578:25; 2602:18; 2606:7; 2613:19; 2646:1; 2685:19; 2687:3; 2703:6; 2738:15, 17, 24; 2739:10; 2751:5; 2754:17; 2760:25; 2765:20; 2773:11; 2774:4; 2779:10, 13-14, 16, 18, 24; 2788:15; 2803:6 High [1] - 2765:18 high-elevation [1] - 2646:1 high-intensity [1] - 2687:3 high-level [2] - 2502:3; 2739:10 high-risk [1] - 2760:25 high-use [1] - 2751:5 higher [23] - 2602:18; 2625:2; 2646:21; 2652:15;
--	--	--	---	--

<p>2654:3, 21; 2656:16, 18; 2699:15; 2705:24; 2707:1; 2712:21-23; 2722:16; 2738:2; 2748:18; 2749:10; 2752:20; 2757:17; 2762:5; 2790:12</p> <p>highest [7] - 2510:6; 2552:2; 2559:9, 14; 2566:18; 2662:22; 2699:3</p> <p>highlight [2] - 2607:14; 2645:18</p> <p>highlighted [4] - 2605:21; 2650:7; 2706:14; 2786:7</p> <p>highly [7] - 2560:6; 2577:6; 2592:23; 2625:11; 2704:23; 2723:12; 2771:20</p> <p>Highway [11] - 2545:15; 2548:10; 2605:6, 11, 24; 2676:11; 2721:19; 2753:17; 2795:12</p> <p>Highwood [4] - 2691:13; 2695:20, 25; 2710:5</p> <p>himself [1] - 2561:5</p> <p>hire [1] - 2517:23</p> <p>historic [5] - 2507:5; 2548:25; 2572:11, 24; 2577:4</p> <p>Historic [1] - 2541:8</p> <p>historical [20] - 2529:9; 2543:2; 2608:5; 2621:16; 2665:20; 2674:3, 20; 2675:16, 19, 21, 25; 2731:17; 2732:1; 2736:2, 6, 8, 11, 13, 15</p> <p>Historical [11] - 2541:12, 16; 2542:1, 8; 2543:3, 14; 2674:5, 25; 2675:5, 9, 11</p> <p>historically [1] - 2617:4</p> <p>history [8] - 2524:10; 2657:6; 2724:1; 2731:21; 2732:6, 11; 2746:23</p> <p>hit [2] - 2527:14; 2801:11</p> <p>hitting [1] - 2527:25</p> <p>hold [5] - 2535:12; 2579:13; 2652:3; 2684:5; 2753:2</p> <p>holders [2] - 2655:22; 2662:12</p> <p>holding [2] - 2536:22; 2652:8</p> <p>holds [2] - 2600:10; 2749:3</p> <p>hole [3] - 2690:22; 2691:5; 2711:19</p> <p>Holloway [2] - 2539:7; 2798:24</p> <p>home [1] - 2627:21</p> <p>homeowners [3] - 2626:14; 2627:23; 2682:5</p> <p>homes [12] - 2511:3; 2621:1; 2627:11, 24-25; 2689:15; 2707:12, 16; 2726:2; 2774:5; 2775:11</p> <p>honestly [1] - 2527:10</p> <p>honour [1] - 2666:7</p>	<p>hook [1] - 2498:7</p> <p>hope [12] - 2493:11, 16; 2610:18; 2680:12; 2723:16; 2774:12-14, 16-17, 19; 2784:4</p> <p>hopefully [5] - 2493:12; 2659:22; 2734:1; 2799:25; 2803:8</p> <p>hopes [1] - 2711:25</p> <p>hoping [3] - 2494:17; 2680:19; 2775:22</p> <p>horizon [1] - 2655:18</p> <p>Horn [2] - 2668:24; 2672:11</p> <p>horse [1] - 2728:10</p> <p>host [1] - 2644:14</p> <p>hosting [2] - 2534:10; 2545:21</p> <p>hour [2] - 2709:20; 2742:18</p> <p>hours [11] - 2515:16; 2560:9; 2622:25; 2623:5, 23; 2719:21; 2742:13, 20; 2744:5</p> <p>house [3] - 2802:13, 23; 2803:1</p> <p>houses [6] - 2523:1; 2524:4, 6-7, 12, 25</p> <p>how.. [1] - 2778:19</p> <p>huge [6] - 2690:11, 15; 2704:9; 2724:16; 2739:6; 2752:19</p> <p>human [23] - 2510:9; 2595:18, 21; 2596:8; 2600:7, 12, 19; 2602:1; 2613:23; 2650:8; 2657:9; 2758:11; 2760:11; 2762:14; 2764:19; 2765:4, 9; 2772:2, 4, 9, 13; 2775:7; 2790:5</p> <p>humanity [1] - 2542:4</p> <p>humble [1] - 2804:13</p> <p>hundred [8] - 2647:4; 2684:6; 2690:18; 2709:21; 2719:18; 2745:8; 2794:21; 2801:7</p> <p>hundreds [4] - 2683:12; 2720:9, 25; 2755:18</p> <p>hung [1] - 2682:7</p> <p>hunt [2] - 2668:3, 9</p> <p>Hunter [12] - 2524:19; 2525:13; 2526:13, 15, 17; 2527:5; 2567:17; 2618:7; 2685:13; 2728:18; 2784:9; 2798:18</p> <p>Hunter's [5] - 2519:25; 2527:22, 25; 2686:1; 2737:3</p> <p>hunters [1] - 2803:17</p> <p>hunting [16] - 2542:21; 2546:12; 2547:7; 2668:4; 2735:10, 13; 2803:5, 11, 14, 22; 2804:15; 2805:5</p> <p>hydraulic [6] - 2589:3; 2592:10; 2759:9, 20; 2761:7, 19</p> <p>hydro [2] - 2749:3; 2759:9</p> <p>hydrogeologic [1] - 2588:19</p>	<p>hydrogeological [3] - 2587:16; 2758:22; 2759:1</p> <p>hydrogeologist [2] - 2756:9, 11</p> <p>hydrogeology [10] - 2507:3; 2575:2; 2587:1, 4, 6; 2588:5, 10; 2595:12; 2755:20, 25</p> <p>hydrograph [1] - 2737:23</p> <p>hydrographs [2] - 2737:18, 21</p> <p>hydrologic [1] - 2648:9</p> <p>hydrological [9] - 2575:18; 2598:25; 2752:17; 2758:22, 25; 2769:12, 14, 19</p> <p>hydrologist [1] - 2756:2</p> <p>hydrology [8] - 2507:3; 2575:1, 10, 12; 2579:6; 2595:13; 2656:2; 2752:10</p> <p>Hydrology [1] - 2738:3</p> <p>hydrometric [1] - 2739:14</p> <p>hydrotechnical [1] - 2559:19</p> <p>hyperbole [1] - 2597:2</p> <p>hypothetical [2] - 2567:2; 2687:9</p>	<p>I</p> <p>i.e [2] - 2743:16; 2765:1</p> <p>I/we [1] - 2799:3</p> <p>IAAC [8] - 2507:13; 2508:16, 19, 24; 2529:21; 2530:1; 2537:7; 2745:1</p> <p>Ian [1] - 2737:2</p> <p>IBI [4] - 2512:11; 2623:25; 2624:11; 2713:7</p> <p>idea [3] - 2493:20; 2690:1; 2759:13</p> <p>identification [1] - 2608:20</p> <p>identified [27] - 2499:25; 2501:21; 2504:17; 2506:12; 2511:1; 2530:1; 2532:6; 2536:14; 2540:10, 21; 2543:5, 18; 2585:13; 2602:12; 2623:10; 2669:16; 2672:2; 2681:17; 2682:24; 2690:14; 2723:6; 2727:7, 14; 2737:12; 2755:5; 2794:2, 4</p> <p>identifies [1] - 2796:23</p> <p>identify [4] - 2540:24; 2544:9; 2777:16, 18</p> <p>identifying [4] - 2540:12; 2679:7; 2728:2, 9</p> <p>IDF [5] - 2562:24; 2563:3; 2564:1; 2573:15; 2743:22</p> <p>idle [1] - 2684:4</p> <p>Ifeoma [1] - 2493:1</p>	<p>Igic [5] - 2661:11; 2677:5, 9, 15; 2679:17</p> <p>Ignasius [1] - 2783:16</p> <p>ignored [3] - 2598:25; 2769:22; 2804:16</p> <p>ignores [2] - 2669:6; 2713:9</p> <p>illegal [2] - 2547:7; 2803:9</p> <p>illustrated [1] - 2628:2</p> <p>illustrations [1] - 2729:20</p> <p>imagination [2] - 2747:16; 2748:15</p> <p>imbalance [1] - 2725:12</p> <p>immeasurable [1] - 2628:4</p> <p>immediate [2] - 2627:10; 2782:15</p> <p>immediately [1] - 2598:14</p> <p>Impact [7] - 2507:12; 2508:7; 2541:9; 2543:3, 14; 2639:16; 2678:25</p> <p>impact [51] - 2504:23; 2505:1-3; 2506:22; 2524:14; 2544:16; 2571:25; 2575:17; 2581:6; 2583:12; 2585:6, 19; 2591:7; 2604:1; 2606:1, 21; 2614:8; 2617:23; 2621:22; 2625:6; 2628:5, 20; 2629:21; 2635:16, 19; 2636:6, 9, 12; 2646:5; 2650:1; 2655:2; 2675:21; 2679:6; 2703:20, 25; 2704:16, 24; 2724:20; 2730:18; 2735:24; 2742:18; 2753:7; 2761:5; 2781:8, 12, 17</p> <p>impacted [22] - 2540:23; 2575:20; 2579:22; 2591:11; 2593:4; 2607:24; 2621:8, 19; 2626:9; 2628:12; 2630:1, 6, 9; 2640:11; 2650:14; 2677:13; 2705:5; 2717:9; 2725:16; 2730:17; 2731:1; 2774:2</p> <p>impacting [2] - 2761:8; 2771:23</p> <p>impacts [128] - 2501:21; 2504:19; 2506:18; 2507:7; 2510:25; 2512:20, 25; 2514:24; 2515:14, 18, 21; 2516:9; 2529:8; 2531:17; 2573:21; 2575:6; 2578:3, 17; 2579:17; 2580:6, 21; 2581:11; 2583:7, 16; 2584:13; 2585:23; 2590:23; 2594:13; 2595:15, 22; 2596:6; 2602:8; 2604:17; 2605:20; 2606:9, 12, 16; 2608:4; 2614:9; 2616:2, 6-7; 2617:20, 25; 2618:2, 25;</p>	<p>2620:1, 3-4, 6, 17, 20; 2621:1, 12, 15; 2622:2, 6; 2623:15; 2629:17; 2630:4; 2631:23; 2632:20; 2635:13; 2636:4; 2638:23; 2639:1, 4, 12, 22; 2640:1, 7-8, 10, 13, 17-18; 2641:10; 2642:1, 5; 2644:24; 2648:21; 2649:18; 2650:10; 2652:21; 2653:1; 2664:20; 2667:9, 12, 17; 2668:12; 2669:16, 18, 23; 2672:2; 2677:25; 2678:24; 2679:10; 2683:2, 9; 2700:21; 2704:4; 2708:3; 2709:14; 2723:24; 2725:8, 20; 2755:10; 2760:11; 2765:14; 2767:12, 19; 2768:4; 2770:19; 2772:13; 2776:14; 2778:16; 2779:20, 22; 2781:19; 2782:1, 4-5; 2789:19</p> <p>impartial [2] - 2505:18; 2771:8</p> <p>impeached [1] - 2587:7</p> <p>impede [1] - 2715:17</p> <p>implement [4] - 2501:22; 2596:21; 2603:15; 2778:5</p> <p>implementation [2] - 2508:21; 2639:20</p> <p>implementations [1] - 2791:6</p> <p>implemented [1] - 2677:1</p> <p>implementing [1] - 2638:16</p> <p>implications [12] - 2512:7; 2576:15; 2578:11; 2587:21; 2598:20; 2600:6; 2602:5; 2638:22; 2714:16; 2728:3; 2745:4</p> <p>imply [1] - 2666:19</p> <p>importance [7] - 2540:22; 2615:7; 2622:18; 2641:14; 2691:22; 2796:10</p> <p>important [31] - 2510:15; 2521:3; 2548:18; 2558:15; 2569:1; 2590:25; 2596:13; 2604:3; 2606:12; 2614:1; 2616:5; 2618:1, 5; 2620:22; 2624:16; 2626:6; 2628:13; 2641:18; 2644:16; 2656:21; 2657:5; 2665:1; 2686:15, 18; 2689:16; 2701:4; 2707:2; 2708:7; 2726:9; 2745:22; 2777:2</p> <p>importantly [7] - 2560:19; 2609:5; 2636:12; 2638:15; 2652:14; 2746:13; 2747:2</p> <p>impose [3] - 2580:25; 2742:10; 2797:15</p>
---	---	--	--	---	--

<p>imposed [2] - 2616:12; 2726:12</p> <p>impossible [3] - 2520:8; 2604:6; 2760:5</p> <p>impound [1] - 2552:6</p> <p>impounded [2] - 2549:8; 2720:2</p> <p>improper [1] - 2768:9</p> <p>improve [4] - 2513:17; 2560:23; 2622:17; 2711:15</p> <p>improved [5] - 2532:12; 2545:11; 2729:22; 2800:12</p> <p>improvement [1] - 2630:18</p> <p>improvements [2] - 2646:19, 22</p> <p>in-depth [2] - 2590:4; 2612:5</p> <p>in-flow [1] - 2562:17</p> <p>in-flows [1] - 2553:10</p> <p>in-stream [1] - 2504:11, 19; 2519:4; 2520:20; 2548:15; 2562:23; 2579:13; 2581:7; 2606:17; 2686:22; 2700:15</p> <p>inaccessible [1] - 2511:5</p> <p>inaccurate [1] - 2737:23</p> <p>inadequate [2] - 2668:19; 2730:17</p> <p>inadvertently [1] - 2763:8</p> <p>inappropriate [2] - 2598:23; 2694:25</p> <p>incident [5] - 2565:19; 2566:13, 17; 2798:6</p> <p>incidents [1] - 2566:22</p> <p>include [38] - 2504:10; 2521:5; 2531:2; 2538:19; 2545:23; 2556:19; 2579:11; 2581:23; 2603:9; 2607:15; 2634:1; 2644:20; 2660:23; 2661:21; 2662:6, 12, 20; 2668:1; 2671:18; 2672:23; 2675:1; 2676:20; 2679:2, 4; 2709:14; 2712:18; 2717:25; 2720:6; 2726:13; 2737:13; 2743:14; 2751:1; 2754:9; 2777:5, 10, 22; 2782:19</p> <p>included [25] - 2501:8; 2507:2; 2523:19; 2526:4; 2536:7; 2539:12; 2566:20; 2572:11; 2574:20; 2582:17; 2599:19; 2628:3, 19; 2665:4; 2700:4; 2712:3; 2713:22; 2715:8; 2716:23; 2718:14; 2722:10; 2726:17; 2779:1; 2794:14; 2795:20</p> <p>includes [17] - 2505:9; 2518:1; 2533:9; 2551:10;</p>	<p>2552:9; 2556:17; 2571:6; 2582:8; 2594:17; 2595:4; 2608:1; 2668:3; 2669:9; 2713:11; 2721:11; 2722:22; 2758:18</p> <p>including [80] - 2500:5; 2504:18, 25; 2508:6; 2509:18; 2513:2; 2517:14; 2519:2; 2522:22; 2523:13, 24; 2524:18; 2525:20; 2531:11, 15; 2536:15, 20; 2539:19; 2544:17, 20; 2545:20; 2558:5; 2575:12; 2578:17; 2586:24; 2603:7; 2605:9, 12-13; 2609:8; 2623:12; 2624:19; 2625:14; 2627:10, 25; 2630:24; 2635:18; 2636:8, 23; 2637:21; 2647:15, 22; 2648:22; 2651:14, 21; 2667:15; 2668:20; 2669:3; 2670:13; 2674:1, 5, 7, 10, 12, 23; 2675:5, 20; 2678:3; 2679:3; 2711:13; 2715:2; 2718:20, 23; 2720:1, 24; 2722:2, 8; 2723:1, 5; 2725:10; 2735:12; 2745:6; 2753:12; 2757:15; 2769:13; 2776:10; 2777:14; 2778:22; 2782:25</p> <p>including.. [1] - 2696:2</p> <p>inclusion [2] - 2517:15; 2544:25</p> <p>inclusive [1] - 2541:20</p> <p>incoming [1] - 2777:17</p> <p>inconsistent [2] - 2719:9; 2803:15</p> <p>incorporate [3] - 2540:16; 2572:24; 2750:2</p> <p>incorporated [2] - 2645:20; 2754:2</p> <p>incorporates [1] - 2573:7</p> <p>incorporating [1] - 2758:7</p> <p>incorporation [1] - 2573:1</p> <p>incorrect [4] - 2751:13; 2772:20; 2776:23; 2794:23</p> <p>increase [21] - 2573:21; 2574:3; 2577:25; 2586:1; 2615:4; 2623:7; 2641:1, 21; 2648:18; 2651:3, 14; 2655:23; 2705:24; 2706:24; 2711:3; 2717:17; 2740:13; 2750:24; 2758:11; 2759:6; 2776:12</p> <p>increased [11] - 2518:8; 2566:1; 2572:4; 2578:9; 2649:12, 14; 2712:24; 2713:6; 2716:14; 2740:21; 2782:21</p> <p>increases [2] -</p>	<p>2517:2; 2653:3</p> <p>increasing [5] - 2520:19; 2617:7; 2633:15; 2652:23; 2744:6</p> <p>increasingly [1] - 2801:6</p> <p>incremental [6] - 2651:10; 2654:16; 2663:10; 2679:6; 2706:2; 2781:24</p> <p>incrementally [2] - 2549:4, 25</p> <p>incurred [1] - 2629:2</p> <p>indeed [11] - 2496:7; 2519:25; 2573:12; 2574:21; 2625:16; 2628:16; 2633:18; 2643:4; 2645:9; 2655:13; 2728:10</p> <p>indefinite [1] - 2783:21</p> <p>indefinitely [1] - 2642:7</p> <p>independent [4] - 2559:23, 25; 2673:4, 6</p> <p>independently [1] - 2770:10</p> <p>index [1] - 2581:25</p> <p>Indian [2] - 2661:6; 2670:24</p> <p>indicate [3] - 2625:15, 18; 2790:24</p> <p>indicated [19] - 2499:18; 2515:2; 2538:10, 12; 2543:12; 2602:14; 2632:4; 2653:11; 2671:10; 2709:21; 2713:25; 2728:14; 2731:16; 2756:19, 22; 2757:18; 2758:5; 2772:8; 2805:24</p> <p>indicates [3] - 2508:20; 2590:1; 2639:7</p> <p>indicating [2] - 2592:13; 2792:10</p> <p>indication [1] - 2601:16</p> <p>Indigenous [44] - 2502:7; 2505:12; 2513:1; 2528:22; 2529:5, 13-14, 21, 25; 2531:25; 2532:5, 8; 2534:2, 6-7, 9; 2535:2, 10, 13; 2537:22; 2544:8, 15; 2546:6; 2574:21; 2607:21; 2608:14, 23; 2662:13; 2666:13, 15, 20; 2667:5, 8; 2671:5; 2673:4, 6, 9; 2676:16, 23; 2677:3, 17, 20; 2678:8; 2717:23</p> <p>indirect [2] - 2721:11, 18</p> <p>indirectly [2] - 2513:5; 2711:2</p> <p>indisputable [1] - 2518:15</p> <p>individual [4] - 2512:14; 2627:8; 2629:1, 9</p> <p>individuals [3] - 2601:8; 2611:1; 2638:7</p> <p>indulging [1] - 2805:13</p>	<p>industry [4] - 2563:22; 2565:24; 2566:15; 2740:19</p> <p>inevitability [1] - 2750:8</p> <p>inevitable [3] - 2617:2; 2626:21; 2642:1</p> <p>inexcusable [2] - 2700:25; 2701:2</p> <p>inferior [4] - 2707:17; 2748:4; 2752:1; 2783:21</p> <p>infestation [1] - 2778:25</p> <p>Inflow [1] - 2743:19</p> <p>inflows [1] - 2619:15</p> <p>influence [3] - 2757:9, 16; 2776:21</p> <p>inform [3] - 2531:4; 2543:8; 2679:7</p> <p>information [45] - 2502:10; 2507:11; 2508:5; 2522:22, 25; 2524:25; 2528:8; 2534:11, 25; 2537:25; 2539:20; 2542:13, 22; 2554:5; 2570:23; 2572:19; 2573:1; 2577:1; 2591:17; 2606:22; 2644:21; 2667:18; 2672:15, 20; 2675:18; 2693:10; 2708:14; 2727:13; 2738:22; 2744:13; 2754:19; 2759:20; 2760:3; 2761:1, 6; 2762:11; 2769:23; 2771:5; 2778:15; 2789:12; 2791:18, 23; 2792:9; 2794:20; 2800:6</p> <p>informed [3] - 2670:19; 2761:2; 2800:6</p> <p>informs [1] - 2530:20</p> <p>infrastructure [37] - 2511:23; 2516:7, 10; 2517:6; 2594:19; 2615:6, 16; 2617:24; 2624:9, 19; 2626:2; 2629:13, 23; 2641:13, 22; 2642:20; 2645:16; 2647:15; 2649:1; 2650:13, 22; 2652:22; 2655:11, 19; 2657:5; 2663:10; 2678:22; 2687:6; 2717:3; 2721:14, 18-19; 2723:5; 2749:20, 22; 2794:14</p> <p>infrequent [6] - 2515:19; 2600:24; 2767:24; 2773:6, 17</p> <p>infrequently [2] - 2596:16; 2600:22</p> <p>infringement [1] - 2667:4</p> <p>inherent [2] - 2583:11, 19</p> <p>inheritance [2] - 2682:11; 2725:11</p> <p>initial [7] - 2505:13; 2518:8; 2613:15; 2743:20; 2801:1, 22; 2802:6</p> <p>injuries [2] - 2622:20; 2623:1</p> <p>injurious [1] - 2518:2</p> <p>injury [1] - 2692:9</p>	<p>inlet [17] - 2549:6, 21; 2550:5, 7, 11, 19, 24; 2551:6, 21; 2553:9; 2563:11, 19; 2594:20; 2700:19; 2740:5; 2744:3, 8</p> <p>inner [2] - 2629:15; 2709:6</p> <p>innovation [2] - 2567:18; 2782:16</p> <p>input [14] - 2533:18; 2535:14; 2536:18; 2540:21; 2544:16, 19; 2545:22; 2560:15; 2603:10; 2607:20; 2718:4; 2772:2; 2795:6; 2802:24</p> <p>inputs [2] - 2705:18; 2768:20</p> <p>inquire [1] - 2779:3</p> <p>inquired [1] - 2770:10</p> <p>inquiries [1] - 2771:3</p> <p>inquiry [1] - 2612:6</p> <p>insecurity [1] - 2628:7</p> <p>install [1] - 2676:10</p> <p>installation [1] - 2656:6</p> <p>installed [1] - 2585:17</p> <p>installing [1] - 2629:3</p> <p>instance [5] - 2684:19; 2719:7; 2732:8; 2741:20; 2742:4</p> <p>instantaneous [1] - 2586:1</p> <p>instead [9] - 2515:17; 2560:22; 2598:4; 2599:2; 2721:15; 2725:16; 2751:6; 2754:4; 2769:23</p> <p>instill [1] - 2766:22</p> <p>instructive [1] - 2611:23</p> <p>instrumentation [2] - 2742:19; 2744:14</p> <p>insurance [3] - 2631:2; 2791:9, 11</p> <p>insurer [1] - 2791:12</p> <p>intact [7] - 2693:14; 2780:1, 11-12, 14, 19, 22</p> <p>intake [5] - 2579:17; 2788:22; 2792:11, 20; 2793:5</p> <p>intelligence [1] - 2762:14</p> <p>intended [8] - 2537:8; 2613:21; 2616:23; 2632:23, 25; 2651:8; 2687:7; 2796:4</p> <p>intending [3] - 2496:25; 2497:5; 2500:24</p> <p>intends [2] - 2541:14; 2579:3</p> <p>intensifying [1] - 2751:14</p> <p>intensity [1] - 2687:3</p> <p>intent [3] - 2496:21; 2527:4; 2793:19</p> <p>intention [1] - 2533:17</p> <p>intentioned [2] - 2555:18; 2586:11</p>
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<p>interact [1] - 2653:22 interchange [1] - 2795:17 Interest [1] - 2682:16 interest [72] - 2501:12, 20; 2503:5, 10, 18; 2505:22; 2506:2, 11; 2519:18; 2520:7; 2522:4, 21; 2539:5; 2544:6; 2606:25; 2610:19; 2611:13, 20; 2612:6; 2614:23; 2616:10; 2620:7; 2624:5, 17, 24; 2625:17; 2631:22; 2632:12, 18; 2634:9; 2636:18; 2639:3; 2641:25; 2642:4; 2645:4, 8, 10; 2653:10, 15; 2657:19; 2662:2, 6, 9, 11; 2664:2, 8; 2666:9, 14; 2667:20; 2681:24; 2682:2, 13; 2683:11, 13, 16, 23; 2684:3, 7, 16, 22, 25; 2685:2; 2691:4; 2694:11, 18; 2710:16, 21; 2711:22; 2714:20; 2763:20; 2783:23 interested [6] - 2528:7; 2533:13, 20; 2539:7; 2786:20; 2802:24 interesting [5] - 2576:20; 2693:7; 2710:25; 2731:15; 2750:22 interestingly [1] - 2734:25 interests [7] - 2506:8; 2533:14; 2615:1; 2666:25; 2667:13; 2668:15; 2679:11 interfaces [1] - 2762:3 Interim [1] - 2517:11 interim [2] - 2538:1; 2539:10 intermittent [1] - 2655:9 intermittently [1] - 2653:20 international [1] - 2542:4 interpretation [2] - 2708:11; 2770:24 interrupt [2] - 2612:9; 2613:11 interrupted [1] - 2714:23 interruption [1] - 2791:16 intersect [1] - 2780:22 intersection [1] - 2795:17 intersections [1] - 2713:16 interval [1] - 2564:10 intervals [5] - 2674:7; 2738:5; 2758:18; 2762:4, 6 intervene [1] - 2532:1 intervener [7] - 2547:8; 2567:15; 2568:3; 2570:4; 2783:8, 11</p>	<p>interveners [10] - 2500:11; 2502:15; 2504:1; 2519:20; 2523:14; 2546:6; 2547:3; 2596:9; 2645:1; 2654:9 intervention [1] - 2564:17 interventions [1] - 2566:23 intolerable [3] - 2642:8; 2650:9; 2668:25 introduce [2] - 2739:13; 2776:17 introduced [1] - 2778:23 introduces [1] - 2577:13 introducing [1] - 2699:19 introduction [3] - 2777:4; 2788:3, 5 introductory [3] - 2499:21; 2519:12; 2547:21 intuition [1] - 2793:19 intuitive [1] - 2702:25 inundation [1] - 2568:9 invasive [1] - 2776:11 invest [3] - 2684:3; 2711:23; 2754:3 investigated [3] - 2753:12; 2754:8; 2755:6 investigation [2] - 2584:12; 2728:15 investigations [3] - 2674:2; 2675:4, 7 investing [1] - 2710:18 investment [10] - 2514:11; 2516:6; 2625:19; 2657:8; 2663:11; 2690:2, 11, 16; 2710:23; 2788:24 invitations [1] - 2544:5 invite [1] - 2541:4 invited [3] - 2524:21; 2541:2; 2543:10 involve [1] - 2736:10 involved [1] - 2524:2; 2538:16; 2545:18; 2574:15; 2587:16; 2664:22; 2700:17; 2760:21; 2798:17; 2800:18; 2805:16 involvement [1] - 2678:13 involves [2] - 2557:7; 2667:2 IR [1] - 2728:13 irreplaceable [1] - 2627:12 irrigation [3] - 2698:4; 2711:17; 2754:20 isopleths [1] - 2775:11 issuance [1] - 2530:13 issue [42] - 2502:18, 21; 2514:16; 2534:17; 2536:4; 2545:8;</p>	<p>2547:24; 2548:1; 2553:22; 2561:3; 2575:14; 2576:6; 2579:15, 25; 2581:2, 23; 2584:23; 2587:4; 2588:5, 10-11; 2590:6; 2599:19; 2600:9; 2603:1; 2604:14, 20, 24; 2607:4; 2611:13; 2618:15; 2634:17; 2638:12; 2699:19; 2731:4; 2742:20; 2752:17; 2753:6; 2760:19; 2779:4, 23; 2803:3 issued [14] - 2506:25; 2509:20; 2524:20; 2612:1; 2691:13; 2710:1; 2736:20, 24; 2740:2; 2741:9, 22; 2745:15, 25; 2774:25 issues [27] - 2499:24; 2507:2; 2529:7; 2533:23; 2536:11; 2560:10; 2562:6; 2567:13; 2574:25; 2575:11; 2590:20; 2596:4; 2605:17; 2611:16; 2612:5; 2613:10; 2623:12; 2672:1; 2681:16; 2704:7; 2736:1; 2760:15; 2761:18; 2762:3; 2766:13; 2767:6; 2804:15 issuing [1] - 2531:7 items [5] - 2539:16; 2627:13; 2691:21; 2735:7; 2801:4 iterative [1] - 2533:21 itself [13] - 2510:11; 2517:6; 2530:3; 2580:20; 2600:19, 23; 2625:24; 2635:1; 2647:22; 2650:24; 2651:22; 2671:12; 2719:20 Iwanyshyn [1] - 2492:12</p>	<p>judgments [1] - 2664:10 July [3] - 2508:7; 2523:11; 2738:20 jumped [1] - 2728:16 June [1] - 2728:12 jurisdiction [3] - 2505:17; 2521:13; 2637:17 jurisdictions [2] - 2679:13; 2749:25 justifiable [6] - 2613:17; 2614:19; 2616:17, 20, 22; 2619:22 justification [4] - 2510:3; 2616:19; 2700:3; 2705:8 justifications [2] - 2703:15 justified [4] - 2519:9; 2613:19; 2614:17; 2635:6 justifying [1] - 2800:16 Justin [1] - 2492:14</p>	<p>Kiwanis [1] - 2714:22 Klepacki [7] - 2524:18; 2577:12; 2578:6; 2696:18; 2702:11; 2737:2; 2782:11 Klepacki's [1] - 2703:9 knowingly [1] - 2724:25 knowledge [8] - 2507:6; 2537:22; 2668:10, 17; 2673:12, 19; 2675:2; 2803:18 known [6] - 2570:25; 2696:4; 2722:24; 2746:23; 2754:20 knowns [3] - 2746:24; 2747:2 knows [2] - 2561:15; 2803:17 KRUHLAK [15] - 2494:21; 2495:7, 15, 22; 2497:2; 2499:11; 2679:24; 2680:6; 2733:9; 2734:3; 2785:21; 2786:9; 2787:8; 2806:15; 2808:4 Kruhlak [32] - 2492:16; 2494:20; 2496:9, 24; 2497:6, 16; 2498:19; 2499:6, 8; 2547:12; 2604:21; 2609:16; 2614:24; 2679:24; 2680:4, 12, 23; 2733:9; 2734:2, 5; 2785:17; 2786:15, 21; 2787:7; 2793:21; 2794:2, 4, 23; 2795:24; 2803:10; 2806:14 Kruhlak's [2] - 2739:17; 2793:18</p>
K				
<p>Kainai [1] - 2796:17 Kamp [1] - 2714:22 Kananaskis [1] - 2504:12 Karen [2] - 2524:19; 2685:17 Karin [7] - 2524:19; 2685:13; 2686:1; 2728:18; 2737:3; 2784:9; 2798:18 keep [6] - 2494:9; 2585:5; 2629:11; 2748:13; 2754:21; 2802:12 keepers [1] - 2668:17 keeping [1] - 2497:12 keeps [1] - 2758:7 Kennedy [5] - 2492:10; 2496:11; 2609:11; 2745:18; 2798:21 KENNEDY [3] - 2496:10; 2806:6, 10 key [12] - 2508:21; 2557:20; 2574:21, 24; 2575:5; 2607:15; 2615:18; 2639:20; 2700:3; 2756:10; 2779:12 Keyes [9] - 2561:5, 24; 2562:14, 19; 2563:24; 2564:4, 7; 2739:23; 2744:17 Keyes' [1] - 2564:22 kicked [1] - 2734:18 kicking [2] - 2734:23; 2745:17 kids [1] - 2689:18 killed [1] - 2803:7 kilometre [3] - 2699:10, 13; 2774:5 kilometres [7] - 2552:3; 2582:14; 2625:7; 2701:21; 2702:6; 2703:1; 2781:8 kind [5] - 2594:10; 2612:19; 2643:15; 2775:20</p>	<p>Jan [3] - 2685:16; 2691:8; 2736:5 January [2] - 2698:18; 2708:13 jets [1] - 2802:3 job [3] - 2561:19; 2799:16; 2800:17 jobs [2] - 2788:9; 2798:11 Jobson [1] - 2579:7 John [2] - 2559:17; 2668:22 joins [1] - 2618:15 Joint [7] - 2691:19, 23; 2695:4, 13, 21, 23; 2710:1 jolted [1] - 2627:16 Jr [1] - 2668:22 JRP [6] - 2710:7; 2711:1, 21; 2726:25; 2727:20 judgment [5] - 2704:1, 17, 25; 2705:9; 2762:16</p>	<p>J</p>	<p>L</p>	
<p>laboratory [3] - 2591:10; 2759:11, 15 lack [12] - 2546:15; 2580:22; 2646:2; 2721:5; 2728:8; 2757:20; 2758:9; 2760:9; 2761:6; 2762:20; 2781:21; 2797:13 lacking [2] - 2719:24; 2730:17 lacustrine [3] - 2756:14, 17; 2757:13 Lancaster [2] - 2693:16; 2780:24 land [96] - 2515:11; 2516:21; 2517:18, 21; 2518:7; 2522:15; 2529:2; 2532:4, 18, 20, 24; 2533:3, 7, 17, 22; 2535:9; 2538:2, 16-17; 2541:21; 2544:24; 2545:1; 2546:7, 10-11, 16, 21, 25; 2547:4; 2556:15; 2558:18; 2605:23; 2607:16; 2608:3; 2662:12; 2667:23; 2668:5, 8; 2669:3, 9, 18; 2671:20, 23-24; 2672:5, 17; 2673:8, 16; 2676:13, 15, 18,</p>				

<p>22; 2677:25; 2679:12; 2689:14; 2708:6, 9, 15; 2713:12; 2714:2, 8, 11, 13, 15; 2718:25; 2724:3, 9, 14, 16; 2725:22; 2726:6; 2732:2; 2734:7-9, 12, 16, 24; 2735:1, 4, 6, 14, 19; 2736:19; 2753:16; 2781:4; 2794:8; 2796:7, 19</p> <p>Land [11] - 2506:15; 2532:17; 2533:24; 2555:21, 24; 2556:4, 12, 25; 2557:21; 2558:15</p> <p>landfills [1] - 2621:24</p> <p>landowner [7] - 2533:5; 2685:11; 2734:14; 2802:9, 24; 2803:16</p> <p>landowners [38] - 2517:20; 2518:4; 2522:14, 20; 2523:9, 13, 15, 24; 2524:13; 2525:3; 2538:18; 2594:24; 2607:25; 2608:2; 2628:10; 2640:19, 25; 2665:14; 2714:1; 2723:13, 20, 25; 2724:10; 2730:4, 17-19; 2734:11, 18, 25; 2784:18; 2796:18; 2802:4, 8; 2805:8</p> <p>Landowners [1] - 2493:1</p> <p>landowners' [2] - 2525:24; 2782:10</p> <p>Lands [4] - 2507:17; 2508:10; 2530:14; 2531:7</p> <p>lands [16] - 2518:1; 2538:11; 2580:11; 2640:20, 23; 2661:12; 2668:20; 2677:2, 6, 9, 16; 2734:23; 2771:24; 2777:2; 2798:1</p> <p>landscape [6] - 2559:5; 2606:2; 2649:3; 2776:14; 2779:10, 17</p> <p>landscapes [6] - 2664:20; 2665:10; 2779:9, 16, 18, 24</p> <p>laneway [1] - 2803:4</p> <p>large [15] - 2500:3; 2520:21; 2572:11; 2624:20; 2633:8; 2652:3, 8; 2656:9; 2699:20; 2712:10; 2747:6; 2755:3; 2786:1; 2797:22</p> <p>large-scale [1] - 2712:10</p> <p>largely [3] - 2543:17; 2560:14; 2807:4</p> <p>larger [21] - 2521:4; 2522:16; 2571:22; 2573:12; 2601:14; 2620:16; 2633:24; 2648:1, 5; 2654:2; 2656:13, 16; 2701:6, 20, 22; 2748:22; 2767:25; 2769:13; 2770:4</p> <p>largest [2] - 2617:6; 2735:18</p> <p>last [21] - 2493:18,</p>	<p>24; 2498:10; 2501:1; 2502:9; 2515:5; 2541:3; 2557:10; 2595:17; 2609:11; 2632:8; 2635:23; 2683:19; 2702:13; 2719:18; 2753:1; 2764:13; 2775:17; 2787:3; 2788:20; 2798:10</p> <p>lasting [1] - 2691:6</p> <p>lastly [4] - 2495:23; 2500:16; 2587:1; 2592:24</p> <p>late [10] - 2532:25; 2586:2, 11; 2684:18; 2688:20; 2690:1; 2728:20; 2738:20; 2760:4</p> <p>laudable [2] - 2631:22; 2632:18</p> <p>Laura [3] - 2492:11; 2495:18; 2798:20</p> <p>lawn [1] - 2803:7</p> <p>layer [5] - 2598:4; 2756:23, 25; 2757:8</p> <p>layers [8] - 2592:4; 2756:15, 17, 19-20; 2757:17; 2758:4; 2761:17</p> <p>lead [10] - 2504:16; 2587:6; 2599:11; 2601:25; 2602:22; 2623:4; 2647:7; 2711:2; 2747:4; 2774:16</p> <p>lead-up [1] - 2623:4</p> <p>leakage [4] - 2757:9; 2758:12; 2759:11, 22</p> <p>learn [1] - 2600:2</p> <p>learned [1] - 2805:15</p> <p>learnt [1] - 2799:3</p> <p>least [11] - 2566:5; 2570:7; 2609:11; 2650:5; 2717:18; 2756:13, 25; 2769:14; 2785:18; 2801:7; 2805:6</p> <p>leave [3] - 2642:6; 2732:13; 2760:17</p> <p>leaves [1] - 2707:11</p> <p>leaving [4] - 2646:3; 2724:5; 2777:12; 2778:1</p> <p>led [7] - 2504:17; 2562:6; 2600:6; 2601:24; 2727:10; 2746:19; 2759:21</p> <p>Lee [5] - 2685:15; 2724:2; 2730:25; 2732:9; 2734:12</p> <p>Leeds [2] - 2611:4; 2626:12</p> <p>left [13] - 2511:5; 2550:6; 2584:24; 2601:21; 2604:8; 2728:10; 2744:3; 2761:3; 2775:15; 2800:8; 2802:16, 19, 21</p> <p>legal [6] - 2517:23; 2555:25; 2570:11; 2796:20; 2797:5; 2805:22</p> <p>legislation [1] - 2509:18</p> <p>legislative [1] - 2665:13</p> <p>length [8] - 2552:3; 2554:8; 2699:8;</p>	<p>2717:20; 2718:1, 8; 2756:6</p> <p>lengths [3] - 2519:2; 2522:1; 2765:6</p> <p>lengthy [2] - 2600:11; 2632:3</p> <p>Leslie [1] - 2588:7</p> <p>less [40] - 2504:18, 22-24; 2505:1; 2562:17; 2570:6; 2581:6; 2602:15; 2634:25; 2635:13, 15-17, 19; 2636:3, 6-7, 9; 2638:4; 2642:19; 2652:5, 22; 2653:24; 2656:17; 2700:13; 2703:11, 19-20, 25; 2704:4, 11, 16, 24; 2709:20; 2728:1; 2740:10; 2803:6</p> <p>letter [8] - 2531:8; 2537:10; 2543:22; 2628:19, 22; 2642:15; 2739:17; 2745:1</p> <p>letters [6] - 2627:1, 7; 2628:4; 2629:14, 17; 2630:20</p> <p>letting [1] - 2664:17</p> <p>level [58] - 2502:3; 2517:16; 2519:3; 2523:20; 2552:13, 17, 19; 2558:13; 2559:14; 2562:11; 2565:15, 23; 2566:15; 2567:7, 14; 2583:10, 18; 2603:16; 2637:1; 2652:15; 2682:10; 2687:18; 2700:7; 2703:3; 2707:19, 21, 24; 2712:22; 2713:3; 2715:16; 2722:17; 2727:9; 2731:2; 2739:10; 2740:18, 25; 2741:3, 17; 2742:5; 2743:8, 12, 17, 20-21; 2744:2; 2752:11, 14; 2778:8, 14; 2790:12</p> <p>levels [14] - 2510:20; 2577:25; 2587:23; 2594:2; 2601:19; 2629:20; 2641:20; 2654:21; 2706:9; 2707:16; 2744:14; 2745:4; 2751:3; 2765:8</p> <p>liaison [6] - 2528:17, 20; 2529:1; 2608:8, 13; 2718:25</p> <p>licence [9] - 2507:22; 2655:22; 2656:4; 2692:16; 2727:25; 2794:5, 7, 10</p> <p>licences [2] - 2692:8; 2794:6</p> <p>licensed [2] - 2559:18; 2663:11</p> <p>licensing [1] - 2655:19</p> <p>Lieutenant [1] - 2607:4</p> <p>life [14] - 2510:9; 2581:24; 2613:23; 2615:14; 2650:8, 10; 2657:9; 2673:21; 2677:11; 2682:12; 2711:6; 2712:23; 2724:21; 2798:2</p> <p>lifespan [1] - 2783:21</p>	<p>lifestyle [1] - 2690:24</p> <p>lift [1] - 2705:6</p> <p>light [6] - 2569:12; 2605:4; 2622:7; 2723:7; 2728:12; 2776:16</p> <p>likelihood [2] - 2647:18; 2767:8</p> <p>likely [19] - 2508:22; 2548:25; 2566:21; 2573:18; 2622:25; 2639:18; 2649:9; 2652:5; 2663:9; 2711:20; 2720:14; 2744:12; 2746:23; 2759:21, 23; 2767:8, 19; 2778:6, 24</p> <p>limit [3] - 2558:16; 2679:8; 2738:7</p> <p>limitation [2] - 2700:10; 2746:18</p> <p>limitations [8] - 2647:5; 2665:25; 2685:23; 2745:2; 2748:13; 2750:9; 2762:24; 2771:13</p> <p>Limited [7] - 2661:11; 2666:7; 2670:7; 2677:6, 9, 16; 2679:17</p> <p>limited [21] - 2503:3; 2515:18; 2519:17; 2531:15; 2542:25; 2592:15; 2616:7; 2639:13; 2653:9; 2654:24; 2674:1, 24; 2675:1; 2679:5; 2748:7, 9; 2752:5; 2774:8; 2777:1; 2778:21; 2804:18</p> <p>limits [7] - 2646:15; 2647:9; 2685:24; 2733:13; 2742:4; 2768:18; 2771:24</p> <p>line [9] - 2588:22; 2590:13, 15; 2701:1; 2730:22; 2733:22; 2793:25</p> <p>lines [3] - 2625:8; 2793:22</p> <p>lingering [1] - 2628:21</p> <p>link [1] - 2729:13</p> <p>linked [2] - 2705:16; 2713:5</p> <p>liquids [1] - 2625:11</p> <p>list [3] - 2562:3; 2676:25; 2735:1</p> <p>listed [5] - 2509:16; 2691:21; 2718:17; 2720:8; 2730:5</p> <p>listen [1] - 2640:15</p> <p>listening [3] - 2684:9; 2688:25; 2804:25</p> <p>lists [1] - 2717:19</p> <p>literature [3] - 2729:5; 2749:2; 2770:2</p> <p>live [3] - 2511:10; 2724:8; 2725:8</p> <p>lived [3] - 2646:7; 2683:16, 22</p> <p>livelihood [2] - 2516:11; 2798:9</p> <p>livelihoods [4] - 2617:21; 2626:8, 20; 2633:8</p> <p>lives [9] - 2516:11; 2617:21; 2622:23;</p>	<p>2626:8, 19; 2633:6; 2645:17; 2701:1; 2745:8</p> <p>living [2] - 2709:2, 8</p> <p>load [1] - 2591:12</p> <p>loads [1] - 2579:8</p> <p>local [38] - 2514:23; 2515:16, 22; 2523:13, 23; 2525:1, 20; 2528:21-23; 2548:8; 2559:15; 2588:24; 2592:15; 2594:24; 2595:2; 2599:17; 2608:14; 2616:6; 2620:11; 2630:18; 2638:23; 2639:1, 12, 22; 2640:7; 2641:3, 10; 2716:25; 2726:13; 2729:25; 2751:7; 2760:9; 2798:12; 2803:18</p> <p>localized [1] - 2776:22</p> <p>locally [1] - 2630:12</p> <p>located [20] - 2508:14; 2549:23; 2550:10, 15; 2551:17; 2558:12; 2582:13; 2583:1; 2590:1; 2594:19, 21; 2601:18; 2617:12; 2621:3; 2645:24; 2661:7; 2706:11; 2709:9; 2776:22; 2779:9</p> <p>location [2] - 2631:3; 2777:14</p> <p>location [18] - 2504:21; 2559:15; 2588:18; 2592:21; 2593:22; 2597:20; 2604:2; 2709:18; 2720:13; 2735:14; 2747:10; 2795:14; 2799:21; 2802:18; 2803:21, 25; 2804:6</p> <p>locations [9] - 2525:1; 2538:19; 2621:8; 2676:21; 2709:6; 2765:12; 2775:11; 2779:19</p> <p>Locke [11] - 2583:2, 8; 2584:7, 11, 17; 2585:2, 24; 2586:4; 2754:3, 11, 25</p> <p>Locke's [8] - 2584:16; 2585:10, 16, 21; 2586:10; 2753:19, 21, 23</p> <p>locks [1] - 2799:22</p> <p>logic [1] - 2750:25</p> <p>logical [1] - 2747:13</p> <p>logs [1] - 2536:12</p> <p>long-lived [2] - 2683:16, 22</p> <p>long-standing [1] - 2665:20</p> <p>long-term [2] - 2512:25; 2663:7</p> <p>longer-term [1] - 2656:1</p> <p>longevity [1] - 2770:11</p> <p>look [19] - 2577:9; 2582:19; 2680:13; 2684:10; 2687:24; 2697:8; 2700:20; 2716:2; 2728:20; 2762:12; 2764:7; 2766:19; 2776:13; 2787:9, 14; 2799:9;</p>
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2804:3; 2805:15; 2806:16 looked [3] - 2577:23; 2689:7; 2753:15 looking [6] - 2566:20; 2629:19; 2691:12; 2711:1; 2723:19; 2748:23 looks [3] - 2493:21; 2749:11; 2802:3 looming [1] - 2723:22 Lorelee [1] - 2493:5 lose [1] - 2613:4 loses [2] - 2682:10; 2742:6 losing [1] - 2724:12 loss [24] - 2510:9; 2564:24; 2604:14, 18; 2615:14; 2625:4; 2627:9, 17; 2629:10; 2630:9; 2650:8; 2676:15; 2677:2; 2692:9, 19; 2725:9-11; 2731:20; 2781:24; 2796:5 losses [4] - 2613:24; 2615:18; 2630:8 lost [12] - 2622:23; 2623:23; 2627:21, 24; 2715:4, 25; 2725:21; 2745:8; 2781:12, 15; 2796:6 Louden [9] - 2492:22; 2609:9; 2658:4; 2659:6; 2660:4, 17; 2679:22, 25; 2785:7 LOUDEN [5] - 2658:6, 9; 2660:5, 18; 2680:4 Louis [3] - 2543:22, 24; 2544:14 low [40] - 2517:16; 2548:9; 2552:13, 17, 19; 2562:11; 2564:24; 2565:15, 23; 2566:15; 2567:7, 14; 2596:24; 2603:16; 2619:14; 2653:18; 2695:17; 2708:25; 2715:16; 2738:19; 2740:18, 25; 2741:3; 2743:4, 8, 12, 17; 2744:10; 2751:1; 2752:11, 14; 2754:16; 2756:15; 2759:21; 2778:8, 14 low-level [23] - 2517:16; 2552:13, 17, 19; 2562:11; 2565:15, 23; 2566:15; 2567:7, 14; 2603:16; 2715:16; 2740:18, 25; 2741:3; 2743:8, 12, 17; 2752:11, 14; 2778:8 lower [14] - 2571:10; 2589:3; 2619:15; 2654:5; 2688:1; 2722:14, 19; 2754:23; 2757:8; 2758:4, 8 lowered [1] - 2751:4 lowering [1] - 2553:13 LRT [3] - 2621:5; 2625:6; 2630:11 Ltd [8] - 2493:3; 2542:16; 2579:16; 2788:6, 13; 2796:7; 2798:15 lucky [1] - 2764:13	Luigi [1] - 2492:20 lunch [3] - 2493:21; 2498:22; 2658:2 Luzi [5] - 2575:11, 14; 2576:21; 2577:21; 2578:3 M machine [1] - 2762:15 magnifies [1] - 2803:21 magnitude [14] - 2511:14; 2512:2, 7; 2573:3; 2588:2; 2613:22; 2620:16; 2624:1; 2695:1; 2748:18; 2749:10; 2757:11; 2758:5; 2763:17 main [7] - 2500:13; 2501:6; 2546:14; 2557:7; 2611:16; 2735:14; 2759:18 mainstream [1] - 2702:12 maintain [3] - 2505:14; 2553:14; 2654:21 maintained [2] - 2508:2; 2553:5 maintaining [3] - 2562:24; 2563:3, 20 maintenance [6] - 2553:1; 2558:1; 2568:10, 21; 2651:25; 2699:25 major [13] - 2559:2; 2572:17; 2579:18; 2613:25; 2617:12; 2642:13; 2648:21; 2652:3; 2653:21; 2728:4; 2741:18; 2768:10; 2795:12 majority [1] - 2582:12 make-up [1] - 2664:12 makers [1] - 2780:17 makings [1] - 2800:13 malfunctions [1] - 2678:2 manage [10] - 2595:9; 2634:21; 2685:19; 2686:11; 2724:20; 2765:5; 2766:20; 2777:4, 15 manageable [2] - 2578:21; 2655:10 managed [1] - 2766:17 management [55] - 2496:17; 2506:20; 2508:1; 2514:7, 11; 2519:23; 2520:15, 17, 21-22; 2541:21; 2546:4; 2548:19; 2559:7; 2568:2, 6, 22; 2569:5; 2570:14; 2571:3, 13; 2598:13; 2603:6, 8; 2651:15; 2654:8; 2656:25; 2663:2; 2670:8; 2674:16, 19; 2685:19; 2692:6, 25; 2693:22; 2695:24; 2696:2; 2710:4; 2715:9; 2717:3, 20; 2718:19;	2720:5; 2726:7; 2727:3; 2735:21; 2743:10; 2744:24; 2745:17; 2766:22; 2777:3, 7, 9 manager [1] - 2539:9 managers [3] - 2497:12; 2498:4; 2784:2 manages [1] - 2683:24 mandate [7] - 2503:2; 2519:16; 2545:3; 2611:20; 2653:9; 2661:24; 2670:15 mandates [2] - 2522:4; 2665:14 manifested [1] - 2577:19 manner [4] - 2516:19; 2535:1; 2539:2; 2746:14 manual [2] - 2739:5, 20 manuals [1] - 2568:21 map [1] - 2795:8 mapped [3] - 2779:25; 2780:19, 22 mapping [3] - 2568:9; 2582:5; 2718:21 maps [3] - 2542:19; 2676:21; 2795:9 March [14] - 2507:10; 2517:11; 2523:22; 2531:8; 2535:12; 2537:10; 2684:18; 2686:5; 2698:15; 2701:11; 2746:7; 2755:22; 2757:18; 2758:3 MARCH [1] - 2495:20 marching [1] - 2800:18 margin [3] - 2551:10, 23; 2552:9 marked [8] - 2495:1, 11; 2496:5; 2498:17; 2500:7; 2739:17; 2785:24; 2786:10 market [1] - 2517:25 Marshall [4] - 2685:15, 20; 2688:19, 23 Mary [6] - 2524:19; 2685:14; 2717:8, 16; 2732:8; 2736:2 Mary's [1] - 2753:8 masses [1] - 2798:8 Massey [3] - 2524:19; 2618:9; 2685:17 massive [5] - 2573:5; 2589:12; 2720:20; 2766:18; 2775:6 master's [1] - 2600:10 match [1] - 2744:7 material [13] - 2588:3; 2593:14; 2599:25; 2624:23; 2653:19; 2660:24; 2680:22; 2684:22; 2685:1; 2756:24; 2769:23, 25; 2777:24 materials [8] - 2501:2; 2515:3; 2592:21; 2599:2;	2655:14; 2733:11; 2763:16; 2777:17 math [2] - 2592:17; 2742:16 matter [11] - 2510:6; 2519:15; 2556:21; 2567:10; 2575:4; 2593:19; 2595:12; 2731:9; 2744:10; 2769:22; 2799:10 matters [11] - 2494:11, 18; 2495:8; 2498:11, 25; 2603:25; 2617:7; 2618:15; 2681:19; 2807:23 Matthew [2] - 2527:19; 2790:10 maximum [17] - 2551:9; 2552:17; 2562:15, 17; 2563:18; 2564:11, 19; 2651:4, 8, 18; 2687:10; 2688:11; 2697:11, 25; 2740:5, 10 mayor [1] - 2642:14 MC1 [93] - 2503:25; 2504:8; 2514:13; 2519:21; 2520:2, 7, 12-13, 17-18, 20, 24; 2523:17, 19; 2582:25; 2587:14; 2634:10, 14, 18, 20, 23; 2635:4, 6, 12; 2636:3, 19, 23; 2637:15, 21, 25; 2638:7, 12; 2653:6, 16, 25; 2654:3, 6, 10; 2686:7, 21-22; 2687:13, 25; 2688:3; 2691:6; 2696:18; 2700:5, 9; 2701:6, 13, 17, 24; 2702:4, 14, 19; 2703:1, 5, 20; 2704:11, 13, 25; 2706:3; 2712:3, 20, 24; 2713:2, 22; 2715:8, 23; 2716:2; 2721:15, 24; 2722:2, 15-16; 2727:8; 2728:14; 2729:16, 19-20, 23; 2736:10; 2737:23; 2748:3; 2751:25; 2784:12; 2801:18; 2805:2 MC1's [1] - 2700:22 McDougall [1] - 2524:15 McKay [1] - 2666:6 McLean [6] - 2502:25; 2519:5; 2582:15, 25; 2705:13; 2729:7 Meadows [7] - 2521:7; 2582:5; 2633:1; 2634:4; 2682:7; 2705:23; 2721:12 mean [15] - 2525:18; 2557:2, 11; 2592:18; 2634:24; 2684:14; 2693:10; 2697:22; 2732:22; 2735:5, 7; 2748:8; 2750:15; 2776:2; 2786:12 meaning [3] - 2554:18; 2603:21; 2648:15 meaningful [5] - 2529:16; 2533:18; 2534:2, 20; 2535:19 means [11] -	2548:11; 2557:24; 2559:13; 2585:12; 2594:3; 2653:20; 2654:4; 2740:24; 2743:14; 2780:9; 2781:14 meant [2] - 2762:13 meanwhile [2] - 2682:6; 2704:14 measure [3] - 2576:18; 2648:8; 2737:7 measured [4] - 2592:11; 2712:24; 2748:19; 2761:19 measurement [2] - 2702:7; 2759:14 measurements [5] - 2702:13; 2757:12; 2761:9, 15 measures [35] - 2501:23; 2507:7; 2508:22; 2532:12; 2535:15; 2539:21; 2540:25; 2541:24; 2544:4; 2593:11; 2596:22; 2603:9; 2639:21; 2640:15; 2641:3; 2647:21; 2661:22; 2664:6; 2667:16; 2669:15, 17; 2672:2; 2676:13, 18; 2677:1; 2679:9; 2702:11; 2715:12; 2717:20, 25; 2718:7, 10; 2777:10; 2778:3 mechanical [2] - 2629:4; 2651:15 mediating [1] - 2790:17 mediation [3] - 2790:7; 2791:5; 2793:15 medicinal [1] - 2544:11 meet [20] - 2526:17, 21, 25; 2527:2, 6; 2532:8; 2544:24; 2551:12; 2562:20; 2652:7; 2671:25; 2693:1, 23; 2694:1, 12; 2695:7; 2696:1; 2712:1; 2727:24; 2801:20 meeting [5] - 2523:15, 25; 2537:14; 2540:14; 2802:6 meetings [5] - 2523:1; 2534:21; 2540:4; 2545:21; 2605:1 meets [6] - 2522:10; 2563:9, 21; 2573:6; 2616:22; 2645:11 Melissa [1] - 2492:18 member [5] - 2526:12; 2555:9; 2599:10; 2677:19; 2762:19 Member [3] - 2492:8 members [40] - 2499:13; 2501:5; 2505:9; 2510:10; 2522:15; 2523:3, 9, 14, 24; 2524:18; 2525:20; 2526:2, 4, 7, 11; 2547:14; 2606:19; 2610:10, 17; 2626:14, 25; 2644:7, 14; 2660:19; 2679:14;
--	--	--	--	--

2685:11, 18; 2698:16; 2730:24; 2760:23; 2766:6; 2776:19; 2779:8; 2784:1, 7, 19; 2789:20; 2798:20, 23 membership [1] - 2626:6 membrane [1] - 2788:25 mementos [1] - 2627:12 memo [5] - 2568:13; 2569:21; 2584:17; 2588:6; 2718:9 memorandum [2] - 2565:21; 2569:16 memories [2] - 2627:16; 2725:21 memory [1] - 2784:13 Menninger [14] - 2549:10; 2554:24; 2559:17; 2560:4, 6, 9; 2564:5; 2566:8, 14, 21; 2567:1, 9; 2709:21 Menninger's [2] - 2560:12; 2763:2 mental [4] - 2626:16; 2628:5, 20; 2629:17 mentally [1] - 2650:14 mention [3] - 2704:21; 2723:25; 2752:2 mentioned [8] - 2613:11; 2655:24; 2711:21; 2714:5; 2716:7; 2718:10; 2725:15 mentioning [1] - 2633:11 mentions [1] - 2726:1 Mercer [2] - 2492:19; 2609:10 mere [2] - 2525:16; 2597:15 merely [1] - 2694:3 merit [5] - 2503:19; 2561:19; 2637:8; 2705:17; 2765:15 merits [3] - 2503:7; 2653:12; 2748:4 met [10] - 2523:12, 23; 2524:9, 17; 2525:4; 2534:9; 2535:2; 2645:10; 2663:9; 2775:23 met.. [1] - 2696:4 meteorological [8] - 2600:25; 2766:14; 2770:20; 2772:11; 2773:5, 8, 10; 2774:17 meteorologically [1] - 2768:1 meteorology [5] - 2767:18; 2768:16; 2769:4; 2771:16; 2772:23 method [1] - 2577:8 methodology [1] - 2536:24 methods [3] - 2583:5, 15; 2601:3 metre [3] - 2558:13; 2697:17; 2742:17 metres [63] - 2548:23; 2551:9, 11,	14-15; 2552:2, 5, 8, 10, 18; 2553:3, 5, 7-8, 10, 15; 2554:2, 6, 16, 18-19, 21; 2558:24; 2559:2; 2562:16, 18; 2592:2, 6; 2619:1, 12, 14; 2646:17; 2648:16; 2651:11; 2687:11; 2688:12; 2697:12, 18, 24; 2699:10, 12; 2707:8-11, 14; 2712:25; 2738:9; 2739:2; 2752:20; 2756:13, 23; 2757:3; 2759:22; 2801:15, 17; 2804:2 Miami [5] - 2698:13, 21; 2699:4, 10; 2700:1 Michael [2] - 2492:12, 17 micrograms [1] - 2790:6 Middle [1] - 2765:18 middle [3] - 2687:8; 2747:7; 2788:15 might [28] - 2496:4, 19; 2497:9; 2499:20; 2504:10; 2540:23; 2566:22, 25; 2569:13; 2591:16; 2593:4; 2607:7; 2612:12; 2638:7; 2667:5, 8; 2684:12; 2690:12; 2724:10; 2733:15; 2736:20, 23; 2745:16; 2774:25; 2778:16; 2786:20 migrate [1] - 2593:10 migration [2] - 2593:1, 3 migratory [1] - 2718:21 millimetres [2] - 2699:5 million [58] - 2516:5; 2552:8, 10; 2622:1, 3; 2623:23; 2624:7, 13; 2625:2, 13, 22; 2646:17; 2647:12; 2649:2, 21; 2651:11; 2683:3; 2713:6-8, 11-14, 16-17, 20, 22-23; 2714:9, 12; 2715:8; 2717:10, 12, 18; 2722:2, 6-11, 20-22; 2723:1; 2788:23; 2796:14; 2800:25; 2801:8 mimic [1] - 2761:19 mind [4] - 2557:18; 2650:12; 2749:21; 2796:10 minds [1] - 2766:20 mineralogy [1] - 2762:7 minimal [2] - 2650:1; 2768:19 minimalist [1] - 2774:11 minimalistic [3] - 2768:18, 24; 2771:11 minimize [1] - 2755:10 minimum [10] - 2562:24; 2563:3; 2676:20; 2677:25; 2707:19, 21, 24; 2777:10; 2790:4; 2801:20	minister [1] - 2509:2 ministerial [1] - 2570:13 ministries [1] - 2531:14 minor [3] - 2498:14; 2576:3; 2733:13 minus [1] - 2757:3 minute [3] - 2632:3; 2764:1; 2775:21 minutes [9] - 2499:3; 2604:8; 2643:22; 2644:4; 2681:10; 2774:6; 2775:18; 2784:16 misguided [1] - 2527:9 misleading [2] - 2698:8; 2699:3 misleads [1] - 2702:2 misrepresentation [1] - 2767:11 misrepresenting [1] - 2802:2 misrepresents [1] - 2770:24 miss [1] - 2761:24 missing [16] - 2714:17, 22; 2715:2, 11, 17, 22; 2716:8, 12, 24; 2717:2, 6; 2719:25; 2720:23; 2722:5, 10; 2756:20 misspelled [1] - 2756:1 misunderstanding [2] - 2588:18; 2589:1 mitigate [15] - 2512:22; 2541:1; 2548:7; 2573:11; 2579:2; 2613:21; 2615:12; 2621:15; 2622:1; 2640:13; 2652:21; 2667:17; 2718:2; 2747:24; 2755:11 mitigated [12] - 2566:23; 2575:8; 2596:7, 25; 2598:13; 2601:5; 2640:7, 9; 2650:1; 2655:17; 2667:9; 2773:20 mitigating [3] - 2512:8; 2620:9; 2725:14 Mitigation [2] - 2646:23; 2698:17 mitigation [108] - 2501:23; 2507:7; 2508:21; 2510:6, 16; 2514:4, 6, 19; 2516:9, 18; 2518:25; 2520:18; 2521:4, 24; 2532:7; 2533:11; 2535:5, 15; 2536:24; 2539:21; 2541:3, 5, 23; 2544:3, 16-17; 2545:19, 24; 2546:1, 3; 2549:12; 2574:22; 2582:3; 2594:9; 2596:22; 2598:14; 2599:9; 2601:23; 2606:4, 9, 11; 2610:16; 2614:7, 13; 2615:17; 2616:6, 25; 2618:6, 24; 2619:7, 17; 2628:14; 2629:2, 11-12; 2632:5; 2633:17, 25; 2634:6, 11; 2638:17;	2639:20; 2640:9, 14, 17, 19; 2641:3, 5; 2642:20; 2646:25; 2647:2, 6; 2648:3; 2649:17, 20; 2650:11, 25; 2652:22; 2654:15; 2656:21; 2662:22; 2663:16, 22; 2664:6; 2667:16; 2669:14, 17; 2670:20; 2672:1; 2674:2, 9; 2675:7; 2679:9; 2683:14; 2685:2; 2694:19; 2698:3; 2705:24; 2707:19; 2712:10; 2715:12; 2729:18; 2760:3; 2764:25; 2782:1; 2791:2; 2798:13 mitigation.. [1] - 2618:13 mitigations [9] - 2536:10; 2539:13; 2540:12; 2586:22; 2597:20; 2598:10; 2601:23; 2669:19 mitigative [1] - 2515:18 mix [1] - 2544:21 MNP [1] - 2492:14 mobilization [1] - 2718:3 mode [1] - 2782:3 model [33] - 2512:13; 2582:2; 2587:21; 2588:25; 2589:2, 4, 17, 20; 2590:6, 10; 2592:8; 2593:2, 4; 2597:18; 2598:1, 21, 25; 2600:21; 2721:6; 2756:15, 20; 2757:1, 5; 2758:4, 7; 2761:5, 17, 22, 25; 2762:12, 17; 2779:4 modelled [7] - 2590:8, 18; 2602:16; 2740:6; 2751:16; 2769:23; 2773:9 modelling [23] - 2582:1; 2589:13; 2593:9, 12-13, 24; 2597:13; 2600:14; 2601:4; 2602:13; 2604:19; 2684:17, 19-20; 2753:2; 2755:4; 2759:1; 2768:11, 20; 2770:14, 23; 2774:20 models [11] - 2570:24; 2587:23; 2590:17, 23; 2591:2; 2662:20; 2664:3; 2758:22; 2762:10, 13 modest [2] - 2654:16; 2655:23 modifications [2] - 2532:11; 2646:19 modified [3] - 2605:8, 13; 2781:24 moment [3] - 2514:21; 2525:11; 2634:17 moments [1] - 2495:24 monetize [4] - 2649:12; 2664:11; 2731:16, 20 money [3] - 2712:2, 9; 2800:22 monitor [10] -	2594:5; 2673:4, 6, 9; 2675:7; 2677:8; 2760:2; 2774:7; 2792:16 monitored [5] - 2516:17; 2575:9; 2578:21; 2595:16; 2596:6 monitoring [40] - 2539:14; 2544:18; 2545:18, 20, 24-25; 2546:1; 2574:22; 2582:2; 2593:21; 2594:7, 13, 16-18, 21, 23; 2595:3, 5, 8; 2601:17, 24; 2607:17; 2608:20; 2673:13, 19; 2674:6, 8, 12; 2677:5; 2720:4; 2725:13; 2726:7; 2757:23; 2760:3; 2790:3, 13, 21 monitors [1] - 2530:17 month [1] - 2524:3 monthly [1] - 2790:16 months [5] - 2599:13; 2720:7, 14; 2742:14; 2802:5 moreover [6] - 2521:12; 2577:7, 23; 2588:10; 2596:4; 2599:20 Morley [1] - 2672:11 morning [25] - 2493:9, 25; 2494:2, 12; 2496:17, 23; 2497:15; 2498:8, 16, 19; 2499:12; 2500:22, 24; 2547:14; 2610:10, 20; 2611:25; 2614:24; 2644:17; 2680:24; 2689:12; 2793:4; 2807:14, 25; 2808:3 morning's [2] - 2688:25; 2803:10 Morris [1] - 2642:24 most [35] - 2498:7; 2515:11; 2521:16; 2532:14; 2539:2; 2552:4, 23; 2557:5; 2566:19, 21; 2575:8; 2598:5; 2605:23; 2626:6; 2628:18; 2629:9, 24; 2636:12; 2638:15; 2639:14; 2649:10; 2657:4; 2662:11; 2665:1; 2686:10, 15, 17; 2702:21; 2712:11; 2724:12; 2742:13; 2746:21; 2783:1; 2801:19 mountain [1] - 2646:1 move [9] - 2593:6, 8; 2612:4; 2650:15; 2690:4; 2730:12; 2748:20; 2749:25; 2750:2 movement [7] - 2545:11, 16; 2575:12; 2605:8, 11; 2676:11; 2699:22 moving [8] - 2523:18; 2584:8; 2602:3; 2700:3; 2709:24; 2733:18; 2734:6; 2736:25
--	---	--	--	---

<p>mowing [1] - 2735:22 MR [67] - 2494:21; 2495:7, 15, 22; 2496:10; 2497:2, 4, 15; 2498:13, 24; 2499:11; 2547:13; 2604:11; 2609:21; 2610:1, 3, 8; 2612:8; 2613:8, 14; 2632:1, 14; 2635:25; 2659:25; 2660:2; 2679:24; 2680:6, 10, 19; 2681:7, 11, 13, 15; 2732:20; 2733:4, 7, 9, 19; 2734:3, 6; 2764:3, 9, 12; 2775:20; 2776:4, 8, 10; 2784:20, 25; 2785:3, 14, 21; 2786:9, 11; 2787:8, 15, 24; 2799:17, 19, 25; 2806:5, 10, 15, 18, 22; 2808:4 MS [15] - 2495:3, 18; 2496:12; 2497:24; 2643:20; 2644:3, 7; 2658:6, 9; 2659:14, 19; 2660:5, 12, 18; 2680:4 mud [4] - 2690:22; 2691:5; 2694:5; 2711:18 multi [1] - 2724:1 multi-generational [1] - 2724:1 Multiculturalism [2] - 2540:19; 2672:25 multigenerational [1] - 2732:5 multiple [7] - 2520:15; 2587:10; 2591:15; 2625:19; 2651:13; 2756:4; 2765:21 multitude [2] - 2623:11; 2669:10 multituse [1] - 2690:7 municipal [4] - 2521:13; 2693:24; 2694:2; 2788:10 municipalities [1] - 2510:11 Munkittrick [2] - 2492:18; 2609:11 must [57] - 2503:11; 2506:11; 2517:21; 2522:15; 2530:2; 2558:12; 2559:13; 2562:23; 2563:2; 2571:10; 2597:18; 2598:1; 2600:4; 2606:12; 2614:25; 2633:10, 13; 2639:3; 2650:7; 2662:2, 6, 8, 11; 2664:8, 10; 2665:6, 8, 20; 2666:7; 2667:5, 9, 11; 2668:25; 2670:15; 2672:9, 18; 2676:20; 2678:17; 2682:23; 2692:6, 25; 2693:22; 2694:12; 2709:12; 2721:14; 2723:7; 2743:25; 2744:10; 2773:22; 2777:6, 19, 23; 2778:10; 2780:5, 10; 2795:20; 2804:8 mute [1] - 2499:12 mutually [2] -</p>	<p>2633:17; 2673:10 N Nabi [5] - 2661:11; 2677:5, 9, 15; 2679:17 Naheed [1] - 2642:14 Nakoda [70] - 2492:22; 2500:19; 2529:7; 2535:25; 2588:4, 10; 2604:20, 25; 2608:18; 2658:5; 2660:25; 2661:3, 6, 12; 2662:1; 2665:17, 21, 25; 2666:1, 16, 19, 21; 2667:1, 13; 2668:1, 6-7, 15-16, 24; 2669:8, 13, 22, 25; 2670:4, 9, 20, 23; 2671:8, 14, 19, 22, 25; 2672:4, 6, 13, 17, 19; 2673:2, 8, 11-12, 15, 19; 2674:15; 2675:2, 7, 13, 18, 23; 2676:1, 4-5, 19; 2677:19, 21, 24; 2678:11, 17; 2679:11 NAKODA [1] - 2785:11 Nakoda's [1] - 2661:7 name [5] - 2550:12; 2551:18; 2684:1; 2755:25; 2756:1 namely [3] - 2548:9; 2587:14; 2615:4 narrative [1] - 2592:5 narrow [3] - 2694:20, 23; 2748:25 Nation [21] - 2492:22; 2531:13, 20; 2532:1, 15; 2533:8; 2588:5, 11; 2621:3; 2661:1; 2666:6; 2679:16; 2721:17; 2734:13; 2735:22; 2783:9; 2796:15 Nations [40] - 2500:19; 2515:13; 2529:8, 13, 24; 2530:11; 2533:2, 19, 23-24; 2534:12; 2535:25; 2544:6, 20, 24; 2545:1, 5, 17; 2546:24; 2604:20, 25; 2608:19; 2660:25; 2661:4; 2666:18, 23-24; 2670:9, 20; 2671:4; 2676:7; 2714:18; 2718:25; 2723:20; 2734:15, 19, 22; 2735:13; 2771:24; 2796:17 NATIONS [1] - 2785:11 Nations' [5] - 2521:13; 2672:21; 2732:4; 2734:17; 2735:9 native [10] - 2693:14, 17; 2736:3; 2776:16; 2780:1, 11, 14, 19, 22; 2781:24 natural [12] - 2505:19; 2611:8; 2627:3; 2646:3; 2653:17; 2657:7; 2704:18; 2725:12; 2781:23, 25; 2792:15</p>	<p>Natural [4] - 2492:1; 2637:11; 2645:2; 2684:1 naturally [1] - 2758:15 nature [11] - 2528:3; 2538:4; 2540:22; 2603:13; 2616:8; 2639:13; 2653:24; 2682:19; 2683:22; 2721:5; 2768:19 navigate [1] - 2638:9 navigated [1] - 2636:25 navigation [1] - 2784:11 NDA [1] - 2801:7 near [10] - 2524:6; 2525:1; 2548:10; 2594:22; 2617:12; 2709:2, 8; 2743:24; 2761:20; 2783:22 near-term [1] - 2783:22 nearby [1] - 2601:18 nearest [1] - 2601:20 nearly [7] - 2559:6; 2637:23; 2646:8; 2647:10; 2697:25; 2714:10; 2802:5 necessarily [2] - 2600:19; 2701:21 necessary [13] - 2516:6; 2529:12; 2541:17; 2605:3; 2649:21; 2656:22; 2657:8; 2663:16, 22; 2761:2; 2772:2; 2778:22; 2790:3 Need [1] - 2685:8 need [45] - 2494:15; 2497:11, 17; 2501:18; 2510:2, 22; 2511:11; 2514:5; 2549:2; 2565:18; 2566:11; 2577:9; 2579:25; 2594:8; 2606:11; 2611:16; 2613:17; 2614:2, 6-7; 2616:24; 2617:1; 2618:23; 2643:24; 2644:4, 23; 2645:23; 2646:5; 2667:24; 2681:3; 2685:19, 22; 2686:3; 2692:16; 2695:19; 2700:15; 2716:17; 2736:4; 2744:15; 2749:14, 19; 2760:16; 2762:18; 2794:10 needed [18] - 2508:11; 2511:15; 2573:9; 2613:20; 2614:17; 2616:22; 2618:4, 6, 18; 2619:21; 2633:9; 2638:16; 2639:11; 2640:20; 2645:16; 2646:11; 2728:3 needing [1] - 2654:19 needlessly [1] - 2598:7 needs [19] - 2498:20; 2544:12; 2548:13; 2654:22; 2655:20; 2656:25; 2657:2; 2665:3; 2678:24; 2683:14; 2693:23, 25; 2694:1; 2695:7; 2705:7; 2712:5;</p>	<p>2727:25; 2797:7 negative [7] - 2621:15; 2622:1; 2688:16; 2703:21; 2725:24; 2782:25; 2789:19 negatively [1] - 2655:2 negotiate [1] - 2805:10 negotiated [1] - 2801:10 negotiating [1] - 2640:25 negotiations [2] - 2518:3; 2666:16 Nenshi [1] - 2642:14 nervous [1] - 2748:11 net [2] - 2649:8 networks [2] - 2647:16; 2778:14 never [10] - 2516:25; 2520:25; 2561:8; 2591:22; 2630:7; 2688:19; 2689:25; 2723:15; 2729:23; 2800:8 Nevertheless [1] - 2748:11 nevertheless [5] - 2555:17; 2573:6; 2579:2; 2580:2; 2662:1 new [21] - 2521:8, 19; 2604:19; 2634:1; 2656:7; 2659:8; 2663:3; 2696:15; 2707:22; 2711:4, 18; 2717:19; 2722:6, 9, 13; 2723:2; 2727:13; 2730:2; 2782:19; 2802:2; 2805:22 newer [1] - 2802:22 newly [2] - 2713:18; 2720:12 news [3] - 2602:20; 2715:3; 2802:6 newsletters [1] - 2523:2 next [25] - 2510:2; 2511:16; 2518:21; 2522:7; 2524:2; 2529:2; 2547:10; 2556:25; 2623:17; 2626:3, 21; 2642:13; 2643:18; 2647:4; 2680:2; 2683:13, 17-18; 2684:6; 2685:7; 2690:18; 2709:6; 2733:18 nice [2] - 2493:16; 2799:16 night [2] - 2808:4 nil [1] - 2737:11 nine [2] - 2697:25; 2775:15 Noble [9] - 2600:8, 10, 17; 2601:24; 2765:23; 2772:21; 2773:1; 2775:9 Noble's [3] - 2772:8, 12, 19 nobody [1] - 2685:21 non [6] - 2546:6; 2598:21; 2768:14; 2773:24; 2778:9 non-factual [2] - 2768:15; 2773:24 non-flood [1] -</p>	<p>2778:9 non-guidance [1] - 2768:14 non-guideline [1] - 2598:21 non-Indigenous [1] - 2546:6 none [8] - 2495:17; 2499:1; 2526:7; 2696:9; 2766:23; 2785:9; 2806:21; 2807:25 Nonetheless [1] - 2700:22 nonsensical [1] - 2714:15 normal [3] - 2517:6; 2551:19; 2698:9 normally [1] - 2732:22 north [1] - 2794:15 notable [2] - 2517:13; 2651:9 notably [1] - 2730:24 note [20] - 2505:15; 2542:11; 2561:6; 2565:6; 2568:18; 2572:2; 2582:24; 2600:5; 2616:5; 2618:5; 2620:22; 2660:20; 2671:10; 2707:2; 2708:7; 2740:23; 2742:22; 2755:15; 2764:10; 2778:1 noted [62] - 2502:1; 2506:3; 2507:10; 2508:18; 2514:9; 2516:16; 2517:20; 2519:16; 2520:5; 2535:6; 2537:18; 2539:4, 10; 2541:2; 2543:10; 2549:10; 2559:8; 2563:5; 2565:23; 2566:3; 2569:16; 2576:5; 2578:3; 2583:10, 14, 18, 23; 2584:3; 2589:10; 2590:22; 2591:9; 2592:2; 2601:8; 2610:20; 2614:21; 2615:6; 2624:18; 2629:25; 2636:11; 2640:2; 2651:16; 2691:10; 2692:14, 23; 2693:5, 20; 2701:9; 2723:6; 2726:20; 2728:7; 2736:5; 2745:16, 18; 2750:5; 2752:8; 2754:11; 2766:8, 13; 2776:15; 2780:2, 24; 2800:10 notes [19] - 2497:8; 2536:4, 13; 2537:5; 2538:14; 2539:23; 2541:6, 21; 2542:5; 2545:7; 2561:3; 2573:24; 2578:23; 2607:8; 2633:23; 2688:21; 2736:3; 2752:4; 2780:16 noteworthy [1] - 2526:6 nothing [6] - 2642:11; 2682:3; 2683:4; 2700:13; 2737:25; 2763:4 notice [3] - 2612:10, 18; 2790:1</p>
--	---	---	--	--

<p>noticeable [1] - 2601:15</p> <p>notify [1] - 2774:7</p> <p>noting [7] - 2519:25; 2540:10; 2576:20; 2589:17; 2633:5, 16; 2738:23</p> <p>notion [2] - 2589:16; 2750:23</p> <p>notwithstanding [6] - 2519:19; 2563:23; 2564:14; 2572:3; 2584:10; 2587:7</p> <p>NOVA [1] - 2542:16</p> <p>novel [1] - 2533:6</p> <p>November [4] - 2507:9; 2524:15; 2534:8; 2538:10</p> <p>nowhere [1] - 2792:24</p> <p>noxious [2] - 2776:11; 2778:23</p> <p>NR [3] - 2691:15; 2694:7; 2695:2</p> <p>NR2018-01 [1] - 2682:14</p> <p>NRCB [52] - 2503:11; 2505:16; 2521:17; 2530:2; 2531:9-12, 15; 2537:7, 10, 13, 20; 2542:10, 20, 25; 2638:10; 2664:17; 2666:3; 2678:23; 2687:23; 2691:3, 13-14, 21; 2692:23; 2693:20; 2694:16; 2695:2; 2697:8, 14; 2726:24; 2728:13; 2736:24; 2737:14; 2738:23; 2739:19; 2742:8; 2745:1; 2760:23; 2762:16; 2783:7; 2789:11; 2790:13; 2792:9; 2793:13; 2798:19, 24; 2799:9; 2800:10; 2803:22; 2804:20</p> <p>NRCB/CEAA [1] - 2710:1</p> <p>NRCBA [4] - 2503:23; 2505:17; 2780:3, 5</p> <p>Number [37] - 2495:4, 19; 2635:12; 2659:13; 2661:5; 2706:7; 2734:6; 2740:9, 14, 16; 2741:8, 10, 21; 2785:8; 2789:10, 25; 2790:20; 2791:25; 2792:2, 8-9; 2793:1, 5, 17, 25; 2794:4, 17, 19; 2795:7; 2796:6, 9, 13, 21, 24; 2797:11; 2805:7</p> <p>number [33] - 2505:12; 2512:24; 2518:5; 2523:13; 2532:10; 2533:10; 2543:15; 2545:10; 2549:18; 2591:10; 2603:6; 2604:25; 2622:20; 2635:8; 2641:1; 2644:25; 2702:3; 2713:10; 2730:6; 2736:18; 2740:4; 2742:25; 2745:13; 2753:9; 2754:17; 2757:19; 2765:16; 2774:22;</p>	<p>2775:8; 2786:22; 2789:6; 2801:8; 2806:9</p> <p>numbered [1] - 2494:16</p> <p>Numbers [1] - 2795:10</p> <p>numbers [6] - 2496:4; 2497:20; 2623:20; 2625:18; 2706:25</p> <p>numerical [1] - 2587:20</p> <p>numerous [15] - 2501:23; 2502:10; 2503:25; 2525:3; 2526:14; 2536:17; 2580:19; 2607:8; 2608:1; 2640:14; 2653:5; 2668:18; 2685:10; 2761:21; 2781:9</p> <p>nutrient [1] - 2579:8</p> <p>nutrients [1] - 2776:16</p>	<p>2734:13, 17</p> <p>obviously [5] - 2555:25; 2569:1; 2745:21; 2757:24; 2800:17</p> <p>occasions [4] - 2545:11; 2587:10; 2617:5; 2756:4</p> <p>occupy [1] - 2779:17</p> <p>occur [24] - 2514:25; 2533:15; 2558:19; 2564:11; 2566:22; 2570:20; 2578:24; 2579:11; 2591:17, 20; 2615:16; 2616:7; 2634:23; 2667:5, 8; 2689:4; 2724:24; 2741:1; 2759:12; 2762:3; 2774:13, 16</p> <p>occurred [13] - 2526:11; 2537:13; 2584:22; 2616:6; 2621:9; 2634:23; 2684:13; 2699:4; 2712:12; 2728:23; 2746:22; 2748:19; 2750:11</p> <p>occurrence [2] - 2600:24; 2724:15</p> <p>occurrences [1] - 2577:18</p> <p>occurring [5] - 2595:7; 2600:22; 2654:5; 2678:2; 2758:15</p> <p>occurs [3] - 2548:17; 2554:5; 2686:6</p> <p>Oceans [1] - 2509:5</p> <p>October [2] - 2524:8; 2538:9</p> <p>odd [3] - 2612:11; 2613:3; 2802:18</p> <p>odds [4] - 2589:22; 2735:13, 22; 2742:3</p> <p>odours [1] - 2627:14</p> <p>OF [8] - 2496:13; 2659:17; 2660:13; 2785:10; 2786:23; 2787:20; 2806:22</p> <p>Off-Stream [2] - 2499:16; 2606:25</p> <p>off-stream [17] - 2504:18; 2508:15; 2548:6, 16; 2549:4; 2564:25; 2581:5; 2606:15; 2635:13; 2636:3; 2652:6; 2653:19, 24; 2655:7; 2696:25; 2704:4</p> <p>offer [11] - 2567:2; 2648:4; 2672:12; 2673:1, 17; 2674:18; 2675:22; 2677:22; 2678:11, 17; 2700:6</p> <p>offered [4] - 2526:17; 2532:7; 2640:21; 2701:11</p> <p>offering [4] - 2526:21, 25; 2535:12; 2545:20</p> <p>offers [5] - 2527:2, 6; 2645:19; 2648:8; 2727:16</p> <p>Office [2] - 2529:20; 2666:2</p> <p>office [2] - 2565:8; 2742:4</p> <p>Official [1] - 2493:5</p> <p>officials [3] - 2522:21; 2528:24;</p>	<p>2608:16</p> <p>offs [1] - 2523:1</p> <p>offseason [1] - 2790:16</p> <p>offset [5] - 2676:13, 18, 25; 2715:23; 2796:4</p> <p>offsets [1] - 2715:2</p> <p>offsetting [4] - 2509:25; 2586:22; 2716:4, 6</p> <p>often [5] - 2538:12; 2571:10; 2747:1, 4; 2799:22</p> <p>oftentimes [1] - 2760:4</p> <p>Ohio [4] - 2698:14, 16, 22; 2700:1</p> <p>oil [1] - 2555:14</p> <p>Okoye [5] - 2493:1; 2609:9; 2784:8, 10, 18</p> <p>old [1] - 2698:14</p> <p>oldest [1] - 2662:12</p> <p>ominous [1] - 2559:13</p> <p>once [13] - 2497:6; 2530:20; 2532:21; 2549:1; 2564:10; 2591:19; 2593:18; 2762:2; 2799:1, 22; 2806:3; 2807:16; 2808:2</p> <p>One [4] - 2792:1; 2796:9</p> <p>one [75] - 2504:2; 2515:7; 2521:3; 2526:12; 2527:19; 2532:1, 14; 2539:15; 2555:3; 2556:25; 2561:14; 2564:20; 2570:7; 2577:5, 9; 2581:7, 21; 2585:3; 2589:14; 2590:23; 2601:13; 2613:4; 2618:8; 2627:9, 20; 2630:11; 2632:3; 2633:24; 2637:1; 2657:17; 2663:14; 2667:24; 2670:6; 2682:9; 2685:2; 2691:8; 2699:5; 2700:20; 2709:20; 2714:3; 2727:12, 14; 2728:4; 2729:3; 2730:4; 2733:18; 2740:4; 2742:17; 2743:16; 2746:9, 18; 2749:11; 2750:13, 19; 2757:13; 2759:17; 2762:22; 2774:6; 2779:9; 2788:7; 2791:21; 2794:15; 2795:5, 16; 2798:6; 2802:9; 2804:21; 2805:1, 16</p> <p>one's [1] - 2747:4</p> <p>one-way [1] - 2802:9</p> <p>ones [2] - 2706:17; 2731:11</p> <p>ongoing [10] - 2509:24; 2528:19; 2534:24; 2578:25; 2629:18; 2661:8; 2699:25; 2711:14; 2728:24; 2801:23</p> <p>online [4] - 2556:4; 2599:6; 2628:23; 2799:18</p> <p>onside [1] - 2734:20</p>	<p>open [15] - 2523:1; 2524:4, 6-7, 12, 24; 2539:2; 2564:13; 2581:2; 2585:15; 2743:6; 2744:3; 2797:17; 2807:24</p> <p>opened [1] - 2630:7</p> <p>opening [25] - 2501:4, 7, 10; 2504:14; 2508:19; 2510:12; 2516:3; 2525:2; 2543:16, 19; 2549:6; 2596:20; 2597:6; 2603:5; 2611:5; 2618:8; 2626:13; 2627:19; 2629:25; 2630:13, 22; 2635:11; 2636:2; 2642:24; 2723:23</p> <p>openings [1] - 2501:6</p> <p>operate [14] - 2510:18; 2513:25; 2548:13, 21-22; 2549:1; 2551:20; 2552:23; 2554:17; 2560:21; 2596:16; 2704:14; 2719:20</p> <p>operated [7] - 2508:2; 2513:19; 2515:6; 2548:16; 2553:11; 2630:12; 2788:13</p> <p>operates [1] - 2651:20</p> <p>operating [31] - 2547:23; 2552:21; 2553:4, 18; 2564:15; 2588:17; 2631:2; 2652:2; 2704:15; 2711:14; 2718:15; 2721:2, 6, 9; 2723:7; 2737:12; 2738:14, 16, 24; 2739:1, 7-8, 13, 18-19; 2742:10; 2778:21; 2782:3; 2801:23</p> <p>operation [40] - 2504:22; 2508:12; 2548:19; 2549:24; 2550:7; 2552:25; 2564:13; 2568:10; 2575:19; 2578:24; 2580:10; 2600:23; 2603:23; 2604:16; 2611:21; 2616:13; 2618:3; 2624:3; 2639:12; 2643:3; 2651:9, 24; 2655:9; 2657:15; 2673:21, 25; 2737:15, 18; 2738:18; 2739:14; 2741:2; 2743:23; 2744:11; 2746:2; 2752:18; 2773:7; 2788:6; 2792:4</p> <p>operational [12] - 2620:5; 2623:16; 2635:14; 2636:5; 2639:14; 2642:13; 2651:16; 2652:10; 2654:1; 2706:22; 2739:20</p> <p>operations [37] - 2515:19; 2528:18; 2551:20; 2553:2, 21; 2568:21; 2575:21; 2576:2; 2587:22; 2594:14; 2596:12, 18; 2603:14, 21; 2608:5;</p>
O				
<p>object [4] - 2499:12; 2512:13; 2732:25; 2786:9</p> <p>object-based [1] - 2512:13</p> <p>objection [7] - 2732:24; 2787:6; 2789:13; 2791:25; 2793:17; 2798:3; 2806:15</p> <p>Objection [1] - 2795:9</p> <p>objections [14] - 2495:16; 2505:14; 2659:23, 25; 2660:5; 2733:8; 2785:9, 15, 19; 2788:3; 2789:10; 2799:2, 5, 7</p> <p>objective [10] - 2506:5; 2600:18; 2606:13; 2614:21; 2615:11; 2729:11; 2768:8; 2771:7, 16</p> <p>objectives [2] - 2520:15; 2791:1</p> <p>objects [2] - 2676:2, 6</p> <p>Objects [1] - 2676:7</p> <p>obligation [1] - 2529:11</p> <p>obligations [1] - 2528:12</p> <p>obliged [2] - 2528:11; 2542:11</p> <p>observations [1] - 2541:6</p> <p>observe [4] - 2541:3; 2543:10; 2544:3</p> <p>observed [6] - 2588:24; 2590:8, 17; 2654:7; 2695:14</p> <p>observers [1] - 2800:3</p> <p>obtain [7] - 2522:24; 2532:8; 2535:3, 14; 2536:23; 2541:17; 2589:8</p> <p>obtained [7] - 2518:4; 2533:16; 2534:10; 2587:20; 2670:18; 2757:13, 15</p> <p>obvious [2] -</p>				

<p>11; 2711:2; 2714:23; 2718:17; 2719:3, 25; 2720:1; 2724:6, 18; 2726:6; 2739:5, 11; 2742:24; 2778:15, 21; 2781:13</p> <p>operator [8] - 2532:19; 2549:2; 2567:25; 2570:19; 2598:16; 2671:13; 2692:15; 2706:23</p> <p>opine [1] - 2588:9</p> <p>opining [1] - 2739:1</p> <p>opinion [5] - 2505:21; 2569:10; 2746:19; 2760:18; 2804:13</p> <p>opinions [1] - 2802:9</p> <p>opportunities [15] - 2513:2; 2520:20; 2528:9; 2533:2; 2534:5, 13; 2536:18; 2537:17; 2544:1, 8, 15; 2669:12; 2711:5, 18; 2734:22</p> <p>opportunity [13] - 2502:16; 2533:14; 2544:2; 2610:15; 2667:6; 2669:4; 2679:20; 2680:2; 2785:22; 2795:14, 22; 2797:2; 2799:2</p> <p>oppose [2] - 2500:11; 2638:7</p> <p>opposed [5] - 2504:11; 2654:9; 2709:4; 2759:14, 22</p> <p>opposes [1] - 2618:5</p> <p>opposite [4] - 2577:24; 2650:18; 2711:20; 2803:12</p> <p>opposition [3] - 2524:5; 2722:25; 2734:13</p> <p>optimized [1] - 2656:5</p> <p>option [15] - 2599:14; 2635:8; 2637:20; 2638:1; 2678:9; 2705:13, 17; 2729:4; 2747:9, 12; 2748:3, 22; 2750:14, 17</p> <p>options [9] - 2523:18; 2636:22; 2662:22; 2663:2; 2728:21; 2742:7; 2755:6; 2762:21; 2763:20</p> <p>Opus [5] - 2704:13; 2705:3; 2728:11; 2729:13, 15</p> <p>oral [10] - 2496:3; 2500:2, 21; 2513:18; 2515:3; 2528:2; 2537:22; 2644:20; 2668:16; 2779:7</p> <p>orally [3] - 2733:1, 12; 2786:7</p> <p>oranges [1] - 2702:2</p> <p>order [7] - 2505:20; 2597:20; 2606:7, 13; 2662:2; 2751:4; 2760:2</p> <p>Order [1] - 2691:22</p> <p>orders [3] - 2757:10; 2758:4; 2800:18</p> <p>organizations [1] - 2630:16</p> <p>original [4] -</p>	<p>2539:25; 2694:25; 2714:11; 2776:2</p> <p>originally [1] - 2602:16</p> <p>Osko [4] - 2603:11; 2776:13, 15; 2778:5</p> <p>Osko's [3] - 2603:12, 22; 2776:23</p> <p>otherwise [3] - 2571:15; 2628:15; 2642:5</p> <p>ought [3] - 2520:7; 2653:6; 2654:10</p> <p>ourselves [1] - 2762:23</p> <p>outages [2] - 2511:6; 2630:10</p> <p>outcome [8] - 2519:6; 2682:18; 2700:22; 2725:1; 2729:23; 2735:20; 2755:13; 2781:6</p> <p>outcomes [15] - 2573:18; 2616:23; 2631:14, 17; 2634:12; 2635:2; 2685:24; 2686:22; 2703:22; 2725:24; 2729:18, 22-23; 2754:5; 2755:9</p> <p>Outcomes [1] - 2706:4</p> <p>outcomes' [1] - 2635:3</p> <p>outcry [1] - 2729:25</p> <p>outdated [1] - 2589:21</p> <p>outdoors [1] - 2774:18</p> <p>outflow [1] - 2700:20</p> <p>outflows [1] - 2700:16</p> <p>outlet [33] - 2508:15; 2517:16; 2552:13, 17, 19; 2562:11; 2565:15, 23; 2566:3, 6, 9, 15; 2567:7, 14; 2576:4; 2603:16; 2697:5; 2715:16; 2716:14; 2740:18, 25; 2741:3, 6; 2743:10, 12, 17; 2752:11, 14; 2758:19; 2778:8, 21</p> <p>outlets [1] - 2743:9</p> <p>outline [3] - 2497:7; 2584:8; 2612:3</p> <p>outlined [8] - 2614:9; 2620:21; 2627:1; 2630:22; 2631:7; 2633:9; 2767:21; 2771:8</p> <p>outlooks [1] - 2649:19</p> <p>output [1] - 2762:12</p> <p>outset [2] - 2572:7; 2747:13</p> <p>outside [9] - 2493:14; 2557:14; 2597:14; 2603:21; 2647:8; 2649:16; 2678:4; 2749:6; 2753:16</p> <p>outstanding [3] - 2494:13; 2585:3; 2671:25</p> <p>outward [1] - 2595:1</p> <p>outweigh [3] - 2518:20; 2625:20; 2641:10</p> <p>outweighed [2] - 2639:22; 2652:12</p>	<p>overall [5] - 2508:12; 2583:23; 2652:23; 2662:16; 2664:18</p> <p>overbank [1] - 2557:9</p> <p>overcharged [1] - 2737:10</p> <p>overconfidence [1] - 2763:16</p> <p>overdesign [1] - 2801:20</p> <p>overestimate [1] - 2593:9</p> <p>overestimation [2] - 2593:11</p> <p>overlain [1] - 2756:23</p> <p>overland [6] - 2510:19; 2554:5; 2555:16; 2556:19; 2647:23; 2648:1</p> <p>overlapping [1] - 2580:8</p> <p>overlook [1] - 2700:17</p> <p>overpass [3] - 2604:21; 2676:9, 11</p> <p>overpredictions [1] - 2598:22</p> <p>oversight [3] - 2700:13, 24; 2797:2</p> <p>oversights [1] - 2747:4</p> <p>oversimplification [1] - 2703:4</p> <p>overtop [1] - 2744:5</p> <p>overtopped [1] - 2744:9</p> <p>overview [1] - 2788:1</p> <p>overwhelmingly [4] - 2614:16; 2631:11; 2645:8; 2768:24</p> <p>owed [2] - 2531:17; 2537:15</p> <p>owing [2] - 2578:25; 2593:15</p> <p>own [12] - 2512:23; 2538:12; 2558:18; 2567:20; 2599:4; 2647:1; 2649:18; 2666:24; 2769:12; 2794:10; 2801:3; 2805:9</p> <p>owned [2] - 2630:12; 2661:11</p> <p>owner [3] - 2721:14; 2800:4; 2804:18</p> <p>owners [2] - 2516:12; 2631:1</p> <p>ownership [2] - 2672:21; 2745:20</p> <p>owns [3] - 2651:20; 2661:12; 2794:6</p> <p>oxygen [1] - 2578:18</p>	<p>2794:9; 2795:7; 2796:25; 2797:11</p> <p>pages [9] - 2569:6, 24; 2715:6; 2717:11; 2729:14, 19; 2745:21; 2775:15; 2794:21</p> <p>paid [1] - 2796:3</p> <p>painfully [1] - 2761:13</p> <p>paleo [2] - 2576:17, 25</p> <p>paleontological [1] - 2674:21</p> <p>pandemic [1] - 2687:9</p> <p>Panel [39] - 2499:13; 2547:14; 2562:2; 2569:19; 2599:10; 2643:12; 2644:8; 2653:10; 2660:19; 2679:14; 2684:24; 2686:11; 2694:14; 2695:4, 8, 13, 21, 23; 2697:4; 2698:17; 2705:7; 2706:7; 2710:1, 11, 19; 2716:2; 2722:15; 2723:8; 2724:24; 2726:12; 2777:5; 2779:3; 2783:13; 2784:1; 2797:15; 2800:3; 2805:12; 2807:2</p> <p>panel [4] - 2580:24; 2601:7; 2644:13; 2756:11</p> <p>Panel's [1] - 2691:23</p> <p>panels [1] - 2501:5</p> <p>paper [4] - 2589:21; 2590:3; 2599:5</p> <p>paragraph [20] - 2523:5; 2615:8; 2682:15; 2730:14, 23; 2766:25; 2767:13; 2768:5; 2769:9; 2770:6, 21; 2771:2, 25; 2772:7; 2773:3, 19, 23; 2774:9; 2775:2; 2785:25</p> <p>paragraphs [6] - 2730:5, 22; 2732:14; 2733:17; 2742:25; 2785:16</p> <p>parallel [2] - 2548:10; 2571:4</p> <p>parameters [2] - 2578:17; 2746:4</p> <p>paramount [3] - 2615:6; 2622:18; 2641:14</p> <p>parcels [1] - 2556:8</p> <p>Park [7] - 2685:5; 2709:8; 2788:6, 16, 20; 2789:4; 2798:15</p> <p>park [3] - 2697:7; 2721:18</p> <p>PARK [1] - 2787:21</p> <p>park-like [1] - 2697:7</p> <p>parking [3] - 2546:13; 2716:24; 2721:20</p> <p>parkland [1] - 2781:22</p> <p>Parks [12] - 2506:25; 2530:16; 2546:23; 2671:14, 17; 2672:24; 2673:23; 2677:8, 15; 2678:11, 17; 2705:14</p> <p>Part [2] - 2556:5, 8</p> <p>part [27] - 2498:7;</p>	<p>2500:7; 2501:3; 2521:17; 2525:24; 2529:4; 2530:8; 2556:12; 2560:24; 2561:2; 2565:21; 2571:7; 2575:8; 2580:12; 2593:15; 2600:13; 2608:22; 2629:7, 9; 2662:15; 2668:6; 2670:14; 2673:7; 2708:21; 2716:18, 20; 2742:15</p> <p>partial [3] - 2748:21; 2764:25; 2770:16</p> <p>partially [3] - 2758:13; 2759:25; 2797:20</p> <p>participant [3] - 2537:19; 2570:7; 2608:21</p> <p>participants [8] - 2609:8; 2632:19; 2680:12; 2784:3; 2788:1; 2795:10; 2798:17; 2800:3</p> <p>participate [8] - 2534:12; 2537:20; 2543:13; 2608:19; 2610:15; 2644:16; 2679:20; 2783:11</p> <p>participated [1] - 2611:2</p> <p>participating [3] - 2545:1, 5; 2610:25</p> <p>Participation [1] - 2534:7</p> <p>participation [10] - 2498:8; 2534:3; 2537:17; 2608:23; 2643:11; 2678:6, 8; 2798:22; 2799:14; 2805:25</p> <p>particle [1] - 2766:15</p> <p>particles [4] - 2601:15; 2602:15, 17</p> <p>particular [20] - 2500:4; 2502:25; 2504:1; 2519:25; 2543:22; 2546:10; 2588:22; 2606:6; 2609:8; 2614:5; 2618:20; 2633:23; 2686:1; 2691:22; 2730:7; 2739:24; 2768:23; 2769:2; 2782:9</p> <p>particularly [6] - 2619:8; 2646:12; 2650:13; 2656:6; 2763:11; 2805:20</p> <p>particulars [1] - 2599:18</p> <p>particulate [1] - 2769:21</p> <p>parties [23] - 2494:25; 2498:12; 2500:5; 2502:20, 23; 2504:10; 2528:7; 2533:13; 2640:12; 2643:11; 2644:15, 17; 2660:20; 2670:14; 2679:19; 2712:14; 2728:23; 2732:24; 2783:11; 2787:2, 7; 2790:18; 2793:16</p> <p>partners [1] - 2655:20</p> <p>party [6] - 2600:5; 2670:9; 2792:19, 22; 2793:1; 2802:23</p>
P				
<p>P.M [5] - 2658:12, 14; 2659:3, 5; 2808:6</p> <p>page [28] - 2496:4; 2569:7; 2582:17; 2680:25; 2686:12; 2688:23; 2691:16; 2693:6; 2701:10, 18; 2703:14; 2706:15; 2719:1; 2726:25; 2727:20; 2736:16; 2745:11; 2775:18, 22; 2780:20; 2790:20; 2792:10; 2793:5, 25;</p>				

<p>pass [7] - 2563:12, 17; 2603:18; 2651:7, 17; 2739:3; 2744:1</p> <p>passage [11] - 2532:11, 13; 2545:9; 2550:13; 2581:23; 2584:2, 4; 2715:11, 17; 2741:18; 2778:17</p> <p>passed [2] - 2725:4, 17</p> <p>passenger [1] - 2791:23</p> <p>passing [6] - 2648:5; 2668:10; 2715:13; 2742:23; 2750:21; 2778:14</p> <p>past [9] - 2644:22; 2665:23; 2717:16; 2730:1; 2746:23; 2748:19; 2763:15; 2800:10; 2801:2</p> <p>patchy [1] - 2770:15</p> <p>path [1] - 2727:15</p> <p>pathways [4] - 2511:7; 2594:4; 2716:25; 2721:20</p> <p>patience [1] - 2644:15</p> <p>Paul [1] - 2693:5</p> <p>pausing [1] - 2790:6</p> <p>pay [4] - 2625:24; 2685:9, 12</p> <p>payments [9] - 2670:14; 2713:15; 2714:17, 20; 2722:12, 23-24; 2801:5, 9</p> <p>payouts [1] - 2730:3</p> <p>PDA [11] - 2538:6; 2543:5; 2545:12; 2588:2; 2597:14; 2714:14; 2753:17; 2776:23; 2777:1, 12</p> <p>pdf [6] - 2691:16; 2693:6; 2726:25; 2727:20; 2738:12; 2764:22</p> <p>PDF [1] - 2582:17</p> <p>peace [1] - 2650:12</p> <p>peak [14] - 2563:12; 2576:18, 22; 2577:24; 2619:2, 11; 2686:9, 14, 17, 25; 2687:7; 2702:15; 2751:21</p> <p>pedestrian [1] - 2625:8</p> <p>peek [3] - 2612:15; 2659:22; 2785:18</p> <p>pending [1] - 2738:21</p> <p>people [20] - 2501:20; 2511:23; 2621:10; 2622:15, 23; 2626:11, 19; 2641:22; 2659:22; 2681:9; 2700:17; 2706:20; 2719:21; 2746:8; 2748:23, 25; 2755:16; 2760:16; 2774:18; 2803:25</p> <p>people's [3] - 2529:6; 2749:17; 2763:12</p> <p>peoples [1] - 2667:5</p> <p>Peoples [4] - 2662:13; 2666:13; 2667:8; 2671:5</p> <p>per [59] - 2517:22; 2548:23; 2551:9, 11, 14; 2552:18; 2553:3, 5, 7-8, 11, 15; 2554:2,</p>	<p>6, 16, 18-19, 21; 2558:24; 2559:2; 2562:17; 2592:2, 6; 2599:23; 2619:2, 12, 14; 2648:16; 2687:11; 2688:12; 2697:12, 18, 24; 2699:10, 12; 2707:8-10, 12, 14; 2712:25; 2714:10; 2716:2; 2738:9; 2739:2; 2742:17; 2757:3; 2759:22; 2769:14; 2773:17; 2775:18, 21; 2801:15, 17</p> <p>perceived [1] - 2588:23</p> <p>percent [38] - 2551:10; 2552:9; 2573:8, 21, 23; 2586:1; 2598:22; 2619:6; 2627:25; 2640:3, 23; 2641:1; 2646:24; 2651:3; 2652:18; 2654:2, 25; 2687:12, 14, 16, 20, 25; 2689:3; 2701:25; 2702:3, 7, 15, 17, 20; 2708:1; 2719:7; 2722:18; 2765:2; 2770:18; 2790:5; 2797:4</p> <p>percentage [1] - 2702:17</p> <p>perfect [2] - 2590:15; 2660:15</p> <p>perform [1] - 2591:12</p> <p>performance [1] - 2590:21</p> <p>performed [4] - 2622:24; 2649:6; 2757:19; 2762:7</p> <p>perhaps [21] - 2493:14; 2496:4, 22; 2497:10; 2498:22; 2599:25; 2612:10, 16; 2628:18; 2632:2; 2636:12; 2665:1; 2700:15, 17, 19; 2712:9; 2732:21; 2748:19; 2786:5; 2787:13; 2806:14</p> <p>peril [1] - 2791:14</p> <p>perils [1] - 2792:11</p> <p>perimeter [2] - 2545:13; 2594:22</p> <p>period [19] - 2506:9; 2508:24; 2572:18; 2573:4; 2593:15; 2623:11; 2639:16; 2694:5; 2700:6; 2738:15, 17, 25; 2741:18; 2746:17; 2749:5; 2765:24; 2767:7, 25</p> <p>periodic [1] - 2606:7</p> <p>periodically [2] - 2514:25; 2571:9</p> <p>periods [8] - 2577:19; 2579:14; 2591:8; 2652:2; 2653:21; 2724:22; 2738:5; 2773:14</p> <p>permanent [9] - 2508:13; 2579:12; 2652:15; 2656:17; 2676:15; 2677:2; 2691:7; 2788:9; 2798:11</p>	<p>permanently [2] - 2548:12; 2781:11</p> <p>permeability [3] - 2592:9; 2653:19; 2756:15</p> <p>permit [2] - 2509:22; 2542:6</p> <p>permitted [3] - 2557:24; 2669:1; 2670:5</p> <p>permitting [4] - 2508:12; 2561:9; 2744:21</p> <p>Person [1] - 2597:5</p> <p>person [4] - 2597:9; 2600:14; 2601:11; 2608:11</p> <p>person's [2] - 2597:17; 2598:19</p> <p>personal [5] - 2510:9; 2515:25; 2617:19; 2629:2; 2691:10</p> <p>personally [2] - 2525:3; 2802:11</p> <p>personnel [2] - 2719:15; 2720:1</p> <p>persons [2] - 2522:14; 2524:17</p> <p>perspective [7] - 2540:25; 2576:24; 2602:17; 2605:19; 2664:18; 2730:11; 2749:4</p> <p>perspectives [4] - 2535:3; 2536:18, 23; 2541:20</p> <p>pertained [1] - 2536:5</p> <p>pertaining [3] - 2533:23; 2542:21; 2599:22</p> <p>pertains [1] - 2531:19</p> <p>perusal [1] - 2732:14</p> <p>pests [1] - 2776:17</p> <p>Peter [1] - 2492:7</p> <p>Petroleum [1] - 2666:6</p> <p>PGL [1] - 2588:6</p> <p>phase [1] - 2570:22</p> <p>philosophy [1] - 2527:11</p> <p>phone [4] - 2523:2; 2525:14; 2599:17; 2600:1</p> <p>photos [1] - 2628:3</p> <p>physical [6] - 2626:16; 2628:5; 2629:17; 2674:22; 2754:10; 2759:1</p> <p>picture [2] - 2526:10; 2759:14</p> <p>piece [3] - 2632:8; 2657:5; 2663:14</p> <p>piling [1] - 2792:14</p> <p>Pine [9] - 2696:23; 2697:2, 4, 8, 10, 25; 2698:2, 11</p> <p>pioneering [1] - 2725:10</p> <p>pipeline [3] - 2717:6, 15; 2801:22</p> <p>pipelines [3] - 2555:13; 2655:14; 2717:9</p> <p>Pirmez [3] - 2753:11, 14</p> <p>pit [1] - 2694:5</p> <p>pitted [1] - 2723:11</p>	<p>pivotal [1] - 2737:4</p> <p>place [21] - 2508:13; 2539:2; 2541:1; 2543:11; 2558:6; 2564:19; 2586:22; 2594:11; 2596:13; 2597:20; 2604:1; 2647:18; 2655:6, 18; 2673:20; 2689:2; 2740:7; 2763:11; 2767:9; 2777:3; 2793:13</p> <p>placed [1] - 2760:24</p> <p>Plains [1] - 2699:16</p> <p>plan [76] - 2506:16; 2508:1; 2516:4; 2520:16; 2521:4; 2532:21; 2533:17, 22; 2540:4; 2544:18; 2545:25; 2546:2; 2547:1, 23; 2552:21; 2553:4, 18; 2564:16; 2568:2, 6; 2570:14-16; 2571:3, 8, 13; 2584:7, 9; 2594:13, 16; 2595:3, 8; 2598:13; 2601:24; 2603:8, 10; 2607:16; 2608:23; 2623:5; 2633:25; 2652:19; 2662:16; 2669:3, 9; 2674:16, 19; 2675:1; 2676:13, 18, 20; 2677:21, 23; 2690:7; 2695:6; 2698:7; 2715:9; 2727:22; 2734:7; 2735:4; 2739:1; 2742:16; 2745:17; 2754:24; 2766:22; 2774:20; 2777:3, 7, 10, 19; 2780:4; 2803:12</p> <p>Plan [4] - 2534:7; 2691:14; 2710:3; 2779:25</p> <p>planned [2] - 2580:1; 2735:24</p> <p>planners [1] - 2617:13</p> <p>planning [6] - 2545:1; 2570:2, 5; 2572:7; 2679:12; 2718:22</p> <p>plans [32] - 2518:13; 2544:16, 22; 2545:19-21, 23; 2568:8; 2570:23; 2571:6; 2574:23; 2607:17, 19; 2655:18; 2663:7; 2691:25; 2695:9, 24; 2716:6; 2726:5, 8; 2732:2; 2738:14, 16, 19, 24; 2739:8, 18-19; 2794:15</p> <p>plant [5] - 2778:7; 2788:25; 2792:12, 21; 2794:6</p> <p>plants [3] - 2544:10, 12; 2776:16</p> <p>play [1] - 2782:24</p> <p>played [1] - 2627:19</p> <p>playgrounds [1] - 2775:12</p> <p>playing [1] - 2731:25</p> <p>plays [1] - 2751:14</p> <p>Playschool [2] - 2765:18</p> <p>PLCs [1] - 2789:21</p> <p>pleased [1] -</p>	<p>2499:14</p> <p>plotted [1] - 2590:11</p> <p>plus [6] - 2558:13; 2607:17; 2619:6; 2640:3; 2680:25; 2792:5</p> <p>plus-page [1] - 2680:25</p> <p>PM [8] - 2601:10, 14, 17; 2688:17; 2766:9, 11; 2790:1, 5</p> <p>PMF [3] - 2738:1; 2744:1; 2752:1</p> <p>pockets [1] - 2645:14</p> <p>point [33] - 2498:16; 2502:19; 2520:9; 2527:21; 2528:19; 2551:15; 2552:3; 2564:6; 2567:10; 2591:4, 16, 19; 2608:11; 2635:11; 2636:1; 2637:13, 24; 2642:9, 14; 2687:6; 2701:19; 2702:21; 2703:17; 2722:4, 20; 2743:8; 2759:14; 2765:6; 2768:25; 2777:15; 2795:16; 2805:17</p> <p>pointed [5] - 2524:11; 2562:25; 2576:12; 2590:10; 2730:24</p> <p>points [9] - 2523:8; 2576:9; 2597:25; 2700:3; 2743:3; 2756:10; 2777:15; 2783:16; 2797:11</p> <p>policies [1] - 2531:1</p> <p>Policy [1] - 2507:23</p> <p>policy [3] - 2531:20; 2665:13; 2688:22</p> <p>politics [2] - 2763:11; 2782:23</p> <p>pollution [1] - 2688:17</p> <p>pond [4] - 2520:21; 2752:16; 2753:7; 2804:10</p> <p>pool [2] - 2719:8; 2743:21</p> <p>pooled [1] - 2511:7</p> <p>poor [1] - 2767:9</p> <p>popular [1] - 2504:12</p> <p>population [11] - 2559:15; 2582:9, 11, 20; 2654:25; 2656:2; 2663:8; 2687:15, 21; 2752:7</p> <p>populations [3] - 2662:10; 2803:24</p> <p>pore [1] - 2762:1</p> <p>portion [6] - 2557:3, 8, 13; 2580:7; 2587:16; 2682:4</p> <p>portions [1] - 2578:2</p> <p>pose [1] - 2655:16</p> <p>poses [1] - 2759:5</p> <p>position [16] - 2501:11; 2527:22; 2554:25; 2564:4, 22; 2592:1; 2601:25; 2631:15; 2634:10; 2635:3; 2654:3; 2730:15; 2733:10; 2743:6; 2798:24</p> <p>positions [7] - 2500:4; 2502:16; 2616:18; 2631:12;</p>
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2671:3; 2681:21; 2798:11 positive [8] - 2505:3; 2512:25; 2516:8; 2530:12; 2623:2; 2636:11; 2649:18; 2755:13 posits [1] - 2564:7 possession [1] - 2672:22 possessions [1] - 2627:11 possibility [7] - 2564:25; 2744:8, 10; 2749:11; 2753:13; 2793:8; 2803:6 possible [23] - 2501:19; 2525:22; 2539:3; 2579:5; 2580:6; 2601:16; 2640:13, 16; 2646:25; 2696:7, 11; 2705:20; 2716:5; 2724:24; 2737:17, 20; 2742:1; 2747:20; 2754:6, 16, 21; 2774:6; 2777:20 possibly [2] - 2684:10; 2763:19 post [22] - 2543:24; 2544:3; 2594:15; 2599:13; 2602:24; 2604:2; 2674:1; 2678:1; 2719:3, 6; 2720:7; 2721:11, 18; 2735:15, 19; 2767:19, 25; 2770:2, 20; 2771:15; 2778:9; 2790:4 post-construction [1] - 2544:3 post-flood [15] - 2594:15; 2674:1; 2678:1; 2719:3, 6; 2720:7; 2721:11, 18; 2735:15, 19; 2767:25; 2770:2, 20; 2771:15; 2778:9 posttraumatic [1] - 2623:15 potable [7] - 2654:22, 24; 2677:15; 2788:14; 2794:11; 2796:22; 2798:11 potential [60] - 2501:21; 2509:13, 25; 2521:8; 2529:8; 2531:17; 2532:6; 2536:10, 19; 2540:9, 11; 2543:8; 2562:11; 2565:1; 2571:24; 2579:17; 2581:10; 2586:19; 2587:17; 2593:3; 2594:13, 24-25; 2596:6, 10; 2597:14, 21; 2598:9; 2600:15; 2602:1; 2615:18; 2617:7; 2625:14; 2634:1; 2641:4; 2646:4; 2649:14; 2655:7; 2663:20; 2667:12, 15, 22; 2668:14; 2679:10; 2694:22; 2724:17; 2727:5; 2745:7; 2754:8; 2760:10; 2767:6; 2768:4, 12; 2771:15; 2777:15; 2795:18, 22; 2796:23; 2801:17 potentially [9] -	2522:13; 2527:10; 2579:9; 2645:17; 2682:12; 2754:18; 2771:23; 2789:18; 2805:16 power [4] - 2511:5; 2621:8; 2630:10; 2743:17 powering [1] - 2665:17 PowerPoint [6] - 2501:8; 2555:10; 2597:6; 2598:19; 2746:6; 2755:22 practical [2] - 2656:1; 2694:6 practically [1] - 2579:5 practice [6] - 2533:9; 2563:22; 2569:14, 23; 2570:6, 8 Pradera [1] - 2788:19 Prairie [1] - 2542:18 prayers [1] - 2798:25 pre [8] - 2502:19, 21; 2524:24; 2572:18; 2634:16; 2637:3; 2673:25; 2771:21 Pre [1] - 2653:11 pre-construction [1] - 2673:25 pre-emptively [1] - 2771:21 pre-hearing [5] - 2502:19, 21; 2524:24; 2634:16; 2637:3 Pre-Hearing [1] - 2653:11 pre-record [1] - 2572:18 precarious [1] - 2750:13 precedent [2] - 2698:9; 2766:18 precious [3] - 2627:12; 2654:23; 2683:24 precipitation [2] - 2656:18; 2773:13 precise [2] - 2754:13 precision [1] - 2577:14 preclude [2] - 2634:5; 2743:6 predefined [1] - 2674:7 predicated [3] - 2592:18; 2598:9; 2762:17 predict [3] - 2587:21; 2638:6 predicted [6] - 2511:13; 2576:18; 2593:13; 2597:15, 19; 2665:2 predicting [1] - 2754:12 predictions [5] - 2598:6; 2767:16, 24; 2768:25; 2772:21 predicts [2] - 2573:18; 2625:23 predominantly [2] - 2532:23; 2582:14 preemptive [1] - 2603:9 prefer [1] - 2801:19 preferable [3] - 2645:22; 2656:1, 15 preference [2] -	2636:22; 2787:7 preferred [6] - 2564:6; 2567:10; 2587:9; 2637:20; 2663:2; 2756:8 prefiled [3] - 2737:1; 2746:5; 2755:21 prelim [1] - 2494:18 Preliminary [2] - 2508:8; 2517:12 preliminary [2] - 2494:11; 2498:11 premature [1] - 2670:1 prematurely [1] - 2729:9 premier [1] - 2795:14 premiered [1] - 2631:15 preparation [6] - 2513:21; 2568:6; 2570:20; 2571:2; 2574:9 prepare [2] - 2506:21; 2570:18 prepared [24] - 2517:19; 2518:12; 2526:3; 2532:5; 2539:11, 18; 2542:12, 17; 2543:8; 2555:4; 2560:17; 2561:12; 2570:17; 2573:13; 2574:23; 2580:3; 2584:17; 2590:23; 2606:23; 2617:11; 2664:4; 2737:21; 2748:2; 2787:5 preparedness [3] - 2569:9; 2570:15; 2718:23 preparing [1] - 2559:20 prequisite [1] - 2531:6 presence [11] - 2578:25; 2589:15, 25; 2590:7; 2591:6; 2594:2; 2601:17; 2602:15; 2757:8; 2770:15; 2803:20 present [12] - 2496:2; 2499:14; 2599:24; 2713:10; 2773:15, 25; 2779:18, 24; 2781:5; 2788:2; 2799:2; 2801:21 presentation [15] - 2499:19, 24; 2501:9, 16; 2555:10; 2597:6, 9; 2598:2; 2689:12; 2731:14; 2783:7; 2789:9; 2797:4; 2799:5; 2803:10 presentations [3] - 2528:2; 2605:2 presented [18] - 2522:25; 2563:16; 2570:4; 2704:11; 2729:12, 14; 2748:1; 2768:2, 11; 2770:3, 7, 11, 17; 2772:15; 2773:2, 12, 25; 2778:15 presenting [1] - 2609:3 presents [2] - 2598:8; 2653:15 preserve [1] - 2751:4 preserving [1] - 2747:21	president [3] - 2525:13; 2526:18; 2798:18 pressure [1] - 2762:2 presume [2] - 2680:17; 2732:18 prevent [10] - 2551:1; 2585:11; 2621:15; 2744:8; 2770:19, 25; 2777:3; 2778:10, 13 preventative [1] - 2777:10 prevented [1] - 2623:1 preventing [1] - 2687:5 previous [2] - 2505:25; 2681:21 previously [5] - 2520:5; 2675:15, 19; 2757:4; 2793:2 Priddis [1] - 2729:8 primarily [4] - 2494:12; 2528:20; 2561:6; 2608:12 primary [3] - 2615:10; 2746:10; 2793:24 principal [2] - 2611:24; 2619:24 principle [3] - 2692:14, 23; 2693:20 principles [8] - 2546:11, 18; 2547:1; 2597:7; 2671:4; 2672:21; 2692:5; 2735:6 Principles [3] - 2532:17; 2533:12; 2735:5 printed [1] - 2496:22 prioritization [1] - 2709:13 prioritize [2] - 2709:12; 2777:19 priority [10] - 2510:7; 2527:13; 2528:1; 2544:9; 2559:9; 2662:9; 2732:3; 2739:15; 2789:4; 2797:23 private [17] - 2515:24; 2532:23; 2533:7; 2538:16, 18; 2615:5; 2641:13, 21; 2647:14; 2648:25; 2676:15, 22; 2677:2; 2689:14, 16; 2714:19; 2765:20 proactive [1] - 2750:1 proactively [2] - 2596:21; 2601:4 probability [2] - 2743:4 probable [6] - 2563:18; 2564:11, 19; 2580:16; 2651:8, 17 problem [6] - 2496:20; 2549:11; 2704:9; 2724:19; 2745:16; 2785:19 problems [3] - 2695:11; 2709:1; 2749:18 procedural [3] - 2530:24; 2667:3, 10 procedurally [1] - 2667:4	procedure [2] - 2675:10; 2792:16 procedures [1] - 2541:12 proceed [10] - 2565:11; 2604:10; 2610:7; 2612:17; 2613:6; 2644:6; 2660:17; 2734:5; 2787:23; 2789:12 proceeded [1] - 2532:21 proceeding [9] - 2560:18; 2574:13; 2575:17; 2611:2; 2619:23; 2637:6, 22; 2739:23; 2799:24 PROCEEDINGS [6] - 2493:8; 2658:12, 14; 2659:5; 2808:6, 8 proceedings [6] - 2500:4; 2536:1; 2656:20, 24; 2763:17; 2799:15 Proceedings [1] - 2492:1 proceeds [1] - 2724:12 process [39] - 2505:18; 2512:11; 2518:6; 2522:23; 2531:15, 23; 2532:3; 2541:11; 2561:9; 2570:9; 2571:4, 7; 2572:7; 2574:11, 14; 2591:18; 2638:10; 2640:24; 2665:24; 2666:3; 2681:22; 2742:12; 2744:22; 2746:18; 2782:24; 2783:12; 2794:25; 2795:4, 10; 2798:22; 2800:12, 20; 2801:12; 2805:14, 23 processes [6] - 2521:20; 2531:11; 2537:7, 13; 2595:23; 2637:1 procurement [1] - 2570:21 producers [1] - 2776:20 productive [3] - 2602:10; 2781:9 productivity [1] - 2690:25 professional [1] - 2559:18 professionals [1] - 2763:5 profile [1] - 2631:3 profit [1] - 2657:7 profound [1] - 2629:22 program [17] - 2508:22; 2517:19; 2522:11; 2529:15, 17-18; 2532:12; 2546:4; 2587:20; 2589:23; 2590:5; 2594:5; 2622:1; 2639:21; 2672:14; 2678:10; 2720:5 programs [4] - 2546:3; 2582:3; 2678:7; 2757:8 progressed [1] - 2517:4 prohibited [3] - 2509:16; 2708:6;
--	--	---	---	--

<p>2778:23 Project [5] - 2499:16; 2606:25; 2685:8; 2709:25; 2726:24 project [409] - 2499:23; 2500:11; 2501:18, 21, 24; 2502:4, 14; 2503:4, 7, 13, 22, 24; 2504:2, 5; 2505:5, 14, 16; 2506:2, 10, 12, 19-20; 2507:15, 20; 2508:1, 4, 17, 22; 2510:2, 7, 22; 2511:11, 15, 17-18, 21; 2512:10, 24; 2513:3, 7, 10; 2514:5, 8, 11, 21-22, 24; 2515:6, 14; 2516:2, 18; 2517:4, 7-8, 13; 2518:10, 13, 24; 2519:4, 18; 2520:25; 2521:17, 19; 2522:5, 13, 22; 2524:1, 20, 22; 2525:4, 9, 15, 19; 2527:18, 20; 2528:8, 10, 13, 25; 2529:8, 15; 2530:14, 21; 2532:11, 15, 19, 21, 23; 2533:1, 6, 16; 2534:25; 2535:3, 16; 2536:15, 24-25; 2539:20; 2540:9, 24; 2541:11; 2542:17; 2543:4; 2544:1, 16; 2545:2, 14; 2546:7, 13, 21; 2547:7, 23; 2548:20; 2565:11; 2567:25; 2569:10; 2570:6, 21; 2571:16; 2572:4, 20; 2574:8, 15, 23, 25; 2575:17, 21; 2576:15; 2577:15; 2578:1, 8, 11, 23-24; 2579:1; 2580:8, 11, 17; 2581:8, 11; 2582:25; 2583:19; 2584:13; 2586:19, 21; 2587:11, 18; 2588:2; 2589:15, 22; 2593:14; 2594:19, 23; 2595:6, 10, 24; 2597:1; 2600:23; 2601:9, 12, 18; 2602:5, 8; 2604:15, 17; 2605:4, 7; 2607:5, 10, 12, 16; 2608:5, 22; 2611:18; 2613:17; 2614:18, 22; 2615:1, 3, 11, 13, 20; 2616:12, 17, 22; 2619:21; 2624:17, 22, 24; 2631:16, 18; 2632:22; 2634:11, 14, 24; 2636:14, 20, 24; 2637:5, 16-17; 2638:3, 5, 9, 14, 24; 2639:4, 11; 2640:20, 23; 2641:11, 15, 19, 24; 2642:4, 10; 2644:25; 2645:5, 11, 21, 23; 2647:11; 2653:13; 2654:9; 2657:8, 16; 2661:7, 13-14, 17, 20, 25; 2663:3, 13, 20, 25; 2666:9, 11; 2667:13, 19, 22; 2668:12; 2669:3, 7-8; 2670:2, 4; 2671:7; 2672:9, 20; 2673:21; 2674:4, 6;</p>	<p>2675:20, 22; 2676:24; 2677:10, 12; 2678:1, 3-4, 9, 20; 2679:6; 2682:19, 24; 2683:4, 12, 15, 17, 22, 24; 2684:4, 7, 16; 2685:22; 2686:3; 2690:17; 2692:4, 12; 2693:13; 2694:12, 15, 19-20, 25; 2696:2; 2698:8; 2700:3; 2703:11; 2705:8, 12, 21; 2706:14; 2707:5; 2708:16; 2709:15; 2710:4, 9, 12, 15, 19-20; 2711:1, 10, 13-14, 16, 22, 24; 2712:1, 3, 11, 23; 2713:4, 9; 2714:8, 19; 2716:3; 2717:4, 14, 17; 2721:6; 2722:3, 16, 24; 2723:4, 9; 2724:2, 12-13, 19, 25; 2725:4, 7, 19; 2726:6, 9, 12; 2727:12, 16, 24; 2731:2, 23; 2732:7; 2734:7, 10; 2735:5; 2736:5; 2737:14; 2739:6, 20; 2745:20; 2746:2, 12; 2750:13; 2754:20; 2755:9; 2760:8; 2762:17; 2763:19, 21; 2765:15; 2766:16; 2767:23; 2770:4, 19; 2771:23; 2773:7; 2774:6; 2777:7, 21; 2779:9, 19, 21; 2780:1, 11, 13, 15, 21; 2781:5, 8, 12, 20; 2782:3, 15, 22; 2783:4, 15, 21; 2791:16; 2798:8; 2799:8; 2805:1 project's [13] - 2504:15; 2517:14; 2552:11; 2575:6; 2578:16; 2595:14; 2603:14; 2614:20; 2620:12; 2641:16; 2657:14; 2674:23; 2779:22 project-related [3] - 2574:8; 2595:6, 24 project-specific [1] - 2536:24 project.. [1] - 2682:21 Project/Highwood [1] - 2710:2 projected [2] - 2661:22; 2670:23 projections [1] - 2573:20 projects [38] - 2502:18; 2503:21; 2505:19, 21, 23; 2516:25; 2520:8; 2521:9, 12; 2542:23; 2606:1, 4; 2633:17, 20; 2634:7; 2637:10; 2638:24; 2649:24; 2662:4; 2663:14, 24; 2664:2, 23; 2665:5, 19; 2679:10; 2692:6, 25; 2693:22; 2700:21; 2703:23; 2707:22; 2728:18; 2782:17, 19 prolonged [1] - 2591:8</p>	<p>prolonging [1] - 2756:6 promised [23] - 2640:15; 2734:25 promises [1] - 2734:15 promote [1] - 2550:13 proofing [2] - 2726:2; 2782:17 propagating [1] - 2595:1 propagation [2] - 2592:14 proper [4] - 2588:21; 2596:14; 2597:21; 2771:12 properly [3] - 2755:5; 2759:20; 2767:2 properties [12] - 2511:23; 2554:3, 9; 2555:1, 6; 2558:4; 2624:8; 2626:8, 20; 2700:25; 2706:11; 2707:7 property [23] - 2510:21; 2516:12; 2524:10; 2558:10; 2615:5; 2617:21, 23; 2626:2; 2629:10; 2633:7, 21; 2641:13, 21; 2647:14; 2689:15, 17; 2746:8; 2748:23, 25; 2752:16; 2753:10; 2790:14; 2791:13 proponent [32] - 2521:15; 2526:21, 24; 2528:6, 13; 2583:6, 11, 15; 2584:20; 2687:17; 2704:1, 18; 2712:16, 20; 2713:8; 2715:15; 2719:4; 2720:15; 2721:13; 2723:23; 2724:14, 22; 2729:24; 2731:20; 2734:10, 14, 20; 2737:21; 2738:7; 2741:23; 2742:1; 2782:24 proponent's [6] - 2503:16; 2661:22; 2687:19; 2705:9; 2729:17; 2783:18 proponents [1] - 2726:4 proportional [1] - 2669:15 proposal [1] - 2543:13 propose [2] - 2540:4; 2661:7 proposed [34] - 2510:7; 2528:8; 2533:25; 2535:14, 23; 2536:24; 2539:20; 2540:12; 2544:3; 2584:3; 2595:9; 2601:17; 2612:2; 2613:19; 2640:14; 2654:3; 2657:5; 2661:14; 2662:4; 2669:2, 17; 2670:11; 2677:20; 2691:24; 2692:3; 2695:5, 9; 2706:12; 2715:13; 2718:24; 2731:23; 2765:22; 2795:11 prospect [1] - 2638:16</p>	<p>Prosper [1] - 2666:6 protect [23] - 2559:9; 2619:4; 2621:16, 18; 2629:7, 23; 2633:2, 21; 2641:5, 7, 21-22; 2645:15; 2647:13; 2662:4; 2687:24; 2689:2; 2706:6; 2709:5; 2748:23; 2752:23; 2782:20 protected [10] - 2611:4; 2626:10; 2639:9; 2666:12; 2682:4; 2688:10; 2706:14; 2707:13; 2712:21; 2713:2 protecting [7] - 2615:15, 25; 2629:22; 2641:12; 2645:14; 2763:5; 2798:9 Protection [1] - 2506:23 protection [41] - 2512:3; 2513:4; 2521:11; 2554:3, 9, 12; 2555:5; 2615:5; 2618:19; 2630:24; 2631:20; 2632:10, 16, 25; 2634:25; 2646:19; 2652:15; 2657:9, 17; 2661:15, 18, 22; 2662:7; 2665:1; 2675:12; 2682:9; 2687:18; 2688:6, 15; 2700:7; 2706:9; 2707:14, 21, 24; 2712:4; 2716:18; 2722:18; 2746:8; 2751:23; 2798:10 protects [2] - 2631:1; 2750:15 protocols [3] - 2529:22; 2541:20; 2675:14 protracted [1] - 2746:17 proud [1] - 2788:7 proven [5] - 2596:21; 2599:8; 2601:2; 2770:1; 2789:1 provide [71] - 2493:23; 2497:17; 2499:21; 2505:18; 2511:18; 2513:15; 2514:13, 18; 2516:8; 2519:22; 2520:12; 2521:10; 2522:22; 2523:25; 2525:15; 2528:7; 2531:10; 2537:22; 2539:18; 2540:8; 2543:25; 2544:4, 7, 14-15; 2551:23; 2554:25; 2555:5; 2558:8; 2559:3, 24; 2560:22; 2565:17; 2594:25; 2610:20; 2619:17; 2628:10; 2635:4; 2649:21; 2650:13; 2652:16; 2654:16; 2656:13; 2661:15; 2663:15, 21; 2669:4; 2672:3; 2675:17; 2676:3, 17; 2677:15; 2680:1; 2686:6; 2691:6; 2697:2; 2701:12; 2711:4, 18; 2715:11, 18; 2721:6; 2724:11; 2741:19; 2773:4, 13; 2775:5;</p>	<p>2781:4; 2786:6; 2791:12; 2795:23 provided [48] - 2502:20; 2508:5; 2524:4, 10; 2536:3, 17; 2537:2, 21; 2538:1; 2541:24; 2554:9; 2555:22; 2556:2; 2560:25; 2565:25; 2580:15; 2586:12; 2588:13; 2590:20; 2594:12; 2597:5; 2599:1; 2604:22; 2605:18; 2635:10; 2636:1; 2655:24; 2661:18; 2672:6; 2701:14; 2715:22; 2716:1, 4; 2729:13; 2740:22; 2754:19; 2761:9; 2762:5, 20; 2771:5; 2776:24; 2785:7; 2788:13; 2791:8, 18; 2794:16, 18 provides [14] - 2517:7; 2532:18; 2548:18; 2554:12; 2557:22, 25; 2558:3; 2617:19; 2619:7; 2675:12; 2698:3; 2719:2; 2739:10; 2780:17 providing [12] - 2497:7; 2526:10; 2536:20; 2545:20; 2549:12; 2584:4; 2614:13; 2652:14; 2664:16; 2679:11; 2751:22 Province [5] - 2556:20; 2557:6, 15; 2642:17; 2670:6 province [15] - 2493:14; 2506:13; 2510:11; 2621:25; 2629:7, 12; 2630:3; 2633:8, 20; 2641:6; 2643:4; 2647:7; 2690:9, 17, 25 province...without [1] - 2682:25 provincial [14] - 2507:16; 2521:14; 2529:19; 2537:8; 2543:7; 2581:17, 19, 21; 2607:21; 2636:21; 2637:1; 2638:2; 2730:2; 2788:10 provision [2] - 2539:21; 2675:6 provisions [4] - 2558:14; 2580:19; 2780:6, 18 proximity [5] - 2559:15; 2569:11; 2661:12; 2757:1; 2760:8 proxy [1] - 2669:21 prudent [1] - 2743:14 Public [6] - 2507:17; 2508:10; 2530:14; 2531:7; 2682:15; 2716:24 public [137] - 2501:12, 19; 2503:5, 10, 17; 2505:21; 2506:2, 11; 2507:6; 2508:24; 2510:10, 15; 2511:6; 2515:13, 24;</p>
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2516:6, 10; 2519:18; 2520:6; 2522:4, 8-10, 22; 2548:3; 2559:9; 2567:22; 2606:24; 2610:19; 2611:13, 20; 2612:6; 2614:22; 2615:3-5, 24; 2616:9; 2617:24; 2620:6-8, 10, 14; 2622:5, 10, 17; 2623:12; 2624:4, 17-18, 20, 24; 2625:17; 2631:21; 2632:12, 18; 2634:9; 2636:18; 2639:2; 2641:12, 19, 21, 24; 2642:4; 2645:4, 8-9; 2647:13; 2648:25; 2652:23; 2653:3, 10, 14; 2654:15; 2657:8, 19; 2662:2, 6, 9, 11; 2664:2, 8; 2666:9, 14; 2667:20; 2681:24; 2682:2-4, 13; 2683:11, 13, 16, 23; 2684:3, 7, 16, 22-23, 25; 2685:2; 2691:4; 2694:11, 18; 2705:18; 2709:12; 2710:16, 18, 20, 23; 2711:22, 24; 2714:19; 2723:21; 2728:22; 2730:13, 16; 2734:21; 2735:14; 2745:6, 11, 14, 23; 2751:9; 2763:6; 2766:7; 2774:7; 2783:23; 2795:4; 2800:14; 2803:23 public's [1] - 2763:19 published [3] - 2702:11, 13; 2801:5 pull [1] - 2497:5 pulling [1] - 2624:9 pumps [1] - 2629:3 pungent [1] - 2627:14 purchases [1] - 2640:24 purport [1] - 2664:12 purpose [15] - 2505:18; 2510:14; 2520:18; 2523:25; 2619:24; 2645:12; 2654:14; 2661:14; 2686:3; 2694:19; 2709:5; 2715:1; 2720:16; 2743:16 Purpose [1] - 2685:8 purposes [4] - 2520:22; 2590:24; 2610:23; 2677:16 pursuant [3] - 2505:17; 2541:22; 2678:25 pursue [2] - 2637:25; 2782:17 pursued [1] - 2633:20 pursuing [1] - 2783:20 purview [2] - 2567:11; 2782:18 put [18] - 2512:3; 2578:10; 2594:10; 2645:22; 2656:9; 2662:17; 2680:24; 2685:20; 2690:15; 2731:4; 2747:9; 2750:14, 17; 2777:3; 2786:13; 2793:13;	2803:1; 2807:3 putting [1] - 2750:23 Q Q.C [3] - 2492:16, 20 qualification [1] - 2772:22 qualifications [1] - 2561:4 qualified [2] - 2760:21; 2767:24 quality [84] - 2507:2; 2546:3; 2575:1; 2578:15, 20; 2579:15; 2587:17, 23; 2594:17; 2595:7, 10, 13, 18, 21; 2597:5, 8; 2600:16, 18; 2601:1, 3, 12; 2608:3; 2655:1, 8, 16; 2657:15; 2677:8, 13; 2682:12; 2684:20; 2704:22; 2711:5; 2720:4; 2724:17, 19, 21; 2725:8; 2726:7; 2727:14; 2752:24; 2753:8; 2757:22; 2760:10, 15; 2764:15-17; 2765:8; 2766:2, 5, 8; 2767:4, 6-8, 10, 17, 19; 2768:25; 2769:6, 11, 15; 2770:14, 22, 25; 2771:9, 15, 21; 2772:2, 6, 9, 16, 18, 20; 2775:11; 2789:13, 15; 2790:4, 25; 2804:3 quantifiable [2] - 2620:20; 2621:12 quantified [2] - 2710:10; 2711:11 quantities [1] - 2702:14 quantity [8] - 2575:13; 2587:18; 2594:17; 2595:10; 2633:13; 2677:8, 13; 2725:8 quarter [2] - 2610:7; 2764:11 quarters [1] - 2742:17 Queen's [1] - 2661:10 questioned [2] - 2527:7; 2698:10 questioning [2] - 2588:22; 2745:10 questions [18] - 2522:23; 2524:22; 2528:9; 2546:12; 2547:3; 2588:20; 2601:6; 2604:14; 2706:8; 2751:16; 2756:4; 2763:17; 2776:24; 2793:18, 20; 2802:16, 19 quick [4] - 2496:15; 2612:16; 2737:18; 2764:3 quickly [4] - 2498:22; 2596:21; 2604:12; 2784:5 quiet [1] - 2747:8 quite [5] - 2548:1; 2746:11; 2750:22; 2762:19; 2804:8 quo [2] - 2515:25;	2642:8 quote [7] - 2626:13, 23; 2692:24; 2693:21; 2694:8; 2695:22; 2698:18 R radical [1] - 2567:18 radically [1] - 2698:22 Rae [2] - 2492:22; 2609:9 rail [3] - 2625:8; 2647:16 rain [2] - 2751:15; 2773:14 rain-on-snow [1] - 2751:15 rainfall [7] - 2634:21; 2635:1; 2646:2; 2654:4; 2699:3; 2751:2 raise [3] - 2588:5; 2591:6; 2654:6 raised [22] - 2505:13; 2518:12; 2531:24; 2535:25; 2546:12; 2547:3; 2549:25; 2550:8; 2579:16; 2580:5; 2588:11, 14; 2590:6; 2603:2; 2604:20; 2681:19; 2708:18; 2729:24; 2764:19; 2783:14; 2792:8; 2804:15 raising [3] - 2549:5; 2629:5; 2706:25 ranch [4] - 2524:11; 2724:9; 2734:11; 2753:8 ranchers [1] - 2776:20 ranching [6] - 2532:24; 2724:1, 4, 6; 2732:6, 9 Range [2] - 2713:19; 2793:22 range [13] - 2592:6; 2598:22; 2599:12; 2623:21; 2624:9; 2648:19; 2664:9; 2685:25; 2688:16; 2737:17, 20; 2757:15; 2761:7 Ranker [1] - 2705:6 rank [1] - 2662:21 rapid [6] - 2565:18; 2566:11, 23; 2567:1; 2646:2; 2728:16 rapidly [1] - 2745:3 rare [5] - 2587:24; 2600:21; 2773:5, 7; 2783:2 rate [23] - 2551:9, 12; 2552:17; 2553:14; 2554:21; 2562:17; 2573:8; 2575:19; 2593:9; 2619:13; 2648:16; 2651:4; 2687:10; 2698:1; 2700:11; 2701:22; 2702:7, 22; 2707:15; 2742:5, 17; 2743:9 rates [18] - 2553:2, 6; 2554:1, 6; 2558:23; 2575:23; 2585:23; 2631:2; 2686:22; 2700:16; 2701:3; 2703:3, 8; 2705:25;	2706:24; 2707:7; 2738:2, 4 rather [15] - 2536:11; 2538:16, 22; 2580:13; 2614:25; 2633:1; 2636:19; 2687:19; 2694:23; 2701:25; 2707:16; 2747:6; 2767:23; 2787:2; 2801:20 rating [2] - 2507:25; 2566:19 ratio [7] - 2625:21; 2649:5; 2721:24; 2722:3, 5, 14 ratios [1] - 2642:11 RCP [1] - 2573:16 re [2] - 2630:7; 2787:4 re-adjourn [1] - 2787:4 re-opened [1] - 2630:7 reach [5] - 2527:3; 2553:3; 2559:6; 2697:23; 2774:5 reached [1] - 2691:18 reaches [1] - 2693:5 reaching [4] - 2512:7; 2591:13; 2601:20; 2612:19 react [2] - 2594:10; 2754:4 reacting [1] - 2755:2 read [74] - 2502:21; 2503:14; 2506:4; 2510:13; 2515:4; 2525:6; 2527:7; 2534:17; 2535:6; 2537:11; 2546:20; 2556:14; 2557:2, 12; 2563:7, 15; 2584:18; 2594:6; 2599:25; 2611:5; 2615:9; 2618:10; 2626:13; 2632:9; 2642:15, 25; 2663:6, 18; 2666:10; 2682:16; 2688:24; 2689:10, 22; 2690:20; 2691:17; 2692:24; 2693:21; 2694:8; 2695:3, 12, 22; 2696:3; 2697:15, 21; 2698:19; 2705:11; 2706:16; 2708:20; 2710:7, 14; 2715:19; 2716:15; 2717:21; 2727:1, 21; 2729:2; 2730:22; 2731:5; 2733:21, 25; 2737:5; 2738:13; 2740:17; 2741:12; 2745:21; 2749:2; 2752:4; 2764:23; 2765:23; 2766:3; 2769:12; 2790:23; 2796:2; 2806:18 readily [3] - 2588:8; 2591:4; 2599:3 readiness [1] - 2534:10 reading [4] - 2569:20; 2732:15; 2786:18; 2794:25 readings [3] - 2703:7; 2742:18; 2744:14 ready [6] - 2643:2, 5; 2658:7; 2785:1;	2787:23 real [10] - 2518:16; 2637:18; 2655:15; 2694:6; 2759:10, 13-14; 2760:25; 2804:7 reality [5] - 2589:22; 2598:24; 2629:10; 2642:9, 11 realize [1] - 2775:14 realized [2] - 2578:20; 2741:2 really [11] - 2496:17; 2500:22; 2680:25; 2689:11; 2693:7; 2701:19; 2733:2; 2747:4; 2749:7; 2750:20; 2755:8 reapplication [1] - 2599:14 reason [7] - 2504:6; 2628:22; 2654:9; 2671:1; 2691:8; 2701:5; 2748:20 reasonable [20] - 2584:7; 2598:1; 2670:25; 2672:12; 2673:1, 18; 2674:18; 2675:6, 22; 2676:3; 2677:22; 2678:12, 17; 2711:3, 6; 2753:25; 2755:6; 2771:17; 2778:3; 2801:7 reasonably [5] - 2533:23; 2536:14; 2567:7; 2585:10; 2721:21 reasons [7] - 2519:10; 2579:10; 2630:24; 2638:19; 2663:25; 2669:25; 2735:12 reassessment [2] - 2740:12; 2767:17 recalculations [1] - 2684:17 recap [1] - 2756:10 receipt [3] - 2539:17; 2540:7; 2738:21 receive [6] - 2540:15; 2612:24; 2638:11; 2722:18; 2732:19; 2788:11 received [14] - 2502:25; 2505:6; 2528:10, 24; 2532:9; 2533:19; 2537:19; 2627:1, 7; 2628:3, 24-25; 2643:16; 2680:12 receives [2] - 2509:20; 2530:18 receiving [3] - 2532:4; 2707:25; 2722:17 recent [5] - 2506:3; 2510:17; 2572:23; 2750:2; 2804:9 recently [2] - 2688:21; 2801:6 receptors [4] - 2594:24; 2597:14; 2758:19; 2760:11 recognition [4] - 2572:7; 2647:5; 2732:5, 10 recognize [4] - 2662:8; 2689:1; 2797:25; 2805:20 recognized [13] -
--	---	---	--	---

2538:14; 2543:23; 2624:14; 2628:14; 2634:15; 2637:4; 2646:9; 2767:3; 2770:22; 2794:13; 2797:6 recognizes [4] - 2530:2; 2571:24; 2769:7; 2807:2 recommend [3] - 2607:4; 2657:20; 2729:3 recommendation [15] - 2531:10; 2565:20; 2568:7-9, 11; 2603:15; 2716:13; 2740:5, 9, 14, 16; 2741:8, 10, 21 recommendations [24] - 2531:3; 2535:4; 2539:12; 2543:17; 2544:21; 2560:23; 2561:1, 19-20; 2562:2, 4; 2568:5, 12, 20; 2584:11, 16; 2716:12; 2739:25; 2740:4; 2753:20, 23; 2778:5; 2804:24 recommended [2] - 2566:5; 2782:2 recommends [1] - 2742:2 reconsider [1] - 2642:17 reconstruction [1] - 2621:2 reconvene [1] - 2658:11 record [29] - 2494:15; 2500:3, 7; 2504:9; 2515:5; 2530:7; 2534:18; 2536:5; 2540:25; 2542:13; 2556:21; 2559:16; 2571:15; 2572:8, 16, 18; 2577:20; 2614:16; 2620:23; 2628:16; 2637:15; 2651:4; 2708:10; 2732:15; 2739:3; 2749:6; 2784:11; 2786:14 recorded [5] - 2675:15, 19; 2693:18; 2699:7; 2781:1 records [6] - 2548:25; 2570:24; 2576:17; 2577:7; 2589:11; 2734:18 recourse [1] - 2580:20 Recovery [1] - 2698:16 recovery [2] - 2512:9; 2757:20 recreation [9] - 2504:12; 2519:23; 2520:15, 22; 2635:19; 2665:1; 2688:6, 15; 2694:22 recreational [10] - 2505:2; 2520:19; 2621:17; 2636:10; 2704:16, 19; 2705:1, 4; 2711:4, 18 recurrence [1] - 2564:9 REDD [1] - 2582:4 redeeming [1] - 2755:8	redirected [1] - 2712:10 reduce [19] - 2510:19; 2511:21; 2513:11; 2532:7; 2540:12; 2584:13; 2619:9; 2622:20; 2624:11; 2629:10; 2641:4; 2667:17; 2705:23; 2717:25; 2718:4; 2757:10; 2764:25; 2779:15, 20 reduced [9] - 2513:5; 2553:21; 2575:22; 2623:16; 2639:24; 2646:23; 2647:20; 2652:25; 2737:10 reduces [2] - 2548:14; 2633:13 reducing [11] - 2511:19; 2513:24; 2518:16; 2551:13; 2559:1; 2615:14; 2619:10; 2621:14; 2645:12; 2652:23; 2705:25 reduction [9] - 2554:1; 2555:1; 2559:3; 2566:4; 2573:25; 2631:1, 3; 2718:7; 2741:1 redundancies [1] - 2651:13 redundant [1] - 2569:25 Redwood [7] - 2521:7; 2582:5; 2633:1; 2634:4; 2682:7; 2705:22; 2721:12 refer [17] - 2499:17; 2555:25; 2556:13, 25; 2557:10; 2581:14; 2611:25; 2660:24; 2686:1; 2730:22; 2745:9, 20; 2775:8; 2781:16; 2782:6, 8 reference [23] - 2496:3; 2506:25; 2507:1; 2518:23; 2521:22; 2545:4; 2556:3; 2633:5; 2692:3, 12; 2694:17; 2701:18; 2715:18, 21; 2718:7; 2739:17; 2743:3; 2764:22; 2774:3; 2775:1; 2796:1 referenced [2] - 2630:13; 2718:6 references [10] - 2496:1; 2610:22; 2644:19; 2660:23; 2693:16; 2715:19; 2733:23, 25; 2775:8 referred [21] - 2503:25; 2504:5; 2519:10; 2523:4; 2545:6; 2552:24; 2554:8; 2555:20; 2576:9; 2613:23; 2672:18; 2673:8, 16; 2675:3; 2696:24; 2697:9; 2701:7, 16; 2720:6; 2726:4; 2775:10 referring [4] - 2497:19; 2689:6; 2725:20; 2795:25 refers [4] - 2590:7;	2698:13, 15; 2713:8 refiltration [1] - 2778:20 reflect [2] - 2518:10; 2535:19 reflected [1] - 2531:25 reflective [4] - 2704:17; 2719:8; 2757:5; 2761:23 reflector [1] - 2704:7 reflects [2] - 2529:15; 2541:12 refreshed [1] - 2764:7 refused [2] - 2714:18; 2756:3 refuses [1] - 2684:25 refute [1] - 2761:20 regard [23] - 2505:22; 2508:10; 2510:22; 2517:18; 2521:18; 2523:19; 2530:5; 2565:15; 2569:4; 2572:2; 2578:22; 2584:2, 6; 2585:19; 2607:1; 2645:4; 2689:13; 2743:8, 18; 2766:24; 2771:12; 2782:7 regarding [22] - 2510:24; 2531:12, 17; 2562:13; 2591:6; 2596:10; 2600:6; 2602:23; 2603:6; 2604:12; 2643:7; 2675:18; 2677:24; 2697:20; 2705:21; 2708:11, 15; 2734:16; 2755:8; 2760:10; 2765:11; 2791:19 regardless [2] - 2514:17; 2670:22 regards [3] - 2731:13; 2789:25; 2799:5 regime [6] - 2570:5; 2575:18; 2587:23; 2593:25; 2594:1; 2648:9 region [11] - 2506:13; 2589:21; 2645:17; 2657:7; 2679:2; 2682:24; 2683:7; 2702:23; 2711:6; 2746:22; 2771:22 region-wide [1] - 2589:21 regional [10] - 2506:15; 2647:14; 2655:3, 20; 2657:9; 2678:21, 23; 2711:19; 2780:4; 2794:16 Regional [1] - 2779:25 regions' [1] - 2655:21 register [1] - 2577:10 regret [1] - 2763:9 regular [6] - 2508:3; 2509:24; 2525:12; 2544:25; 2607:23; 2627:16 regularly [1] - 2734:12 regulated [1] - 2648:14 regulation [4] - 2570:12; 2676:2, 6	regulations [2] - 2543:7; 2556:6 regulators [8] - 2502:7, 11; 2516:22; 2573:14; 2607:21; 2638:25; 2717:23; 2783:13 regulatory [12] - 2504:4; 2522:23; 2527:14; 2528:1; 2541:11; 2542:1; 2571:3; 2574:10; 2650:21; 2717:15; 2789:6; 2797:2 rehabilitated [1] - 2646:20 Reid [1] - 2597:5 reiterate [2] - 2504:1; 2606:14 reiterated [1] - 2547:2 reiterates [4] - 2514:15; 2515:20; 2553:17; 2580:3 reiterating [1] - 2566:14 reject [1] - 2783:24 rejected [2] - 2715:15; 2803:14 rejecting [2] - 2782:15; 2783:19 rejects [4] - 2554:14; 2571:23; 2703:16; 2729:17 relate [2] - 2719:6; 2735:10 related [13] - 2512:9; 2555:13; 2574:8, 15; 2580:25; 2586:10; 2595:6, 10, 24; 2612:5; 2630:15; 2750:7; 2791:13 relates [4] - 2610:16; 2662:18; 2678:9; 2762:2 relating [8] - 2674:3; 2675:4; 2721:8; 2736:15; 2745:2, 23; 2773:11; 2784:11 relation [8] - 2612:1; 2614:5; 2678:2; 2696:10; 2710:25; 2723:17; 2781:19 relationship [1] - 2772:17 relative [6] - 2503:6; 2592:21; 2638:21; 2653:12; 2702:4; 2721:24 relatively [4] - 2593:15; 2653:21; 2661:16; 2704:14 relaxing [1] - 2493:12 release [16] - 2579:4; 2580:1; 2585:7, 19; 2586:2, 8, 10-11, 14; 2587:25; 2753:24; 2754:1; 2793:10; 2802:6 released [4] - 2508:19; 2549:9; 2552:13; 2579:8 releasing [1] - 2579:18 relevance [2] - 2503:9; 2666:18 relevant [14] - 2501:12; 2503:17; 2534:25; 2556:12;	2576:21; 2612:5; 2634:8, 14; 2636:17; 2653:14; 2721:7; 2722:15; 2726:22; 2744:23 reliable [1] - 2514:19 reliance [2] - 2700:8, 11 relied [7] - 2589:24; 2590:3; 2705:14; 2751:13; 2753:18; 2758:21; 2784:12 relies [2] - 2739:12, 22 relocating [2] - 2629:4; 2724:6 relocation [4] - 2517:16; 2713:25; 2714:4, 24 rely [12] - 2526:10; 2531:14; 2537:12; 2542:15; 2606:7; 2666:3; 2701:1; 2737:1; 2744:24; 2746:5; 2749:5; 2755:20 relying [3] - 2563:10, 18; 2647:13 remain [10] - 2554:19; 2581:2; 2611:25; 2642:23; 2681:21; 2763:18; 2767:9; 2768:15; 2780:12; 2782:2 remained [3] - 2499:12; 2546:15; 2562:7 remaining [2] - 2539:24; 2732:14 remains [7] - 2518:12; 2580:3; 2592:1; 2628:7; 2637:15; 2710:21; 2748:11 remarkably [1] - 2609:3 remarks [15] - 2500:2; 2501:15; 2519:12; 2556:3; 2603:5; 2609:13; 2612:15; 2618:8; 2643:15; 2644:12; 2681:23; 2685:7; 2782:11, 14; 2807:14 remediate [2] - 2692:17; 2760:6 remedy [2] - 2695:6, 10 remember [3] - 2521:3; 2665:13; 2693:9 remembered [1] - 2511:9 reminders [1] - 2627:17 reminds [1] - 2653:8 remiss [1] - 2608:24 remnants [1] - 2770:15 remote [3] - 2652:4, 11 removal [2] - 2545:12; 2716:9 remove [2] - 2603:18; 2619:1 removed [2] - 2575:25; 2732:6 removes [1] - 2577:14 renegotiate [1] -
---	--	---	--	---

<p>2805:5 renewed [1] - 2670:8 repair [1] - 2627:25 repairing [1] - 2622:3 repairs [3] - 2558:2; 2721:11; 2723:5 repatriation [2] - 2676:2, 6 Repatriation [1] - 2676:8 repeat [3] - 2523:6; 2630:21; 2646:5 repeated [2] - 2514:12; 2642:2 repeatedly [5] - 2589:17; 2656:19; 2701:8, 16; 2744:11 repeating [1] - 2552:23 replace [1] - 2762:14 replaced [1] - 2646:20 replacement [3] - 2713:20; 2715:3, 23 reply [23] - 2500:10, 12, 14, 23; 2501:14; 2523:4; 2526:4; 2536:8; 2539:16; 2543:19; 2560:24; 2565:22; 2582:18; 2585:12; 2588:13; 2597:12; 2603:3; 2698:13; 2785:22; 2786:20; 2807:9, 15 Report [8] - 2508:7; 2517:11; 2653:11; 2691:20; 2698:15; 2738:3 report [63] - 2508:20, 24-25; 2531:16; 2538:2; 2539:19; 2540:1, 7; 2542:11, 25; 2555:4; 2560:17, 19; 2561:1, 12, 21; 2562:1, 19; 2563:1; 2565:6; 2568:16; 2569:4, 6, 25; 2572:23; 2583:8, 23; 2584:16, 19; 2589:6; 2590:11; 2599:20; 2634:16; 2637:3; 2639:18; 2693:16; 2697:9, 14; 2698:18; 2700:4; 2703:10; 2704:13; 2705:1, 3, 10; 2706:10; 2710:2; 2713:7, 22; 2727:20; 2728:11; 2729:1, 3, 13, 15; 2737:4; 2738:12; 2753:21; 2764:17; 2780:2; 2783:16; 2792:9; 2799:9 reported [1] - 2542:7 REPORTER [2] - 2612:23; 2632:9 reporter [5] - 2494:6; 2610:21; 2612:10; 2613:5; 2659:7 Reporters [1] - 2493:5 reporters [6] - 2497:18; 2609:1; 2643:8; 2644:14; 2798:23; 2807:20 reporting [6] - 2718:18, 21; 2720:3; 2760:13; 2790:14 reports [6] -</p>	<p>2542:16; 2568:4; 2581:22; 2675:18; 2771:5 represent [4] - 2569:22; 2570:1; 2617:18; 2629:16 representation [3] - 2528:21; 2588:25; 2608:14 representations [1] - 2767:22 representative [12] - 2528:17; 2598:6; 2608:9; 2767:22; 2768:4, 12; 2769:3, 5; 2770:2; 2771:9; 2772:23 representatives [6] - 2523:11, 22; 2524:9, 17; 2538:25; 2540:18 represented [4] - 2610:6; 2661:3; 2784:19; 2805:21 representing [3] - 2630:19; 2658:4; 2783:8 represents [1] - 2622:15 request [11] - 2530:22; 2543:24; 2607:3; 2681:1; 2715:15; 2774:24; 2775:19; 2791:3, 9; 2802:7; 2803:13 requested [14] - 2525:4; 2643:23; 2644:5; 2675:10; 2736:12, 17, 22; 2745:7, 13, 23; 2753:20; 2774:21; 2791:12, 24 requesting [5] - 2537:3; 2790:12; 2791:14; 2793:13; 2798:3 requests [11] - 2502:11; 2507:11; 2543:22; 2573:14; 2606:23; 2671:14; 2685:9, 12; 2726:11; 2783:23; 2791:7 require [11] - 2507:16; 2518:24; 2563:2; 2567:1; 2570:13, 23; 2643:22; 2716:3; 2777:9; 2779:3; 2780:17 required [37] - 2506:21; 2507:15; 2521:21; 2528:7; 2531:6; 2538:18; 2539:22; 2540:2; 2541:13, 15, 22; 2551:12; 2552:11; 2567:3, 7; 2568:1; 2571:8; 2577:15; 2583:24; 2621:2; 2651:12; 2667:16; 2695:23; 2701:19; 2717:2; 2720:24; 2722:11; 2726:9; 2741:15; 2755:10; 2767:5; 2769:7; 2790:7; 2792:24; 2802:10; 2803:19 requirement [3] - 2563:11; 2678:19; 2720:14 requirements [13] - 2509:25; 2541:23;</p>	<p>2542:1; 2562:20; 2650:21; 2696:8, 11; 2718:18; 2728:1; 2741:6, 23; 2768:19; 2801:20 requires [9] - 2507:19, 21-22, 24; 2522:4; 2530:12; 2642:21; 2742:4; 2780:3 requiring [2] - 2562:22; 2777:11 rescue [8] - 2532:12; 2546:2; 2582:2; 2584:6; 2720:18, 22; 2754:24; 2755:16 rescuers [1] - 2720:23 rescues [1] - 2622:24 research [5] - 2576:12; 2577:23; 2578:6; 2770:8 reseeding [1] - 2692:18 Reseeding [1] - 2719:7 reserves [1] - 2661:6 Reserves [1] - 2670:24 reserving [2] - 2696:6, 10 Reservoir [49] - 2499:16; 2510:18; 2513:19, 25; 2521:6; 2547:25; 2551:13; 2553:24; 2554:2, 11, 13; 2555:2, 6; 2558:17, 23; 2559:4; 2576:4; 2606:25; 2619:4, 10; 2633:14; 2634:3; 2646:17; 2647:24; 2648:4, 6, 12; 2651:21; 2654:6, 20; 2655:11; 2656:6; 2670:8; 2682:5; 2683:10; 2687:17, 21; 2696:16, 23; 2697:11; 2698:2; 2702:16; 2712:9, 19; 2725:5; 2731:12; 2747:21; 2751:3; 2782:21 reservoir [98] - 2508:12, 15; 2510:20; 2513:21; 2515:12; 2520:22; 2548:6, 8; 2549:4, 8, 17; 2551:7, 16, 20, 22, 25; 2552:6, 12, 19; 2553:14, 20; 2554:4; 2562:18; 2563:5, 13-14, 17; 2564:2, 8, 14; 2565:1, 19, 25; 2566:12, 24; 2573:8; 2576:1; 2579:9, 18; 2581:5; 2582:23; 2585:7, 20, 24; 2586:5; 2588:1; 2591:25; 2592:19, 22; 2593:17; 2594:22; 2596:11; 2598:14; 2604:4; 2619:5; 2663:3; 2687:1; 2692:17; 2696:25; 2697:6, 12; 2704:3; 2706:12; 2709:20, 23; 2716:10; 2719:24; 2724:21; 2732:3; 2735:18, 21; 2740:21, 25; 2741:16; 2742:5,</p>	<p>16; 2743:11, 15, 20, 24; 2744:1, 4, 11; 2751:19, 22, 25; 2755:17; 2756:13; 2757:7, 10; 2758:13, 16; 2759:18, 24; 2766:18; 2778:11; 2788:24 Reservoirs [1] - 2743:19 reservoirs [3] - 2662:21; 2741:7; 2766:19 reside [1] - 2628:12 residence [1] - 2601:19 residences [5] - 2601:20; 2615:15; 2639:10; 2645:15; 2792:6 resident [1] - 2774:1 residential [7] - 2605:25; 2617:22; 2624:8; 2629:21; 2747:8; 2793:24; 2795:15 residents [41] - 2515:23; 2516:11; 2518:17; 2607:25; 2617:18; 2626:15; 2627:8; 2628:10; 2629:1, 16, 19; 2633:7; 2640:16; 2657:16; 2665:5, 15; 2682:6; 2688:9, 18; 2708:3, 12, 17, 21; 2709:5, 14, 19; 2723:13; 2724:21; 2725:4, 17; 2729:21; 2730:2; 2731:1; 2751:7, 22-23; 2760:9; 2783:8, 14; 2803:23 residual [5] - 2507:7; 2554:13; 2558:16; 2707:4; 2767:8 residuals [2] - 2590:12 resilience [2] - 2647:8, 21 resilient [1] - 2629:4 resolution [1] - 2723:21 resolve [4] - 2522:17; 2525:22; 2761:14; 2792:23 resort [1] - 2600:1 resource [11] - 2535:9; 2654:24; 2667:23; 2669:18; 2675:21; 2683:24; 2690:23; 2692:22; 2732:1; 2752:5 Resource [1] - 2541:8 resources [17] - 2503:21; 2505:20; 2507:5; 2516:6; 2529:9; 2543:2; 2608:5; 2637:9; 2652:20; 2657:7; 2669:21; 2674:22; 2690:16; 2736:2, 11, 13, 15 Resources [15] - 2492:1; 2541:13, 16; 2542:1, 8; 2543:3, 14; 2637:11; 2645:3; 2674:5, 25; 2675:6, 9, 11; 2684:1</p>	<p>respect [50] - 2499:15; 2514:22; 2516:2; 2519:1; 2529:7, 21; 2536:11; 2542:9; 2543:2; 2546:7; 2550:20; 2551:5; 2552:21; 2564:4, 21; 2571:16; 2578:15; 2579:16; 2580:6; 2602:4, 21; 2603:24; 2605:19; 2607:7; 2634:13; 2650:17; 2654:13; 2668:5; 2691:20; 2692:7; 2694:14; 2725:19; 2743:2; 2754:6; 2767:13; 2768:5; 2769:9; 2770:6, 21; 2771:2, 6, 25; 2772:7; 2773:3, 19, 23; 2774:9; 2797:15; 2805:9 respected [2] - 2529:17; 2583:2 respectful [11] - 2539:2; 2614:15; 2616:9, 16; 2618:1; 2619:20; 2626:4; 2628:17; 2638:19; 2642:6; 2807:6 respectfully [2] - 2501:16; 2607:3 respecting [2] - 2647:6; 2651:15 respective [1] - 2502:7 respiratory [1] - 2804:1 respond [8] - 2525:15; 2528:11; 2531:24; 2591:15; 2616:17; 2623:3; 2652:17; 2680:23 responded [8] - 2502:12; 2539:15; 2543:21; 2565:20; 2566:14; 2567:1; 2568:12; 2569:15 responding [1] - 2543:7 responses [2] - 2500:15, 18 response [67] - 2504:7, 22; 2510:8; 2514:12; 2526:25; 2532:9, 15; 2540:8, 15; 2541:19; 2542:2, 14; 2560:25; 2562:5, 25; 2563:5, 23; 2565:7, 19; 2566:3; 2567:3, 23; 2568:8, 16, 22; 2569:14; 2570:16; 2573:14; 2579:10; 2581:20; 2584:17-19; 2588:12; 2591:9; 2593:1; 2595:4, 9; 2601:11; 2604:22; 2623:5, 7-8; 2635:15; 2636:5; 2649:12; 2652:19, 25; 2670:16; 2701:13, 24; 2703:14; 2708:18; 2714:1; 2737:16; 2740:23; 2745:6, 12; 2750:12; 2760:1; 2764:16; 2765:11; 2766:3; 2786:16; 2803:18 responses [13] - 2494:23; 2532:5;</p>
---	--	---	--	---

2549:14; 2561:25; 2568:14; 2581:13, 18, 21; 2583:24; 2606:22; 2628:24; 2706:8; 2776:24 RESPONSES [1] - 2495:5 responsibility [5] - 2570:18; 2683:21; 2710:21; 2783:17; 2789:2 responsible [5] - 2531:4; 2532:20; 2561:16; 2595:12; 2735:3 responsive [4] - 2518:11; 2529:16; 2669:15; 2671:3 rest [4] - 2565:9; 2574:10; 2731:13; 2747:18 restored [1] - 2621:7 restrict [1] - 2778:18 restricted [1] - 2661:25 restrictions [4] - 2538:19; 2558:4; 2669:10; 2678:1 result [43] - 2509:8; 2510:20; 2512:4, 24; 2513:23; 2516:14; 2526:2; 2566:4; 2569:24; 2573:1; 2577:18; 2578:8; 2579:17; 2580:7; 2586:23; 2588:16; 2598:21; 2602:9; 2606:15; 2617:15; 2626:18; 2627:21; 2655:8; 2667:15; 2668:19, 23; 2676:24; 2692:8, 18; 2709:22; 2711:17; 2715:5; 2717:22; 2728:9, 13; 2745:8; 2757:17; 2758:14; 2764:18; 2765:3; 2771:13; 2780:13; 2793:7 resulted [7] - 2510:8; 2520:3; 2573:21; 2575:5; 2586:5; 2596:3; 2783:6 resulting [6] - 2509:16; 2512:6; 2649:4; 2668:24; 2677:25; 2778:24 results [13] - 2545:19; 2581:12; 2590:4; 2592:13; 2595:6; 2650:21; 2699:2; 2761:8; 2762:17; 2768:6; 2790:21; 2800:21 resume [1] - 2785:5 RESUMED [1] - 2659:5 resumption [1] - 2673:14 retained [7] - 2559:24; 2560:16; 2567:15; 2583:2; 2586:5; 2603:11; 2776:13 retention [2] - 2611:22; 2613:19 retroactively [1] - 2708:13 return [5] - 2573:4; 2609:18; 2738:5; 2754:22	returning [4] - 2556:24; 2568:5; 2588:15; 2613:14 reveal [1] - 2756:3 revealed [1] - 2588:16 revegetate [1] - 2781:3 revegetation [7] - 2546:1; 2602:23, 25; 2693:15, 17; 2780:23, 25 revenue [1] - 2520:19 revenues [1] - 2630:25 reverse [2] - 2688:20; 2690:1 reversed [1] - 2593:18 reversible [3] - 2587:25; 2655:10 Review [7] - 2691:19, 23; 2695:4, 13, 21, 23; 2710:1 review [52] - 2499:22, 24; 2501:13; 2502:6; 2504:2, 9; 2505:15, 19; 2508:24; 2520:6; 2524:1; 2530:19; 2537:7; 2540:3, 7, 20; 2543:1; 2545:21; 2559:23; 2568:20, 23; 2569:2; 2571:6; 2583:4, 14; 2607:9; 2612:16; 2615:22; 2637:22; 2662:3; 2663:25; 2664:1; 2665:4; 2671:24; 2680:3; 2682:18; 2684:24; 2694:24; 2703:5; 2729:5; 2733:12; 2738:21; 2739:8, 21; 2741:24; 2742:2, 9; 2744:20; 2766:8; 2785:20; 2806:12 review... community [1] - 2682:20 reviewable [11] - 2503:4, 13, 22; 2506:2, 19; 2519:17; 2634:14; 2636:19; 2637:4, 10, 16 reviewed [19] - 2520:4; 2521:20; 2525:23; 2534:20; 2536:2; 2561:11; 2565:20; 2569:8, 21; 2571:8, 10; 2584:16, 18; 2589:10; 2604:24; 2611:19; 2702:11; 2716:19; 2740:6 reviewing [3] - 2505:15; 2545:18; 2705:8 revised [6] - 2507:9; 2602:13; 2695:25; 2717:24; 2769:20 Revised [1] - 2691:13 revisions [4] - 2495:10, 25; 2684:20 revisit [1] - 2634:17 revitalization [1] - 2630:19 Richard [3] - 2493:1; 2497:4; 2660:2 Rideau [1] - 2709:8	Ridge [3] - 2582:4, 6; 2648:13 ridiculous [1] - 2689:5 rifle [4] - 2803:3, 5, 8; 2805:6 rights [31] - 2531:18; 2533:3, 10; 2536:14, 19; 2537:1, 4; 2661:9; 2662:8, 12; 2665:5; 2666:12, 18, 25; 2667:4, 8-9, 13, 25; 2668:13; 2669:5, 11, 23; 2679:11; 2689:15; 2692:7, 10; 2732:4; 2805:5 Rights [1] - 2671:5 rigorous [1] - 2502:6 ring [1] - 2576:20 rings [1] - 2576:18 riparian [12] - 2606:6; 2646:18; 2662:8; 2665:5, 15; 2692:7; 2693:24; 2694:2; 2698:25; 2752:13; 2781:17; 2782:4 riprap [7] - 2517:17; 2605:14; 2716:9; 2741:11, 13, 19; 2801:14 rise [3] - 2579:9; 2600:19; 2601:1 rising [2] - 2712:6; 2789:20 Risk [2] - 2509:12, 15 risk [72] - 2509:17, 22; 2512:1, 8, 17; 2513:5, 24; 2547:18, 20; 2548:2, 19; 2553:20; 2555:1, 13; 2559:3, 7; 2560:11; 2566:5, 17; 2572:3; 2573:11; 2574:1; 2579:7; 2582:12; 2584:23; 2592:24; 2600:12; 2613:23; 2615:14; 2617:8, 14; 2619:9; 2631:3; 2637:14; 2639:24; 2645:20; 2646:23; 2650:15; 2654:1; 2686:12; 2704:11; 2707:5; 2708:19; 2725:7; 2737:1; 2739:13; 2741:1; 2743:10; 2744:24; 2745:2, 4; 2747:24; 2751:15; 2752:13; 2758:11; 2759:2; 2760:25; 2762:6; 2764:18; 2765:4, 9; 2772:11, 21; 2777:17; 2778:6; 2779:14; 2783:20, 22; 2803:21, 23 risks [13] - 2511:6; 2515:24; 2616:13; 2646:14; 2652:12; 2704:22; 2737:12; 2750:7; 2758:23; 2759:4; 2773:1; 2793:12 river [34] - 2508:14; 2549:9; 2550:1, 11, 16; 2553:3, 6, 10; 2554:21; 2559:6; 2575:25; 2577:5; 2579:4, 23; 2585:20, 23; 2617:16; 2629:20; 2650:5; 2664:18; 2699:9; 2700:11; 2702:19; 2706:25; 2707:12; 2708:24; 2709:3, 6, 9; 2744:13; 2778:7; 2792:15 River [156] - 2492:20; 2502:23; 2504:12, 24; 2510:5, 16; 2511:14, 20; 2512:2, 5, 12, 16-17, 22; 2513:17, 25; 2514:6, 10, 20; 2516:10; 2519:4; 2521:5, 8, 11, 25; 2536:11; 2548:7, 10-11, 18, 23; 2549:3, 12, 23; 2550:17; 2551:23; 2552:16; 2554:20; 2558:5; 2572:9, 12, 14, 17; 2575:20; 2576:3; 2577:10; 2578:2; 2581:24; 2582:5, 13; 2585:8; 2586:2; 2606:16; 2610:5, 11; 2614:7; 2616:25; 2617:2; 2618:7; 2619:2, 5, 15-16, 18; 2621:14, 19; 2624:6; 2625:9; 2627:23; 2631:15; 2633:3, 25; 2634:2, 22; 2635:16; 2636:7; 2644:9; 2645:15, 25; 2646:12, 14; 2647:3; 2649:17, 24-25; 2650:1; 2652:16, 21; 2655:5, 8, 25; 2656:5, 15, 20-21; 2659:12; 2661:19, 23; 2662:16, 19, 21; 2663:4, 12, 19, 21; 2670:12, 21; 2679:3; 2683:25; 2684:11; 2689:9; 2692:16, 19; 2693:5; 2695:25; 2696:15, 20; 2697:21, 23; 2698:14, 20; 2699:4, 10, 12; 2701:23; 2702:8, 12, 21; 2703:25; 2704:2; 2710:5; 2715:4; 2718:5; 2720:16; 2723:13; 2727:4, 7; 2728:17, 20, 23; 2752:9, 19-20, 22; 2778:24; 2788:20; 2792:1; 2793:6; 2795:25; 2800:11 River's [2] - 2653:22; 2691:11 river's [2] - 2770:1; 2792:15 riverbank [1] - 2550:6 riverbeds [1] - 2650:2 Rivers [11] - 2505:8; 2617:4; 2621:21; 2631:21; 2632:12, 17; 2648:22; 2662:25; 2664:16; 2665:20; 2687:22 river's [10] - 2617:15; 2619:19; 2632:6; 2645:25; 2646:11; 2650:4; 2652:24; 2664:17, 24; 2698:25 road [8] - 2647:15; 2713:18, 25; 2720:2;	2722:11; 2734:24; 2748:6; 2801:22 Road [4] - 2713:19; 2793:22; 2795:13 roads [6] - 2504:22; 2625:7; 2635:15; 2636:5; 2723:2; 2735:15 roadways [1] - 2511:7 Roberts [2] - 2492:8; 2736:14 Robinson [9] - 2524:9, 19; 2593:23; 2685:14; 2717:8, 16; 2732:8; 2736:2; 2752:15 Robinson's [1] - 2753:16 robust [7] - 2534:19; 2567:17; 2568:2; 2586:20; 2601:23; 2737:7; 2748:17 Rocky [26] - 2505:12; 2513:1, 4; 2555:21; 2556:5, 24; 2705:10; 2708:6, 9-10, 15, 22; 2713:15; 2717:5; 2721:16; 2723:14; 2729:1, 21; 2730:6; 2748:10; 2783:7; 2789:3; 2795:2, 7; 2796:14; 2797:6 Roger [1] - 2739:23 role [4] - 2527:13; 2531:11; 2587:11; 2751:14 Ron [3] - 2492:16; 2679:24; 2733:9 roof [2] - 2656:9 rooted [1] - 2699:20 rough [2] - 2592:22; 2780:25 roughly [3] - 2548:10; 2554:22; 2651:2 roughness [1] - 2766:14 Round [4] - 2581:16, 18, 20 round [2] - 2728:13; 2788:9 rounded [1] - 2804:10 route [1] - 2722:12 rooted [1] - 2758:15 routes [5] - 2511:6; 2614:1; 2621:5; 2625:7; 2725:16 routine [1] - 2553:1 routing [7] - 2563:4, 14; 2564:1, 3; 2565:4; 2743:24; 2744:1 Roxboro [2] - 2628:1; 2709:8 RPR [1] - 2493:5 rubric [1] - 2686:3 rules [1] - 2568:1 ruling [1] - 2723:9 run [7] - 2552:14; 2609:5; 2646:2; 2698:4; 2720:9, 25; 2725:7 run-off [1] - 2646:2 running [1] - 2784:5 runoff [1] - 2699:13 runs [1] - 2548:9 rural [8] - 2662:10; 2665:10, 12; 2723:13; 2731:8; 2803:16
--	--	--	--

<p>rush ^[1] - 2783:3 Ruth ^[1] - 2739:23 RVC ^[6] - 2722:23; 2729:12, 14-15, 18; 2730:2</p>	<p>satisfactory ^[1] - 2723:21 satisfied ^[1] - 2565:12 satisfy ^[3] - 2530:3; 2531:16; 2618:23 Saturday ^[1] - 2494:24 save ^[2] - 2645:17; 2730:21 scale ^[2] - 2572:5; 2712:10 scarce ^[1] - 2692:21 scared ^[1] - 2684:15 scenario ^[12] - 2564:7; 2567:2; 2573:17; 2586:2, 8, 14; 2684:14; 2749:14; 2751:5, 17; 2773:11 scenarios ^[11] - 2577:2; 2580:1; 2581:23; 2586:10, 12; 2684:8; 2753:24; 2754:1; 2760:7; 2766:12; 2768:21 schedule ^[3] - 2493:17, 19; 2658:1 School ^[1] - 2788:16 school ^[6] - 2725:18; 2765:11, 20; 2788:16; 2792:5 schools ^[2] - 2765:16; 2775:11 science ^[6] - 2585:22; 2702:9; 2703:21, 24; 2704:1; 2705:10 scientific ^[1] - 2583:4 SCLG ^[131] - 2504:1; 2514:12; 2523:3, 9, 14, 24; 2524:18; 2525:21; 2526:2, 4, 7, 11-12; 2527:23; 2546:9; 2554:8; 2555:4, 9; 2560:16; 2561:13; 2567:5; 2568:3; 2571:19; 2572:10; 2576:5; 2577:12, 17; 2583:2; 2584:25; 2587:3; 2588:4, 17; 2589:14; 2592:24; 2597:11, 23; 2603:2, 11; 2605:16; 2616:18; 2618:5, 15, 17; 2631:13; 2634:10, 20; 2637:13; 2680:9; 2681:16; 2685:9, 12, 18, 22; 2686:4; 2688:21; 2696:21; 2703:14, 16; 2708:18; 2711:12, 25; 2715:7; 2716:1; 2718:6; 2723:3, 21; 2725:2, 7; 2726:11; 2729:17, 24; 2730:15, 24; 2736:12, 21-22; 2737:1; 2739:22, 25; 2741:7, 21, 25; 2742:8, 22, 25; 2743:2; 2744:24; 2745:12, 22; 2746:5, 11; 2747:11, 15; 2749:19; 2750:22, 25; 2751:2, 16; 2752:10; 2753:11, 18; 2755:12, 15, 20; 2756:6; 2761:4; 2763:14, 18; 2764:19; 2765:7, 13; 2774:24; 2776:18; 2777:4, 8, 22; 2778:4,</p>	<p>10, 20; 2779:1, 8; 2780:16; 2782:8; 2783:5, 23; 2784:7; 2786:23 SCLG's ^[12] - 2500:16; 2525:24; 2567:19; 2576:14; 2578:10; 2589:19; 2635:3; 2637:18; 2638:20; 2681:21; 2702:3; 2760:8 scope ^[7] - 2568:23; 2569:2; 2634:18; 2661:20; 2694:20, 23, 25 scoping ^[2] - 2519:3; 2523:20 Scott ^[3] - 2492:12; 2493:4 scour ^[1] - 2752:11 scramble ^[1] - 2800:24 screen ^[1] - 2715:16 screening ^[1] - 2727:9 scrutiny ^[2] - 2502:15; 2504:4 seal ^[1] - 2759:18 searching ^[1] - 2763:10 season ^[8] - 2513:22; 2586:7; 2628:9; 2633:15; 2654:20; 2738:20; 2751:5; 2790:16 seasonal ^[4] - 2656:17; 2751:2; 2788:8; 2798:10 seasons ^[2] - 2788:16; 2789:17 second ^[59] - 2495:10; 2548:23; 2551:9, 11, 14; 2552:18; 2553:3, 6-8, 11, 15; 2554:3, 7, 17-19, 21; 2558:24; 2559:2; 2562:11, 17-18; 2565:16; 2566:3, 6, 9; 2567:7; 2585:6; 2592:17; 2619:2, 12-14; 2648:16; 2687:11; 2688:12; 2692:23, 25; 2697:12, 19, 24; 2707:8, 11-12, 14; 2712:25; 2716:13; 2738:9; 2739:2; 2741:3; 2757:3; 2791:20; 2801:15, 17; 2805:3 secondary ^[4] - 2533:10; 2740:24; 2743:14; 2793:25 secondly ^[7] - 2502:18; 2549:16; 2557:25; 2564:11; 2619:15; 2754:22; 2778:12 seconds ^[1] - 2635:23 SECOND ^[24] - 2497:4; 2659:25; 2660:2; 2680:10, 19; 2681:7, 11, 13, 15; 2732:20; 2733:4, 7, 19; 2734:6; 2764:3, 9, 12; 2775:20; 2776:4, 8, 10; 2784:20; 2785:14; 2786:11 Secord ^[25] - 2493:1;</p>	<p>2497:4, 16; 2498:19; 2499:11; 2555:22; 2560:10; 2566:9, 25; 2588:19; 2591:5; 2593:22; 2609:9; 2660:1-3; 2679:23; 2680:9, 15; 2732:17; 2734:5; 2764:8; 2775:19; 2784:17; 2786:19 Secord's ^[6] - 2560:14; 2587:8; 2588:22; 2733:10; 2785:12; 2796:16 secret ^[2] - 2723:6; 2783:5 section ^[10] - 2509:15; 2518:23; 2531:18; 2558:3; 2569:4; 2595:17; 2733:18; 2755:20; 2780:3 Section ^[9] - 2537:1; 2557:22, 25; 2620:21; 2645:2; 2710:6; 2727:2; 2738:13; 2780:5 Sections ^[1] - 2556:9 sections ^[2] - 2557:21; 2558:7 secure ^[1] - 2796:22 security ^[19] - 2513:17; 2628:9; 2633:12; 2654:13; 2655:23; 2657:15; 2688:5, 14; 2718:22; 2720:2; 2746:20; 2750:24; 2751:8, 10; 2759:6; 2763:13; 2792:3; 2796:11 sediment ^[34] - 2504:20; 2520:21; 2575:13, 24; 2578:18; 2596:11; 2598:13; 2599:1, 4; 2602:13; 2604:19; 2635:14; 2636:4; 2684:19; 2704:5, 9; 2715:16; 2718:3; 2720:12; 2727:14; 2762:6; 2766:15, 18; 2769:13, 25; 2791:25; 2792:10; 2793:12; 2804:2 sedimentation ^[2] - 2602:6; 2782:5 sediments ^[2] - 2767:18; 2770:4 see ^[19] - 2582:20; 2609:22; 2618:9; 2697:9; 2721:1; 2723:21; 2733:2; 2736:14; 2737:3; 2739:24; 2740:7, 14; 2747:15; 2749:25; 2757:21; 2774:2; 2808:2 seed ^[2] - 2544:21; 2604:5 seeded ^[1] - 2720:12 seeds ^[6] - 2603:17; 2778:6, 22 seeing ^[2] - 2752:21; 2763:18 seek ^[1] - 2539:5 seem ^[10] - 2578:7; 2612:21; 2613:10; 2698:9; 2731:8; 2747:13; 2748:13; 2765:14; 2801:23; 2802:23</p>	<p>seepage ^[3] - 2591:25; 2592:1, 5 sees ^[1] - 2797:19 select ^[2] - 2519:8, 14 selected ^[10] - 2519:7; 2520:2, 4, 10; 2523:16; 2565:24; 2566:18; 2636:21; 2654:10; 2740:19 selecting ^[1] - 2514:15 selection ^[3] - 2504:18; 2519:13; 2606:14 self ^[1] - 2618:2 send ^[2] - 2783:3; 2805:1 sending ^[2] - 2493:19; 2680:5 Senek ^[7] - 2492:18; 2497:14, 22; 2609:10; 2643:18; 2657:23; 2660:11 SENEK ^[4] - 2497:24; 2643:20; 2644:3, 7 senior ^[2] - 2524:16; 2792:6 sense ^[7] - 2564:5; 2603:24; 2628:6; 2737:8; 2746:19; 2754:15; 2762:13 sensitive ^[8] - 2504:19; 2605:22; 2635:13; 2636:4; 2704:4; 2737:15, 22; 2789:15 sensitivities ^[1] - 2737:24 sensitivity ^[8] - 2571:16; 2592:8; 2746:2; 2763:21; 2779:12; 2789:21; 2792:13 sent ^[4] - 2495:13; 2498:18; 2747:19; 2801:25 separate ^[2] - 2590:23; 2792:4 September ^[1] - 2517:12 sequester ^[2] - 2752:25 series ^[3] - 2681:23; 2685:7; 2736:20 serious ^[9] - 2501:18; 2515:21; 2522:2; 2526:8; 2709:18; 2728:3, 7, 17; 2765:15 seriously ^[3] - 2521:25; 2529:13; 2655:1 serve ^[10] - 2509:21; 2528:19; 2540:12; 2598:7; 2608:11; 2664:2; 2666:13; 2682:13; 2690:17; 2767:20 servd ^[5] - 2580:11; 2682:3; 2684:22, 25; 2685:2 services ^[4] - 2538:3; 2590:13; 2797:21; 2798:8 service ^[15] - 2549:5, 20, 22, 24; 2550:4, 8, 18, 23-24; 2553:4, 13; 2621:7; 2741:17;</p>
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<p>2743:12; 2795:23 services [1] - 2647:16 servicing [1] - 2767:20 Session [9] - 2547:17-19; 2560:4; 2574:4; 2576:8, 10; 2659:3 sessions [3] - 2500:1; 2501:6; 2524:25 set [15] - 2500:6; 2516:21; 2543:15, 18; 2559:25; 2579:23; 2597:6; 2601:21; 2603:3; 2663:14; 2740:3; 2731:7; 2753:20; 2782:9; 2793:6 Setbacks [1] - 2556:9 sets [3] - 2556:6, 12; 2598:19 setting [2] - 2747:8; 2768:19 settings [2] - 2744:14; 2800:1 settle [1] - 2714:13 seven [12] - 2515:16; 2607:17; 2650:5; 2697:17; 2717:9, 13; 2730:1; 2731:7; 2794:6, 25; 2802:14 seventh [1] - 2791:21 several [19] - 2500:6; 2502:3; 2517:4; 2523:13, 24; 2524:17; 2526:16; 2537:21; 2554:24; 2560:9; 2568:19; 2583:8; 2587:12; 2617:5; 2627:23; 2630:23; 2691:18; 2739:12; 2795:9 severe [5] - 2512:19; 2577:18; 2646:4; 2648:10; 2684:5 severity [1] - 2767:6 sewer [1] - 2802:12 shall [29] - 2558:5; 2671:21, 23; 2672:3, 12, 23; 2673:1, 5, 9, 17, 20-21, 24; 2674:18; 2675:1, 17, 22; 2676:3, 10, 14, 17; 2677:8, 15, 19, 22; 2678:11; 2679:2, 4; 2764:9 shallow [1] - 2699:20 shallow-rooted [1] - 2699:20 shallow [1] - 2557:16 shape [1] - 2714:13 shaped [1] - 2682:19 share [5] - 2499:18; 2536:18; 2610:17; 2620:25; 2789:12 shared [8] - 2534:7, 25; 2545:10; 2627:4; 2789:14; 2790:21; 2794:8; 2795:8 shares [2] - 2585:9; 2796:10 sharing [3] - 2539:20; 2672:15, 20 shear [2] - 2591:16, 19 shelterbelts [1] -</p>	<p>2608:4 shifts [2] - 2494:4; 2719:22 shocked [1] - 2802:4 short [20] - 2512:25; 2588:6; 2590:3; 2591:19; 2593:15; 2596:18, 23-24; 2600:3, 22; 2639:15; 2653:21; 2655:10; 2680:2; 2687:3; 2694:5; 2764:18; 2765:4, 9; 2771:7 short-term [4] - 2512:25; 2764:18; 2765:4, 9 shortcoming [1] - 2727:18 shortcomings [1] - 2801:24 shorter [2] - 2595:18; 2703:13 shortest [1] - 2725:20 shortly [1] - 2617:25 shoulders [1] - 2783:18 show [5] - 2558:15; 2592:14; 2702:14; 2729:15; 2793:22 showed [7] - 2587:24; 2637:12; 2767:4; 2769:20; 2771:19; 2773:8, 10 showing [4] - 2590:15; 2676:21; 2758:3; 2800:21 shown [8] - 2588:23; 2589:1; 2645:8; 2646:10; 2649:8, 10; 2706:7; 2793:22 shows [13] - 2582:20; 2597:13; 2614:12; 2620:4; 2650:18; 2661:16; 2663:13; 2703:5; 2718:15; 2756:12, 14; 2778:16; 2795:11 siblings [1] - 2724:3 side [6] - 2551:17; 2686:7; 2688:16; 2700:21 side-by-side [1] - 2686:7 sideboards [1] - 2755:5 sides [1] - 2527:10 sign [1] - 2808:1 sign-in [1] - 2808:1 signatories [1] - 2661:4 significance [7] - 2541:24; 2608:21; 2674:22; 2717:4; 2779:10, 15, 20 significant [53] - 2501:24; 2503:1, 20; 2508:23; 2510:9; 2532:10, 14; 2544:12; 2548:14; 2566:4; 2582:10; 2586:23; 2602:2; 2604:17; 2615:24; 2616:2; 2617:23; 2620:18; 2621:2; 2622:9; 2623:18; 2624:22; 2625:16; 2626:7; 2629:1; 2631:10; 2634:22; 2635:8; 2636:24; 2637:9;</p>	<p>2639:19, 23; 2641:3; 2642:10; 2648:4; 2652:9; 2676:12; 2691:20; 2693:2, 13; 2699:21; 2704:25; 2711:3; 2720:20; 2739:13; 2741:1; 2742:10; 2746:21; 2776:18; 2779:11; 2781:25; 2793:9 significantly [10] - 2521:10; 2575:20; 2619:9; 2620:16; 2623:16; 2624:3; 2625:2; 2647:20; 2778:18; 2793:11 Siksika [1] - 2621:3 silt [3] - 2602:15, 17; 2757:17 similar [16] - 2497:16, 22, 24; 2520:13; 2613:22; 2614:4, 6; 2628:1; 2635:3; 2661:18; 2662:5; 2698:6; 2701:17; 2707:5; 2747:18; 2770:11 similarities [2] - 2697:1, 3 similarity [1] - 2698:12 similarly [2] - 2627:24; 2707:22 simple [3] - 2553:18; 2744:12; 2748:16 simpler [1] - 2762:21 simplistic [1] - 2768:24 simplistically [1] - 2722:16 simply [16] - 2500:23; 2520:13; 2577:4; 2578:9; 2598:6; 2641:5; 2642:22; 2656:12; 2665:6, 11; 2669:19; 2684:24; 2700:17; 2708:16; 2761:2; 2786:2 sincere [1] - 2522:17 single [5] - 2515:7; 2625:24; 2800:8; 2801:13 siphon [1] - 2739:1 SIR [5] - 2549:14; 2581:13, 20-21; 2583:23 SIRs [3] - 2574:10; 2581:17, 19 sit [2] - 2684:4; 2751:6 site [32] - 2534:22; 2538:9; 2539:1, 8, 20; 2540:18; 2542:5, 22; 2543:24; 2544:1, 8; 2589:12, 22; 2590:22; 2602:24; 2675:23; 2676:21; 2693:18; 2719:21, 23; 2720:2; 2761:23; 2769:3, 8; 2771:10, 17; 2772:24; 2773:16; 2778:1 site-specific [8] - 2542:22; 2676:21; 2769:8; 2771:10, 17; 2772:24; 2773:16 sites [26] - 2524:11; 2540:21-23; 2541:1; 2543:9; 2668:8, 21, 24; 2669:8; 2674:4,</p>	<p>20, 24; 2675:4, 8, 10, 13, 16, 19, 25; 2727:6; 2736:7; 2781:1 sits [2] - 2737:14; 2800:25 sitting [3] - 2717:14; 2722:20, 25 situate [2] - 2500:2; 2779:23 situated [2] - 2532:23; 2594:23 situation [5] - 2533:6; 2538:17; 2668:25; 2763:8; 2774:20 situations [1] - 2746:25 six [3] - 2524:12; 2661:6; 2802:5 size [7] - 2515:9; 2569:10; 2571:25; 2743:22; 2754:17; 2766:16 sizing [1] - 2741:6 skill [1] - 2762:12 skims [1] - 2738:9 skip [1] - 2786:12 skipped [1] - 2785:16 Slide [5] - 2598:19; 2789:24; 2792:8; 2795:11; 2796:13 slightly [3] - 2572:6; 2680:16; 2794:22 slip [2] - 2591:16, 19 slope [1] - 2699:17 Slopes [2] - 2699:14, 18 slow [1] - 2757:20 slower [2] - 2557:17; 2593:8 small [8] - 2515:9; 2520:21; 2697:9; 2698:2; 2717:4; 2759:15; 2783:1; 2788:11 smaller [6] - 2552:5; 2634:21; 2719:6, 12-13; 2802:22 smooth [1] - 2609:3 SNN [29] - 2536:3, 16, 18, 23; 2537:6, 16; 2538:1, 20; 2539:1, 5, 9, 11, 18; 2540:4, 10, 15, 18, 21, 24; 2541:2, 4; 2543:8, 10, 13, 16; 2545:8, 10; 2703:19 SNN's [5] - 2538:5; 2539:17; 2541:7, 20; 2542:10 snow [1] - 2751:15 Snow [4] - 2539:9; 2543:18; 2668:22; 2798:25 snowfield [1] - 2656:17 snowpack [1] - 2751:14 snowpacks [1] - 2751:2 so-called [4] - 2573:17; 2576:17; 2590:11; 2701:16 so-so [1] - 2730:11 so.. [5] - 2494:10; 2612:22; 2613:5; 2644:2; 2799:24 social [45] - 2503:11;</p>	<p>2505:1, 22; 2506:8, 17; 2510:24; 2511:16, 18; 2514:22; 2515:25; 2522:12; 2607:1; 2611:17; 2614:8, 20; 2615:1; 2616:2; 2619:25; 2620:10, 18; 2622:11, 14, 16; 2623:18; 2626:7; 2628:13; 2631:6; 2635:19; 2636:9; 2637:6; 2639:3, 25; 2641:9; 2645:5; 2648:21; 2668:1; 2683:1, 8; 2694:9; 2704:16, 19; 2723:10; 2724:18; 2725:3, 24 Social [1] - 2709:24 society [2] - 2573:18; 2689:20 socioeconomic [1] - 2507:6 soil [7] - 2590:21; 2602:6, 8; 2605:14; 2684:19; 2756:16; 2769:18 soil's [1] - 2602:17 soils [7] - 2507:5; 2602:3; 2699:17; 2757:4; 2758:15; 2769:17; 2786:13 soils' [1] - 2602:10 Sol [2] - 2512:11, 13 sole [3] - 2510:14; 2694:19; 2804:22 solely [1] - 2649:22 solid [1] - 2591:13 Solution [11] - 2549:11; 2664:15, 18-19; 2723:16; 2747:24; 2748:21; 2763:1; 2792:17; 2800:24; 2804:21 solutions [5] - 2670:16; 2754:8; 2762:21; 2794:16; 2802:15 solve [1] - 2735:25 someone [3] - 2528:13; 2689:20 sometimes [6] - 2525:22; 2528:5; 2612:12; 2747:5; 2756:5; 2760:5 somewhat [1] - 2603:13 soon [3] - 2501:18; 2609:22; 2788:18 sooner [1] - 2538:22 sophisticated [1] - 2591:10 sorry [17] - 2495:18; 2526:22; 2556:10; 2562:14; 2578:23; 2586:15; 2587:25; 2590:17; 2592:11; 2593:12; 2601:8; 2612:9; 2635:22; 2680:9, 15; 2718:20; 2785:13 sort [8] - 2515:9; 2656:24; 2681:9; 2730:9; 2733:1, 5, 19; 2785:19 sorts [1] - 2719:24 Sosiak [1] - 2702:12 sought [3] - 2538:23; 2585:5; 2591:5 sound [8] - 2516:6; 2585:17; 2594:1;</p>
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<p>2625:18; 2696:1; 2724:14; 2737:15; 2763:6 sounding [1] - 2637:14 sounds [3] - 2498:6; 2559:12; 2627:14 source [6] - 2519:24; 2520:16; 2617:13; 2656:1; 2657:14; 2777:16 sources [1] - 2523:1 sourcing [1] - 2804:22 south [3] - 2605:24; 2706:12; 2794:15 South [1] - 2779:25 southern [5] - 2623:23; 2641:7; 2650:6; 2666:24; 2696:23 sp [1] - 2804:10 space [1] - 2776:16 span [1] - 2605:9 spawning [1] - 2582:3 speaking [4] - 2497:7; 2643:19; 2746:25; 2784:5 speaks [2] - 2628:20; 2663:1 special [1] - 2522:21 Species [2] - 2509:12, 15 species [6] - 2509:17, 21; 2581:24; 2582:12; 2699:1; 2776:11 specific [23] - 2529:7, 22; 2535:4, 16; 2536:24; 2540:20; 2542:14, 22; 2544:21; 2600:11; 2622:14; 2676:21; 2677:24; 2683:11; 2718:14; 2726:19; 2769:8; 2771:10, 17; 2772:24; 2773:16; 2774:22 specifically [20] - 2537:3; 2547:24; 2558:4; 2563:7; 2576:9; 2578:22; 2581:14; 2593:23; 2602:5; 2614:6; 2619:1; 2637:5; 2681:19; 2701:3; 2714:4; 2726:17; 2736:23; 2738:23; 2752:3; 2798:20 specification [1] - 2801:22 specifications [2] - 2770:9, 12 speculation [1] - 2572:18 speculative [1] - 2578:11 speed [2] - 2494:7; 2774:4 Speller [2] - 2765:5, 12 spend [1] - 2527:18 spending [2] - 2754:25; 2755:1 spent [4] - 2519:20; 2576:5; 2622:3; 2712:3 spillway [36] - 2549:5, 20, 22, 25; 2550:4, 8, 18, 21,</p>	<p>23-24; 2551:1, 17, 19; 2553:5, 13; 2562:10, 14, 16, 22; 2563:2, 9, 16, 25; 2565:5, 12; 2567:14; 2613:20; 2651:17; 2706:19; 2716:14, 16; 2740:10, 12; 2743:18; 2744:7 spiritual [3] - 2668:21; 2674:3; 2798:25 split [1] - 2494:4 spoken [3] - 2525:3; 2625:6; 2646:8 sports [1] - 2765:21 spread [5] - 2493:14; 2775:4; 2776:25; 2777:1; 2778:11 spring [4] - 2513:20; 2586:6; 2629:19; 2751:15 Springbank [36] - 2493:10; 2499:16; 2513:1, 4; 2522:16; 2524:5; 2525:14; 2526:18; 2527:12; 2569:11; 2606:24; 2607:25; 2683:6; 2685:3; 2688:17; 2706:11; 2720:13; 2723:24; 2725:2, 17; 2730:19; 2744:25; 2745:24; 2765:17; 2778:25; 2783:14; 2788:14-17; 2789:2; 2791:19; 2795:13 springs [1] - 2594:3 Springs [1] - 2788:19 spur [1] - 2782:15 square [3] - 2701:20; 2702:6; 2703:1 squarely [1] - 2783:17 Squaw [1] - 2727:23 SR1 [490] - 2493:1; 2499:17; 2502:6, 24; 2503:4, 10, 18; 2504:5, 17; 2505:13; 2506:19; 2507:19; 2509:19; 2510:1, 14, 18; 2512:3, 19; 2513:15; 2514:2, 14-15, 18; 2515:11, 20; 2516:4, 8, 13, 16, 24; 2517:3; 2518:3, 14, 19; 2519:7, 14, 18, 22; 2520:2, 6, 10, 13, 18, 24; 2521:3, 18; 2522:9; 2523:15; 2527:22; 2529:15; 2534:3; 2547:25; 2548:6, 13, 16, 21, 25; 2549:1, 10, 14; 2552:1, 21, 23, 25; 2553:11, 18, 23; 2554:1, 9, 11, 16-17, 25; 2555:5; 2558:16, 22; 2559:2, 4, 8, 11, 16, 21-22; 2560:1, 8, 20; 2563:8; 2566:22; 2567:16, 18; 2568:2; 2570:13, 17; 2571:3, 10, 12, 19, 22, 24; 2572:10, 16; 2573:6, 23, 25; 2574:2; 2577:16; 2578:12; 2579:14, 18; 2580:1, 11, 17; 2581:5; 2582:13, 15, 21, 23;</p>	<p>2587:14; 2596:16; 2598:11; 2603:20; 2606:1, 15; 2611:1, 4, 10, 13, 17; 2614:5, 12, 17; 2615:23; 2616:9, 16, 19, 24; 2618:3, 6, 18, 23; 2619:1, 7-8, 10; 2620:5, 13-14; 2621:3, 14; 2622:5, 9, 12, 14, 16-17, 20; 2623:2, 7, 16, 19; 2624:3, 11; 2625:2, 15-16, 18, 20, 22-23, 25; 2626:4, 10; 2627:2, 6; 2628:10, 24; 2629:22; 2630:20, 23; 2631:6, 11, 13; 2632:22; 2633:9, 11, 16, 24; 2634:5, 9, 20; 2635:5, 9, 13; 2636:3, 11, 16, 19, 21, 24; 2637:4, 7, 20; 2638:1, 14, 24; 2639:2, 6, 9, 13-14, 18, 22; 2640:2, 6, 10; 2641:10, 15, 20; 2642:2, 10, 12, 15-16; 2643:4; 2644:23; 2645:4, 8, 14, 19, 21; 2647:11, 13, 18, 20, 25; 2648:3, 5, 7, 12, 16, 20; 2649:1, 13, 21-23; 2650:16; 2651:1, 7, 9-10, 19; 2652:1, 10; 2653:2, 7, 9, 16-17, 19; 2654:10, 14, 16, 18; 2655:2, 5, 9, 17, 24; 2656:22; 2657:3, 19; 2661:13, 25; 2662:15, 20; 2663:3, 13, 20, 25; 2667:12; 2670:2, 5; 2671:2, 7, 13; 2672:20; 2682:1, 7; 2683:6-9, 12, 17; 2685:23; 2686:7, 10, 20, 23; 2687:1, 4, 15, 17, 20; 2688:7, 10, 13, 16; 2689:1, 4, 7; 2690:6, 12; 2691:3; 2692:12, 15; 2693:12; 2694:1, 3, 16; 2696:9, 21, 24; 2697:2; 2698:7, 9, 11; 2700:5, 9-10, 18; 2701:6, 13, 17; 2702:4, 16, 18, 20; 2703:1, 5, 11, 17, 19-20, 22, 25; 2704:4, 6, 10-11, 15-16, 21, 24; 2705:10, 12; 2706:5, 8, 12; 2707:10; 2708:19; 2709:5, 23; 2711:15, 17; 2712:7, 10, 18-19, 22, 24; 2713:1, 6; 2715:5, 10, 24; 2716:3; 2721:23; 2722:1, 13, 25; 2723:3, 20; 2725:22; 2727:9, 15, 17; 2728:14, 18; 2729:16, 22; 2735:2; 2736:13, 25; 2737:5, 15, 22, 24; 2738:1, 7, 10; 2739:5, 11, 15; 2740:2; 2742:6, 16; 2744:4, 11, 20; 2745:2, 9; 2746:15; 2747:6, 12, 17; 2748:4, 7; 2749:23;</p>	<p>2750:9, 24; 2751:5, 8, 18, 23; 2752:1, 8, 16, 18, 23, 25; 2753:2, 7, 14; 2755:14; 2756:16; 2757:7, 9; 2758:8, 11, 23; 2759:4, 6, 21; 2760:14; 2762:2; 2764:17; 2780:13; 2782:23, 25; 2783:19, 24; 2784:12; 2789:17; 2791:16; 2792:19; 2793:10; 2796:7; 2800:12, 14, 20; 2802:3; 2803:2, 13, 21-22; 2805:5, 9 SR1's [10] - 2650:23; 2651:8, 14; 2653:23; 2654:2; 2657:11; 2701:6; 2709:18; 2722:5, 21 SSRP [4] - 2780:6, 10, 16, 20 staff [13] - 2499:13; 2609:1, 17; 2643:8, 15; 2644:13; 2679:18; 2718:16, 23; 2784:1; 2798:23; 2805:12 Staff [6] - 2492:11 stage [6] - 2541:11; 2638:5; 2660:17; 2727:13; 2728:19, 25 stages [1] - 2581:24 staggering [2] - 2620:20; 2648:20 stakeholder [4] - 2517:2; 2723:11; 2801:9 stakeholders [18] - 2502:8; 2503:1; 2522:18; 2524:20; 2525:8, 17, 20; 2526:1; 2528:20; 2533:9; 2546:24; 2574:20; 2607:22; 2608:12; 2717:24; 2723:15; 2735:3; 2801:5 stalls [1] - 2705:5 Stampe [1] - 2505:11 stand [7] - 2611:3; 2626:10, 20; 2639:9; 2650:12; 2689:20; 2787:5 standard [12] - 2563:22; 2572:3; 2600:18; 2650:25; 2651:1, 25; 2657:13; 2679:1, 9; 2742:1; 2749:22; 2790:5 standardized [2] - 2574:17; 2595:25 standards [9] - 2565:24; 2566:16; 2600:16; 2648:15; 2707:18; 2740:20; 2749:19; 2789:6, 8 standing [3] - 2665:20; 2789:11; 2799:1 standpoint [3] - 2712:14; 2714:15; 2759:1 stands [2] - 2620:23; 2640:4 Stantec [21] - 2559:17; 2560:25; 2562:5, 25; 2563:5, 7, 15; 2565:20, 23; 2566:18; 2567:9;</p>	<p>2568:12; 2569:15; 2584:15; 2589:7, 10; 2590:5; 2600:8; 2602:3; 2766:10; 2789:7 Stantec's [8] - 2561:25; 2564:2; 2565:6; 2569:20; 2584:18; 2588:25; 2589:20; 2590:9 stark [2] - 2598:20; 2640:4 start [8] - 2494:17; 2499:5, 19; 2610:4; 2644:8; 2659:6; 2807:25 started [3] - 2499:1; 2530:10; 2795:2 starting [6] - 2499:4; 2575:10; 2730:13; 2744:1; 2749:25; 2788:5 state [7] - 2621:10; 2657:2; 2707:20, 24; 2735:18; 2780:12; 2797:12 statement [30] - 2501:7; 2504:14; 2508:19; 2510:12; 2516:3; 2525:2; 2542:2; 2543:16, 20; 2596:20; 2597:6; 2611:5; 2626:13; 2627:20; 2629:25; 2630:13, 23; 2635:11; 2636:2; 2642:24; 2669:6; 2709:4, 7; 2723:23; 2766:25; 2767:14; 2769:10; 2772:1; 2773:24; 2774:10 statements [7] - 2501:4, 10; 2525:24; 2685:11; 2750:21; 2782:10 states [11] - 2537:11; 2546:19; 2662:23; 2697:14, 20; 2704:1; 2716:15; 2721:13; 2791:19, 21; 2796:2 stating [2] - 2637:5; 2783:1 station [5] - 2703:7; 2705:6; 2790:21, 24 Station/Glenmore [1] - 2703:7 stations [5] - 2621:5; 2739:14; 2777:14; 2790:3, 13 statistical [1] - 2572:22 statistics [2] - 2626:12; 2773:13 status [2] - 2515:25; 2642:8 Status [2] - 2540:19; 2672:25 stay [2] - 2719:21; 2805:18 steep [1] - 2646:1 step [4] - 2524:2; 2535:8; 2749:6, 15 Stephanie [1] - 2492:13 stepped [1] - 2587:10 stepping [1] - 2806:4 steps [3] - 2584:8; 2641:3; 2778:10 sterilization [1] -</p>
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<p>2602:10 sterilized [3] - 2796:7; 2797:5; 2798:1 Stewardship [1] - 2506:15 sticks [1] - 2690:14 still [29] - 2495:25; 2539:23; 2562:7; 2563:24; 2566:5; 2573:3; 2577:13; 2626:23; 2643:22; 2650:13; 2662:3; 2668:22; 2680:17, 19; 2689:4; 2703:14; 2705:22; 2706:1; 2709:1; 2711:8; 2727:15; 2737:5; 2741:19; 2761:20; 2765:3; 2771:22; 2782:2; 2800:2 stipulates [1] - 2570:13 STONEY [1] - 2785:11 Stoney [73] - 2492:22; 2500:19; 2529:7; 2535:25; 2588:4, 10, 14; 2604:20, 25; 2608:18; 2658:4; 2660:25; 2661:3, 6-7, 12; 2662:1; 2665:17, 21, 25; 2666:1, 16, 19, 21, 25; 2667:13; 2668:1, 6-7, 15-16, 24; 2669:8, 13, 22, 25; 2670:4, 9, 20, 23; 2671:8, 14, 19, 22, 25; 2672:4, 6, 10, 13, 17, 19; 2673:2, 8, 11-12, 15, 19; 2674:15; 2675:2, 7, 13, 18, 23; 2676:1, 4-5, 19; 2677:19, 21, 24; 2678:11, 17; 2679:11 stopped [1] - 2727:15 storage [37] - 2513:16; 2552:1, 7, 9-10; 2559:11; 2602:18; 2619:3; 2646:3, 11, 16; 2651:10; 2652:8; 2656:16, 20; 2662:21, 24; 2670:21; 2691:7; 2694:6; 2695:19; 2696:15, 25; 2700:4, 9, 17; 2701:1; 2716:10; 2727:6; 2737:6, 16; 2744:5, 8, 15 store [4] - 2630:12; 2705:5; 2710:4; 2752:8 stored [3] - 2552:12; 2694:4; 2741:16 storm [3] - 2598:9; 2646:21; 2687:4 storm-like [1] - 2598:9 storms [2] - 2597:2; 2687:3 stormwater [3] - 2778:13, 17 story [2] - 2597:16; 2602:20 straight [1] - 2719:22 straightforward [2] -</p>	<p>2553:19; 2756:4 strange [1] - 2714:13 strategies [1] - 2656:25 Strategy [1] - 2780:18 strategy [2] - 2655:13; 2723:11 stream [30] - 2504:11, 18-19; 2508:15; 2519:4; 2520:20; 2548:6, 15-16; 2549:4; 2562:23; 2564:25; 2579:13; 2581:5, 7; 2606:15, 17; 2635:13; 2636:3; 2646:18; 2652:6; 2653:19, 24; 2655:7; 2686:22; 2696:25; 2700:15; 2704:4; 2781:9 Stream [2] - 2499:16; 2606:25 street [2] - 2528:6; 2630:10 strength [1] - 2599:16 stress [3] - 2623:15; 2628:6; 2629:18 stretch [1] - 2764:3 striking [1] - 2725:13 stringent [3] - 2650:21; 2651:24; 2657:13 strive [1] - 2748:16 strong [4] - 2599:8; 2767:11; 2771:14; 2773:14 strongly [4] - 2554:14; 2558:25; 2586:7, 15 stroke [1] - 2529:21 structural [1] - 2559:20 structure [25] - 2521:8; 2545:3; 2549:15, 19, 23; 2550:5, 21; 2551:2, 4; 2552:2; 2566:4; 2584:3; 2605:3; 2606:15; 2611:22; 2613:20; 2634:2; 2655:7; 2709:16; 2741:2; 2742:24; 2744:20; 2759:5, 12; 2760:24 structures [14] - 2578:13; 2579:13; 2584:4; 2646:21; 2651:21; 2670:12, 21; 2674:20; 2736:6, 8; 2743:16; 2753:14; 2754:10, 13 struggles [1] - 2750:25 struggling [1] - 2802:11 studied [1] - 2585:8 studies [4] - 2532:4; 2534:23; 2583:22; 2625:19 study [8] - 2523:18; 2536:21; 2623:25; 2647:7, 11; 2728:17, 22; 2800:14 stuff [2] - 2498:5; 2681:6 sub [6] - 2589:9; 2593:1, 10, 16; 2679:4; 2762:1</p>	<p>sub-surface [5] - 2589:9; 2593:1, 10, 16; 2762:1 subcomponents [1] - 2549:18 subject [9] - 2575:4; 2595:12; 2599:13; 2607:5; 2637:22; 2646:1; 2674:24; 2675:5; 2762:9 subjected [5] - 2502:6, 15; 2504:4; 2548:17; 2559:22 subjective [1] - 2705:15 submission [30] - 2500:10; 2526:6; 2540:3; 2542:10, 20; 2548:13; 2549:11; 2555:7; 2565:10, 22; 2568:15; 2571:23; 2575:16; 2585:12; 2588:13; 2597:13; 2603:4, 12; 2605:18; 2614:15; 2615:21; 2619:20; 2620:13; 2622:7; 2657:4; 2733:15; 2801:3; 2804:20; 2805:9; 2806:19 submissions [31] - 2500:11, 21, 23; 2501:3, 15; 2502:3; 2503:15; 2514:12; 2520:1; 2523:4; 2526:5; 2536:3, 8; 2537:5; 2542:9; 2560:25; 2582:18; 2628:3; 2643:6; 2644:11, 18, 20; 2653:15; 2657:21; 2681:22; 2685:10; 2709:11; 2779:7; 2782:12; 2807:1 submit [16] - 2501:16; 2522:6; 2558:14; 2598:3, 23; 2601:24; 2606:11; 2639:5; 2644:18; 2662:1; 2670:4; 2692:11; 2708:14; 2778:10; 2791:24; 2806:6 submits [46] - 2514:17; 2516:5, 23; 2518:18; 2519:13; 2520:11; 2521:2; 2522:8; 2526:9; 2530:5, 21; 2531:22; 2533:1; 2535:18; 2537:24; 2542:24; 2559:1; 2560:5, 11; 2561:17; 2567:4, 24; 2570:4; 2571:23; 2575:3; 2579:24; 2580:24; 2586:9; 2587:5; 2606:20; 2645:7, 11; 2649:2; 2650:17; 2652:10; 2670:1; 2711:12; 2756:7; 2766:16; 2777:5, 8, 22; 2778:20; 2779:1, 3; 2797:14 submitted [20] - 2494:23; 2495:9, 23; 2507:8, 11; 2519:8; 2525:16; 2530:8; 2555:10; 2656:19; 2704:8; 2786:25;</p>	<p>2790:3; 2792:2, 7; 2794:3; 2804:24; 2806:12 submitting [2] - 2508:6; 2612:14 subregion [2] - 2781:23, 25 subsection [2] - 2556:8 subsequently [1] - 2536:22 substantial [10] - 2516:8; 2518:5, 15; 2554:25; 2559:3; 2581:9; 2648:8; 2720:17; 2726:1; 2782:16 substantially [3] - 2511:19; 2518:19; 2705:24 substantive [3] - 2573:2; 2667:3, 10 Substantively [1] - 2667:7 substrate [1] - 2716:10 subtopic [1] - 2726:19 subtopics [1] - 2547:22 success [3] - 2693:15, 19; 2780:25 successful [4] - 2555:12; 2614:12; 2693:18; 2800:4 successfully [3] - 2531:24; 2636:25; 2638:9 suffer [2] - 2626:18; 2627:3 suffered [2] - 2626:17; 2627:18 suffering [1] - 2690:5 sufficient [7] - 2583:15; 2641:5; 2646:3; 2700:5; 2758:9; 2761:15; 2770:19 sufficiently [1] - 2576:23 suggest [5] - 2571:15; 2577:24; 2594:7; 2595:6; 2622:18 suggested [15] - 2547:8; 2566:9; 2567:17; 2569:13; 2572:10; 2577:17; 2592:24; 2696:14; 2702:1; 2752:24; 2768:20; 2770:9; 2771:19; 2804:9 suggesting [3] - 2591:7; 2708:3; 2778:13 suggestion [3] - 2571:20; 2586:10; 2603:22 suggestions [3] - 2585:16; 2597:1; 2650:16 suggests [7] - 2550:12; 2551:18; 2578:7; 2741:23; 2743:20; 2746:8; 2773:16 suitability [2] - 2581:25; 2582:3 suitable [1] -</p>	<p>2572:19 suite [2] - 2519:22; 2520:12 suites [1] - 2514:18 suites [1] - 2639:9 sum [1] - 2586:16 summarize [2] - 2501:10; 2529:9 summarized [1] - 2519:10 summarizes [1] - 2738:4 summary [5] - 2571:12; 2595:11; 2702:21; 2718:9; 2723:3 summer [6] - 2524:21; 2540:5; 2541:6; 2720:13; 2789:17; 2798:10 sump [1] - 2629:3 sunk [1] - 2690:5 superior [8] - 2584:5; 2653:16; 2686:8, 22; 2700:22; 2701:13; 2728:14; 2729:18 supersede [1] - 2665:1 superseded [1] - 2569:17 supervising [2] - 2720:24; 2755:16 supplement [3] - 2771:5; 2787:12; 2792:9 supplemental [2] - 2500:22; 2606:22 supplier [2] - 2599:17; 2600:2 supplies [1] - 2654:24 supply [12] - 2514:1; 2633:15; 2654:17; 2655:1; 2656:14; 2711:16; 2741:17; 2743:17, 21; 2752:3, 6; 2796:11 support [23] - 2505:6; 2508:11; 2530:15; 2539:18; 2579:20; 2587:13; 2589:25; 2609:2; 2611:1, 11; 2627:2; 2628:24; 2630:20; 2678:12, 18; 2682:20; 2683:6; 2704:12; 2735:13; 2746:15; 2761:5; 2763:15; 2805:12 supportable [1] - 2778:12 supported [7] - 2542:22; 2559:18; 2567:19; 2590:19; 2597:3; 2641:20 supporters [1] - 2626:7 supporting [7] - 2578:12; 2580:23; 2642:15; 2653:16; 2725:23; 2797:13 supports [5] - 2501:17; 2514:18; 2580:16; 2614:16; 2644:11 supposed [3] - 2558:19; 2752:23 suppression [4] - 2694:22; 2718:17;</p>
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2720:6; 2735:23 Supreme [1] - 2669:24 surface [18] - 2507:3; 2545:25; 2550:1; 2575:1, 13; 2578:15; 2589:9; 2593:1, 10, 16; 2595:13; 2752:24; 2757:1; 2758:18; 2761:20; 2762:1; 2766:14; 2791:25 surficial [3] - 2589:15, 20, 25 surge [1] - 2686:25 surprised [2] - 2586:4; 2746:11 surrounding [7] - 2538:15; 2698:5; 2704:21; 2723:20; 2724:21; 2771:23; 2777:1 surveillance [2] - 2568:10; 2651:24 survey [3] - 2582:20; 2628:23; 2693:9 surveys [2] - 2582:4; 2718:21 susceptible [1] - 2653:24 suspect [3] - 2592:23; 2604:8; 2644:4 suspended [2] - 2575:24; 2578:18 suspension [1] - 2630:11 sustainability [3] - 2655:21; 2796:12; 2797:23 sustainable [6] - 2692:2, 11; 2694:16; 2695:10, 18; 2712:2 sustained [1] - 2587:8 Svenson [1] - 2697:2 sweepers [1] - 2792:14 swelling [3] - 2591:6; 2762:8; 2802:12 synergistically [1] - 2647:21 system [17] - 2512:17; 2579:17, 22; 2603:16, 19; 2604:1, 5; 2646:22; 2653:23; 2679:3; 2698:20; 2699:2; 2778:20; 2792:12, 21 systemic [2] - 2590:10, 14 systems [3] - 2651:16; 2717:2; 2758:17	takeoffs [1] - 2791:22 tall [1] - 2552:2 tandem [1] - 2510:17 tanks [1] - 2629:5 target [1] - 2687:19 task [3] - 2643:9; 2645:2; 2744:19 Task [1] - 2698:16 tasked [1] - 2800:15 taxpayers [3] - 2513:13; 2727:11; 2748:10 taxpayers' [1] - 2690:5 teaching [1] - 2689:18 team [9] - 2507:18; 2508:4; 2527:20; 2559:18; 2591:9, 15; 2680:24; 2789:20; 2798:23 teams [3] - 2504:22; 2635:15; 2636:5 TEC [1] - 2717:8 technical [15] - 2524:13; 2565:21; 2568:13; 2569:16; 2583:4, 25; 2584:17; 2603:25; 2609:2; 2646:9; 2705:15, 17; 2729:6, 10 technically [2] - 2588:9; 2803:9 Technologies [1] - 2492:14 Tegtmeyer [2] - 2685:16; 2691:10 temperature [1] - 2578:18 temperatures [1] - 2712:6 temporary [9] - 2507:21; 2508:13; 2514:25; 2575:8; 2595:16; 2616:8; 2630:11; 2639:13; 2737:6 ten [7] - 2511:15; 2515:6; 2549:1; 2604:8; 2719:18; 2775:25; 2776:1 tend [2] - 2593:9; 2747:3 tender [1] - 2516:20 tendered [2] - 2542:19; 2786:3 tens [1] - 2650:11 term [11] - 2512:25; 2576:4; 2580:18; 2656:1; 2663:7; 2690:8; 2764:18; 2765:4, 9; 2783:22 terms [42] - 2494:7; 2506:25; 2507:1; 2518:23; 2521:22; 2545:4; 2570:9; 2584:12; 2598:20; 2604:18; 2613:17; 2633:12; 2640:10; 2641:3; 2643:15; 2654:1; 2656:14; 2680:15; 2681:1; 2684:11; 2692:14; 2728:6; 2731:25; 2733:5; 2734:7; 2735:1; 2736:2; 2744:24; 2746:24; 2751:19; 2752:10; 2753:18; 2754:16;	2763:21; 2766:8, 24; 2768:14; 2775:3, 13; 2781:7; 2799:21 terrain [4] - 2507:4; 2602:3; 2646:1; 2786:13 terrestrial [2] - 2547:19; 2595:19 terrible [1] - 2511:9 territory [2] - 2661:8; 2665:17 Terry [1] - 2604:13 Test [1] - 2682:16 test [11] - 2506:5; 2614:21; 2682:1, 3; 2683:11, 23; 2686:10; 2694:17; 2712:1; 2757:25; 2759:17 tested [6] - 2644:22; 2743:11, 13; 2759:15; 2761:12; 2762:7 testified [20] - 2526:7, 13; 2561:24; 2566:21; 2576:21; 2584:18; 2585:2; 2590:9; 2591:13; 2596:19; 2599:12; 2601:11; 2602:4; 2606:3, 5; 2696:22; 2769:17; 2772:9; 2776:12; 2781:7 testifying [1] - 2574:6 testimonies [1] - 2779:7 testimony [17] - 2500:25; 2519:21; 2526:20, 23; 2527:25; 2537:23; 2560:20; 2563:23; 2566:2; 2568:13; 2569:19; 2570:1; 2589:6; 2602:11; 2757:18; 2772:8, 20 testing [3] - 2587:20; 2718:18; 2720:3 tests [4] - 2591:10; 2757:19; 2759:10, 17 text [2] - 2495:25; 2589:24 textural [1] - 2602:12 thank [1] - 2644:8 THE [86] - 2493:9; 2495:2, 13, 16; 2496:7, 11, 15; 2497:3, 13, 21; 2498:1, 21, 25; 2547:12; 2604:10; 2609:15, 22, 24; 2610:2, 4; 2612:7, 9, 25; 2613:13; 2631:25; 2632:2, 9; 2635:22; 2643:14, 21; 2644:6; 2657:23; 2658:7, 10; 2659:6, 16, 21; 2660:1, 3, 6, 10, 13, 15; 2679:22; 2680:8, 15; 2681:4, 8, 12, 14; 2732:17, 21; 2733:5, 8; 2734:4; 2764:2, 4, 7, 10; 2775:18, 24; 2776:5, 9; 2784:17, 21; 2785:1, 4, 7, 10, 12, 15; 2786:8, 17, 24; 2787:18, 22; 2799:13, 18, 20; 2805:19; 2806:8, 11, 17, 20, 24; 2808:5 theme [2] - 2627:9; 2731:6	themselves [1] - 2748:2 theoretical [1] - 2726:8 theory [1] - 2589:25 thereafter [2] - 2571:9; 2677:11 thereby [1] - 2633:15 therefore [30] - 2513:24; 2561:18; 2571:22; 2574:1; 2580:22; 2588:19; 2592:22; 2593:16; 2601:16; 2607:3; 2612:14; 2616:11; 2618:23; 2619:22; 2620:7; 2634:20; 2636:15; 2638:14; 2642:3; 2649:14; 2651:23; 2661:21; 2670:1; 2671:15; 2729:17; 2768:12; 2772:12, 17; 2777:2; 2803:14 thereof [1] - 2762:20 they've [1] - 2537:18 thick [1] - 2756:23 thinking [1] - 2749:6 thinks [2] - 2735:25; 2761:14 third [7] - 2630:6; 2670:14; 2693:20, 22; 2792:19, 22; 2793:1 third-party [1] - 2793:1 thirdly [4] - 2549:16; 2564:12; 2754:24; 2778:19 thorough [2] - 2583:24; 2729:10 thoroughway [1] - 2795:12 thoughtful [1] - 2647:11 thousand [2] - 2690:19; 2801:17 thousands [6] - 2534:21; 2610:25; 2650:11; 2720:10; 2721:1; 2755:18 threat [3] - 2655:16; 2670:17 threats [1] - 2657:18 three [47] - 2498:14; 2500:13; 2502:9; 2508:14; 2517:10; 2549:14, 17; 2556:13; 2557:18; 2564:17; 2572:11, 15; 2594:18; 2621:23; 2625:25; 2636:21; 2640:25; 2641:20; 2650:6; 2670:18; 2694:12; 2699:6; 2720:19; 2728:20; 2729:14, 19; 2740:4; 2742:17; 2756:5, 14, 17, 19-20; 2757:12; 2759:9, 17; 2761:8, 14; 2788:3; 2789:10, 17; 2799:5; 2804:25 three-quarters [1] - 2742:17 three-tiered [1] - 2594:18 three-year [1] - 2728:21 threshold [2] - 2648:18; 2766:15 thresholds [1] -	2679:7 THROUGH [1] - 2495:6 throughout [8] - 2651:6; 2653:5; 2656:19, 24; 2700:8; 2731:6; 2799:14, 23 thrown [1] - 2804:13 Thursday [1] - 2751:11 tie [1] - 2797:2 tied [1] - 2793:24 Tier [3] - 2594:18, 21 tiered [1] - 2594:18 tills [4] - 2592:18; 2761:8, 15; 2762:8 timeline [6] - 2520:4; 2703:13; 2712:14; 2725:20; 2775:5; 2776:2 timelines [2] - 2703:17; 2729:19 timely [3] - 2514:18; 2516:18; 2534:25 timing [6] - 2493:20; 2570:19; 2655:4; 2680:16; 2699:23; 2730:11 title [1] - 2661:9 titled [1] - 2556:8 TLRU [1] - 2536:21 TLU [1] - 2539:25 TLUA [1] - 2540:7 TO [4] - 2495:5, 20; 2658:14; 2808:8 today [17] - 2493:17, 19; 2494:4; 2498:16; 2499:14; 2611:15; 2644:20; 2657:2; 2681:20; 2683:5; 2713:8; 2726:16; 2737:5; 2754:19; 2788:2; 2806:25; 2807:7 together [4] - 2521:10; 2629:16; 2680:24; 2723:15 tolerance [1] - 2637:12 toll [1] - 2518:17 tomorrow [11] - 2785:22; 2786:10, 20; 2787:4; 2807:8, 10, 14-15, 24-25; 2808:2 tone [1] - 2609:6 took [6] - 2526:8; 2529:19; 2535:7; 2543:11; 2621:6; 2802:5 tool [1] - 2599:9 top [8] - 2569:7; 2688:11; 2756:14, 19-20; 2788:7; 2800:13; 2804:25 top-down [1] - 2800:13 topic [11] - 2499:25; 2501:6; 2596:20; 2681:17; 2732:13; 2736:19; 2737:2; 2752:2; 2763:24; 2764:13 Topic [26] - 2501:8; 2545:6; 2547:17; 2560:4; 2574:4; 2576:7, 10; 2587:4; 2601:7; 2611:16; 2618:8; 2635:12; 2636:2; 2685:7; 2686:1; 2726:18;
T				
T'ina [1] - 2783:9 Table [5] - 2511:25; 2701:18; 2719:1; 2757:4; 2758:5 table [4] - 2524:5; 2542:14; 2590:11, 15 tackifier [9] - 2599:12, 22; 2720:7; 2770:9, 11, 15; 2775:3, 6 tackifiers [7] - 2599:8; 2600:2; 2720:9; 2735:16; 2770:8; 2771:3				

<p>2728:18; 2734:6; 2736:25; 2763:22; 2774:23; 2789:9 topics [4] - 2501:11; 2502:2; 2547:17; 2608:3 topographic [1] - 2653:17 topography [3] - 2548:8; 2650:2; 2701:23 total [10] - 2524:19, 24; 2578:18; 2618:11; 2630:6; 2663:1; 2714:8; 2719:17; 2796:19; 2801:7 totality [1] - 2717:13 totally [2] - 2749:8; 2800:20 totals [1] - 2713:14 touch [1] - 2653:4 touchdowns [1] - 2791:22 touched [1] - 2577:3 tough [1] - 2724:7 tougher [2] - 2724:7; 2807:19 tour [2] - 2524:10; 2698:15 tourism [5] - 2505:3; 2635:19; 2636:10; 2704:24; 2788:8 tourist [2] - 2711:6, 19 toward [1] - 2551:23 towards [3] - 2524:16; 2584:8; 2749:25 town's [1] - 2615:10 Township [1] - 2713:19 toxicology [1] - 2600:11 Tracey [1] - 2685:14 tracked [1] - 2590:18 traction [1] - 2747:12 traditional [46] - 2507:5; 2531:19; 2532:4; 2533:3, 10; 2534:23; 2535:9; 2536:14, 20-21; 2537:4, 25; 2538:2, 5; 2539:6, 11, 17; 2540:20; 2544:10, 12; 2581:6; 2661:8; 2665:16; 2667:23; 2668:8; 2669:5, 7, 18; 2671:20, 22, 24; 2672:5, 17; 2673:8, 12, 16, 19; 2675:2; 2676:24; 2732:4; 2734:19; 2735:17, 22-23; 2736:4 traffic [2] - 2608:4; 2791:23 train [1] - 2625:11 training [6] - 2534:4; 2600:11; 2672:7, 10, 13; 2718:23 TransAlta [3] - 2670:7; 2795:25; 2796:3 TransCanada [2] - 2795:12, 17 TRANSCRIPT [2] - 2495:21; 2660:8 transcript [14] - 2498:14; 2610:23; 2659:19; 2715:18-20; 2717:10; 2721:1;</p>	<p>2733:25; 2745:21; 2756:3; 2775:1, 8; 2781:6 Transcript [6] - 2686:12; 2688:23; 2701:10; 2715:6; 2736:16; 2745:11 transcripts [2] - 2495:10; 2612:16 transit [1] - 2605:5 translate [1] - 2701:21 Transmission [1] - 2542:16 transparency [1] - 2529:17 transparent [2] - 2607:24; 2664:10 transport [3] - 2575:14, 24; 2777:16 TRANSPORTATIO N [1] - 2496:14 Transportation [270] - 2492:16; 2494:13; 2496:24; 2499:2, 15; 2500:5, 9; 2501:2, 22; 2502:12; 2504:6; 2506:21; 2507:12, 17; 2509:4, 6, 11, 14, 23; 2514:14, 17; 2515:20; 2516:5, 23; 2517:19, 21; 2518:4, 6, 11, 18, 24; 2519:1, 13; 2520:11; 2521:2, 14, 23; 2522:1, 3, 8, 12, 15, 19; 2523:12, 23; 2524:2, 8, 17, 23; 2525:7, 23; 2526:3, 9; 2527:16, 24; 2528:7, 12, 16-17; 2529:10, 18; 2530:2, 5, 12, 20; 2531:5, 22; 2532:3, 10; 2533:1; 2534:2, 6, 19; 2535:2, 7, 18; 2536:2, 9, 13, 17; 2537:2, 5, 24; 2538:7, 14, 22-24; 2539:4, 15, 23, 25; 2540:2, 6, 14, 17; 2541:2, 10, 14, 16, 21, 25; 2542:5, 24; 2543:3, 6, 12, 15, 21, 23; 2544:7, 13, 19; 2545:7, 9, 17; 2546:17; 2547:6, 16; 2553:17; 2554:14; 2555:17; 2557:19; 2558:21, 25; 2559:10, 24; 2560:5, 11; 2561:3, 17; 2565:3, 8; 2566:10; 2567:4, 24; 2570:3; 2571:23; 2573:13, 24; 2574:7; 2575:3; 2578:16, 23; 2579:3, 24; 2580:2, 23; 2581:2, 9, 14; 2583:9; 2584:15, 25; 2585:4, 9, 15, 21; 2586:9, 12; 2587:5; 2588:12; 2593:20, 25; 2594:12; 2595:8; 2596:2, 5, 12, 20; 2597:22; 2598:15, 18; 2599:2, 11; 2600:4, 6; 2603:5; 2604:22, 24; 2606:10, 20; 2607:8, 23; 2608:8, 17, 25; 2609:14; 2611:12; 2614:10; 2618:16; 2623:10; 2624:5; 2625:23; 2631:8, 18;</p>	<p>2633:23; 2635:7, 10; 2636:1, 16; 2639:21; 2640:11, 14, 21-22; 2644:9; 2649:7; 2650:19; 2653:6; 2654:11; 2662:14; 2664:3, 14; 2665:8; 2666:19; 2667:22; 2669:2, 14, 16; 2671:6, 11, 15, 21, 23; 2672:3, 12, 18, 24; 2673:1, 5, 10, 17, 22; 2674:17; 2675:17, 22; 2676:3, 10, 14; 2677:7, 14, 22; 2678:10, 16; 2684:9; 2706:5; 2717:22; 2751:12; 2758:21; 2783:10; 2789:7; 2790:10, 22; 2791:1, 8, 11; 2792:18, 23; 2793:4, 14; 2797:8, 14, 18-19, 25; 2805:12 transportation [4] - 2614:1; 2624:19; 2625:4, 14 Transportation's [45] - 2500:12; 2501:11; 2504:16; 2515:2; 2517:24; 2519:6; 2523:4; 2525:18; 2526:1; 2529:14; 2530:9, 17; 2536:7; 2543:19; 2544:23; 2554:24; 2555:7; 2560:24; 2565:22; 2574:19; 2576:12, 16; 2578:19; 2579:6; 2581:20; 2582:18; 2586:18; 2592:1; 2595:11, 20; 2597:4, 12; 2601:7; 2602:22; 2603:3; 2604:13; 2620:2; 2626:1; 2716:20; 2790:19; 2791:5; 2792:25; 2797:10; 2807:9, 15 transported [2] - 2575:25; 2777:21 transpose [1] - 2709:7 trauma [2] - 2668:18, 22 travel [3] - 2650:3; 2774:3 traverse [1] - 2605:15 treated [2] - 2731:10, 12 treatment [7] - 2647:15; 2655:11; 2656:2; 2788:25; 2792:11, 21 treaty [1] - 2669:5 Treaty [13] - 2529:24; 2530:10, 17; 2533:3, 9; 2536:14, 19; 2537:4; 2661:5; 2667:25; 2668:13; 2669:11, 23 tree [2] - 2576:18, 20 tremendous [1] - 2784:10 Tribe [3] - 2543:23; 2544:14; 2796:18 Tribe's [1] - 2543:24 tribunals [1] - 2666:7 tributaries [2] -</p>	<p>2508:14; 2702:12 tributary [1] - 2702:8 tried [2] - 2782:24; 2786:14 triumph [1] - 2782:23 trouble [3] - 2747:3, 15; 2764:14 trout [9] - 2509:13, 17; 2582:12, 14, 21-22; 2586:25; 2693:4; 2755:13 trucks [1] - 2777:24 true [2] - 2714:21; 2715:1 truly [2] - 2538:20; 2749:13 trust [1] - 2762:18 try [7] - 2632:6; 2681:4; 2723:16; 2734:19, 21; 2754:15; 2799:21 trying [5] - 2747:1; 2749:13; 2754:4; 2761:14; 2783:10 TSP [1] - 2773:25 TSS [4] - 2578:19, 22, 24; 2579:2 Tsuu [1] - 2783:9 Tsuut'ina [5] - 2666:17; 2713:17; 2721:17; 2722:23; 2796:15 Tuesday [1] - 2753:1 tunnel [2] - 2523:17; 2613:20 turn [6] - 2510:2; 2574:24; 2622:12; 2630:25; 2631:12; 2638:23 turned [2] - 2588:20; 2764:20 turning [6] - 2523:5; 2559:7; 2567:22; 2574:4; 2581:4; 2763:24 turns [1] - 2648:6 tweak [1] - 2748:14 Twelve [1] - 2727:5 twice [1] - 2713:25 two [48] - 2495:7; 2501:1; 2502:13; 2520:8; 2524:3, 7, 25; 2528:6; 2536:22; 2561:4; 2562:8, 12; 2567:13; 2582:22; 2585:2; 2590:22; 2591:2; 2612:13; 2613:4; 2619:18; 2632:6; 2636:25; 2644:22; 2650:3; 2665:23; 2670:11; 2686:4; 2700:20; 2703:23; 2717:9; 2719:23; 2720:19; 2729:20; 2735:14; 2743:8; 2757:10; 2759:18; 2763:15; 2764:1; 2774:6; 2775:17; 2785:25; 2800:10; 2801:2, 11; 2803:25; 2804:25 two-minute [1] - 2764:1 two-way [1] - 2528:6 two-week [1] - 2502:13 type [2] - 2502:3; 2782:19 types [2] - 2538:13;</p>	<p>2583:22 typical [4] - 2538:16; 2541:10; 2583:21; 2743:15 typically [3] - 2557:7; 2579:12; 2593:7</p>
U				
<p>ultimate [1] - 2800:23 ultimately [7] - 2521:9; 2550:1; 2560:1; 2561:16; 2635:7; 2638:10; 2664:7 ultra [1] - 2788:25 unable [6] - 2512:21; 2694:1; 2697:3; 2718:6, 13; 2801:13 unacceptable [8] - 2506:16; 2683:1, 8; 2724:18, 25; 2764:18; 2765:3, 9 unaccessible [1] - 2679:8 unaffected [1] - 2611:25 unanswered [1] - 2763:18 unavailable [1] - 2684:24 unbelievable [1] - 2750:18 uncertain [6] - 2577:1, 7; 2578:14; 2684:23; 2713:24; 2714:8 uncertainties [1] - 2767:2 uncertainty [10] - 2546:15; 2577:14; 2580:22; 2583:12, 20-21; 2597:18; 2754:12; 2783:19; 2797:12 unchanged [1] - 2604:18 unclear [2] - 2714:12; 2716:22 uncommon [1] - 2724:16 unconsolidated [1] - 2757:23 uncontroverted [3] - 2578:19; 2602:7; 2620:23 unconventional [1] - 2599:4 under [58] - 2499:25; 2503:22; 2504:2; 2505:17; 2506:19, 22; 2507:16, 19, 23; 2508:17; 2509:3, 7, 12, 14, 18; 2541:12; 2545:15; 2551:13; 2568:1, 23; 2570:12; 2573:16; 2579:19; 2580:6; 2588:17; 2589:7; 2591:1, 11-12, 15; 2599:21; 2605:12; 2614:3; 2615:22; 2637:10; 2645:2; 2671:4; 2675:8, 11; 2676:6; 2682:15, 20; 2686:3, 23; 2706:4; 2714:10; 2726:25; 2732:23; 2738:13; 2743:13; 2751:5; 2759:16, 21;</p>				

2763:22; 2770:19; 2779:6; 2804:13; 2806:14 underdesigned [2] - 2578:13; 2650:17 underestimating [1] - 2767:12 undergo [1] - 2672:10 underlain [2] - 2653:18; 2756:13 underlie [1] - 2592:19 underlying [6] - 2592:4, 10; 2597:7; 2758:15, 17; 2761:7 underpass [1] - 2545:15 underpredicts [1] - 2771:14 undersized [1] - 2571:22 understated [1] - 2628:13 understatement [1] - 2587:2 understood [6] - 2575:7; 2578:5; 2595:16; 2604:3; 2706:21; 2792:19 undertake [4] - 2647:1; 2675:24; 2701:11; 2791:2 undertaken [12] - 2530:6; 2541:3, 5; 2583:16; 2590:5; 2596:3; 2602:24; 2633:18; 2647:2; 2673:7; 2675:21; 2679:12 undertaking [6] - 2604:23; 2606:4; 2714:2; 2720:20; 2791:8, 19 undertakings [4] - 2494:14, 19; 2509:8; 2736:21 UNDERTAKINGS [1] - 2495:6 Undertakings [1] - 2494:23 undertook [4] - 2532:4; 2578:16; 2581:9; 2591:10 underway [1] - 2716:17 undisturbed [2] - 2693:19; 2780:12 undoubtedly [1] - 2624:4 Unequal [1] - 2706:4 unequal [6] - 2554:12; 2631:14; 2635:2; 2685:24; 2706:9 unequivocal [1] - 2577:21 unfavourable [1] - 2738:2 unfettered [2] - 2803:11; 2804:14 unfettered [1] - 2547:7 unfold [1] - 2656:3 unfortunate [1] - 2538:20 unfortunately [6] - 2525:21; 2627:22; 2646:25; 2762:22, 24; 2764:20	unimpeached [1] - 2560:13 unintended [3] - 2747:5; 2754:5; 2755:2 unintentional [2] - 2798:6 uninterrupted [1] - 2545:16 unique [8] - 2538:15; 2605:18; 2627:22; 2646:3; 2721:5; 2747:6; 2754:9; 2804:21 United [1] - 2671:4 units [2] - 2588:19; 2592:9 University [1] - 2702:9 unjustified [1] - 2736:9 unknown [7] - 2696:7, 11; 2735:19; 2746:25; 2747:2; 2796:19 unknowns [3] - 2747:3; 2760:20 unlawful [1] - 2542:2 unless [7] - 2548:13; 2565:11; 2647:2; 2661:18; 2670:8; 2732:24; 2787:5 unlike [1] - 2652:1 unlikely [2] - 2754:13 unmitigated [4] - 2512:20; 2515:22; 2598:12; 2655:13 Unnamed [11] - 2548:9; 2552:15; 2715:12, 15; 2717:21; 2718:2, 4, 8; 2752:12; 2756:21, 24 unobstructed [1] - 2604:5 unoccupied [3] - 2676:15, 22; 2677:2 unprecedented [1] - 2696:21 unprotected [1] - 2642:23 unproven [1] - 2693:15 unrealistic [2] - 2564:21 unreasonable [1] - 2767:16 unrelated [1] - 2666:20 unresolved [1] - 2525:17 unrestricted [1] - 2538:11 unsafe [3] - 2765:8; 2766:2, 5 unsubstantial [1] - 2716:22 unsubstantiated [1] - 2769:16 unusual [1] - 2517:3 up [69] - 2494:9, 14; 2496:19, 21, 25; 2497:1, 5; 2498:3; 2499:2, 6; 2508:21; 2521:3; 2527:5; 2531:23; 2538:25; 2553:7; 2554:18; 2559:2; 2573:21; 2592:9; 2612:20; 2623:4; 2639:21;	2643:18; 2644:1; 2648:17; 2651:11; 2652:2; 2664:12; 2678:9; 2681:5, 10; 2689:21; 2696:17; 2700:16; 2703:21; 2704:5; 2709:21; 2724:6; 2737:8; 2751:17; 2752:16, 19, 21; 2754:4, 25; 2757:2, 10, 22; 2758:2; 2760:17; 2761:3, 10; 2762:15; 2768:21; 2776:1; 2786:14; 2792:14; 2793:21; 2794:23; 2795:24; 2800:5; 2801:6; 2804:10; 2806:4; 2807:1 update [3] - 2523:25; 2722:1; 2729:13 Updated [1] - 2532:16 updated [8] - 2546:10; 2612:2; 2717:6, 15; 2722:7; 2769:19; 2801:4, 23 updates [4] - 2524:20; 2525:15; 2530:19; 2534:24 upfront [1] - 2672:3 upgrade [1] - 2521:5 upgrades [4] - 2510:17; 2634:2; 2713:19; 2717:2 upland [1] - 2781:20 upper [1] - 2738:6 uppermost [1] - 2756:18 upside [1] - 2800:20 upstream [41] - 2547:25; 2553:23; 2554:10, 13; 2555:6; 2558:16; 2582:13, 15, 23; 2618:24; 2629:10; 2634:20; 2640:9; 2646:11; 2648:11, 13; 2649:17, 20; 2650:3; 2656:16, 20; 2662:7, 10, 21, 24; 2665:5, 14; 2670:12, 21; 2682:6; 2683:7; 2687:15; 2705:21; 2706:3; 2709:14; 2712:19; 2713:2; 2723:5; 2726:2; 2741:11; 2747:23 urban [5] - 2655:15; 2662:10; 2665:11; 2723:14; 2731:9 urge [1] - 2611:12 urgency [1] - 2767:5 urges [1] - 2657:20 US [1] - 2743:18 usage [4] - 2734:14, 19; 2735:1; 2793:10 useful [2] - 2499:20; 2534:14 useless [2] - 2688:7, 13 users [2] - 2533:19; 2665:6 uses [22] - 2531:19; 2532:19; 2533:3, 10-11; 2536:14, 20-21; 2537:4; 2546:7, 16; 2557:24; 2669:5, 10; 2693:25; 2694:3; 2695:16; 2703:15; 2719:7;	2734:24; 2735:23; 2764:23 usual [2] - 2573:17; 2751:4 utilities [3] - 2629:6; 2647:16; 2655:14 Utilities [1] - 2670:7 utility [5] - 2704:19; 2794:13; 2795:23; 2796:24; 2797:21 utter [1] - 2760:9	V vaccine [9] - 2687:12, 14, 20, 24-25; 2688:1, 3; 2707:25; 2722:19 valid [1] - 2577:8 validated [2] - 2767:17 validity [1] - 2576:25 valley [3] - 2548:9; 2756:22, 25 Valley [2] - 2672:11; 2765:17 valuable [1] - 2664:7 value [21] - 2516:24; 2518:1; 2542:25; 2566:19; 2576:17; 2591:23; 2592:3, 11; 2664:10; 2705:19; 2713:10; 2754:17; 2756:18; 2757:2, 8; 2761:15; 2779:10, 16, 18, 24 value-based [1] - 2705:19 valued [3] - 2574:17; 2596:1; 2627:11 values [23] - 2505:2; 2589:3; 2590:8, 17-18; 2635:20; 2636:10; 2665:10; 2704:16, 24; 2705:16; 2731:17; 2757:5, 13, 15, 17; 2758:3, 8-9; 2768:16, 20; 2770:3 valuing [1] - 2731:25 Vance [7] - 2492:10; 2601:7; 2603:15; 2604:3; 2609:12; 2789:25 Vanderjagt [3] - 2542:9, 15, 19 vanishingly [1] - 2652:11 variability [2] - 2578:9; 2656:18 variants [3] - 2688:4, 7, 13 variety [3] - 2522:25; 2735:11; 2781:4 various [19] - 2499:25; 2500:15, 18; 2501:4; 2502:1, 22; 2527:1; 2547:22; 2578:17; 2591:11; 2596:5; 2603:25; 2664:16, 23; 2679:13; 2726:4; 2737:25; 2765:22; 2783:5 vast [1] - 2582:11 vastly [1] - 2686:8 vectors [2] - 2776:25; 2777:20 vegetation [20] - 2507:4; 2542:21; 2544:17, 22; 2545:25; 2595:21; 2599:11;	2602:21; 2605:13; 2674:11, 14; 2692:18; 2770:13, 16; 2775:13; 2776:10, 22; 2779:6; 2782:6 vehicles [2] - 2777:11, 13 velocity [1] - 2766:15 verbatim [2] - 2746:4; 2787:16 verification [2] - 2674:9; 2758:10 vernacular [1] - 2763:2 version [3] - 2556:2; 2748:9; 2787:11 versus [3] - 2666:6; 2703:5; 2722:9 Vespa [13] - 2493:5, 25; 2494:2, 9; 2496:5, 8; 2612:12, 19, 21; 2632:7, 14; 2784:4 via [1] - 2753:14 viability [4] - 2611:17; 2613:17; 2725:6; 2746:4 viable [5] - 2614:17; 2616:23; 2618:18; 2619:21; 2642:10 vicinity [2] - 2580:11; 2601:9 video [2] - 2627:19; 2799:21 View [24] - 2505:12; 2513:1, 4; 2555:21; 2556:5, 24; 2705:10; 2708:6, 10, 22; 2713:15; 2717:5; 2721:16; 2723:14; 2729:1, 21; 2730:6; 2748:10; 2783:7; 2789:3; 2795:2, 7; 2796:14; 2797:6 view [22] - 2506:10; 2526:19, 23; 2563:25; 2577:21; 2598:8; 2616:9, 16, 20; 2618:1; 2626:4; 2628:17; 2631:11, 13; 2633:10; 2636:15; 2638:19; 2642:6; 2655:25; 2684:23; 2721:4; 2749:1 View's [2] - 2708:9, 15 viewed [1] - 2542:3 views [3] - 2610:17; 2667:6 virtual [1] - 2609:3 virtually [2] - 2492:2; 2647:23 virtue [1] - 2780:5 virus [2] - 2687:9, 13 vis-à-vis [1] - 2589:20 visible [1] - 2774:1 visibly [1] - 2774:2 visitor [2] - 2721:20; 2803:1 visits [13] - 2534:22; 2538:9, 15, 17; 2539:1, 8, 20, 25; 2540:18; 2543:25; 2544:1, 9; 2675:23 vital [1] - 2647:16 viva [4] - 2685:13; 2746:6; 2753:19; 2755:22 vocation [1] - 2803:17
---	---	---	---	---	---

<p>voce [4] - 2685:13; 2746:6; 2753:19; 2755:22 voice [3] - 2611:3; 2612:11; 2626:11 voiced [1] - 2739:13 Volume [3] - 2492:4; 2581:15; 2659:1 volume [8] - 2552:7, 9; 2573:8; 2575:19; 2652:8; 2700:17; 2701:22; 2702:22 volumes [11] - 2513:9; 2575:23; 2686:20; 2696:19; 2700:4; 2701:4; 2703:3, 8; 2744:15; 2763:15 voluminous [2] - 2662:17; 2784:11 voluntary [1] - 2640:24 vulnerable [4] - 2504:24; 2635:17; 2636:7; 2642:7</p>	<p>2606:7; 2608:4; 2617:12; 2622:24; 2629:5, 11; 2633:12, 15; 2634:21; 2639:15; 2646:22; 2647:15; 2650:2; 2652:4; 2654:13, 17, 22-24; 2655:1, 3, 5, 8, 11-12, 16, 22-23; 2656:4, 10, 13-14, 24; 2657:15; 2662:24; 2665:2, 19; 2670:7, 12, 21; 2674:10, 13; 2677:5, 8, 13, 15; 2683:24; 2688:5, 14; 2691:7, 11; 2692:6, 8-9, 16-17, 19, 21, 25; 2693:22; 2694:4; 2695:8, 17, 25; 2696:2, 7, 11; 2698:7; 2700:18; 2701:22; 2704:2; 2710:3; 2711:16; 2712:5; 2718:18; 2719:23; 2720:3, 15; 2725:8; 2727:2, 6; 2737:6; 2741:15; 2742:18; 2743:17; 2745:3; 2750:24; 2751:3, 8; 2752:3, 5-6, 8, 21, 24-25; 2753:3, 8-9, 17; 2757:20, 22, 25; 2758:12, 18; 2759:6; 2760:15; 2761:10; 2763:17; 2776:17; 2782:25; 2788:14, 23, 25; 2791:25; 2792:3, 11, 20-21; 2793:10; 2794:5, 8, 11; 2796:10, 22; 2797:16, 22; 2798:12; 2802:12 Water [13] - 2507:16, 18, 20; 2508:3, 6; 2530:14; 2531:7; 2568:24; 2570:12; 2571:7; 2716:21; 2792:1; 2796:9 waterborne [1] - 2623:12 watercourse [2] - 2556:16; 2557:8 watering [2] - 2720:12, 14 waterline [2] - 2793:21; 2804:2 waterlines [1] - 2794:1 waters [3] - 2579:8; 2665:16, 22 watershed [4] - 2514:10; 2663:1; 2753:4; 2779:13 watersheds [1] - 2663:15 Waterworks [7] - 2493:3; 2579:16; 2788:13; 2789:5; 2791:10; 2796:7; 2798:16 WATERWORKS [1] - 2787:21 ways [1] - 2499:7 weak [1] - 2762:4 weather [10] - 2493:13, 15; 2504:25; 2548:24; 2577:18; 2629:19; 2635:17; 2636:8; 2652:5; 2653:25 Webber [1] - 2765:20</p>	<p>weed [19] - 2603:6, 8, 11, 17-18; 2604:5; 2726:8; 2776:12, 25; 2777:3, 6, 9, 15, 17; 2778:6, 22 weeds [7] - 2603:1; 2776:11, 14-15, 21; 2777:20; 2778:11 week [6] - 2493:18, 24; 2495:10; 2502:13; 2515:17; 2683:19 weekend [5] - 2493:12, 16; 2803:2; 2807:1, 4 weekly [1] - 2790:15 weeks [11] - 2498:10; 2501:1; 2593:19; 2621:25; 2644:22; 2665:23; 2742:20; 2763:15; 2800:11; 2801:2; 2804:25 weigh [1] - 2641:16 weighed [2] - 2620:11; 2785:17 weighing [1] - 2624:23 weight [5] - 2555:8; 2599:23; 2622:7; 2638:20; 2786:5 weight-per-hectare [1] - 2599:23 weir [1] - 2744:14 Weisbach [1] - 2492:13 welcome [6] - 2493:9, 25; 2544:19; 2659:7; 2660:16 welcomed [1] - 2539:4 welcomes [4] - 2539:16; 2540:2; 2543:13; 2545:22 wellbeing [2] - 2641:22; 2763:12 wells [15] - 2555:13; 2593:21, 23; 2594:2, 18, 21, 23; 2608:4; 2753:10; 2757:23; 2761:11; 2788:22; 2793:5 Wesley [4] - 2661:2, 4; 2679:16; 2798:25 west [3] - 2580:12; 2605:23; 2779:17 westerly [1] - 2790:8 wetland [3] - 2713:20; 2715:23 wetlands [15] - 2507:23; 2544:17; 2546:1; 2605:20; 2674:12, 14; 2715:25; 2776:22; 2779:6; 2781:7, 10-11, 13, 15, 20 Wetlands [2] - 2507:23; 2508:7 wetlands' [1] - 2781:14 wetted [1] - 2594:22 whereas [5] - 2564:2; 2699:11; 2769:22; 2770:23; 2773:15 whereby [1] - 2694:4 Whitson [3] - 2602:3, 11, 19 Whitson's [1] - 2602:7 whole [3] - 2601:13; 2731:7; 2802:16</p>	<p>wholesale [1] - 2734:9 wholly [2] - 2661:11; 2798:14 wholly-owned [1] - 2661:11 wide [3] - 2589:21; 2688:16; 2700:24 wider [1] - 2498:20 widespread [1] - 2647:19 width [2] - 2605:10; 2697:17 Wiebe [2] - 2492:14; 2807:22 wildlife [25] - 2507:4; 2532:12; 2539:13; 2545:9, 11, 14, 16, 24; 2595:22; 2604:12; 2605:8; 2674:11, 13; 2676:9; 2718:19; 2720:18; 2735:24; 2779:12; 2782:9; 2804:13 William [1] - 2492:10 WILLIAMS [5] - 2784:25; 2785:3; 2787:15, 24; 2799:17 Williams [12] - 2493:3; 2579:19; 2580:9; 2581:3; 2784:22, 24; 2785:5; 2786:24; 2787:10, 16, 22; 2799:13 willing [1] - 2802:25 willingness [2] - 2527:3; 2778:4 Willow [2] - 2697:10; 2698:3 win/win [1] - 2723:16 wind [2] - 2773:14; 2774:4 winds [3] - 2774:4; 2790:8 windy [2] - 2720:13; 2773:11 wins [1] - 2682:9 wipe [1] - 2724:4 wiped [2] - 2724:2; 2732:11 wire [1] - 2545:12 wisdom [1] - 2514:15 wish [5] - 2604:23; 2610:14; 2631:24; 2632:21; 2643:6 withdrawal [1] - 2722:25 withdrawn [1] - 2555:11 withdrew [1] - 2570:2 withstand [2] - 2651:7; 2749:22 Witness [1] - 2706:7 witness [9] - 2501:5; 2504:16; 2541:7; 2560:6; 2579:6; 2587:6; 2663:5, 17; 2756:2 witnessed [1] - 2798:14 witnesses [9] - 2537:21; 2555:3; 2561:4; 2571:18; 2576:12, 16; 2654:12; 2779:8; 2784:8 Woloshyn [1] - 2492:7 Women [2] -</p>	<p>2540:20; 2672:25 wonder [1] - 2775:15 Wood [9] - 2513:18; 2554:23; 2686:12; 2696:22, 24; 2708:19; 2719:17; 2753:15; 2778:2 woody [1] - 2699:20 word [5] - 2566:11; 2612:13, 20; 2764:23; 2765:6 words [7] - 2570:1; 2573:17; 2591:21; 2613:4; 2616:23; 2626:23; 2765:5 works [5] - 2493:22; 2552:13; 2738:19; 2740:18; 2741:6 workshops [4] - 2534:10, 22; 2535:13; 2536:22 world [1] - 2691:9 worried [2] - 2690:22; 2706:20 worry [2] - 2613:2; 2783:2 worse [2] - 2613:12; 2617:7 worst [7] - 2611:7; 2627:3; 2684:8, 13; 2749:13; 2751:16; 2760:6 worst-case [5] - 2684:8, 13; 2749:13; 2751:16; 2760:6 worth [4] - 2621:24; 2633:5, 11; 2738:23 worthwhile [1] - 2728:17 worthy [2] - 2694:13, 17 Woste [5] - 2661:11; 2677:5, 9, 15; 2679:17 wrap [2] - 2775:25; 2776:1 writ [1] - 2633:8 write [1] - 2628:22 writing [1] - 2500:6 written [13] - 2500:10, 22; 2528:2; 2532:5; 2536:3; 2540:8, 15; 2556:2; 2644:18; 2660:22; 2733:15; 2786:2; 2787:11 wrote [2] - 2630:20; 2710:7</p>
Y				
<p>year [9] - 2513:23; 2541:4; 2548:22; 2649:2; 2696:19; 2728:21; 2731:7; 2788:9; 2801:18 year-round [1] - 2788:9 years [50] - 2502:10; 2505:4; 2511:12, 15; 2515:1, 5, 11; 2517:10; 2549:1; 2552:23; 2564:10; 2571:11; 2572:6, 15; 2573:4; 2580:10; 2583:3; 2636:13; 2637:24; 2639:14; 2646:9; 2647:4, 10; 2649:4; 2665:18; 2683:12, 14, 17-18,</p>				

20; 2684:6; 2690:19;
2717:7, 13, 16;
2719:16, 19; 2730:1;
2742:14; 2764:20;
2783:15; 2788:7, 21;
2789:23; 2794:25;
2798:10; 2802:14
years^[1] - 2621:23
yield^[1] - 2761:11
Yoshida^[1] -
2755:25
Yoshisaka^[8] -
2587:7; 2589:8, 16;
2590:8, 22; 2592:7;
2593:2; 2594:6
Yoshisaka's^[2] -
2587:9; 2590:19
young^[1] - 2766:1
younger^[1] -
2668:10

Z

Zelt^[31] - 2597:11,
23; 2598:3, 8, 18, 20,
25; 2599:7, 15, 20,
25; 2600:4; 2720:8;
2766:13; 2767:21, 24;
2768:2; 2769:4, 6;
2770:3, 7, 9, 22;
2771:3, 8, 19; 2772:5;
2773:8, 10, 15;
2775:3
Zelt's^[12] - 2599:20;
2764:17; 2766:8;
2767:1, 4, 14, 17;
2768:7, 9; 2770:17;
2771:7, 16
zero^[1] - 2590:13
zone^[5] - 2731:18;
2803:5, 14; 2805:6
zones^[2] - 2597:2;
2630:19
Zoom^[2] - 2644:14;
2808:1