

SUBJECT AREA: Fish, Fish Habitat

REFERENCE: MWL-IR-001

QUESTION:

QUESTION:

Given that MMTP EIS indicates in section 8.2.1. (local assessment area) that Manitoba does not currently provide guidance on the spatial study area boundaries related to transmission line construction, please advise whether the study area boundaries used by Manitoba Hydro for MMTP are consistent with the study area boundaries for other Manitoba Hydro transmission projects.

Explain how the “spatial boundaries” referred to in response to MWL-IR-001 are consistent with the information requirements for a full review pursuant to s. 37(1)-(3) of the *Fisheries Act*, R.S.C., 1985, c. F-14), and the corresponding Regulations.

RESPONSE:

- 1 Spatial boundaries described in 8.2.1 for the MMTP assessment were ‘valued-component
- 2 centered’, selected in consideration of the geographic extent over which Project activities and
- 3 their effects on VCs are likely to occur. As such, they may differ from the study boundaries for
- 4 other Manitoba Hydro transmission projects.

- 5 Section 37(1)-(3) of the *Fisheries Act* addresses the provision of plans, specifications, studies,
- 6 procedures, analyses, samples, evaluations and other information to the Minister of Fisheries
- 7 and Oceans (DFO) for any works that result or are likely to result in serious harm to fish that are
- 8 part of, or support, a commercial, recreational or Aboriginal (CRA) fishery.

- 9 The *Fisheries Act* does not specify the dimensions or extent of spatial boundaries required to
- 10 determine if there is a potential for serious harm to fish that are part of a CRA fishery. “An
- 11 Applicant’s Guide to Submitting an Application for Authorization under Paragraph 35(2)(b) of

12 the Fisheries Act” (DFO, 2013) indicates that the spatial scope for assessing fish and fish habitat
13 should encompass all areas potentially affected by the proposed work, undertaking, or activity,
14 and not just the direct physical footprint of the work, undertaking or activity. The local
15 assessment area for the Red and Assiniboine rivers was established as 200 m upstream and 600
16 m downstream from the centerline of the transmission line crossing, and 30 m upbank from the
17 high watermark (HWM). For all other watercourses crossed by the Project, the LAA extends 100
18 m upstream and 300 m downstream beyond the centerline, and 30 m up bank from the HWM.
19 The footprint of the station components plus a 30 m buffer beyond the footprint. These spatial
20 boundaries were considered sufficient to encompass areas potentially affected by the proposed
21 work. These measures would be sufficient to allow for a full review under the *Fisheries Act*, but
22 it is expected that the approach used and output of the assessment demonstrates that a full
23 review is not required.

SUBJECT AREA: Fish, Fish Habitat

REFERENCE: MWL-IR-002

QUESTION:

QUESTION:

Further to Manitoba Hydro's response to MWL-IR-002, specify what mitigation measures will be in place for each watercourse in relation to Cooks and Edie creeks that support fish and fish habitats.

Confirm whether the mitigation measure examples provided in lines 10-11 of this response are actually assigned to specific watercourses.

Confirm whether Manitoba Hydro intends on implementing mitigation measures in addition to the examples outlined in lines 10-11 of this response, and if so, particularize each mitigation measure in accordance to the watercourse the measure corresponds to.

Confirm that Manitoba Hydro Intends to conduct the field work needed now that these two watercourses are included in the plan for MMTP. In clarification, this question is based on confirmation by Manitoba Hydro on March 23, 2017, that MMTP additional field work is intended to start this spring.

RESPONSE:

- 1 As described in MWL-IR-002 Manitoba Hydro used a precautionary approach in assessing
- 2 effects to fish and fish habitat, and:
- 3 - no transmission towers will be placed closer than 30 m to any watercourse;

-
- 4 - wire stringing across watercourses will be done either during frozen conditions or by
5 helicopter; and
- 6 - Manitoba Hydro has developed an environmental protection plan that prescribes
7 effective measures to reduce levels of any deleterious substances to levels that are not
8 expected to result in any measurable adverse effects.

9 Mitigation measures specific to mussel SOCC will be implemented at each watercourse where
10 mussel SOCC are known to occur (Red and Assiniboine Rivers), in addition to general and site-
11 specific mitigation determined during detailed design of each watercourse crossing.

12 Discussion of mitigation measures related to change in fish habitat and to change in fish
13 mortality or health are provided in the MMTP Environmental Impact Statement (EIS) (Chapter
14 8, p. 8-51 and p. 8-65, respectively). A comprehensive list of general mitigation is provided in
15 the Construction Environmental Protection Plan (Appendix 22A). The complete list of
16 mitigation measures for each watercourse will be determined during detailed design of each
17 watercourse crossing and will include the measures presented in the MMTP EIS, as appropriate
18 for each crossing.

19 Pre-construction field work will be completed at the Cooks and Edie Creek locations to confirm
20 that sufficient information is available for construction. Information collected will include
21 channel morphology, high water mark, bank width, bank height and slope. This information will
22 be used to plan construction and implementation of mitigation measures.

SUBJECT AREA: Fish, Fish Habitat

REFERENCE: MWL-IR-003

QUESTION:

QUESTION:

Further to Manitoba Hydro's response to MWL-IR-003, specify what mitigation measures will be in place for each watercourse in relation to Cooks and Edie creeks that support fish and fish habitats, and when these measures are expected to be in place.

Conservation Districts are not the same as Watershed Plans, nor are Conservation Districts part of Sustainable Development Manitoba. For regulatory and provincial jurisdiction purposes water plans (re: relevant legislation) must be accepted by the Manitoba Government. Provide the specific watershed plan names with their respective government domain access that were used in the EIS to arrive at the conclusions regarding fish and fish habitat.

Confirm that Manitoba Hydro will now conduct the field work regarding these watercourses, rather than rely on desk studies only.

RESPONSE:

- 1 As described in MWL-IR-002, MLR-IR-003 and MLR-IR-065, Manitoba Hydro used a
- 2 precautionary approach in assessing effects to fish and fish habitat, but stresses that:
 - 3 - no transmission towers will be placed closer than 30 m to any watercourse;
 - 4 - wire stringing across watercourses will be done either during frozen conditions or by
 - 5 helicopter; and

- 6 - Manitoba Hydro has developed an environmental protection plan that prescribes
7 effective measures to reduce levels of any deleterious substances to levels that are not
8 expected to result in any measurable adverse effects.

9 A comprehensive list of general mitigation is provided in the Construction Environmental
10 Protection Plan (Appendix 22A). The complete list of mitigation measures for each watercourse
11 will be determined during detailed design of each watercourse crossing and will include the
12 measures presented in the MMTP EIS, as appropriate for each crossing. This will include a site-
13 specific analysis of both Cooks and Edie Creek crossings.

14 While there is a low likelihood of pathways of effect from project activities and robust
15 precautionary mitigation measures being proposed, Manitoba Hydro assembled information on
16 the various watercourses that would be crossed to determine habitat sensitivity. As described
17 in the EIS, Chapter 8, Section 8.3.1 (page 8-9), field and desktop data (sources described in
18 Section 8.3.1.1, pages 8-10, 8-11) were analyzed to characterize the existing in-water and
19 riparian physical environment, surface water quality, and habitat suitability for fish. Fish species
20 potentially inhabiting watercourses in the Regional Assessment Area were identified and their
21 seasonal ranges, sensitive periods, and habitat use were described with special attention to
22 relevant Species of Conservation Concern. Known and potential CRA fisheries were also
23 identified. In terms of watershed management plans, Section 6.0 of the Fish and Fish Habitat
24 Technical Data report includes references and web addresses for each integrated watershed
25 management plan used in the analysis. The data collected from the field and desktop studies,
26 together with input from the other Project VCs, and Public and First Nation and Metis
27 Engagement Processes, were used to determine the habitat sensitivity for each of the
28 watercourses crossed by the Project.

29 Based on the information that was available on the above crossings to determine habitat
30 sensitivity, the low likelihood of pathways of effect from project activities and robust
31 precautionary mitigation measures being proposed, no additional field assessments for the
32 purposes of the environmental assessment are being planned at this time.

33 Pre-construction field work will be completed at the two locations on both creeks to collect
34 information to facilitate construction. Information collected will include channel morphology,
35 high water mark, bank width, bank height and slope. This information will be used to plan
36 construction and implementation of mitigation measures.

SUBJECT AREA: Fish, Fish Habitat

REFERENCE: MWL-IR-004

QUESTION:

Specify, with direct references, which method(s), guidelines, or other sources were used for MMTP EIS and other Manitoba Hydro transmission projects to categorize watercourses.

In reference to Manitoba Hydro's response to MWL-IR-004, specify what expert(s) provided the expertise and experience from across Canada as referenced in lines 19-21 of that response. Provide name, affiliation, and qualifications of these experts.

Indicate the name of the aquatic consultant(s) referenced in line 19 of the Manitoba Hydro response to MWL-IR-004, as well as what methods that "they were able to use" that were "properly suited" to the scope of the project.

RESPONSE:

- 1 It is important to note that gathering detailed information on fish habitat for every crossing site
2 is not critical in assessing the effects of the MMTP project because, as described in MWL-IR-
3 002, MLR-IR-003, MLR-IR-065 and MLR-IR-065, Manitoba Hydro used a precautionary approach
4 in assessing effects to fish and fish habitat, and:
- 5 - no transmission towers will be placed closer than 30 m to any watercourse;
 - 6 - wire stringing across watercourses will be done either during frozen conditions or by
7 helicopter; and
 - 8 - Manitoba Hydro has developed an environmental protection plan that prescribes
9 effective measures to reduce levels of any deleterious substances to levels that are not
10 expected to result in any measurable adverse effects.

11 While there is a low likelihood of pathways of effect from project activities and robust
12 mitigation measures being proposed, Manitoba Hydro's precautionary approach included a
13 process to assess and characterize the habitat available in watercourses traversed by the MMTP
14 FPR. The methods, guidelines, or other sources used to categorize the habitat available in
15 watercourses traversed by the MMTP FPR are provided in Section 2.0 of the Fish and Fish
16 Habitat Technical Data Report. In general, Manitoba Hydro reviews and references any
17 guidance material that it becomes aware of and may assist in this process. Two included here
18 and used in the MMTP Fish and Fish Habitat analysis:

19 Alberta Transportation. 2009. Fish Habitat Manual: Guidelines and Procedures for Watercourse
20 Crossings in Alberta. Edmonton, Alberta.

21
22 Milani, D.W. 2013. Fish community and fish habitat inventory of streams and constructed drains
23 throughout agricultural areas of Manitoba (2002-2006). Can. Data Rep. Fish. Aquat. Sci.
24 1247: xvi + 6,153 p.

25 The methods, guidelines, and other sources used in categorizing watercourses were more than
26 sufficient to meet the requirements based on the scale, scope and location of the project.
27 Bipole III is the only recent Class III Development project and therefore the only comparable
28 project. DFO (2008) and DFO+BCMOE (1989) were used to classify streams for Bipole III:

29 DEPARTMENT OF FISHERIES AND OCEANS (DFO) and British Columbia Ministry of the
30 Environment (BCMOE). 1989. Fish Habitat Inventory and Information Program. Stream Survey
31 Field Guide. Department of Fisheries and Oceans and British Columbia Ministry of the
32 Environment.

33 FISHERIES AND OCEANS CANADA (DFO). 2008. Fish Habitat Classification for Manitoba
34 Agricultural Watersheds Version 1.0.

35 Qualified professionals from Manitoba Hydro worked in collaboration with qualified
36 professional consultants (Stantec) to prepare the environmental impact statement to meet the
37 guidelines put forth by the regulators.

38 As stated in the Fish and Fish Habitat technical data report (prepared by Stantec Consulting
39 Ltd.), the report was prepared by Lisa Peters, Ph.D. and reviewed by Vince Palace, Ph.D.

40 In addition, Dave Block and Sarah Coughlin from Manitoba Hydro were involved in preparation
41 and final review of the associated EIS Fish and Fish Habitat chapter.

SUBJECT AREA: Community Health, Well-being

REFERENCE: MWL-IR-005

QUESTION:

Further to the response (the "Response") provided by Manitoba Hydro to MWL-IR-005:

Particularize more than an "overview level of information" (as stated in line 2), and more than "an overview level of baseline information" (as stated in line 7), so as to:

- Identify the potential harm(s) that this project will have on community health and well-being;
- Specify which "valued components and other environmental effects" that the Response refers to in chapters 8 to 21 (lines 2-3).
- Specify which "socio-economic valued components, including human health" that the Response refers to in Sections 13 to 19.

Confirm whether the only community health benefit from MMTP is the "potential" health benefit described in the Response at lines 12-14. If this is not the only community health benefit from MMTP, particularize any and all additional health community health benefits.

RESPONSE:

- 1 1. The potential Project effects on community health and well-being addressed in the EIS
2 are identified in Section 19.5 These are:
 - 3 • Change in health resulting from socio-economic change
 - 4 • Change in health associated with the mobile workforce
 - 5 • Change in levels of stress and annoyance
 - 6 • Change in Aboriginal health
 - 7 • Change in capacity of or demand on health care services and infrastructure
- 8 2. Chapter 6.3 provides socio-economic context for the other valued components assessed
9 in the EIS. These valued components, assessed in chapters 8 to 21 are:
 - 10 • Fish and Fish Habitat (Chapter 8)
 - 11 • Wildlife and Wildlife Habitat (Chapter 9)

- 12 • Vegetation and Wetlands (Chapter 10)
 - 13 • Traditional Land and Resource Use (Chapter 11)
 - 14 • Heritage Resources (Chapter 12)
 - 15 • Infrastructure and Services (Chapter 13)
 - 16 • Employment and Economy (Chapter 14)
 - 17 • Agriculture (Chapter 15)
 - 18 • Land and Resource Use (Chapter 16)
 - 19 • Visual Quality (Chapter 17)
 - 20 • Human Health Risk (Chapter 18)
 - 21 • Community Health and Well-being (Chapter 19)
 - 22 • Effects of the Environment on the Project (Chapter 20)
 - 23 • Accidents, Malfunctions and Unplanned Events (Chapter 21)
- 24 3. Context for the socio-economic and health related valued components referred to in
25 sections 13 to 19 are those assessed in Chapters 13 to 19 listed above. Human health is
26 addressed specifically in Chapter 18 (Human Health Risk) and Chapter 19 (Community
27 Health and Well-being).
- 28 4. Households that experience an increase in income due to Project employment may
29 experience health related benefits from that higher income because income is a social
30 determinant of health.

SUBJECT AREA: Economic Impact Analysis

REFERENCE: MWL-IR-006

QUESTION:

Please provide confirmation whether the “entire business case for the project” informs Manitoba Hydro’s consideration of principles of sustainable development in reference to the project and if so how?

Please provide confirmation whether the “entire business case for the project” informs Manitoba Hydro’s consideration of alternative routing methods, and if so how?

In the event either of the above are answered in the affirmative, please provide the “entire business case for the project”.

Does the “entire business case” for MMTP support and fulfill the Manitoba Sustainable Environment Principles and Guidelines?

RESPONSE:

1 Manitoba Hydro’s ‘entire business case for the project’ is outlined in The Needs For and
2 Alternatives To business case put forward in August of 2013. The business case indicates that it
3 supports Manitoba’s Clean Energy Strategy and sustainable development principles: It provides
4 clean renewable energy (e.g. reducing global GHG emissions) and provides an infrastructure
5 legacy for future generations. Details on how it meets these principles are provided in the
6 business case.

7

8 Yes, the MMTP supports and fulfills the Manitoba Sustainable Environment Principles and
9 Guidelines in a variety of ways, including those listed in Appendix 23B, Table 23B-1.

SUBJECT AREA: Communicating & Reporting

REFERENCE: MWL-IR-007

QUESTION:

Does Manitoba Hydro intend to have a website about the MMTP during its operation, to provide reports, public information, and updates on the EPP, and other adaptive management tools used in project operation by Manitoba Hydro?

RESPONSE:

- 1 As outlined in CAC-IR-007, the length of time the project website will be maintained will be
- 2 based on public interest, need and technology.

- 3 It is Manitoba Hydro's intention to include the relevant information related to monitoring and
- 4 assessing environmental mitigation and management. Regulatory reports and project related
- 5 information will be placed on the website as it becomes available.

- 6 The project website can be found at www.hydro.mb.ca/mmtp.

SUBJECT AREA: Accidents, Malfunctions, Unplanned Events

REFERENCE: MWL-IR-009

QUESTION:

Specify, with particulars, what types of accidents, malfunctions, and unplanned events that could conceivably occur in relation to a project of this size and scope, and what methodology will be implemented to minimize any change from the anticipated plan for the MMTP project. Provide examples of what type of accidents, malfunctions, and unplanned events that have occurred in relation to a transmission project of this size, energy capacity, and scope.

Particularize discussions and planning Manitoba Hydro has had with provincial and federal government as to how to approach an accident, malfunction, or unplanned event in relation to the MMTP project.

Confirm and particularize the procedures that Manitoba Hydro has in place to react to any accident, malfunction, or unplanned event that may result in environmental impacts on a minimal scale, medium scale, as well as on a catastrophic scale.

When Manitoba Hydro identifies a preferred change to the Licence after licensing is in place for a project, in this case a transmission project, does Manitoba Hydro make sure the change requested is provided to the public with the outcome, and the updated licence made public?

RESPONSE:

- 1 a) The EIS has dedicated Chapter 21 to cover extensively the topic of accidents,
- 2 malfunctions and unplanned events and provides examples that have the potential for
- 3 occurring on MMTP.
- 4 b) Manitoba Hydro has had no specific discussion about response planning with Provincial
- 5 or Federal governments in relation to MMTP. Manitoba Hydro, as part of its Corporate

- 6 Emergency Management Plan, has ongoing communications with respect to corporate-
- 7 wide emergency management.
- 8 c) See a above.
- 9 d) All requests and approvals for changes to the project including license amendments are
- 10 posted on the Manitoba Sustainable Development Public Registry.

SUBJECT AREA: Adaptive Management

REFERENCE: MWL-IR-011

QUESTION:

What access will affected stakeholders have to information generated through the adaptive management process?

Although Manitoba Hydro has deemed itself, “the ultimate decision making authority” for the adaptive management process how will Manitoba Hydro ensure the participation of stakeholder’s and communities involved in decisions?

After a possible change has been identified through the adaptive management process, what criteria will Manitoba use in its decision to implement the change, and what weight will be prescribed those criteria?

Does Manitoba Hydro use Structured Decision-Making (SDM) in the adaptive management process? If not, how does Manitoba Hydro’s current adaptive management process compare to SDM and why do they choose to use it rather than SDM?

RESPONSE:

- 1 The information generated by the adaptive management process will be publically available in
- 2 the annual reports. Further, Manitoba Hydro will continue to provide opportunities through the
- 3 First Nations and Metis engagement process to be involved in the adaptive management
- 4 process. The Indigenous Community Monitoring Working Group (as described in IR CEC-IR-079)
- 5 is an opportunity Manitoba Hydro is pursuing with interested First Nations and Metis
- 6 communities for involvement in decision making. Environmental Protection Program meetings
- 7 have been held with interested First Nations and Metis communities to provide opportunities
- 8 for discussion and feedback on construction, mitigation and monitoring activities. Manitoba

9 Hydro's Construction Community Liaisons will also be in contact with interested communities
10 during construction to field any questions or concerns that communities may have.

11 Changes to Environmental Protection measures are made when environmental or compliance
12 monitoring has shown them to be ineffective or when industry best practice has identified a
13 proven improvement to that method or process. Where the adaptive management process has
14 identified a need for changes to be made, decision criteria are based on but not exclusive to
15 commitments made in the EIS, license conditions and environmental regulations. No defined
16 weights will be assigned to the criteria; however, license conditions and regulations will have a
17 larger weight than other criteria.

18 While some would consider Adaptive Management (AM) to be a special case of Structured
19 Decision-Making (SDM) (Lyons et al 2008), Manitoba Hydro recognizes the value and support
20 AM has received for use in its Environmental Protection Program (EPP). Though Manitoba
21 Hydro doesn't purposefully follow an (SDM) process, several major components of the SDM
22 decision cycle are utilized during the planning stage of AM.

23 Adaptive management is Manitoba Hydro's preferred method for the implementation of the
24 EPP. This decision is supported by several independent sources advising Manitoba Hydro of AM
25 benefits:

- 26 • *"...adaptive environmental management (AEM), considered to be best practice for*
27 *minimizing the environmental and social risks of development."* Diduck et al 2012.
- 28 • The AM approach has also been recommended by Peguis First Nation in their Draft Land
29 Use and Occupancy Interview Project Report as a mitigation measure for traditional
30 land and resource effects. EIS Chapter 22 Section 22.1.2. The Clean Environment
31 Commission report on the public hearing for the Bipole III Transmission Project had
32 stated the importance of AM to monitoring *"...the Commission believes that monitoring*
33 *and adaptive management are essential to ensure that plans are followed and that*
34 *unexpected incidents and unforeseen consequences can be dealt with"*. (pg. 63 CEC
35 Hearing 2012)

- 36 • The use of Adaptive management requested through a license condition for the BPIII
37 Project:

38 *"The Licencee shall, during construction of the Development, submit annual*
39 *reports to the Director on the success of the mitigation measures employed*
40 *during construction, a description of the Adaptive Management measures*
41 *undertaken to address issues, and recommendations for improvements of*
42 *mitigation in future projects..." (BPIII License #3055, clause #57)*

43 REFERENCES:

44 CEC Summary Report 2013. "Report on Public Hearing, Bipole III Transmission Project June
45 2013" Manitoba Clean Environment Commission."

46 Diduck, Alan, Patricia Fitzpatrick, and Jim Robson. "Guidance from Adaptive Environmental
47 Management, Monitoring and Independent Oversight for Manitoba Hydro's Upcoming
48 Development Proposals: A report prepared for the Public Interest Law Centre of Legal Aid
49 Manitoba." *Winnipeg, MB: Public Interest Law Centre (2012).*

50 Lyons, James E., et al. "Monitoring in the context of structured decision-making and adaptive
51 management." *Journal of Wildlife Management* 72.8 (2008): 1683-1692

SUBJECT AREA: Wildlife, Wildlife Habitat

REFERENCE: MWL-IR-013

QUESTION:

How did Manitoba Hydro determine that the Project was not in the range of any small species at risk, and what data was relied upon in forming that conclusion, if any?

On what basis does Manitoba assert that “more precise knowledge of species distribution and abundance would not influence that assessment and conclusions” and why?

What are the effects on small animals captured in section 9.5 and how did Manitoba Hydro form this conclusion?

Did Manitoba Hydro consider the use of studies or data that did not involve the use of trapping in forming its conclusion that enquiry into the effect of the Project on small animals was not necessary, and if so what considerations were made?

Will Manitoba Hydro’s planned spring 2017 field work aim to fill the gap regarding information about small animals, small mammals, and when will the results of spring 2017 field work be available?

RESPONSE:

- 1 A) Small mammals at risk in Manitoba were determined by reviewing the Manitoba Endangered
- 2 Species and Ecosystems Act (MWCS 2014) and federal Species at Risk Public Registry
- 3 (Government of Canada 2015). For those occurring in Manitoba, details of distribution were
- 4 reviewed by examining individual status reports on the Species at Risk Public Registry. In
- 5 addition, Manitoba Hydro also contacted the Manitoba Conservation Data Centre to request
- 6 information on all species at risk known to occur in the study area.

7 B) The assessment of potential effects on wildlife and wildlife habitat (EIS Chapter 9) is based
8 on evaluating pathways through which the Project may interact with wildlife (Section 9.3.2.2).
9 Small mammals are acknowledged as being an important component of the ecosystem, but
10 potential effects on them are expected to be captured by those evaluated for furbearers.
11 Unless species are known to have a restricted distribution (e.g., elk), the assessment is based on
12 the conservative assumption that species are present, therefore having more precise
13 knowledge of species distribution and abundance would not influence the interpretation of
14 effects.

15 C) Small mammals may be affected by both change in habitat availability and change in
16 mortality risk. While discussion of effects did not always specifically address small mammals,
17 the residual effects presented are considered to be applicable to them, based on the effects
18 assessment process described above.

19 D) No, the decision to not pursue field surveys for small mammals was based on the effects
20 assessment process assuming their presence, as described above.

21 E) No, the spring 2017 field work will not address small mammals because assessment of
22 Project effects has assumed that small mammals are present.

23 **References:**

24 Government of Canada. 2015. Species at Risk Public Registry [online]. Available from
25 <http://www.registrelep-sararegistry.gc.ca/default.asp?lang=en&n=24F7211B-1> [accessed
26 February 11, 2015].

27 MCWS. 2014. Species Listed under The Endangered Species and Ecosystems Act [online].
28 Available from: <http://www.gov.mb.ca/conservation/wildlife/sar/sarlist.html> [accessed May 15,
29 2014].

SUBJECT AREA: Wildlife, Wildlife Habitat

REFERENCE: MWL-IR-014

QUESTION:

Manitoba Hydro has failed to answer whether it is in possession of data and/or studies with respect to the cumulative, over time effects and impacts on large mammals from Bipole I or Bipole II.

Did Manitoba Hydro study these effects and impacts over the last 50 years, and does Manitoba Hydro hold or have access to data to answer the question?

What is Manitoba Hydro's standard and methodologies regarding cumulative impacts?

Manitoba Hydro has failed to answer what methodology Manitoba Hydro applies to support the outcomes from its environmental assessment and monitoring, and its studies conducted on previous constructed transmission lines—to inform planning for any new transmission projects. See IR and provide answer.

What effects did M602F have on large and small mammals, how was that information collected and applied to the MMTP Project EIS and routing methodology?

RESPONSE:

- 1 Manitoba Hydro has not conducted and is not aware of any wildlife data or studies specific to
- 2 understanding the cumulative, over time effects and impacts on large mammals from Bipole I
- 3 or Bipole II.

- 4 Manitoba Hydro's standard and methodologies regarding cumulative impacts are presented in
- 5 Section 7.3.5 of the EIS: Step 5: Assessment of Cumulative Effects.

6 See CAC-IR-27 for information on how past transmission line projects are used to inform
7 planning for new transmission projects.

8 While the effects of M602F on large and small mammals have not been explicitly researched,
9 camera trap studies and aerial surveys along M602F in preparation for this Project showed that
10 a wide variety of mammals use the ROW, including white-tailed deer, black bear, gray wolf,
11 coyote, red fox, fisher, American marten, and river otter (see Section 2.3.3 of the Wildlife and
12 Wildlife Habitat TDR). These results were used to inform predictions regarding future use of
13 the MMTP ROW by mammals during operation.

SUBJECT AREA: Wildlife, Wildlife Habitat

REFERENCE: MWL-IR-015

QUESTION:

What methodology and/or guidelines will Manitoba Hydro implement, if any, to ensure that any active bear den identified will remain undisturbed until unoccupied?

Provide data and any other basis relied upon in support of the assertion that the approach referenced therein, “has been demonstrated as effective in protecting black bears in the development of the Bipole III, Keeyask Transmission Project, and Lake Winnipeg East System Transmission Project”, including the methodology used to collect the data.

Why is the Lake Winnipeg East System Transmission Project included in the assertion about protecting black bear, when it is so recently licensed?

Are any of the studies from Bipole III, Central Transmission Project available to support your assertions regarding MMTP?

RESPONSE:

- 1 Mitigation measures regarding black bear dens are detailed in Section 4.4.8 of the draft
- 2 Environmental Monitoring Plan (Appendix 22C), Section 5.2 of Construction Environmental
- 3 Protection Plan (Appendix 22A) and MCWS MH-I-110. As outlined in Section 4.4.8 of the draft
- 4 Environmental Monitoring Plan, the environmental inspector will be responsible for ensuring
- 5 that any active bear den will remain undisturbed until unoccupied. This includes contacting
- 6 Manitoba Sustainable Development as soon as possible when a bear den is identified,
- 7 establishing a 150 m buffer around identified bear dens within which no machinery with
- 8 potential to disturb a bear may operate, installing flagging along the buffer perimeter, and

9 monitoring the site to ensure that project-related disturbances do not resume until after the
10 den has been vacated.

11 Environmental inspectors for the Bipole III, Keeyask, and Lake Winnipeg East System
12 Transmission Projects provide regular updates regarding wildlife-related concerns as part of
13 their regular reporting procedures. As outlined in MCWS MH-I-110, and MWL-IR-015,
14 construction activities on other Manitoba Hydro transmission projects have not, to date,
15 resulted in any known black bear mortality or den abandonment.

16 The Lake Winnipeg East System Improvement Transmission Project was granted an
17 Environmental Act License on April 28th, 2015. Project related vegetation clearing was
18 completed in the winter of 2015/16.

19 As required under their respective Environment Act Licences, annual reports for the Bipole III,
20 Keeyask, and Lake Winnipeg East Transmission Projects can be found on Manitoba Hydro's
21 Project websites (www.hydro.mb.ca). These annual reports include updates on wildlife studies.

SUBJECT AREA: **Wildlife, Wildlife Habitat**

REFERENCE: **MWL-IR-016**

QUESTION:

To complete the answer to MWL-IR-016:

Identify and provide range maps of ungulate species maintained by the Province of Manitoba that were utilized by Manitoba Hydro in the development of this environmental assessment and provide copies of said maps.

As it relates to the known range of all ungulate specify, identify and provide literature, government publications and field studies relied upon in support of this MMTP environmental assessment.

Please explain why Manitoba Hydro did not conduct a data compilation relating to all ungulate species in support of this MMTP environmental assessment.

Regarding lines 6 and 7 of Manitoba Hydro's response, identify the "various publications" that contain the range maps of ungulate species in Manitoba.

Further to lines 6 and 7 of Manitoba Hydro's response, did Manitoba Hydro use these sources for the MMTP EIS?

RESPONSE:

- 1 Manitoba Hydro's assessment of ungulates was not dependent on mapping. Rather,
- 2 distribution and abundance were informed largely by field studies and key-person interviews as

3 summarized in Section 2.3 of the Technical Data Report, and these were taken into
4 consideration in evaluating the potential effects of the Project on deer, elk, and moose.
5 Sources used to support the assessment are cited in Section 9.5 of the EIS, and listed in Section
6 9.11. In particular, these include range information for ungulate species expected to occur
7 within the RAA from Manitoba Sustainable Development (formerly Manitoba Conservation and
8 Water Stewardship [MCWS]), i.e., white-tailed deer (MCWS 2014a), elk (MCWS 2014b), and
9 moose (MCWS 2014c), as well as from Banfield (1974). As such, Manitoba Hydro did compile
10 existing information on all ungulates in the Project area, as well as supplementing it with
11 Project-specific field surveys.

12 **References**

13 Banfield, A.W.F. 1974. The Mammals of Canada. National Museum of Natural Sciences, National
14 Museums of Canada by University of Toronto Press, Toronto, ON. 438 pp.

15 MCWS. 2014a. Wild Animals of Manitoba: White-tailed Deer Fact Sheet [online]. Available from
16 <http://www.gov.mb.ca/conservation/wildlife/mbsp/fs/wtdeer.html> [accessed December 23,
17 2014].

18 MCWS. 2014b. Wild Animals of Manitoba: Elk Fact Sheet [online]. Available from
19 <http://www.gov.mb.ca/conservation/wildlife/mbsp/fs/elk.html> [accessed December 23, 2014].

20 MCWS. 2014c. Wild Animals of Manitoba: Moose Fact Sheet [online]. Available from
21 <http://www.gov.mb.ca/conservation/wildlife/mbsp/fs/moose.html> [accessed December 23,
22 2014].

SUBJECT AREA: **Transmission, Conductors**

REFERENCE: **MWL-IR-019**

QUESTION:

Provide results of the conductor optimization study for the MMTP Line.

Please explain the exact location of the Riel to Vivian corridor, providing the number, name and location of a MMTP EIS map showing this corridor.

RESPONSE:

- 1 The result of the conductor optimization study was that the Bunting Phase Conductor has the
- 2 lower capital cost and total cost compared to Pheasant Phase Conductor. Therefore, the
- 3 Transmission Line Design Section recommended using Bunting as the phase conductor for
- 4 MMTP project based on the assumed loading and operation conditions.
- 5
- 6 The location of the portion of the Riel-Vivian Transmission Corridor (RVTC) used for MMTP can
- 7 be found in Chapter 2, Map 2-1 - Project Components and is labeled as “Final Preferred Route
- 8 (RVTC)”. The extent of the RVTC is also illustrated as the portion of the Project Development
- 9 Area (White shaded area on maps) surrounding the Final Preferred Route (RVTC) (colored
- 10 yellow on map) in the Map Folio on Map 1-100-07 thru Map 1-100-10.

SUBJECT AREA: Wildlife, Wildlife Habitat

REFERENCE: MWL-IR-020

QUESTION:

Please provide mitigation measures that will be implemented in the event bat hibernacula are discovered in the course of the lifecycle of the project.

RESPONSE:

- 1 The environmental inspector will be responsible for ensuring that any active bat hibernacula
- 2 encountered during construction will remain undisturbed until unoccupied. Mitigation
- 3 measures to be implemented include contacting Manitoba Sustainable Development as soon as
- 4 a bat hibernaculum is identified, establishing a 200 m buffer around identified bat hibernacula
- 5 within which no machinery with potential to disturb bats may operate, installing flagging along
- 6 the buffer perimeter, and monitoring the site to ensure that project-related disturbances do
- 7 not resume until after the hibernaculum has been vacated. There are no pathways for effects
- 8 on bat hibernacula during operation, therefore no specific mitigation measures are proposed.

SUBJECT AREA: Wildlife, Wildlife Habitat

REFERENCE: MWL-IR-024

QUESTION:

Please provide documentation and support for statement "suggested timing is understood to represent time of day when detectability is typically good, rather than a strict limitation and therefore the later effort was not considered to bias the results."

RESPONSE:

- 1 Detectability of amphibians is largely driven by environmental conditions (e.g., air and/or water
- 2 temperature, wind, daylight). Ideal survey conditions (e.g., sunny, warm, winds less than 20
- 3 km/hr) are not limited to a specific time of day.

- 4 The Government of Saskatchewan (2014) protocol recommends conducting visual searches
- 5 between 0900 and 1500, citing Grant *et al.* (2005) as the basis for timing. However, Grant et al.
- 6 (2005) merely reported that their surveys occurred within those hours, they did not
- 7 recommend them. Moreover, Grant *et al.* (2005) conducted their surveys in spring in the
- 8 northeastern United States and targeted different species, therefore their methods have
- 9 limited applicability to late summer visual encounter surveys in the Canadian prairies. Alberta's
- 10 protocol for amphibian visual encounter surveys (AEP 2013) specifically targets northern
- 11 leopard frogs and salamanders, and simply states that surveys "should be conducted during
- 12 daylight hours". The timing of surveys conducted for the Project is therefore considered valid.

- 13 References:

- 14 Alberta Environment and Parks. 2013. Sensitive Species Inventory Guidelines. Alberta
- 15 Environment and Parks, Edmonton AB, 128 pp.

- 16 Government of Saskatchewan. 2014. Species Detection Survey Protocols Amphibian Visual
- 17 Surveys. Ministry of Environment, Fish and Wildlife Branch. Regina SK, 11 pp.

- 18 [http://publications.gov.sk.ca/documents/66/89829-df579dc1-5ed4-43fa-ba4d-](http://publications.gov.sk.ca/documents/66/89829-df579dc1-5ed4-43fa-ba4d-7d4ef60b5fc4.pdf)
- 19 [7d4ef60b5fc4.pdf](http://publications.gov.sk.ca/documents/66/89829-df579dc1-5ed4-43fa-ba4d-7d4ef60b5fc4.pdf)
- 20 Grant, E.H.C., R.E. Jung, J.D. Nichols, and J.E. Hines. 2005. Double-observer approach to
- 21 estimating egg mass abundance of pool-breeding amphibians. *Wetlands Ecology and*
- 22 *Management* 13: 305-320.

SUBJECT AREA: Wildlife, Wildlife Habitat

REFERENCE: MWL-IR-025

QUESTION:

Please provide Manitoba Hydro's rationale for the EIS content, if only one visual encounter survey occurred at each survey location for MMTP in late August and September when the Species Detection Survey Protocols developed by the Saskatchewan Government states "Surveys must be conducted between May and September". In particular, explain Manitoba Hydro's rationale for the departure from this standard in favour of survey times that correspond with *its experience*, which has not yet been identified nor articulated.

Provide particulars and all other documents and data relied upon to support Manitoba Hydro's assertion that it has been its experience, "that late summer can be at least equally effective."

RESPONSE:

1 We interpret the statement "Surveys must be conducted between May and September" to
2 mean that amphibian surveys should be held within that period, but not necessarily throughout
3 all of it. Optimal timing can depend on target species and survey goals. Since one of our
4 objectives was to identify sensitive sites where amphibians (e.g., northern leopard frog)
5 congregate to overwinter, we focused investigations on the later part of this period when
6 amphibians were most likely to exhibit this behavior (Collicutt pers. comm. 2014). Alberta
7 Environment and Parks (2013) specifically recommends surveys from August to early
8 September for northern leopard frogs. In addition, salamander eggs are often more difficult to
9 spot because they are laid singly or in small clumps (AEP 2013), and a later summer survey can
10 therefore allow for greater potential for detection of metamorphosing individuals. Stantec has
11 had previous success documenting northern leopard frogs in late summer.

12 Reference:

- 13 Alberta Environment and Parks. 2013. ESRD Sensitive Species Inventory Guidelines 2013.
- 14 Government of Alberta, Edmonton AB, 128 p.
- 15 Personal Communication:
- 16 Collicutt, Doug. 2014. Biologist. Manitoba Herps Atlas. Email correspondence with Shirley Bartz,
- 17 Stantec Consulting, Ltd. Regina, November 2014.

SUBJECT AREA: Wildlife, Wildlife Habitat

REFERENCE: MWL-IR-026

QUESTION:

Please provide explanation as to why the Saskatchewan Protocol is cited in the Environmental Impact Assessment, although it was not followed, nor considered to be relevant to Manitoba Hydro's purposes?

Please provide basis or documents in support of the assertion that, "the Saskatchewan Protocol is aimed at thorough inventory of individual sites by using visual detection alone".

Although Manitoba Hydro distinguishes its purposes with those underlying the Saskatchewan Protocol, please provide the basis for the rationale that a single visual encounter was considered sufficient for this project?

RESPONSE:

- 1 Although the Saskatchewan amphibian visual survey protocol (SMOE 2014a) is not legally
- 2 applicable to Manitoba, aspects of it were considered relevant (e.g., survey length) and
- 3 therefore followed in the absence of Manitoba-specific amphibian survey guidelines.

- 4 We stated "the Saskatchewan Protocol is aimed at thorough inventory of individual sites by
- 5 using visual detection alone" because it is aimed at "amphibians which cannot be identified or
- 6 detected readily by their call using auditory surveys" as defined in the protocol's introduction.
- 7 A separate amphibian auditory survey protocol (SMOE 2014b) was used to guide Manitoba
- 8 Hydro's spring surveys, as outlined in Section 2.5.3.2 of the Technical Data Report.

- 9 A single visit in the fall was felt to be sufficient as the data gathered during visual encounter
- 10 surveys augmented amphibian data gathered during other surveys (i.e., wetland herptile
- 11 surveys and roadside amphibian call count surveys).

- 12 References:
- 13 SMOE (Saskatchewan Ministry of Environment). 2014a. Amphibian visual survey protocol. Fish
14 and Wildlife Branch Technical report # 2014-2.0. Regina, SK, 9 pp.
- 15 SMOE. 2014b. Amphibian auditory survey protocol. Fish and Wildlife Branch Technical report #
16 2014-2.0. Regina, SK, 11 pp.

SUBJECT AREA: Wildlife, Wildlife Habitat

REFERENCE: MWL-IR-027

QUESTION:

Confirm that Manitoba Hydro undertook a process that included the identification of potential burrowing sites, if not, why not?

Provide methodology employed to identify burrowing sites and basis for any methodology used to further identification.

RESPONSE:

- 1 Manitoba Hydro's surveys did not systematically target herptile burrowing sites. Burrows used
- 2 by herptiles are often inconspicuous (e.g., within dense vegetation) and may vary from year,
- 3 therefore burrow searches have limited value for routing or effects evaluation. Instead,
- 4 wetland herptile surveys, as described in the Technical Data Report (Section 2.5.3.1) were used
- 5 to identify the location of important wetlands where amphibians and reptiles may congregate
- 6 for breeding and/or overwintering.

SUBJECT AREA: Wildlife, Wildlife Habitat

REFERENCE: MWL-IR-028

QUESTION:

Provide explanation as to Manitoba Hydro's refusal to release the information requested to the Clean Environment Commission and its participants, the underlying purpose of the EIS process being, amongst other things, the protection of wildlife and habitats.

Provide explanation as to how the release of this information to the Clean Environment Commission and its participants "could put a species at risk", and describe any basis for such assertion.

Does the answer contained in MWL-IR-028 also mean that Manitoba Hydro consultants are provided with the species data?

RESPONSE:

- 1 Manitoba Hydro was not inferring that the CEC or its participants "could put species at risk".
- 2 Rather, due to the nature of the Clean Environment Commission Hearing for MMTP being a
- 3 public process, the release of the exact locations of flora and fauna into the public domain
- 4 would be counter to the efforts Manitoba Hydro takes for the protection of wildlife and wildlife
- 5 habitat.

- 6 Manitoba Hydro consultants collected the species data referred to in MWL-IR-028. Species data
- 7 from visual encounter surveys is located in Table 2-24 of the Wildlife and Wildlife Habitat
- 8 Technical Data Report. Manitoba Hydro consultants are also subject to strict non-disclosure
- 9 and confidentiality terms within contractual agreements.

SUBJECT AREA: Wetland, Loss Compensation

REFERENCE: MWL-IR-031

QUESTION:

Please provide all emergency response plans in place for the Project. In the event emergency response plans have not yet been developed, please describe anticipated emergency measures in place for the protection and preservation of wetlands and wetlands species.

Would Manitoba Hydro work with Ducks Unlimited or other organizations to conserve replacement areas of wetlands damaged by MMTP?

At line 12 of the response by Manitoba Hydro, it states “there is currently no regulatory mechanism for offsetting effects to wetlands in Manitoba”. How does this statement align with the objective of sustainability in relation MMTP?

Provide examples of wetlands compensation resulting for EIS and regulatory review in Canada, including which species benefited.

RESPONSE:

- 1 In addition to a Corporate Emergency Management Plan (described in MWL-IR-103), each
- 2 contractor will maintain their own Emergency Response Plan that addresses the safety of
- 3 workers and is part of Manitoba Hydro’s contracting requirements. These plans will be
- 4 developed by the contractor and will describe anticipated emergency measures such as spill
- 5 response, erosion and sedimentation control, and the use of rig matting if required in unfrozen
- 6 conditions for the protection and preservation of wetlands and wetlands species.

- 7 Chapter 10 – Assessment of Potential Effects to Vegetation and Wetlands outlines a loss of
- 8 wetlands as a result of the Project will be limited to a small area at the switch yard at Dorsey

9 station and at tower locations. Sustainability is sometimes described as a consideration of
10 three pillars, or domains, including a consideration of environment, economy and social
11 aspects. It is Manitoba Hydro's position that this project provides a balancing of each pillar of
12 sustainability through broad engagement, routing and the proposed mitigation measures
13 associated with the Project. Chapter 23 of the MMTP EIS describes how each of these pillars
14 are met by the Project, and provides specific discussion on how the project is aligned with both
15 provincial and federal guidance on topic.

16 Manitoba Hydro is not proposing wetland compensation for MMTP as the anticipated effects to
17 wetlands will largely be limited to a small area at the switch yard at Dorsey station (0.14 ha) and
18 at tower locations that require excavation. As wetland compensation is not proposed, a review
19 of wetland compensation examples in Canada and species that benefited would not be helpful.

SUBJECT AREA: Wetland, Loss Compensation

REFERENCE: MWL-IR-032

QUESTION:

It is stated in Chapter 10 that there will be permanent wetland loss. Are there mitigation measures in place to replace, or offset the habitat loss?

Why has Manitoba Hydro not assigned a value to the negative impact on wetlands? Wetlands provide ecosystem services and environmental benefits that contribute to the health and well-being of the community and the ecosystems. Explain the approach taken in the EIS.

Does Manitoba Hydro confirm that it needs to fulfill federal and provincial policies regarding wetlands in its EPP for MMTP?

RESPONSE:

1 Manitoba Hydro has assessed the magnitude of Project effects to wetland cover class
2 abundance, distribution, structure and function as low. Effects to wetlands will largely be
3 limited to a small area at the switch yard at Dorsey station (0.14 ha) and at tower locations that
4 require excavation. The function of wetlands at tower excavations will not be measurably
5 reduced or eliminated due to the small size of tower excavations (2m²), large size of the
6 remaining wetland, and because routing has largely avoided the wetlands except for the
7 surrounding upland vegetation. Mitigation measures will be employed to limit effects to
8 wetland areas beyond the construction footprint, such as maintaining shrub and herbaceous
9 vegetation within riparian buffers and maintaining natural drainage patterns and flows (EIS
10 Section 10.5.4.2).

11 The PDA will intersect the Caliento, Sundown and Piney bog complexes, but all three wetland
12 complexes are large intact patches which extend beyond the LAA into the RAA. The PDA
13 intersects only a small area along the edge of each wetland complex. In addition, construction
14 in these wetlands will occur under frozen ground conditions, which will reduce potential effects

15 on wetland function. As a result, mitigation measures to offset or replace lost wetland area or
16 function are not proposed and a monetary or offset value has not been suggested.

17 Manitoba Hydro is committed to adhering to all legislative requirements in the development of
18 this Project. Approval under relevant and applicable regulations will be obtained as required
19 and applicable policies will be followed.

20 The approach used in the EIS was to determine potential effects to wetlands, including
21 function, from Project construction and operation activities, following implementation of
22 mitigation measures and to determine overall significance of effects.

SUBJECT AREA: Tower, Spans

REFERENCE: MWL-IR-035

QUESTION:

Please indicate how wind as a potential environmental hazard (Section 9.12 of CEC's MMTP Final Scoping Document) impacts structure height since the response to MWL-IR-035 did not include wind.

Would not a lower tower height be less impacted by a wind hazard?

RESPONSE:

- 1 A lower tower, at shorter spans would be impacted in the same way as a taller tower at larger
- 2 spans. The majority of wind load on a transmission structure is imparted by the wind pressure
- 3 on the conductors. The load is due to the effect of the wind pressure upon a wind span,
- 4 adjusted for conductor height (wind factor) and tower spans (span factor).

SUBJECT AREA: Tower, Landowners Affected

REFERENCE: MWL-IR-036

QUESTION:

A self-supporting steel lattice tower with a 100 square metres of footprint area on crop land provides opportunity for weeds to grow. Is this an item of concern?

If landowners were not asked for their opinion on the impact to them of the larger 100 square metre footprint every 400 metres compared to the much smaller footprint every 200 to 250 metres of a low profile tubular steel tower, then what evidence can you supply to support your claim that fewer (but much larger) obstacles would be preferable?

RESPONSE:

- 1 The EIS and response to MWL-IR-036 did not indicate that larger tower footprints with fewer
- 2 towers was preferred over smaller footprint towers with more towers (i.e., tubular steel
- 3 towers). As noted in the EIS Chapter 2 page 20, Manitoba Hydro was simply stating a fact that,
- 4 "...steel lattice towers allow for longer span lengths, thereby reducing the number of obstacles
- 5 that land owners may need to avoid when operating agricultural equipment". Regarding weed
- 6 control, Manitoba Hydro acknowledges that there may be concerns regarding weed control
- 7 around towers; structure impact compensation provided to landowners for lands classed as
- 8 agricultural considers weed control underneath and in close proximity to the tower footprint.

SUBJECT AREA: Tower, Configuration

REFERENCE: MWL-IR-037

QUESTION:

What constraints prevented alternative tower configurations from being presented to impacted landowners in the public engagement and consultation process?

RESPONSE:

- 1 There were no constraints. However, there were no alternative tower configurations
- 2 acceptable to Manitoba Hydro that would have been presented in any event. Further, tower
- 3 design was not raised as a concern in the public engagement process.

SUBJECT AREA: Tower, Configuration

REFERENCE: MWL-IR-038

QUESTION:

Please provide evidence that a monopolar structure/tubular steel is not an alternate structure type for this transmission line, taking into account reduced right-of-way width and less land use is possible, lower tower height when the span is reduced by say 50%, foundations can be pile driven in suitable soil so faster construction time, and opportunity to share existing rights-of-way, all present value over the life of the transmission line.

RESPONSE:

- 1 Based on an internal cost comparison for transmission structures in southern Manitoba,
- 2 installed construction cost (not including line hardware) for a single tubular tower is
- 3 approximately 70% of the installed cost for a single self supporting lattice tower. However, with
- 4 the increased number of tubular structures required, the total cost of a tubular line is higher.
- 5 Assuming 500m spans for lattice and 250m spans for tubular structures, a line constructed with
- 6 tubular towers would increase the cost of the line by as much as 40%. This is based on 240 kV
- 7 structure costs in southern Manitoba.
- 8 The assumption of reduced ROW width is not accurate as explained in MWL_IR-090, thus any
- 9 reduction in land use is minimal and the opportunities for shared rights-of-way beyond the use
- 10 of existing transmission corridors for almost half of the projects length are not realized.
- 11 Not included in the cost comparison, but would also need to be considered, would be the
- 12 challenges associated designing economical foundations for large overturning moments on
- 13 tubular structures. With the high overturning moments and large loads developed by the
- 14 anchor bolts, tubular structures would require multiple driven precast piles with a large cap up
- 15 to 3m in depth. The faster construction time suggested would not include the additional time
- 16 required to tie the multiple driven piles together. This would require substantially more time.

17 BiPole III tangent towers supported by a single monolithic cast in place pile took, on average, 1
18 day to complete. The angle towers on BiPole III, multiple piles tied together with a cap, took on
19 average 5 days (1 day for piles, 3 days to form and 1 day to pour). An additional concern with
20 driven piles would be the bio-security issues created by the large amount of equipment
21 required on site (drill rig, crane, driving equipment, skid steer, flat deck trucks, concrete trucks).

22 Lattice towers have the advantage of resolving their foundation loads into pure tension and
23 compression, which can be resisted by a multitude of foundation types. Precast mat footings,
24 cast in place piles, micropiles and helical piles have all been successfully used to support lattice
25 towers. Helical piles have been successfully used to mitigate bio-security concerns by
26 minimizing the amount of traffic at a tower sites. Tubular towers have not traditionally been
27 supported by helical piles (or driven piles), due, in part, to the complexity and cost associated
28 with the attachment of the tower to the foundation.

SUBJECT AREA: Tower, Design

REFERENCE: MWL-IR-039

QUESTION:

Please confirm that a low profile, more acceptable appearing transmission structure and transmission line can be designed to the same standards as D604I is designed to.

RESPONSE:

- 1 A low profile transmission (assuming compact tower head geometry) structure could not be
- 2 designed to the same standards as D604I is designed to.

- 3 Electrically, the current D604I tower head design is as compact as possible while still providing
- 4 safe clearance for live line work which is a D604I design requirement. The inability to perform
- 5 live line work would result in more scheduled line outages and reduced availability of this 500-
- 6 kV transmission interconnection. Other electrical design aspects aggravated by compaction,
- 7 such as increased radio interference and audible noise, could be mitigated either by selecting a
- 8 larger conductor size or by increasing the average conductor height through increasing the
- 9 number of low-profile towers – both of which would add to the cost of the line. Furthermore,
- 10 the current ROW width for the self supporting section of MMTP is governed by an audible noise
- 11 limit and will not be reduced through compaction. D604I electrical requirements would not be
- 12 realized through a compact, low-profile design.

- 13 From a purely structural perspective, you could design a low profile transmission structure that
- 14 would meet the D604I structural requirements, but more structures would be required,
- 15 increasing the property, bio-security and agricultural impacts as well as the overall cost.
- 16 Manitoba Hydro provides a least impact design by minimizing the number of structures
- 17 required. Based on Manitoba Hydro's past experience, lattice structures are the most
- 18 economical solution for supporting large loads in areas requiring large ground to line clearances

- 19 and long spans. Lattice structures can be optimized easily and long spans can be achieved with
- 20 relatively light structures.

SUBJECT AREA: Tower, Social Acceptability

REFERENCE: MWL-IR-040

QUESTION:

Given that it is stated "The existence of right-of-way (ROW) is seen as more significant than the width of the ROW", was any attempt made to design the D604I transmission line that could share existing ROW south of Vivian?

We note that this is being undertaken to a certain extent from Dorsey to Vivian. Given the increasing challenge of finding new ROW for high voltage transmission, shared ROW, particularly with compacted line design, could include either of R49R, M602F, provincial roads such as 203 and 210, or even the CN rail line through Sprague. Were any considerations given to sharing such existing rights-of-way?

RESPONSE:

1 Manitoba Hydro determined there were no opportunities for it to design a 500-kV transmission
2 line that met Manitoba Hydro design standards and could completely share an existing ROW
3 south of Vivian. However, Manitoba Hydro did make use of several paralleling opportunities of
4 an existing 230-kv transmission Line R49R. Rationale for Manitoba Hydro's chosen design and
5 right-of-way requirements is further explained in MWL-IR-39, MWL-IR-89, MWL-IR-90. Effects
6 on rail signaling of a 500-kv transmission line are described in SSC-IR-139. Explanation of how
7 Manitoba Hydro's use of the EPRI-GTC routing methodology considered opportunities and
8 evaluated constraints associated with sharing and/or paralleling existing rights-of-way can be
9 found in Chapter 5 of the EIS, in Sections 5.3.3.1, 5.4.3.1. Manitoba Hydro also considered
10 additional paralleling opportunities brought forward through the public engagement process as
11 described in CEC-IR-008.

SUBJECT AREA: Corridor, Model

REFERENCE: MWL-IR-043

QUESTION:

It is stated that "Manitoba Hydro must have ultimate decision making authority." Please explain why? The CEC makes the recommendation to the Minister after weighing the input from Manitoba Hydro and from participants' expert witnesses and impacted knowledgeable communities and individuals.

RESPONSE:

1 The quote referenced above, was stated with reference to the selection of the tower type to
2 use in any given location along the final preferred route for the transmission line. In the
3 response to MWL-IR-043, it is stated:

4 *"Please see the response MWL-IR-040. As tower type selection involves a number of*
5 *considerations including cost and system implications, land use and industry standards,*
6 *Manitoba Hydro must have ultimate decision making authority."*

7 The responsibility for transmission development and the mandate to do this in a cost effective
8 manner lies with Manitoba Hydro. Locating and designing towers for specific applications along
9 a transmission line involves the balancing of technical details, industry standards, knowledge of
10 land use, and various other considerations – including input or constraints received through
11 regulatory processes.

SUBJECT AREA: MMTP, Delay Advantages

REFERENCE: MWL-IR-044

QUESTION:

The response from Manitoba Hydro to MWL-IR-044 on delaying the in-service date of this line states that "This question is out of the scope of the Clean Environment Commission hearing." Since the Reference for the Scope of the Clean Environment Commission hearings requires an expected in-service date, proposed construction schedule and a project to "promote economy and efficiency in the development, generation, transmission, distribution, supply and end-use of power", please explain further why this MWL-IR-044 is "out of scope".

The original requests in MWL-IR-044 for delay have an impact on the schedule for MMTP since Keeyask is not scheduled to come on-line until August 2021 and the MMTP in the spring of 2020. Please comment on whether a delay in the MMTP line schedule can be effectively accommodated?

RESPONSE:

- 1 Manitoba Hydro is not intending to delay the MMTP line at this time, as the line is still needed
- 2 for import capability, particularly with a delay in Keeyask.

SUBJECT AREA: Groundwater/Aquifers

REFERENCE: MWL-IR-047

QUESTION:

Further to what is stated in lines 8-10 of Manitoba Hydro's response to Question # MWL-IR-047, particularize what other VC's in the assessment would capture any potential changes to the groundwater quality or quantity?

How would any particularized VC's capture any potential changes to the groundwater quality or quantity?

In furtherance of the aforementioned questions, what is the scientific rationale for including groundwater as a pathway component rather than a valued component, apart from Manitoba Hydro's explanation in lines 9-10 that the quality or quantity would be captured by other VC's in the assessment?

RESPONSE:

- 1 As indicated in the Introduction section of the Groundwater Technical Data Report, the VCs that
- 2 used groundwater quality and/or quantity information include the Land and Resource Use VC
- 3 and the Fish and Fish Habitat VC. The Land and Resource Use VC reviewed groundwater
- 4 information from the Groundwater Technical Data Report in relation to groundwater wells and
- 5 well use. The Fish and Fish Habitat VC reviewed groundwater information from the
- 6 Groundwater Technical Data Report in relation to the interconnectivity between groundwater
- 7 and surface water because groundwater can provide a source of recharge to streams.
- 8 Additionally, the Fish and Fish Habitat VC reviewed information regarding the reported
- 9 potential for a release of groundwater into surface water (contingency event).

- 10 As discussed in Chapter 7 (Assessment Methods), if change to an environmental element was
- 11 ultimately captured by an assessment of an existing VC, the element was considered a pathway
- 12 component. Changes to groundwater quality and quantity would be felt by the receptors of the

13 groundwater, thus the changes are assessed in the Land and Resource Use VC. Section 16.5.7
14 presents this assessment. Section 16.5.7.1 identifies the pathways for a change; 16.5.7.2 lists
15 mitigation for potential changes, and 16.5.7.3 assesses the residual effects on change in
16 groundwater use. Mitigation for potential changes to groundwater are also presented in the
17 Fish and Fish Habitat VC, Section 8.5.2.2.

SUBJECT AREA: NFAT

REFERENCE: MWL-IR-049

QUESTION:

What is Manitoba Hydro's definition of externalities? Given that externalities have been part of the review, and questions for the EIS for Hydro projects, provide clarification: Does Manitoba Hydro indicate that no externalities are involved in the assessment in the EIS for the MMTP? Is Manitoba Hydro aware that the NFAT conducted by the PUB did not include the EIS for the MMTP?

Further to what is stated in lines 1-2 of Manitoba Hydro's response to MWL-IR-049, elaborate as to how the definition of "environmental externalities", as it was explained in MWL-IR-049:

- relates to the Needs For and Alternatives To ("NFAT"); and
- how that definition relates to justification of the MMTP project.

RESPONSE:

- 1 The economic assessment of the project relates to the need for, and the justification for, the
- 2 project itself. The need and justification for the project were dealt with by the Public Utilities
- 3 Board at the NFAT and, as stated at Pre-Hearing # 1 held on January 17, 2017 (Transcript Page
- 4 13), those issues are not to be dealt with at this environmental hearing.

- 5 The EIS was not yet filed at the time of the NFAT. The MMTP EIS has not used the term
- 6 'environmental externalities' or the term 'externality.' A full description of potential effects is
- 7 described within the EIS. As the costs of those effects may be different to different people or
- 8 communities, a dollar value has not been included in the assessment.

- 9 In terms of the use of "environmental externalities" by MWL, it has not been defined other
- 10 than to say: "See definition of externalities and discussion in the transcript for Keeyask, CEC
- 11 transcript and exhibits.". Therefore, Manitoba Hydro cannot provide any further answer.

SUBJECT AREA: Groundwater, Health, Well-being

REFERENCE: MLW-IR-050

QUESTION:

Further to what is stated in lines 6-9 of Manitoba Hydro's response to MWL-IR-050:

- Particularize all sources of literature that Manitoba Hydro reviewed to inform the assessment related to groundwater quality;
- Provide any and all Manitoba Hydro transmission line corridor herbicide program documentation that was used by Manitoba Hydro to inform the assessment related to groundwater quality; and
- Specify the exact frequency of herbicide application, and the context in which the application of herbicide is used as it is referred to in lines 8-9 of this response.

RESPONSE:

- 1 The sources relied upon to inform the assessment related to groundwater quality are listed in
- 2 the references section of the Groundwater Technical Data Report.

- 3 Manitoba Hydro maintains guidance documents that reflect beneficial management practices
- 4 as part of its EPP, including documents related to vegetation management strategies and
- 5 pesticide application requirements for transmission lines and stations. From the Province,
- 6 baseline data for the provincial groundwater monitoring wells within the Regional Assessment
- 7 Area were requested. As indicated in the Groundwater Technical Data Report, the provincial
- 8 groundwater monitoring wells are not, and have not historically, been sampled for herbicides
- 9 as part of their monitoring program and therefore no baseline well water data is available and
- 10 was not shared with Manitoba Hydro.

- 11 Construction of the project does not include the use of herbicides. The use of herbicides as part
- 12 of the vegetation and management program for transmission lines in general is targeted and
- 13 infrequent. Manitoba Hydro is not able at this time to provide an exact frequency of herbicide

14 application for MMTP, however post initial clearing, with the development of an integrated
15 vegetation management plan, the entire ROW will be assessed for vegetation management
16 treatment options. Typically 3-5 years post clearing, portions of the ROW will require herbicide
17 application in response to rapid tree re-growth due to suckering. After this initial herbicide
18 treatment, there may be follow-up treatments at a much reduced scale and timeframe to treat
19 encroachment and sporadic re-growth along the right-of-way every 5-15 years.

20 As the frequency of application is limited both geographically and temporally, the contribution
21 of herbicides related to vegetation maintenance would be substantially lower than that related
22 to agricultural applications.

23 Manitoba Hydro applies annually for provincial “Pesticide Use Permits” prior to herbicide
24 application along its transmission lines. The Province ultimately relies on the Pesticides
25 Management Regulatory Agency (PMRA) which is responsible for approving all pesticides and
26 herbicides for use in Canada. The PMRA approval process evaluates the potential effects of
27 products in humans and the receiving environment – including surface water and groundwater
28 – and uses this information to set application limits on the use of these products to prevent
29 affecting surface water and groundwater.

30 Direct supervisors of herbicide applicators working for Manitoba Hydro on Manitoba Hydro
31 rights-of-way are trained and licensed by the Province before applying herbicides. Manitoba
32 Hydro must also provide a “Post Seasonal Report” to the Province, providing specific
33 information on the work that was done including the herbicide products used, respective
34 quantities, specific application locations, applicator(s) name and other information as required
35 by the Province.

SUBJECT AREA: Greenhouse Gas

REFERENCE: MWL-IR-051

QUESTION:

Further to Manitoba Hydro's response MWL-IR-051, and further to the statement in the sixth bullet in the "Rationale for Inclusion in the EIS" column" on page 7-9, as part of Table 7-1, which states: "The Project may result in an increase in greenhouse gas emissions during the construction, operations and maintenance phases", specify how the MMTP alone, that is, without consideration of how MMTP may displace GHG emissions, may result in an increase in GHG emissions in Manitoba during the construction, operations, and maintenance phases of the MMTP project.

Please explain how MMTP displacement of GHG's as per line 13 would occur in Manitoba? Given the assertions in Manitoba Hydro's response to MWL-IR-51, please describe and provide sources for the approach Minnesota Power intends to back up wind energy using power imported via MMTP.

RESPONSE:

1 The MMTP may result in an increase in GHG emissions in Manitoba during the construction,
2 operations, and maintenance phases of the MMTP project. Table 2 of The *Greenhouse Gas Life*
3 *Cycle Assessment of the Manitoba–Minnesota Transmission Project* summarizes the non-
4 generation GHG emissions per life cycle stage for the transmission line and the station
5 upgrades. The construction phase includes emissions from producing necessary construction
6 materials and transporting them to site, as well as on-site emissions to construct the
7 transmission line and stations. The operation phase includes emissions from site maintenance.
8 Decommissioning primarily includes dismantling existing structures and recycling components.
9 Land use change emissions are broken out separately and are primarily associated with
10 permanent conversion of forest to shrub or grassland for the right-of-way. Table 5 provides
11 more detailed life cycle results. Both Table 2 and Table 5 indicate whether estimated emissions

12 occur within Manitoba or outside of Manitoba. The majority of emissions occurring in Manitoba
13 are from land use change. Land use change emissions are primarily associated with the
14 conversion of forested areas to grassland or shrub land for the new right-of-way.

15 The MMTP will help displace GHG emissions in Manitoba. Over the long term the MMTP will
16 lead to an increase in imports from the interconnected region during low flow conditions. This
17 increase will displace the need for some fossil-fueled generation in Manitoba, which in turn
18 displaces Manitoba emissions.

19 Manitoba Hydro is not in a position to respond to questions regarding Minnesota Power's
20 intentions.

SUBJECT AREA: Groundwater

REFERENCE: MWL-IR-055

QUESTION:

Further to Manitoba Hydro's response to MWL-IR-055, and further to lines 15-16, how has Manitoba Hydro determined the period of time that the depth of the work could interact with the shallow sand and gravel aquifers?

What timeframe does Manitoba Hydro refer to in referencing a "short" period of time?

How, and in what ways, will the depth of this work potentially interact with the shallow sand and gravel aquifers?

How did Manitoba Hydro consider the impact on groundwater that may be connected to surface water, when it assessed its surface water impacts and water crossings?

RESPONSE:

- 1 Manitoba Hydro determined the period that the depth of work could interact based on the
- 2 duration of the activities that have potential to interact with groundwater.

- 3 The duration is considered "short" based on the estimated timeframe of these activities (<3
- 4 years) as outlined in Chapter 2, Project Description (Section 2.12).

- 5 Activities that have potential to interact with groundwater include geotechnical investigations
- 6 and tower foundation work Alteration via contamination and/or spillage of hazardous materials
- 7 or from providing interconnection between previously separated aquifers is also discussed as
- 8 part of Accidents, Malfunctions and Unplanned Events (Chapter 21). These events are not
- 9 planned construction or operation activities, so the duration of effect for these events has not
- 10 been included in the assessment; however, the effect and the response to these events has
- 11 been contemplated in Chapter 21.

12 Chapter 16, Assessment of Potential Environmental Effects on Land and Resource Use (Section
13 16.5.7), and Chapter 2, Project Description (Section 2.12), detail how and in what ways Project
14 construction will potentially interact with shallow sand and gravel aquifers. Part of the rationale
15 for conducting geotechnical investigations is to better understand groundwater conditions in
16 the locations where towers will be constructed. Tower foundations and the method of
17 installation are designed to suit the conditions of the area being drilled. Tower siting,
18 foundation design (including the use of screw piles in wetland conditions), and the use of
19 qualified drillers are measures put in place to minimize groundwater interaction.

20 The main pathway of effect to surface water from connection to groundwater is through
21 accidents and malfunctions, leading to contamination of groundwater which in turn could lead
22 to contamination of surface water. This is covered Chapter 21, Section 21.5, which covers spills,
23 effects pathways, and mitigation and describes potential residual effects.

24 Additional pathways not covered include changes to groundwater flows leading to changes in
25 surface water base flow or changes in temperature. The assessment of potential effects to
26 groundwater (Chapter 16, Section 16.5.7) concluded that there is no expected change in
27 groundwater quantity; therefore this was not considered a potential effect pathway to surface
28 waters.

SUBJECT AREA: Wildlife, Wildlife Habitat

REFERENCE: MWL-IR-058

QUESTION:

Apart from literature relating to avian wildlife, specify any literature or data that was reviewed in relation to other mammalian wildlife that is known to occur within the region of the Local Assessment Area (LAA) in relation to the MMTP project.

Why does Section 9.2.1 of the EIS state "A review of literature for other wildlife known to occur within the region [...]", yet the majority of the literature that Manitoba Hydro states as being reviewed in lines 7-26 is literature written in relation to regions outside of Manitoba?

Furthermore, why is Manitoba Hydro referencing literature that is not peer-reviewed (i.e. Storlie, J. 2006. Movements and habitat use of female Roosevelt elk in relation to human disturbance on the Hoko and Dickey Game Management Units, Washington. A thesis presented to the Faculty of Humboldt State University)?

Manitoba Hydro's response indicates, "the size of the PDA is defined in section 7.3.2.4.1 (Spatial Boundaries) as being 80-100 m wide along the new right of way, and 177-245m along the existing transmission corridor, plus station modification footprints, and associated access roads and marshalling yards." Please provide a complete answer regarding the PDA based on the rest of the footprints, access roads, and marshalling yards.

How many LAA boundaries are there, and what size are they. Do each of them include a one (1) km buffer? Does the EIS contain a map of each and if so where?

Please confirm that Manitoba Hydro establishes the LAA, and RAA and PDA in relation to the region, biophysical concerns and nature of the transmission project as reflected in "whereas 5 km buffers were used for the St. Vital Transmission EA and the Bipole III EA, a more conservative buffer of 15 KM was adopted to MMTP, in part to better reflect the range of movement of large mammals known." Further confirm, why only large mammals are relevant in setting these spatial boundaries.

RESPONSE:

- 1 The full list of references is provided in Section 5 of the Wildlife and Wildlife Habitat TDR and
2 Section 9.11 of the EIS; literature specific to large mammal populations in Manitoba is
3 highlighted in the response to MWL-IR-100.
- 4 Section 9.2.1 was focused on a review of literature concerning species that are found in the
5 RAA, but since studies specific to southeastern Manitoba are limited, this included research
6 from elsewhere to better inform the assessment.
- 7 For some topics, little has been published in peer-reviewed journals, therefore other
8 documented research (such as theses and government technical reports) provides the best
9 available information.
- 10 More precise details on the PDA will be dependent on final siting, including consideration of
11 findings from pre-construction surveys.
- 12 As described in Section 9.2.1 of the EIS, there is a single LAA defined as a 1 km buffer around all
13 components of the PDA. The LAA is shown in Map 9-5.
- 14 Manitoba Hydro does establish the PDA, LAA, and RAA specific to each project, as described in
15 Section 7.3.2.4 of the EIS. For the assessment of wildlife and wildlife habitat, the extent of the
16 RAA was guided by the home range of species with the largest range of movement, which
17 happens to be large mammals.

SUBJECT AREA: Assessment Area

REFERENCE: MWL-IR-059

QUESTION:

What sources of literature and information, apart from information obtained by members of a First Nation, indicate the type(s) of wildlife and the extent of wildlife populations that are known to occur in southeastern Manitoba in reference to line 11 of Manitoba Hydro's response to MWL-IR-059?

RESPONSE:

- 1 Literature and key person interviews providing information on the distribution of large mammal
- 2 species are outlined in Sections 2.3.1 and 2.3.2, respectively, of the Wildlife and Wildlife Habitat
- 3 TDR. Specifically:

4 **References**

5 Banfield, A.W.F. 1974. The Mammals of Canada. National Museum of Natural Sciences,
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7 MCWS (Manitoba Conservation and Water Stewardship). 2011. 2011 Big Game Aerial
8 Survey Report Vita-Caribou Elk Population (GHA 35A). Manitoba Conservation,
9 Winnipeg, MB.

10 MCWS. 2013. 2013 Manitoba Hunting Guide [online]. Available from
11 [https://www.gov.mb.ca/conservation/wildlife/hunting/pdfs/FINALHunting_Guide2013_](https://www.gov.mb.ca/conservation/wildlife/hunting/pdfs/FINALHunting_Guide2013_WEB.pdf)
12 [WEB.pdf](https://www.gov.mb.ca/conservation/wildlife/hunting/pdfs/FINALHunting_Guide2013_WEB.pdf) [accessed January 10, 2014].

13 MCWS. 2014. 2014 Manitoba Hunting Guide [online]. Available from
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- 32 Wilcox, D. 2013. Big Game Compensation Experience in Manitoba. Yield Manitoba 2013:
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39 [content/uploads/2013/02/YMB_130214.pdf](http://www.agcanada.com/wp-content/uploads/2013/02/YMB_130214.pdf) [accessed July 23, 2015].

40 **Personal Communication**

41 Berezanski, Dean. 2015. Provincial Furbearer Biologist, Manitoba Conservation and
42 Water Stewardship, Wildlife Branch. Telephone conversation with Angèle Watrin
43 Prodaehl, Stantec Consulting Ltd., Winnipeg, MB, February 18, 2015.

44 Bennett, Brynley, 2014. President –Seine River Game & Fish Association. Key Person
45 Interview with Mike Sweet, Stantec Consulting Ltd., Winnipeg, MB, November 6, 2014.

46 Bilawchuk, William. 2014. Rural resident and landowner, Arbakka, MB. Telephone
47 conversation with Mike Sweet, Stantec Consulting Ltd., Winnipeg, MB, December 15,
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49 Cooper, Dan. 2014. Conservation Officer, Manitoba Conservation and Water
50 Stewardship, Wildlife Branch. Telephone interview with Mike Sweet, Stantec Consulting
51 Ltd., Winnipeg, MB, November 3, 2014.

52 Dettman, Herman. 2015. Big Game Biologist, Manitoba Conservation and Water
53 Stewardship, Winnipeg, MB. Telephone interview with Mike Sweet, Stantec Consulting
54 Ltd., Winnipeg, MB, March 9, 2015.

55 Franke, Ruth Anne. 2014. Area Wildlife Supervisor, Minnesota Department of Natural
56 Resources, Karlstad, MN. Telephone interview with Mike Sweet, Stantec Consulting Ltd.,
57 November 21, 2014.

58 Hildebrandt, George, 2014. President – SE Border Game & Fish Association. Key Person
59 Interview with Mike Sweet. Nov. 19, 2014.

60 Holme, Ken. 2014. Rural resident and owner KC's Outfitting, Sundown, MB. In-person
61 interview by Angele Watrin-Prodaehl, Stantec Consulting, Ltd. Sundown, MB, July 28,
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-
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67 Stewardship, Steinbach, MB. Telephone interview by Mike Sweet, Stantec Consulting
68 Ltd., Winnipeg, MB, November 4, 2014.
- 69 Leavesley, Kelly. 2014. Regional Wildlife Manager, Manitoba Conservation and Water
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80 Interview with Mike Sweet, Stantec Consulting Ltd., Winnipeg, MB, Nov. 6, 2014.

SUBJECT AREA: **Regional Assessment**

REFERENCE: **MWL-IR-060**

QUESTION:

What indication did any affected First Nations provide that would support the proposition that a 15 kilometer buffer is adequate with regards to the Regional Assessment Area?

RESPONSE:

- 1 First Nations have not provided any comment on the RAA boundary.

SUBJECT AREA: **Wildlife, Wildlife Habitat**

REFERENCE: **MWL-IR-061**

QUESTION:

Same follow up question as that in MWL-IR-059:

What sources of literature and information, apart from information obtained by members of a First Nation, indicate the type(s) of wildlife and the extent of wildlife populations that are known to occur in southeastern Manitoba in reference to line 11 of Manitoba Hydro's response to MWL-IR-061?

Please explain, in relation to Manitoba Hydro's response to MWL IR 61

- In relation to the RAA, the LAA, and PDA as referenced in Section 9.2.1, particularize:
- The species of wildlife that inhabit the Project area;
- The extent of the population of each of the aforementioned species; and
- The sampling and statistical method used by Manitoba Hydro to determine the population of each species of wildlife that inhabits the Project area.

RESPONSE:

- 1 Please see response to MWL-IR-100 for sources of literature and information.
- 2 As per Section 9.2.1 and the response to MWL-IR-061, the rationale for the RAA is that it
- 3 reflects a distance that represents the upper limit to typical range of movement of any species
- 4 in the Project area. Large mammals in the Project area are limited to white-tailed deer, elk,
- 5 moose, and black bear. Manitoba Hydro did not seek to determine precise population
- 6 estimates for these species, as the assessment of potential effects was based on evaluation of
- 7 effects pathways and general patterns of occurrence.

SUBJECT AREA: Fish, Fish Habitat

REFERENCE: MWL-IR-010

QUESTION:

Chapter 21 of the EIS cites "Manitoba Hydro. 2014. Corporate Emergency Management Program (CEMP)" in the References section at section 21.10. However, section 21.1.5 states: "[...] the restoration of service will be based on policies and procedures outlined in the CEMP for transmission and distribution systems (Manitoba Hydro 2003)."

Is there an older version of the CEMP that is being referenced in the above excerpt?

Please make available the Manitoba Hydro Corporate Emergency Management Program (CEMP) for review, in its most current version, or the version that Manitoba Hydro is referencing within chapter 21 of the EIS.

RESPONSE:

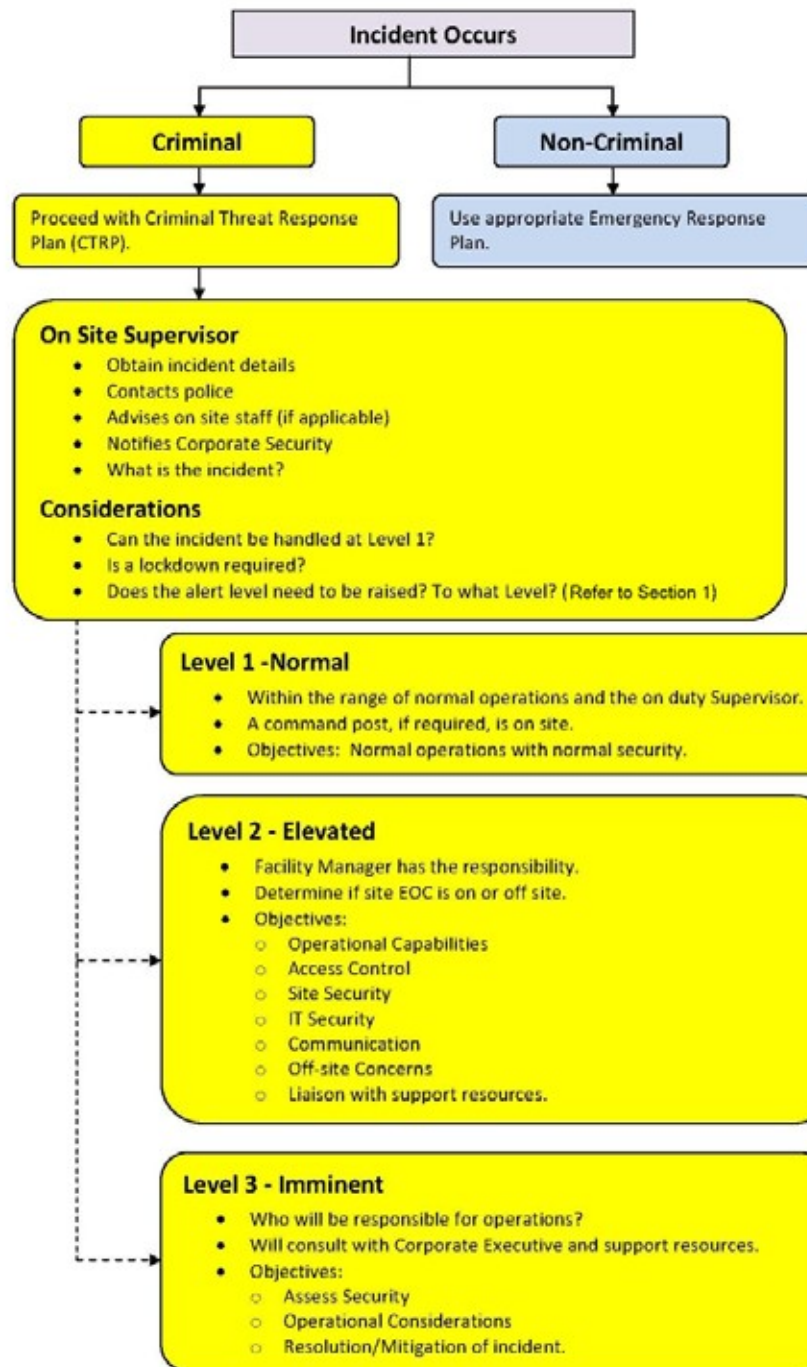
- 1 Please find attached (MWL-IR-103_Attachment) the most current version of the Manitoba
- 2 Hydro Corporate Emergency Management Program. Note this document is currently under
- 3 revision by the end of 2017.



Corporate Emergency Management Program (CEMP)

Preparedness

- Business Continuity Planning (BCP)
- Hazard Risk Assessment (HRA)
- Incident Command System (ICS)
- Emergency Operation Center (EOC)
- Emergency Preparedness Plans (EPP)
- Emergency Response Plans (ERP)
- Testing of Plans



Criminal Threat Response Plan (CTRP)

<http://hrcs.hydro.mb.ca/wshcs/cs/Documents/CTRP%20Final.pdf>

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Revision 0.1
Next expected revision: June 2016.
June 2014



RECORD OF REVISIONS

Revision #	Date Section(s)	Revised/Added/Deleted and Reason
Revision 0.0	September 2011	
Revision 0.1	June 2014	Updates from staff review and exercises

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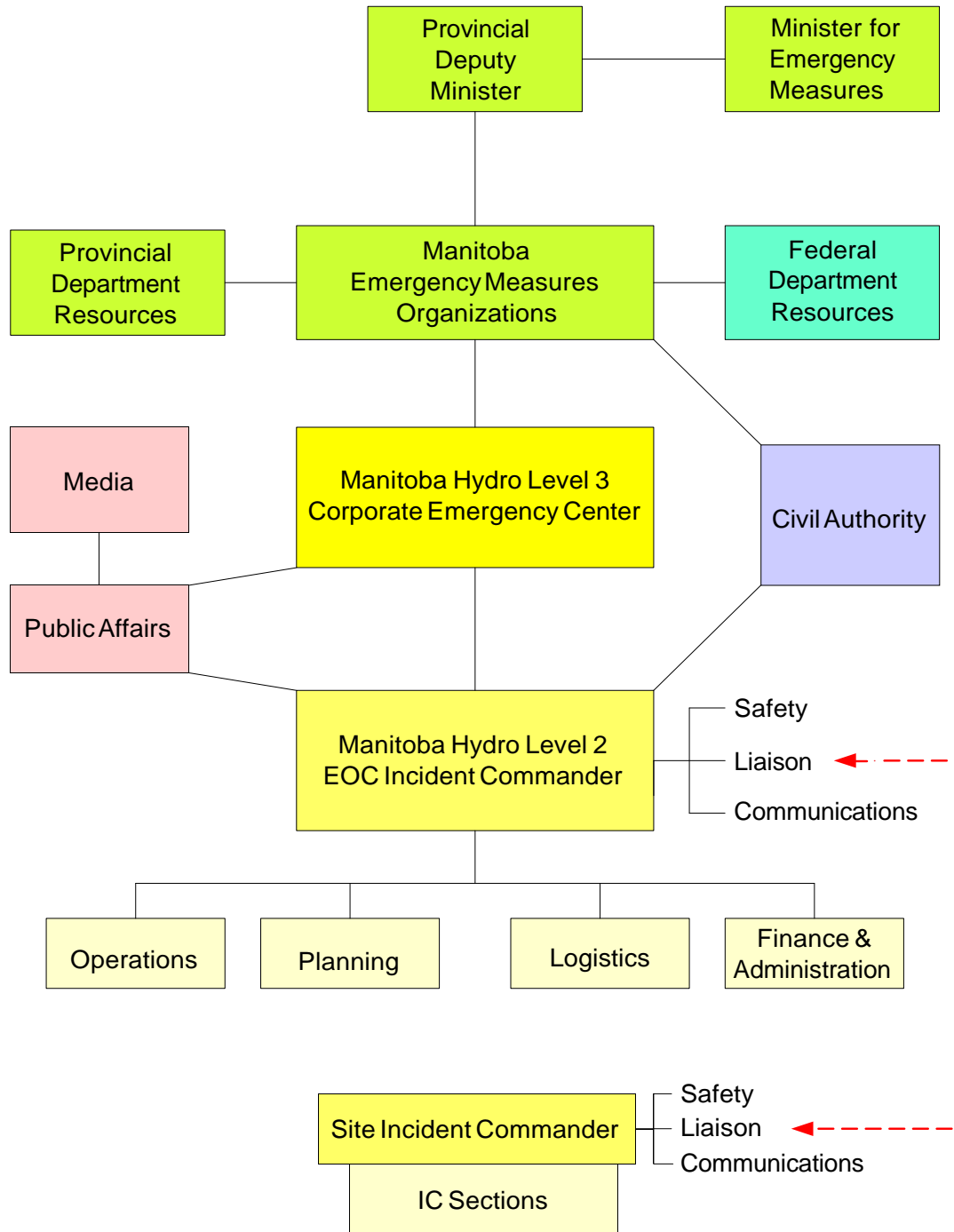
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Figure 1 – Manitoba Emergency Response Structure



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Manitoba Hydro's Corporate Emergency Management Program (CEMP) and the Incident Command System (ICS)

Overview

This document is intended as a high level collection of principles and procedures that dictate emergency management at Manitoba Hydro. It is not intended for use as a specific "how to" manual for business units, but rather a general list of considerations that must be made and at what levels they must be made.

Manitoba Hydro (MH) treats risk management as a critical and integral part of the overall business management system. Risk management is to manage business and operational risks through a systematic, proactive and integrated process that may impact the company's ability to meet corporate objectives. As not all risks can be eliminated, the corporation has implemented Emergency Preparedness Policy – P30 (<http://coil.hydro.mb.ca/policies/1-99/p30/p30.htm>) and established a Corporate Emergency Management Program (CEMP), Emergency Response Steering Committee (ERSC) and a Corporate Emergency Response Coordinator position.

Effective emergency management relies on establishing a clear emergency response structure that is easily understood by all employees. An overarching CEMP provides a framework and sets out the infrastructure for enhancing the resiliency against current and emerging hazards. The goal of the program is to protect the health and safety of all people (employees, public and responders) and limit the damage to MH and third party assets, as well as the environment.

In addition to the CEMP, business units are responsible for ensuring their divisions and departments are proactive in identifying and mitigating the risks to their critical functions and operations. This activity is documented in Business Continuity Plans that incorporate Business Continuity Planning (BCP) practices. In developing these plans the business units will ensure critical functions are maintained in accordance with all laws and regulations. If additional measures are required outside these Business Continuity Plans, business units will implement site specific Emergency Preparedness Plans (EPP) and Emergency Response Plans that align with the CEMP.

The **President and Chief Executive Officer of Manitoba Hydro** shall establish and approve Manitoba Hydro's Emergency Preparedness Policy.

The **Vice Presidents** of each applicable business unit shall direct the development implementation, and maintenance of those parts of the Manitoba Hydro Emergency Preparedness Program that are applicable to that business unit in accordance with the provisions of this policy.

Division Managers within each applicable division shall oversee the development, implementation, and maintenance of emergency preparedness and emergency response plans and supporting documentation to ensure adequate levels of preparedness, response and confidence in the plan are maintained.

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Managers at all levels are accountable for the implementation, updating and maintenance of emergency response plans, documentation, notification and contact list. They are also responsible for verifying that their employees participate in the associated training and drill/exercise programs to ensure adequate levels of preparedness, response and confidence in the plans are maintained.

Everyone has a role to play, from the person who first identifies the emergency and alerts others, to those who respond to it and those who help restore order. Employees need to be familiar with their role and responsibilities as part of the corporate plan before an event happens. **KNOW YOUR ROLE - KNOW OUR PLAN, BEFORE IT HAPPENS.**

Emergency Response Steering Committee

The Emergency Response Steering Committee (ERSC) makes recommendations to the Executive Committee and coordinates activities across corporate business units, to ensure the corporation is in a position to avoid and minimize disastrous impacts upon the general public in the event of a major system emergency. The chair or their delegate will be the liaison to the executive.

ERSC will identify gaps in the corporate emergency response capability and make recommendations to ensure adequate emergency preparedness. Review emergency incident follow up reports to identify best practices and lessons learned.

Corporate Emergency Response Coordinator

The coordinator provides ongoing coordination to ensure consistency for emergency preparedness and support for emergency response plans, plan audits, training and testing to all applicable areas at Manitoba Hydro. The coordinator also acts as a single point of contact with relevant outside agencies as well as represents Manitoba Hydro on various committees.

Corporate Emergency Management Program (CEMP)

As there is the potential to have a number of departments or agencies involved in emergency management, Manitoba Hydro follows a standardized, on-site, all-hazard incident management system that is not hindered by jurisdictional boundaries. The program provides:

- a guideline for employees and the Emergency Operation Centre (EOC) to work together when responding to an emergency;
- a structure for responding to escalating emergencies that require additional support or the consecutive enactment of multiple plans; and
- provides coordination with external agencies for emergency preparedness and emergency response.

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The Corporate Emergency Management Program establishes the elements of a continuous improvement process to develop, implement, maintain and evaluate emergency management and business continuity programs that address prevention, mitigation, preparedness, response and recovery. The elements of this continuous improvement process are:

- program management;
- planning;
- implementation;
- evaluation; and
- management review.

It is acknowledged that every scenario is unique and has varying contributing factors that need to be taken into account and cannot all be predetermined for inclusion in response plans. The level of detail in the procedures and plans will be commensurate with the consequences of that emergency to maintain critical functions.

However all plans shall:

- comply with applicable legislation, policies, regulatory requirements and Manitoba Hydro directives;
- incorporate the Incident Command System (ICS) and Business Continuity Practices (BCP);
- ensure that adequate staff training, plan testing and plan updating are carried out; and
- establish mutual aid/mutual assistance agreements as required.

In order for emergency plans to be effective, they need to be current which is accomplished through periodic review. Emergency preparedness and response procedures, in particular, need to be reviewed after the occurrence of accidents or emergency situations, and periodically test such procedures where practicable.

The frequency of emergency plan evaluations must, at a minimum, meet legislated requirements and/or other standards applicable to the plan.

Emergency Preparedness and Response Plans

Emergency Preparedness and Response Plans, for corporate and sites are used to outline more specifically the concepts, structures, roles and interfaces needed to implement and maintain emergency response capability for a function or location. The roles and responsibilities for various site emergency response personnel are detailed in the department or facility emergency preparedness procedures. Response personnel actions are in accordance with the approved procedures relevant to the type of emergency (fire, environmental release, employee injury, dam failure, security breach and equipment or structural failure impacting gas or electric distribution, transmission, and generation).

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June 2014



Emergency Preparedness Plan (EPP)

Emergency preparedness is all the activities necessary to make an emergency response possible. The EPP objective is to ensure a state of “readiness” by:

- Establishing Emergency Operation Centre (EOC).
- Establishing procedures for maintaining a functional 24/7 EOC with an alternate location.
- Implementing and maintaining procedures for information management.
- Providing training and exercise opportunities for employees specific to their roles and responsibilities, e.g. Incident Command System, Manitoba Emergency Management, exercise design.
- Maintaining and updating documentation of contact information, resources and maps.
- Identifying how essential services will be provided in an emergency.
- Implementing a hazard risk assessment that considers the impact and consequence. This assessment will be reviewed and updated bi-annually.

Emergency Response Plans (ERP)

Emergency response ensures current plans are in place to facilitate the effective and timely use of all resources responding to an emergency. With appropriate ERP in place, MH will limit the loss of life or injuries to personnel, damage to the environment, corporate assets, property and the supply of natural gas and electricity. In the event of an emergency, the relevant ERP is initiated by the person(s) at site and they are responsible for knowing their specific role(s) in the response. An ERP will:

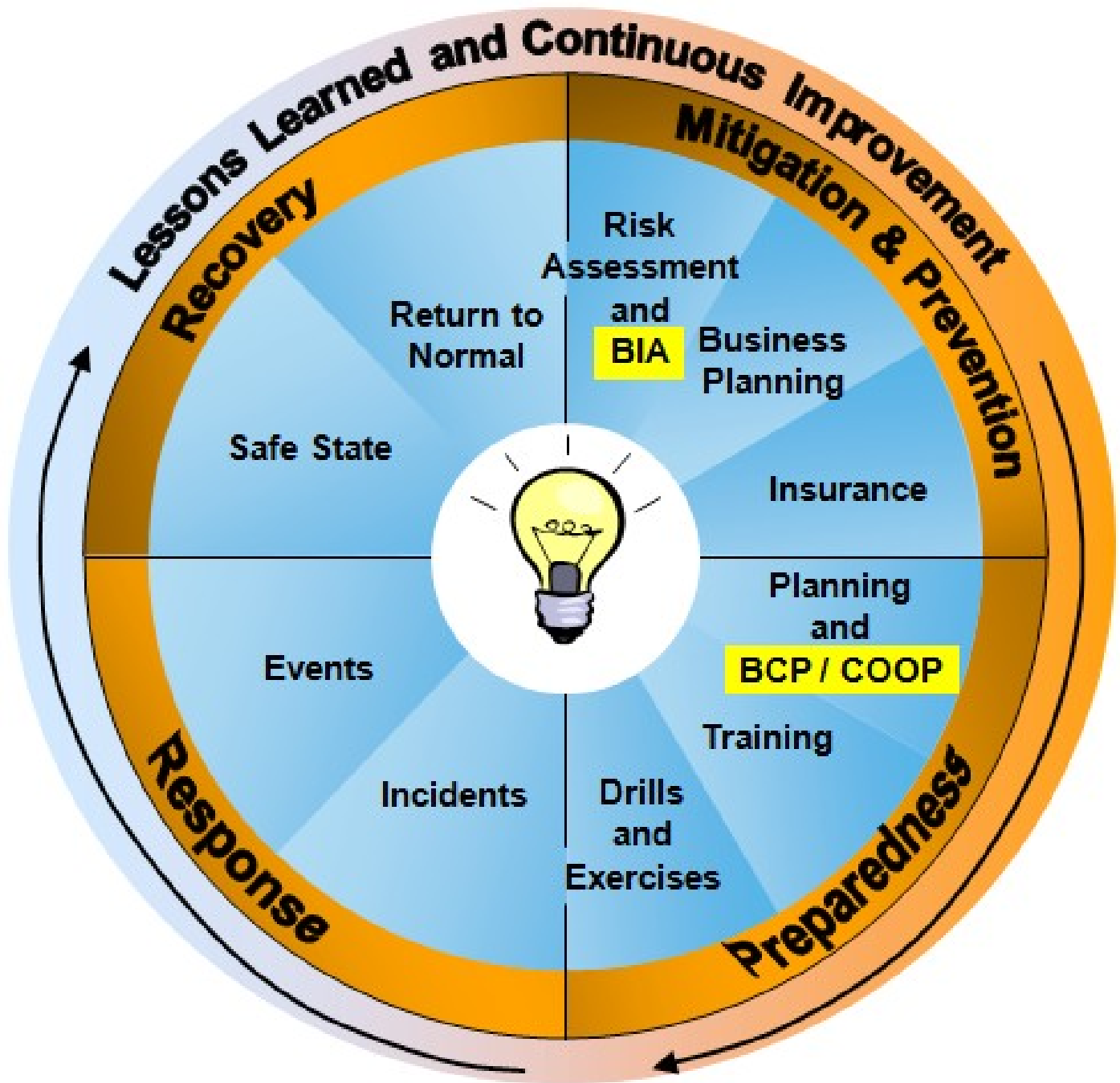
- Address all relevant and credible natural or man-made scenarios that could impact operations and its ability to maintain critical functions;
- Document the procedures staff should follow in response to unusual or emergency conditions;
- Consider Standard Operating Procedures (SOP) and General Operating Guidelines (GOG); and
- Outline the key emergency response roles and responsibilities, in order of priority, as well as the required notifications, contact information and documentation.

To support these objectives, Manitoba Hydro has incorporated the Incident Command System within the corporation's Emergency Response Structure effective January 2011. Figure 2 provides the framework of the ICS.

Training on the Incident Command System ICS100 course is offered by the Office of the Fire Commissioner and is available online. Contact the Corporate Emergency Response Coordinator at 360-5179 to schedule the training.

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Hazard Risk Assessment (HRA)

A hazard identification and risk assessment should be completed in order to identify the relevant hazards and subsequently the risks that these hazards represent. This can establish the foundation for developing the appropriate measures for prevention, mitigation, preparedness, response and recovery.

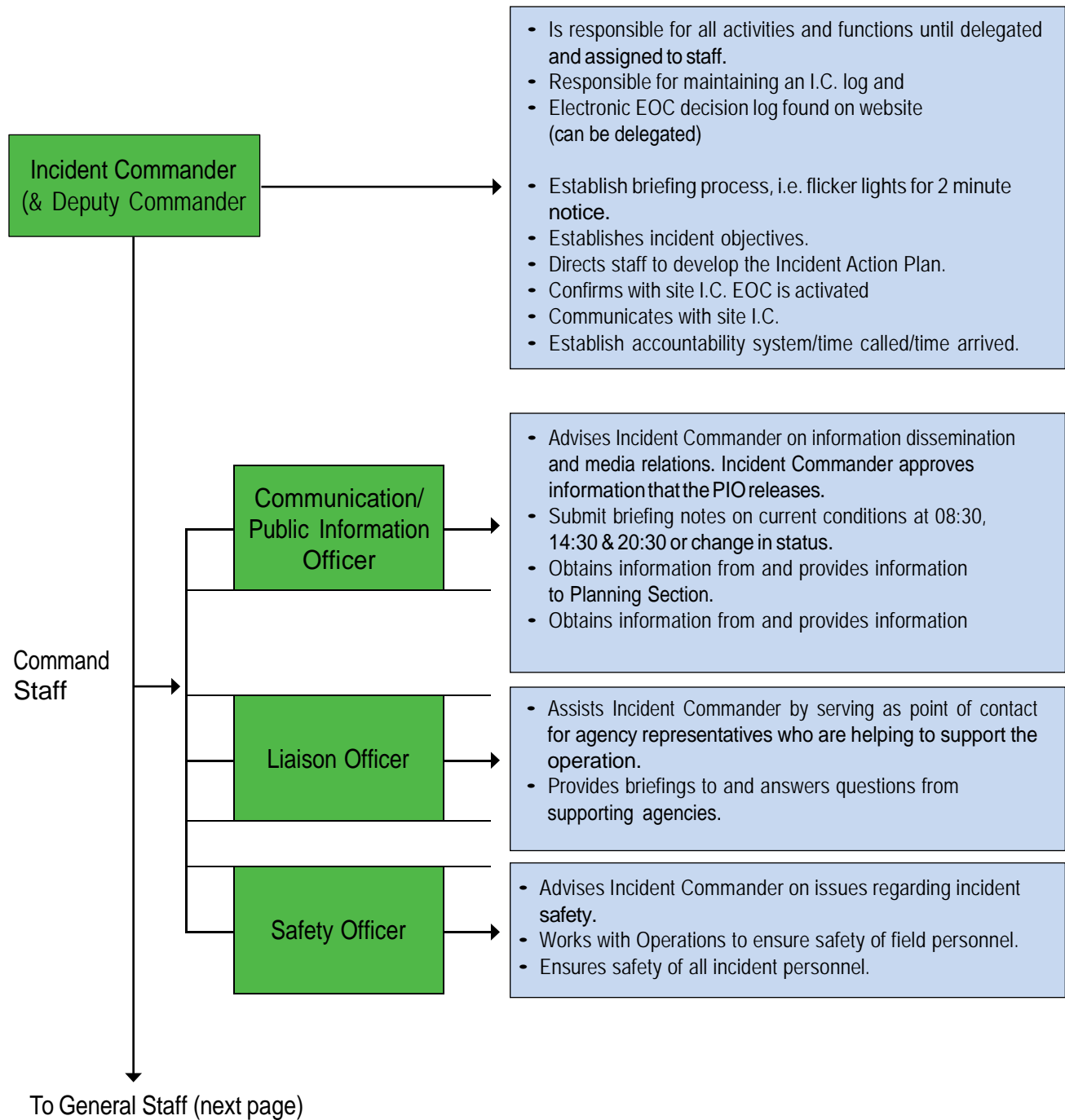
- The risk assessment shall include hazard identification and monitoring to identify sources of risks.
- The hazard assessment shall take into account factors such as threats, frequency, history, trends, probability, and regulatory requirements.
- The risk assessment shall include a risk analysis to comprehend and determine the likelihood potential consequences on business operations, community, associated stakeholders, related infrastructure, and the environment.
- The risk assessment shall include an evaluation to determine and prioritize which risks require further development of treatment to prevent, mitigate, accept, or transfer the hazard or threats.
- The risk assessment includes evaluating the adequacy of existing prevention and mitigation strategies and programs to identify residual risks/impacts for which emergency and continuity management strategies or plans are required.

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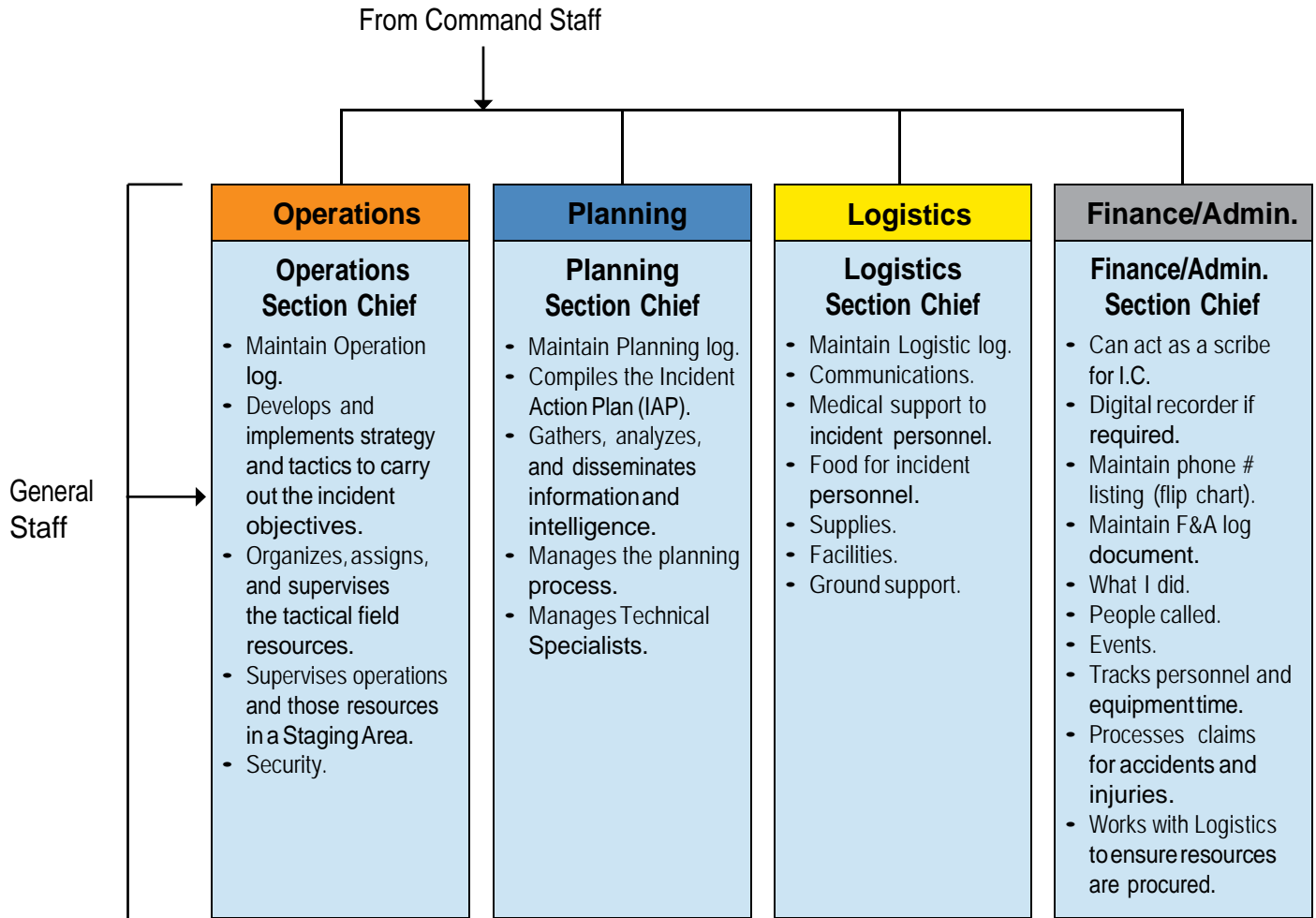


Figure 2 – Incident Command Structure



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Resources could include: Engineering, Technical, Communications, EMS, PS&O, Standards of Conduct Advisor, Human Resources, etc.

- EOC is used to support the site is Strategic thinking for the next incident action plan.
- Site is Tactical thinking and always owns the incident.
- Electronic Log book located on Corporate E.M. website.
- CEMP EOC notification is used to inform other EOCs that an EOC is activated.
- Identify key decisions and actions.
- Log books are required for each position.
- Documents what you did: time, events, calls made and received, decisions made.

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The Incident Command System

What is the Incident Command System?

The Incident Command System (ICS) is an internationally-recognized model for planning, controlling and coordination of single and multi-agency crisis management and emergency responders. It has been summarized as a first-on-the-scene structure, where the first responder to a scene has charge of the scene until the incident is declared resolved or a senior responder arrives on scene and takes command. ICS is flexible and can be used for incidents of any type, scope and complexity. It allows users to adopt an integrated organizational structure to match the complexities and demands of single or multiple incidents. Figure 2 on the preceding pages outlines the ICS and some of the key responsibilities of each role.

Key features of ICS

- ICS is a standardized, on-scene, all-hazard approach for managing incidents.
- ICS allows those managing the event to adopt an integrated organizational structure which matches the complexities and demands of single or wide-spread incident without being hindered by jurisdictional boundaries.
- ICS establishes lines of supervisory authority and formal reporting relationships. There is complete unity of command as each position and person within the system has only one designated supervisor setting direction at all times.
- ICS is internally flexible and can be adapted (grow or shrink in functional size) to meet the needs of a wide variety of incidents and events. This flexibility makes it a very cost effective and efficient approach for managing both small and large incidents/events.
- There are five major management activities (Command, Operations, Planning, Logistics and Finance/Administration) which are the foundations upon which ICS organization is structured. These management activities apply whether responding to a routine emergency or to a wide spread disaster. (See Incident Command System flowchart in Figure 2.)

Command

A single decision authority must control Manitoba Hydro's emergency response.

- The coordination of off-site support rests with the EOC Incident Commander. The EOC Incident Commander is responsible for prioritizing support to the emergencies and maintaining support for day to day operations and responding to events outside of the area under the Site Incident Commanders control.
- The Site Incident Commander has the overall responsibility to control the specific local emergency including all resources (personnel and equipment) assigned to them.

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When an electrical emergency requires two or more EOC's to be activated they will operate under the direction of Line Maintenance Manager (South) to establish priorities, manage inter-relationships. When the emergency impacts the bulk power system, System Control EOC is the lead EOC unless the Corporate Emergency Center has been activated.

The Site Incident Commander and local support control the emergency site within the established emergency site perimeter. The EOC team provides support for the site team and is responsible for events that occur outside the emergency site.

Transfer of Command

- The incoming Incident Commander should, if at all possible, personally perform an assessment of the incident situation with the existing Incident Commander.
- The incoming Incident Commander must be adequately briefed.
- Notice of a change in incident command should be made to all internal and external agencies.
- Should be documented in the position log and on the electronic log.

Roles, Accountabilities and Duties

The Site Incident Commander deals with the short term (1 to 6 hours) tactical emergency mitigation while the EOC team is strategically focused and responsible for the longer term planning and recovery issues.

The EOC Incident Commander is responsible to provide direction, coordination and support for the site during emergency operations. The EOC must compliment, not conflict the site response effort.

Jurisdiction and legitimacy

- **Single Incident Commander:** Most incidents involve a single incident commander. In these incidents, a single person commands the incident response and is the decision-making final authority.
- **Unified Command:** A Unified Command is used on larger incidents usually when multiple agencies are involved. A Unified Command typically includes a command representative from major involved agencies and one from that group to act as the spokesman, though not designated as an Incident Commander. A Unified Command acts as a single entity.
- **Area Command:** During multiple-incident situations, an Area Command may be established to provide for Incident Commanders at separate locations. Generally, an Area Commander will be assigned — a single person — and the Area Command will operate as a logistical and administrative support. Area Commands usually do not include an Operations function.

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Incident Commander

The Incident Commander is responsible for:

- Decision making and leadership associated with the Level 2 emergency response.
- Ensuring adequate resources are activated to mitigate the emergency.
- Providing status reports to the Division Manager who evaluates the level of response to determine when Level 3 activation is required and provides situation updates to the executive.

The Incident Commander's role includes:

- Responsibility for all activities and functions until delegated and assigned to staff.
- Confirms with Site Incident Commander EOC is activated.
- Develops the first Incident Action Plan (IAP).
- Directs planning to develop the ongoing operational Incident Action Plans.
- Maintains communication with Site Incident Command to identify issues and progress.
- Maintaining an Incident Command log and ensuring activation of electronic EOC Event Log to ensure records are kept and decisions are recorded.
- Notification of EOC activation to other incident commanders.
- Providing information services to internal and external stakeholders.
- Establishing and maintaining liaison with other agencies participating in the incident.
- Assesses the need for EOC support staff.
- Establish briefing process e.g. flicker lights for 2 minute notice.
- Establish accountability system / time called / time arrived.
- Inform the Division Manager of EOC activation and de-activation.
- Once the EOC is activated keep the Division Manager informed of all changes to the emergency situation, including decisions and action taken.
- Ensure compliance with environmental and safety guidelines and ensure that all safety and environmental incidents are reported in accordance with applicable policies and regulations.
- Assess the emergency operating requirements within his/her affected area.

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- Make operational decisions and identify restoration priorities.
- Manage the organizational interrelationships, resolve internal or inter-organizational disputes.
- Direct and support the workforce, assign resources.
- Direct the Communications Command staff to ensure communication with Public Affairs, local authorities, stakeholders, vendors, other external agencies and the public, as required.
- Ensure compliance with all safety rules for staff, outside crews and contractors.
- Identify and recommend mutual aid resource support requirements.
- Directs long term planning and recovery.
- Responsible for ensuring a debrief with participants and stakeholders is conducted after the event to identify any gaps, opportunities for improvement and lessons learned is documented, filed and a copy provided to the Corporate Emergency Response Coordinator.

Command Staff (Officers)

Communications/Public Information Officer

- Accountable to the Incident Commander for providing internal communications support.
- Advises Incident Commander on information dissemination and media relations. Incident Commander approves information that the PIO releases.
- Provides information updates to Public Affairs on current conditions at 08:30, 14:30, and 20:30 or change in status while their EOC 2 support team is activated.
- Obtains information from and provides information to Planning Section and Operation Section.
- Records and reports on media and public inquiries, as needed. Requests for interviews are to be forwarded to Public Affairs.
- Contacts related agencies and provide updates.
- Relieve the Incident Commander from inquiries, which may interfere with the overall restoration effort (screens inquiries).
- Manage and analyze outage information and provide a summary to the Incident Commander.
- Contribute to the preparation of the post-emergency report, detailing successes, gaps and opportunity for improvement.

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Safety Officer

- Accountable to the Incident Commander and advises on issues regarding incident safety.
- Works with Operations to ensure safety of field personnel.
- Ensures safety of all incident personnel.
- Is the only other person, besides the Incident Commander that can stop the response when a life threatening situation is identified.

Liaison Officer

- Assists Incident Commander by serving as point of contact for agency representatives who are helping to support the operation.
- Provides briefings to and answers questions from supporting agencies.
- Participates in planning meetings by providing the status on current resources, resource limitations, and resource capabilities of other agencies.
- Briefing notes and summary reports should be circulated by fax or e-mail to reduce miscommunication and personal bias.

Liaison to Civil Governments

External agencies may require a Liaison from Manitoba Hydro to ensure adequate coordination of activities and current accurate information exchange. This would normally be the Corporate Emergency Response Coordinator.

- The Level 2 liaison will work with the civic government departments such as EMO or the City of Winnipeg to provide communication and information related to Manitoba Hydro's role in an emergency.
- The Liaison may be required to report to the civic Emergency Operation Center and work with the Civic Emergency Operation Center Team.

General Staff (Chiefs)

Operations Section Chief

- The Operations Section Chief is accountable to the EOC Incident Commander.
- The Operations Section Chief is responsible for directing response and restoration efforts.
- The Operations Section Chief prime objective is timely and efficient response to emergency requirements.
- Inform Incident Commander of all changes to the emergency situation, including decisions and action taken.
- Ensure compliance with environmental and safety guidelines and ensure that all safety and environmental incidents are reported in accordance with applicable policies and regulations.

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- Maintain log — documents what you did
 - Time
 - Events
 - Calls made and received
 - Decisions made.
- Develops and implements strategy and tactics to carry out the incident objectives.
- Organizes, assigns, and supervises the tactical field resources.
- Supervises operations and those resources in a Staging Area.
- Security.
- Assess the emergency operating requirements within his/her affected area.
- Prioritize and administer requests related to the emergency.
- Assign restoration priorities and issue instructions to the workforce.
- Assign resources.
- Make operational decisions within his/her area of control.
- Direct and support the workforce.
- Direct the Communications Officer to ensure communication with Public Affairs, local authorities, stakeholders, vendors, other external agencies and the public, as required. May be requested by Public Affairs to provide local media information.
- Ensure compliance with all safety rules for staff, outside crews and contractors.
- Ensure internal and external crew support is qualified commensurate of tasks assigned.
- Prepare a post-emergency report, detailing successes and (any) failures, and including recommendations for improvements.
- Identify resource requirements.
- Restoration status reports every 6 hours or when a significant change occurs.

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Planning Section Chief

The Planning Section Chief reports to the Incident Commander providing reports of the operating system and anticipated limit violations.

- Maintain Planning log — document the incident action planning process
 - Time
 - Events
 - Calls made and received
 - Decisions made.
- Compiles the Incident Action Plan. (IAP)
- Gathers, analyzes and disseminates information and intelligence.
- Manages the planning process.
- Manages Technical Specialists.
- Study current and potential electrical loading.
- Process requests for line and equipment clearance related to the emergency.
- Ensure all available equipment is returned to service.
- Critical load identification and outage impact evaluation.
- Recommends major outage requirements through the Incident Commander.
- Assist in the allocation of local resources.
- Assist with determining the priority of restoration.
- Evaluates the most effective sequence of lines to be cleared for ice melting and ensures the removal of lines does not affect operating security.
- Records the methods used and the success of ice melting procedures for future reference.

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Logistics Section Chief

The Logistics Section Chief is accountable to the Incident Commander and providing financial & resource information to the Finance & Administration Section Chief for the provision of support and advice in the areas of material supply, haulage, equipment, specialty tools, monitoring and invoice processing.

- Maintain Logistic log — document what you did
 - Time
 - Events
 - Calls made and received
 - Decisions made.
- Communication requirements (e.g. phone, internet, TV, radio, etc.).
- Arrange for meals, accommodations and medical support to incident personnel outside of EOC.
- Communicate the status of logistical support activities to the Administration Coordinator.
- Arrange for material from internal and external sources including rental equipment procurement.
- Track expenditures against contracts.
- Arrange for orientation of outside crews (e.g., emergency numbers, maps, safety).
- Track expenses for outside contractors and equipment rentals and file invoices for payment.
- Maintain effective security measures, including coordinating access control and arranging for material security, as directed.
- Participate in the EOC staff briefings.
- Contribute to the preparation of a post-emergency report.
- Arrange for camps when required.
- Anticipate the potential resource requirements.
- Records the consumption of resources.
- May be assisted by:
 - Equipment Coordinator
 - Stores Staff
 - Fleet Services
 - Purchasing Dept.

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Finance and Administration Section Chief

The Finance and Administration Section (F&A) Chief is accountable to the Incident Commander to acquire the necessary resources and provide all operational support to the EOC, and associated work center and field crews.

- Maintain F&A log — document what you did
 - Time
 - Events
 - Calls made and received
 - Decisions made.
- Can act as a scribe for I.C. (Digital recorder if required.)
- Maintain phone # listing (flip chart).
- Maintain EOC electronic decision log.
- Tracks personnel and equipment time.
- Processes claims for accidents and injuries.
- Works with Logistics to ensure resources are procured.
- Using the information from the damage assessment sheets, provide updates.
- Acquire and deploy telecommunications and information technology support.
- Obtain spending authority and track emergency expenses.
- Contribute to the preparation of the post-emergency report, detailing successes and (any) failures, and including recommendations for improvement.
- Collect and file all relevant information.
- Identify the Human Resources support required and coordinate the administration and Human Resource support.
- Identifies a phone # for employee family to call regarding family issues.
- Track associated costs.

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Additional EOC Resources

Staff from other departments may be required to support the EOC and provide advice or technical information. Examples are:

- Communications,
- Corporate Emergency Response Coordinator
- Corporate Security,
- Energy Management System,
- Engineering (Civil, Hydraulic, Mechanical, Electrical, etc.),
- Environmental,
- Facilities,
- Finance,
- Generation Maintenance Engineering, Technical Services,
- Human Resource,
- Legal,
- Power Sales and Operations,
- Standards of Conduct Advisor.

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Emergency Operation Center

Emergency Operation Center — activation

Care and judgment are built into the decision-making process for determining the severity of a situation and deciding on whether emergency response facilities need to be activated. Not all support functions or groups will be required for every emergency. Activation and staffing of the EOC will depend on the specifics of the emergency.

Classification of the severity of any given incident will rely on the judgment of local staff or approved local procedures. Such judgment will be based on the staff's knowledge of facility/system/process/technology in question, understanding of the associated risks and their understanding of the perceptions and concerns of the local community/public.

Emergency Operation Center — responsibilities

An EOC is an established, recognized team of people, who are responsible for providing direction, coordination, communications and support during emergency operations. The team receives requests for resources from the emergency site and does their best to satisfy the requirements. The team must determine the amount of normal resources that can be devoted to the abnormal requirements of the emergency.

The EOC team members must have knowledge of the area, hazards, resources, and capabilities as well as the knowledge, experience and authority to make decisions on behalf of their sector. They will:

- Have an Incident Management System in place, and identify who has assumed command?
- Have a personal accountability system in place, and ensure all responders from all agencies are accounted for?
- Identify plans for this and the next operational period?
- Monitor any evacuation taken place, if so how many, and where have they gone?

Accountabilities and authorities during emergency response operations reflect those same accountabilities and authorities that Manitoba Hydro management and business functions would have during normal day-to-day operations. Line organizations/functions carry out necessary actions, while management is kept informed and may redirect priorities as necessary. The key requirement is to ensure proper integration of such activities and actions. Interfaces between organizations must be clear, understood and respected.

The **Corporate Emergency Center (CEC)** is a location for senior executives and key resources such as communication, finance and legal support for Level 3 emergencies. The CEC will be formed with required identified support positions and Manitoba Hydro experts in the area affected.

The CEC leader may be the President/CEO, the Vice-President of the affected business unit or a recognized expert. Additional expert support will be added as determined necessary.

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Emergency Operations Center — facility

The following is a list of some of the equipment and supplies that should be considered, however business units will determine what equipment is required for them to carry out their specific function.

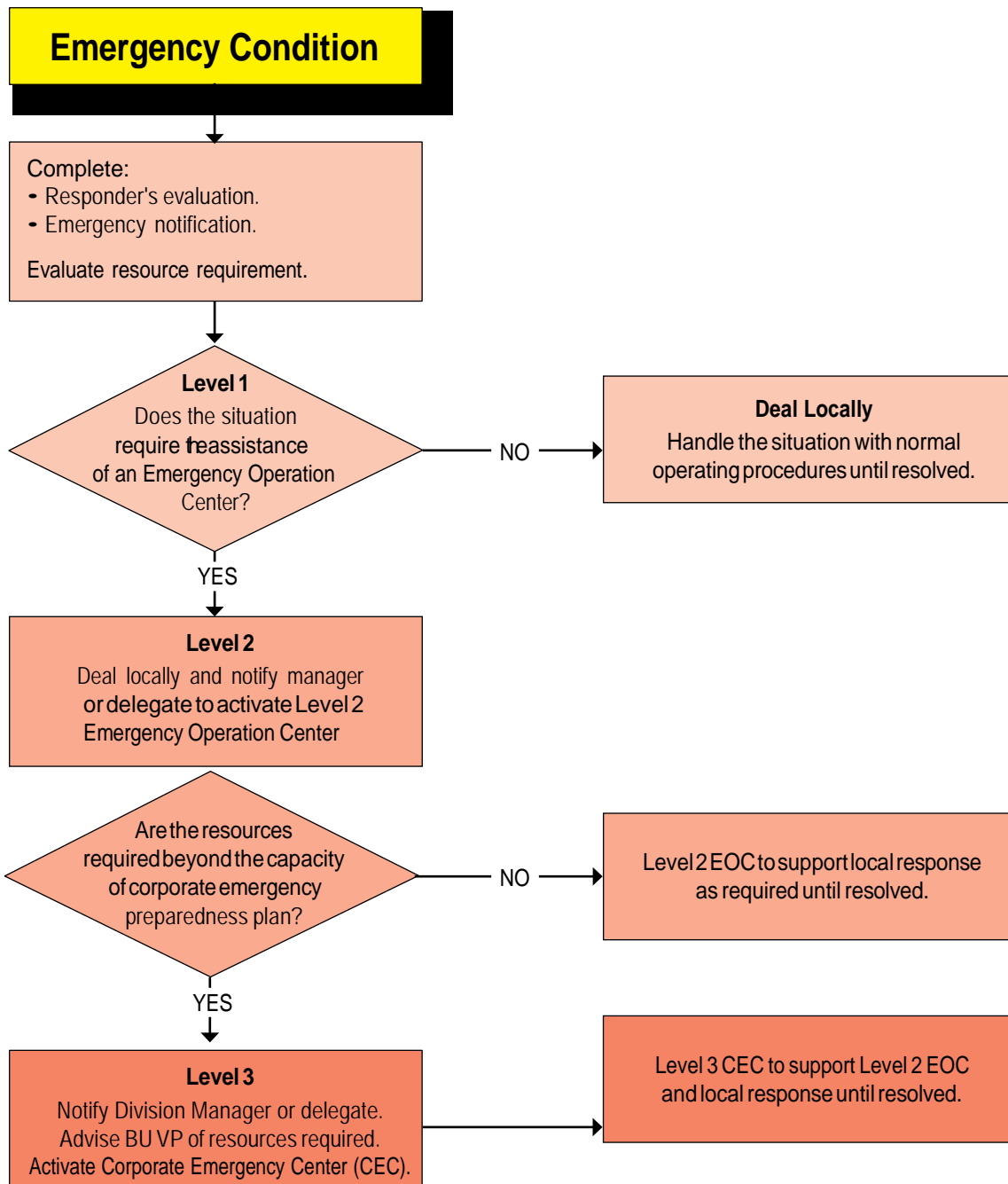
- The emergency operation center needs a workspace to accommodate the Level 2 EOC Incident Commander plus three to seven support staff.
- Each workstation should have 42" of desk or table space.
- In addition, a communication desk with a VHF radio and an antenna installed for an ARES (Amateur Radio Emergency Services) HAM radio operator.
- The EOC should have a minimum of three secure phone lines to serve the Incident Commander, Communication Command staff, and Logistic Section Chief.
- A fax machine located near the EOC should be used for correspondence
- At least two computer work station with Internet access. Staff should have access to the EOC folder found on the website. (<http://csm.hydro.mb.ca/bss/cem/Pages/default.aspx>)
- A television with DVR or PVR available and a local TV connection in the EOC.
- A weather warning radio.
- A 2' wide by 4' high white board for posting response priorities.
- A flipchart for demonstrations during briefings.
- Maps and prints and a cork board for mounting.
- A location with a backup power supply is recommended.
- A backup location with risk exposure different from the main EOC.
- Post the layout of the EOC on the wall in the room to be used.
- Current Corporate Emergency Preparedness Plan and the Sector Emergency Response Plan as well as phone books and contact lists.
- The role description and duties for each position should be posted at their identified workspace when the EOC is activated.
- Have signs at all entry doors that identifies the Emergency Operation Center has been activated.
- Access into the EOC should be controlled.

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Figure 3 – Manitoba Hydro Emergency Response Process — Levels 1, 2, 3



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Responding to an emergency/Site Specific Plans

To respond to large emergencies in an effective manner, staff must be able to quickly and accurately assess the damage, identify resource requirements and activate the correct level of response. Employees must understand their individual role and responsibility to ensure they initiate the appropriate action through a structured communication process.

Level 1 Electrical outage—CSO

Please see: http://coil.hydro.mb.ca/cso/emerg_response/CSO_Outage_Mgmt_booklet_small_final.pdf

Gas Outage:

Being developed

EMPLOYEE

- Need to be familiar with their specific role and responsibilities.

RESPONDER (operator, technician, serviceperson)

- Must abide by their departments policies and corporate guidelines.
- To support working alone or in isolation policy all responders will provide an update of their restoration progress.
- Conduct an evaluation and complete the Level 1 evaluation checklist.
- Identify the resources required for the emergency response.
- Ensure site safety for employees and the public.
- Evaluate the potential for the situation to worsen.
- Identify outages and the anticipated duration.
- Call for additional support or notify a supervisor for assistance.

SUPERVISOR

- Secures and mobilizes the requested local resources.
- Notify the Manager of the Level 1 emergency as per department guidelines.
- Ensures adequate resources for gas and electric supply disruptions, spills and releases.

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MANAGER to a Level 2

- Evaluates conditions and the emergency resource requirements.
- Recommends Level 2 and emergency operation center activation.
- Mobilize resources from outside the local area to ensure adequate response.
- If event escalates or additional resources are needed declares Level 2 emergency.

INCIDENT COMMANDER

Evaluates the resource requirements and the ongoing operation requirements.

1. Initiate EOC & identify Incident Commander (IC) for site & EOC.
 - Confirm with site IC that EOC is activated.
2. Develops an Incident Action Plan (IAP).
 - goals and objectives must be clearly stated and measurable.
 - must be broad, flexible & attainable given the people, equipment, and supplies available.
3. Activated electronic logbook and sent EOC activation notification.
 - Corporate Emergency Management Program.
 - <http://csm.hydro.mb.ca/bss/cem/Pages/default.aspx>.
4. Evaluates if contractor support and mutual aid is required.
5. Provides briefing on conditions to Division Manager and other key stakeholders.

DIVISION MANAGER to a Level 3

1. Conducts a Level 3 evaluation, makes recommendation to VP.
2. Identifies the resources required from outside the corporation.
3. Identifies a liaison to deal with requests to the federal and provincial government.
4. Provides a briefing for the executive and Public Affairs.

BUSINESS UNIT VICE-PRESIDENT

1. Declares a Level 3 emergency.
2. Develops a strategy for media information release.
3. Conveys the requests for aid to other utility executives.
4. Preparation of information release for provincial and federal authorities.

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Level 2 Responses

The corporate emergency response to major emergencies using an approach developed to provide activation of all the required corporate resources to provide adequate mitigation.

Level 2 emergency responses:

- Can be provided with a Level 2 support team and activation of an Emergency Operation Center.
- Are required when there is an identified danger to public safety, property, or the environment.
- May attract provincial media attention.
- Resources can include: corporate resources, the local municipal government, provincial agencies, contractors and mutual aid partners.

Level 2 EOC may be required to be activated when one or more of the following conditions exist:

- **NERC** – Energy Emergency – Alert 2 – Electric system load management procedures in effect.
- An extended outage affecting a critical load or major customers, or an outage with the potential for impacting the general public.
- A natural gas distribution outage, a natural gas explosion, or station fire.
- A highly visible event attracting media attention or environmental concern.
- When more than two districts or divisions are affected.
- When a restoration workforce is required from outside the affected area.
- A Level 3 Dam Safety Emergency or any high-risk emergency at a generation facility.
- Loss of 2,000 MW of generation or interconnection capacity.
- Complete loss of supervisory control on the natural gas or electric system.
- Workforce disruption.
- When gas supply is tight and may not supply the forecast Manitoba load.
- A forecast of Red River Valley flooding or a City of Winnipeg James Street Pumping Station 26 ft. flood forecast.
- An event requiring regular public information release.
- When the resources required to mitigate an emergency include the activation of mutual aid partners support.
- When a local emergency has been declared related to the electric or natural gas infrastructure or when a Provincial State of Emergency has been declared affecting Manitoba Hydro operations.
- When directed by changes to the Threat risk levels (G45-3).
- An emergency with the potential for dangerous effect on public safety, health, property, or the environment.
- When recommended by a manager.

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Level 2 Notification Cycle

EOC Incident Commander is responsible for the activation of the electronic EOC decision log.

It can be accessed at <http://csm.hydro.mb.ca/bss/cem/Pages/default.aspx> under the EOC tab.

- Events — unscheduled real incident.
- Exercise — scheduled.

A notification is sent to advise other Incident Commanders and key staff that an EOC has been activated. The electronic log is used to record, track communicate key decisions and the status to stakeholders outside of the EOC. By monitoring the log others can determine if this incident could impact them and prepare accordingly.

Level 2 Communication Coordinators for all activated Level 2 response teams will prepare a briefing note on current conditions at 08:30, 14:30, and 20:30 while their EOC 2 support team is activated. The briefing note will be submitted to SCC, Public Affairs, and to other activated EOC's

Public Affairs or the lead EOC will prepare a summary report on the current conditions reported by all activated Level 2 support teams. They will submit the summary report to Public Affairs and the Executive at 09:00, 15:00, and 21:00.

The Level 2 Communication Coordinators should submit additional briefing notes and summary reports when any significant change occurs related to the extent of the emergency or forecast restoration timeline.

Briefing notes and summary reports should be circulated by fax or email to reduce miscommunication and personal bias.

Level 3 Responses

The response required to activate support resources beyond those identified in the Manitoba Hydro Level 2 Corporate Emergency Response plan. Level 3 emergencies:

- May require outside agency support such as the military, federal agencies, or agencies from other provinces.
- May require the declaration of a provincial state of emergency related to the electrical or natural gas infrastructure.
- May attract national media attention.
- Includes the Manitoba Hydro Executive along with specific function experts operating from a corporate emergency center, procuring additional resources, providing crisis communication, making emergency policy modification, and managing political interaction.

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Corporate Emergency Center may be required to be activated when one or more of the following conditions exist:

- NERC — Energy Emergency – Alert 3 — Firm electrical load interruption is imminent or in progress.
- When the resources required to provide adequate mitigation are beyond those identified in the corporate Level 2 plan including: contractors, agencies, and mutual aid partner support.
- When a Provincial state of emergency related to the electric or natural gas infrastructure has been declared or requested through EMO.
- When the capability of the Manitoba natural gas system supply will not have capacity to serve the forecast Manitoba load for an extended period.
- Imminent failure of the Winnipeg Floodway or a forecasted City of Winnipeg James St. pumping station water level at the 30 ft. flood level.
- Threat to the corporate image or the ability for the corporation to conduct business.
- When recommended by a Division Manager.

Corporate Emergency Center (CEC) Location

The CEC is located at 360 Portage on the 3rd floor in rooms 3-603 and 3-604. Alternate CEC locations will be identified to ensure adequate Level 3 support in the event of evacuation of the primary CEC.

Emergencies can occur any time including outside regular office hours, during adverse travel conditions, or when key support staff is not available to report to the CEC.

Time may be critical in the early stage of emergencies and normal communication systems are prone to failure during power interruptions and the increased call volume during disasters.

The CEC may establish contact through a prearranged conference call establishing a virtual CEC to deal with the initial corporate support requirements.

Level 3 Notification Cycle

The EOC Communication Officer provides regular status updates to the Corporate Emergency Center and Public Affairs support staff during Level 3 emergencies. At Level 3 — Public Affairs should prepare twice daily condition briefing reports at 10:00 and 16:00. In addition to the condition briefing report the Level 3 support team may elect to provide additional public information or media releases when required. Media releases have deadlines and may be critical for public load reduction appeals or appeals for other public support.

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Documentation & Communication

Incident Action Plan (IAP)

Purpose

- To identify all pieces of information (staffing, resources, weather etc) on the incident and
- the development of the course of action for the next operational period.
- Provides direction that everyone is working together, on the same goals, for that operational period.
 - What do we want to do?
 - Who is responsible for doing it?
 - How do we communicate with each other?
 - What is the procedure if someone is injured?

Development

- The Incident Action Plan is prepared by the Planning Section Chief with input from the appropriate sections.
- It should be written at the outset of the response and revised continually throughout the response.
- The level of detail required in an Incident Action Plan will vary according to the size and complexity of the response.

Guidelines

- Goals and objectives must be clearly stated and measurable so the Incident Management Team can determine how much was accomplished during the current operations shift.
- Goals and objectives must be attainable given the people, equipment, and supplies available during that operations shift.
- Goals and objectives must be broad and flexible enough for the Operations Section Chief to achieve them the best way possible.

Log books

- Every person is responsible for maintaining a log book.
 - Records individual actions, calls, decisions & times.

Emergency Management Website

- <http://csm.hydro.mb.ca/bss/cem/Pages/default.aspx>.
- Provides notification to key internal personnel.
- Electronic log.
 - Provides method of communication of EOC's issues, action & decisions.

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Training for EOC support staff

- Manitoba Emergency Management (MEM) is offered by MB EMO & the City of Winnipeg.
- Incident Command System (ICS) 100 course is offered on-line by the OFC.
- Exercise Design training will be scheduled as required by the Corporate Emergency Response Coordinator.

EOC requirements

- Minimum of 70% of support staff must have MEM training.
- Minimum of 70% of support staff must have the ICS 100 training.
- Have access to someone with exercise design training.
- Must be activated once per fiscal year in response to an actual event or a simulation exercise.
 - Activation must be documented using the appropriate corporate template for EOC activation.
 - Actions items are to be entered and tracked in the Emergency Management data base maintained by the program coordinator.
- Must have access to a functional EOC at a primary and alternate location.
- Quarterly review and update of support staff and contact info.
- Hazard Risk Assessment (HRA) must be reviewed and updated bi-annually starting in the 2009/10 fiscal year.
- Maintain & update site specific plans — Divisions, Departments and Sites develop sector, site and function specific plans which vary in complexity to address hazards.
- To facilitate knowledge sharing, a central filing is maintained on the CEMP website under the library tab.
 - Maintain and update EOC documentation under library tab.
 - Members of all EOC's are encouraged to review the information of the other EOC's, e.g. lessons learned, exercise scenarios, etc.

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Acronyms

BCP	Business Continuity Plans
BEST	Brandon Emergency Support Team
BIA	Business Impact Analysis
CEC	Corporate Emergency Center
CIS	Customer Information System
EC	Executive Committee
EMO	Emergency Measures Organization
EOC	Emergency Operations Center
EPP	Emergency Preparedness Plan
ERP	Emergency Response Plan
ERSC	Emergency Response Steering Committee
HASMAT	Hazardous Materials
HRA	Hazard Risk assessment
IVR	Interactive Voice Response
MH	Manitoba Hydro
MISO	Midwest Independent System Operator
NEB	National Energy Board
NERC	North American Electric Reliability Corporation
NOS	Not Otherwise Specified
PA	Public Affairs
PUB	Public Utilities Board
SCC	System Control Center

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The Emergency Measures Act

The Emergency Measures Act outlines the duties and responsibilities of public sector agencies during an emergency, the requirements for emergency plans by municipalities and others, the use of additional powers to deal with an emergency, and the provision of Disaster Financial Assistance by the provincial government.

All cities and municipalities must have an emergency response plan approved by the Manitoba Emergency Measures Organization and an Emergency Operation Center.

Emergency management programs

8.1(1) Every department must prepare an emergency management program in accordance with directions from the minister.

- In 2006, The Emergency Measures Act was amended to require provincial government departments complete and maintain BCP as a component of their emergency planning.

Contents

8.1(2) A department's emergency management program must include the following:

- (a) identification of the essential services the department will provide in a disaster or emergency;
- (b) identification of the resources the department requires to provide the essential services;
- (c) an assessment of the hazards and risks posed by various disasters and emergencies and how those disasters and emergencies might affect the department's ability to provide the essential services;
- (d) a plan for how the department would provide the essential services if various disasters or emergencies were to occur.

Periodic review

8.1(3) A department must review and revise its emergency management program on a regular basis and when directed to do so by the minister.

April 2014 Amendments

"business continuity plan" means a plan for responding to an event that affects critical services, including an emergency or a disaster, which includes measures to ensure the continuation or restoration of those services during and after the event;

"critical service" means a service or function that is necessary to prevent:

- (a) danger to life, health or safety,
- (b) the destruction or serious deterioration of infrastructure or other property required for the economic well-being of Manitoba or the effective functioning of the government, or

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(c) serious damage to the environment;

"critical service provider" means a corporation or other person, organization or entity designated by regulation as a critical service provider;

8.3(1) Every critical service provider must prepare a business continuity plan, in accordance with the regulations, and submit it to the co-ordinator for approval

National Emergency Board (NEB)

The Minell Pipeline Ltd was originally constructed in 1965 by TransCanada Pipelines Ltd. It was then sold in 1973 to a provincial regulated natural gas company and subsequently became a subsidiary of Manitoba Hydro in 1999.

The Minell pipeline system is a 168.3 mm (6-inch) diameter natural gas transmission pipeline. It commences just downstream of TransCanada's compressor station located near Moosomin Saskatchewan. It then runs north to Russell, Manitoba and is approximately 69.6 km long. Due to the fact the pipeline crosses over the Saskatchewan/Manitoba provincial border makes it an interprovincial pipeline federally regulated by the National Energy Board (NEB). The requirements to operate the federally regulated Minell Pipeline Ltd Company are documented in the National Energy Board Onshore Pipeline Regulations (OPR) SOR/99-294 dated June 25, 2013.

National Energy Board Act.

Definition

"pipeline" means a line that is used or to be used for the transmission of oil, gas or any other commodity and that connects a province with any other province or provinces or extends beyond the limits of a province or the offshore area as defined in section 123, and includes all branches, extensions, tanks, reservoirs, storage facilities, pumps, racks, compressors, loading facilities, interstation systems of communication

by telephone, telegraph or radio and real and personal property, or immovable and movable, and works connected to them, but does not include a sewer or water pipeline that is used or proposed to be used solely for municipal purposes;

Public Safety Canada – Emergency Management

The *Emergency Management Act* recognizes the roles that all stakeholders must play in Canada's emergency management system. It sets out the leadership role and responsibilities of the Minister of Public Safety and Emergency Preparedness, including coordinating emergency management activities among government institutions and in cooperation with the provinces and other entities. Responsibilities of other federal ministers are also set out in the Act.

The federal government is dedicated to working collaboratively with provinces and territories to support communities when disasters strike. To this end, *An Emergency Management Framework for Canada* was revised and approved by Federal/Provincial/Territorial Ministers in 2011. The Framework establishes a common approach for a range of collaborative emergency management initiatives in support of safe and resilient communities.

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The Department maintains a network of partnerships with other federal government institutions, provincial and territorial emergency management organizations, first responders and voluntary organizations, and other stakeholders and communities, supporting a whole-of-society approach to emergency management that leverages resources and capacities at all levels across the country. All Canadians also have a role in building resilient communities, helping to keep hazards from becoming disasters, and in recovering from disasters when they do happen “*Be Prepared*”.

The Canadian Framework

Emergency management in Manitoba is guided by the federal/provincial/territorial (F/P/T) document titled *An Emergency management Framework for Canada*. This framework describes the major components of emergency management, common definitions, and principles on which emergency management programs in Canada are based.

Definitions originate from the Emergency Management Act (EMA) 2013, Emergency Management Act (EMA), Emergency Framework for Canada (EMF) and, Federal Emergency Response Plan (FERP), and Government of Canada Emergency and Crisis Communication Vocabulary (ECCV), Critical Infrastructure Strategy and Action Plan (CISAP).

Definitions

All-hazards emergency management planning — An approach that recognizes that the actions required to mitigate the effects of emergencies are essentially the same, irrespective of the nature of the event, thereby permitting an optimization of scarce planning, response and support resources. The intention of all-hazards generic emergency planning is to employ generic methodologies, modified as necessary by particular circumstances.

All-hazards incorporates natural and man-made hazards threats including traditional emergency management events such as flooding and industrial accidents; as well as national security events such as acts of terrorism; and cyber events. (*Federal Emergency Response Plan (2009). Public Safety Canada*).

Business continuity — an ongoing process supported by senior management and adequately funded to ensure that the necessary steps are taken to identify the impact of potential losses and maintain viable recovery strategies and recovery plans for the continuity of services and operations, or continuity of government, following a disruptive event.

Business continuity planning — an all-encompassing term that includes the development and timely execution of plans, measures, procedures, and arrangements to ensure minimal or no interruption to the availability of critical services and assets. (*Public Service Readiness Plan (2008). Treasury Board of Canada Secretariat*).

Business impact analysis (BIA) — a process that identifies, quantifies, and qualifies the business impact on an organization of a loss, interruption, or disruption of business processes and provides the data from which appropriate continuity strategies can be determined.

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Common Operating Picture — Collating and gathering information—such as traffic, weather, actual damage, resource availability—of any type (voice, data, etc.) from agencies/organizations in order to make decisions during an incident. . . . A common operating picture is established and maintained by the gathering, collating, synthesizing, and disseminating of incident information to all appropriate parties involved in an incident. Achieving a common operating picture allows on-scene and off-scene personnel (e.g., those at the Incident Command Post, an Emergency Operations Center, and within a multi-agency coordination group) to have the same information about the incident, including the availability and location of resources, personnel, and the status of requests for assistance.

Consequence Management — Consequence management is predominantly an emergency management function and includes measures to protect public health and safety, restore essential services.

Critical service — *The Emergency Measures Act (MB) 2013* means a service or function that is necessary to prevent:

- (a) danger to life, health or safety,
- (b) the destruction or serious deterioration of infrastructure or other property required for the economic well-being of Manitoba or the effective functioning of the government, or
- (c) serious damage to the environment; *The Emergency Measures Act (MB) 2013*

Critical service provider means a corporation or other person, organization or entity designated by regulation as a critical service provider *The Emergency Measures Act (MB) 2013*

Concept of operations — Concept of operations provides a framework to operationalize horizontal management and an effective governance structure and delineates clear roles and responsibilities of the principal committees and individuals central to each phase of the incident management process. (*Public Service Readiness Plan (2008)*. Treasury Board of Canada Secretariat).

Critical infrastructure — Critical infrastructure refers to processes, systems, facilities, technologies, networks, assets and services essential to the health, safety, security or economic well-being of Canadians and the effective functioning of government. Critical infrastructure can be stand-alone or interconnected and interdependent within and across provinces, territories and national borders. Disruptions of critical infrastructure could result in catastrophic loss of life, adverse economic effects, and significant harm to public confidence. (*National Strategy and Action Plan for Critical Infrastructure*. Public Safety)

Department — means a department of the government of Manitoba and includes a Crown agency, board or commission established by the government of Manitoba.

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Disaster — means a calamity, however caused, which has resulted in or may result in

- (a) the loss of life; or
- (b) serious harm or damage to the safety, health or welfare of people; or
- (c) wide-spread damage to property or the environment.

Emergency — means a present or imminent situation or condition that requires prompt action to prevent or limit

- (a) the loss of life; or
- (b) harm or damage to the safety, health or welfare of people; or
- (c) damage to property or the environment.

Major emergency *The Emergency Measures Act (MB) 2013* means an emergency that is not a routine emergency;

Routine emergency *The Emergency Measures Act (MB) 2013* means an emergency that

- (a) can be effectively resolved
 - (i) by local police, fire and emergency medical services, working independently or together with public works and utilities personnel, and
 - (ii) without requiring additional resources from a local authority not directly affected by the emergency, the Government of Manitoba or the Government of Canada,
- (b) does not require evacuation of persons out of the geographic area over which a local authority has jurisdiction, and
- (c) does not require the declaration of a state of emergency or a state of local emergency.

Emergency management — The management of emergencies concerning all-hazards, including all activities and risk management measures related to prevention and mitigation, preparedness, response and recovery. (*An Emergency Management Framework for Canada*. Public Safety Canada).

Emergency Management Act (2007) — The EMA sets out the responsibilities for all federal ministers regarding emergency management. (Public Safety Canada).

Emergency Management Framework for Canada — Sets out common principles that are at the heart of an emergency management framework in Canada. In essence, they reflect the key underlying beliefs and goals of emergency management. Their aim is to support the design, implementation and ongoing improvement of frameworks, programs, procedures, guidelines and activities that together comprise the emergency management system. (Public Safety Canada).

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Emergency operations centre — A designated facility established by an agency or jurisdiction to coordinate the overall agency or jurisdictional response and support to an emergency. (*Federal Emergency Response Plan* (2009). Public Safety Canada).

Emergency management program — means a program prepared by a department under section 8.1.

Emergency preparedness program — means a program designed to achieve a state of readiness for emergencies and disasters.

Emergency support function — Emergency support functions are emergency response actions in support of the needs that are anticipated to arise prior to or during an emergency. (*Federal Emergency Response Plan* (2009). Public Safety Canada).

Government Operations Centre — Canada's strategic-level operations centre that coordinates the activities of hub of a network of operations centers run by a variety of federal departments and agencies during emergencies. (*Federal Emergency Response Plan* (2009). Public Safety Canada).

Hazard — A hazard is a potentially damaging physical event, phenomenon or human activity that may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation. (*An Emergency Management Framework for Canada*. Public Safety Canada).

Incident — an occurrence or event, sometimes comparatively, trivial in itself, which precipitates or could precipitate political unrest, open warfare, etc. (Oxford English Dictionary)

Incident Command System — A standardized on-scene emergency-management concept specifically designed to allow its user(s) to adopt an integrated organizational structure equal to the complexity and demands of single or multiple incidents, without being hindered by jurisdictional boundaries. (*Federal Emergency Response Plan* (2009). Public Safety Canada).

Incident management system (IMS) — a system that defines the roles and responsibilities of personnel and the operating procedures to be used in the management and direction of emergencies and other events.

Management by objectives — This is one of the principles of the Incident Command System. Personnel agree to the objectives and understand their overall direction. (*Federal Emergency Response Plan* (2009). Public Safety Canada).

Mitigation — actions taken to reduce the risks and impacts posed by hazards.

Mutual aid/mutual assistance agreement — a pre-arranged agreement entered into by two or more entities whereby the parties to the agreement undertake to render assistance to one another.

Preparedness — measures taken in advance of an emergency to ensure an effective response and recovery.

Prevention — measures taken to avoid an incident or stop an emergency from occurring.

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Probability — The likelihood that is expressed as a number between 0 and 1, where 0 indicates that the occurrence is impossible and 1 indicates definite knowledge that the occurrence has happened or will happen, where the ratios between numbers reflect and maintain quantitative relationships. (*DHS Risk Lexicon*. Department of Homeland Security).

Recovery — activities and programs designed to return conditions to a level that is acceptable to the entity following an emergency or other event.

Resource management — a process for identifying and managing available resources to enable timely and unimpeded access to the resources needed to prevent, mitigate, prepare for, respond to, or recover from an incident.

Response — actions taken during or immediately after an emergency to manage its consequences.

Risk — The combination of the likelihood and the consequence of a specified hazard being realized; refers to the vulnerability, proximity or exposure to hazards, which affects the likelihood of adverse impact. (*An Emergency Management Framework for Canada*. Public Safety Canada).

Risk assessment — The concept of risk is defined as a product or process which collects information and assigns values to risks for the purpose of informing priorities, developing or comparing courses of action, and informing decision making. (*DHS Risk Lexicon*. Department of Homeland Security).

Risk based — The concept that sound emergency management decision-making will be based on an understanding and evaluation of hazards, risks and vulnerabilities. (*An Emergency Management Framework for Canada*. Public Safety Canada).

Risk management — The use of policies, practices and resources to analyze, assess and control risks to health, safety, environment and the economy. (*An Emergency Management Frameworks for Canada*. Public Safety Canada).

Situational awareness — Situational awareness is having insight into one's environment and circumstances to understand how events and actions will affect business objectives, both now and in the near future. (*Government Security Policy* (2009). Treasury Board of Canada Secretariat).

Stakeholder — any individual, group, or organization that might affect, be affected by, or perceive itself to be affected by an emergency.

Standard operating procedures — SOPs are a set of instructions constituting a directive, covering those features of operations which lend themselves to a definite, step-by-step process of accomplishment. SOPs constitute a complete reference document or an operations manual that provides the purpose, authorities, duration, and details for the preferred method of performing a single function or a number of interrelated functions in a uniform manner. (*Producing Emergency Plans: A Guide for All-Hazards Emergency Operations for State, Territorial, Local, and Tribal Governments*. Department of Homeland Security).

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Threat — The presence of a hazard and an exposure pathway; threats may be natural or human-induced, either accidental or intentional. (*Federal Emergency Response Plan (2009)*. Public Safety Canada).

Threat assessment — The process of identifying or evaluating entities, actions, or occurrences, whether natural or man-made, that have or indicate the potential to harm life, information, operations and/or property. (*DHS Risk Lexicon*. Department of Homeland Security).

Vulnerability — The conditions determined by physical, social, economic and environmental factors or processes, which increase the susceptibility of an organization or community to the impact of hazards. (*An Emergency Management Framework for Canada*. Public Safety Canada).

Vulnerability assessment — A process for identifying physical features or operational attributes that render an entity, asset, system, network, or geographic area susceptible or exposed to hazards. (*DHS Risk Lexicon*. Department of Homeland Security).

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Terms of Reference for Emergency Operation Centres

Division Manager Sponsors:

Generation North Division
Generation South Division
HVDC Division
Customer Service Ops Division - South Region
Customer Service Ops Division - Wpg & North Region
Transmission System Operations Division
Apparatus Maintenance Division
Transmission Construction & Line Mtce Division
Chair of the Corporate Emergency Response Steering Committee

Purpose:

Effective emergency management relies on establishing a clear emergency preparedness and response structure that is easily understood by all employees. For effective command, control, and coordination, a single decision authority must control Manitoba Hydro's emergency response. The Incident Command System (ICS) was adopted in 2011 as the corporate standard for responding to emergencies.

When an incident or event affects multiple areas or departments, the local operating authority requests a Level 2 Emergency Operations Centre (EOC) be activated to provide strategic guidance, coordination, and access to greater support. An EOC is an established, recognized team of people that provides direction, support, inter-agency coordination, and resource management to the emergency site while maintaining normal business functions to the other areas.

Background:

Even with effective policies, processes, and systems in place to prevent incidents from occurring, no preemptive initiative can eliminate the occurrence of emergency situations. For this reason, Manitoba Hydro has developed a Corporate Emergency Management Program (CEMP) to establish the infrastructure to support the overall policy. The Program provides guidelines for developing emergency preparedness and emergency response plans (EPP/ERP) for escalated incidents or events when additional support is needed (or requiring multiple plans to be enacted consecutively) and provides the structure for responding to large scale emergencies.

It is acknowledged that every scenario is unique and has varying contributing factors that need to be taken into account and that cannot be comprehensively predetermined for inclusion in response plans. The level of detail in the procedures and plans is commensurate with the consequences of an emergency to maintain critical functions.

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Emergency Operation Centre Deliverables:

- Incident commander is responsible for execution of Emergency Preparedness Plan (EPP) and Emergency Response Plan (ERP)
 - Comply with corporate policies, guidelines, relevant laws and industry standards, and best practices.
 - Implement a Hazard Risk Assessment (HRA) to identify potential emergency situations and potential incidents or events that can have an impact(s) on people, facilities, corporate assets, business processes, technology systems or suppliers, and how they will respond to them.
- Assessment of hazards and risks that could affect the ability to provide essential services.
- Implement business continuity strategies to continue critical operations and functions during and following an emergency.
- Use of the Incident Command System (ICS) to direct, control, and coordinate response and recovery operations.
- Activate EOCs and electronic log in response to an event and maintain a communication process with all stakeholders that allow them to make decisions based on verified information to mitigate risks, develop appropriate responses and monitor the results.
- Implement and maintain an accountability system to track staff and resources during events.
- Establish a primary and alternate emergency operations centre (EOC) physical or virtual, capable of managing continuity, response, and recovery operations.
- EOC to be activated a minimum of once per year in response to an unscheduled event or a scheduled simulation exercise to evaluate program plans, procedures, and capabilities through periodic reviews, testing, and exercises.
- Complete an after action report for each EOC activation that identifies variation to the plans, what worked, lessons learned and issues, gaps or opportunities for improvement, and provide a copy to the Corporate Emergency Response Coordinator within 30 calendar days after the event.
- Provide reports and updates to the Corporate Emergency Response Steering Committee as requested.

Division Manager	Signature	Date
Generation North Division		
Generation South Division		
HVDC Division	original copy signed	July 2011
CSO Wpg & North Division		
CSO South Division		
Trans System Operations Division		
Apparatus Maintenance Division		
Trans Const & Line Mtce Division		
ERSC chair		

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Terms of Reference for Corporate Flood Committee

Division Manager Sponsors:

- Customer Service Ops Division - South Region
- Customer Service Ops Division - Wpg & North Region
- Transmission System Operations Division
- Apparatus Maintenance Division
- Transmission Construction & Line Mtce Division
- Chair of the Corporate Emergency Response Steering Committee

Purpose

The Corporate Flood Committee provides support to the Regional Emergency Operation Centre's (EOC's) that are responsible for preparing and responding to local events or directly to an emergency site. The Flood committee is an established, recognized team of people who are responsible for identifying priorities, providing direction, coordination, communications, and support to the EOC's during emergency operations. The Corporate flood Committee creates and maintains a database of flood related information and operational guidelines to assist all EOC's in preparing for and effectively responding to floods.

Background

As part of its Corporate Emergency Preparedness Plan, Manitoba Hydro has established the Corporate Flood Committee as a lead to support the Emergency Operation Centres. The mandate of the Corporate Flood Committee is to effectively identify potential flood impacts to the corporation and ensure plans are in place along with identifying public information requirements, managing resources, and providing support during a flood to ensure public and employee safety and to mitigate the impacts on corporate assets, property, and the environment.

Geographical area of flood responsibilities

- All EOC's are responsible for preparing for and responding to flood impacts within their area that could be caused by overland flooding or a dam breach. Power Supply Generation Stations are covered by the Dam Safety Program.
- To clarify the geographical area and EOC responsibilities for Customer Service Operations, Apparatus Maintenance, Communication Dept., Line Maintenance and Selkirk/Brandon Thermal stations the following Customer Service Centre (CSC) boundaries will be used:
 - The Selkirk EOC — Interlake, Eastman and Winnipeg CSC area;
 - The Brandon EOC — Parkland and Westman CSC area; and
 - The Thompson EOC — Northman CSC area.

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Deliverables:

The Corporate Flood Committee will:

- Annually in February, review, update, and distribute as required:
 - Current flood information supplied by external sources to determine potential impacts across the corporation;
 - Policies, procedures, and guidelines related to floods;
 - Documents providing guidance and direction to the public related to floods; and
 - Identify training requirements.
- Maintain and update information required to mitigate, prepare for and respond to a flood.
- Maintain and update flood related information stored on the CEMP website.
- Review Emergency Preparedness Plan and provide recommendations for revisions.
- Determine if a remediation plan exists and, if not, create one.
- Activate the Flood Committee a minimum of once per year in response to an unscheduled event or a scheduled simulation exercise to evaluate program plans, procedures, and capabilities through periodic reviews, testing, and exercises.
- Activate EOCs and electronic log in response to an event and maintain a communication process with all stakeholders that allow them to make decisions based on verified information to mitigate risks, develop appropriate responses and monitor the results.
- Complete an after action report for each EOC activation that identifies variation to the plans, what worked, lessons learned and issues, gaps or opportunities for improvement, and provide a copy to the Corporate Emergency Response Coordinator within 30 calendar days after the event.
- Provide reports and updates to the Corporate Emergency Response Steering Committee as requested.

Division Manager	Signature	Date
CSO Wpg & North Division		
CSO South Division		
Trans System Operations Division	original copy signed	July 2011
Apparatus Maintenance Division		
Trans Const & Line Mtce Division		
ERSC chair		

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Terms of Reference for Emergency Response Gas Planning Committee

Division Manager Sponsors:

Customer Service Ops Division - South Region

Customer Service Ops Division - Wpg & North Region

Purpose

The mandate of the Emergency Response Gas Planning Committee is to:

- Implement business continuity strategies to continue critical natural gas operations and functions during and following an emergency.

Background

As part of the Corporate Emergency Preparedness Plan, Manitoba Hydro has established the Emergency Response Gas Planning Committee (ERGPC) as a lead to support the Emergency Operation Centre.

Deliverables

The committee will:

- Develop and maintain the Emergency Preparedness Plan (EPP) and Emergency Response Plan (ERP) to:
 - Comply with corporate policies, guidelines, relevant laws and industry standards, and best practices.
 - Implement a Hazard Risk Assessment (HRA) to identify potential emergency situations and potential incidents or events that can have an impact(s) on people, facilities, corporate assets, business processes, technology systems or suppliers.
- Annually review, and comment as required:
 - Policies, procedures, and guidelines that relate directly to emergency response;
 - Documents providing guidance and direction to the public; and
 - Identify emergency response training requirements.
- Identify plans and procedures for the functions of prevention, mitigation, preparedness, response, recovery, and to maintain critical functions.
- Conduct a business impact analysis in the event of the loss of the natural gas supply.
- Maintain and update information stored on the CEMP website.
- Evaluate program plans, procedures, and capabilities through periodic reviews, testing, and exercises.
- Activate the ERGP committee a minimum of once per year using an Emergency Operation Centre (EOC) in response to an unscheduled event or a scheduled simulation exercise.
- Activate EOCs and electronic log in response to an event and maintain a communication process with all stakeholders that allow them to make decisions based on verified information to mitigate risks. Develop appropriate responses and monitor the results.

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- Identify resource capability shortfalls and the steps necessary to address them.
- Identify a current inventory of internal and external resources that shall be maintained.
- Complete an after action report for each EOC activation that identifies variation to the plans, what worked, lessons learned and issues, gaps or opportunities for improvement.
- Provide a copy to the Corporate Emergency Response Coordinator within 30 calendar days after the event.
- Provide reports and updates to the Corporate Emergency Response Steering Committee as requested.
- ERGPC to meet a minimum of four times per year.
- Membership is position based.

Committee Membership

Corporate

- Insurance Services Dept. Manager

Customer Care and Marketing

- Operations Support Services Dept. Manager
- Utilization, Planning & Dispatch Supervisor
- Corporate Emergency Response Coordinator (ERSC)

Customer Service & Distribution

- Customer Service Ops Wpg East Dept. Manager
- Customer Service Ops Parkland Dept. Manager
- Gas Apparatus Maintenance & Control Dept. Manager (ERSC)
- Distribution Standards Dept. Manager
- Gas Facilities Engineer

Finance and Administration

- Senior Gas Trades Specialist

Resource

- Operations Support Services Department

NOTE – Corporate Emergency Response Steering Committee (ERSC) member

Division Manager	Signature	Date
CSO Wpg & North Region	original copy signed	August 2011
CSO South Region		

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Revision 0.1
Next expected revision: June 2016.
June 2014



SUBJECT AREA: **Climate**

REFERENCE: **MWL-IR-034**

QUESTION:

What management plans will identify response to the climate impacts and events discussed?
Are the management plans and responses to the climate impacts and events discussed part of the EPP?

RESPONSE:

- 1 As noted in the previous response, Chapter 22, Section 22.2.6 of the EIS, Project-specific
- 2 Management Plans will be developed by construction contractors for Emergency Preparedness
- 3 and Response and Erosion Protection and Sediment Control. These plans are a component of
- 4 the EPP and will contain measures to deal with climate events such as freezing rain, wind
- 5 events, excessive rainfall and snowfall.

- 6 However, regional climate-related emergencies such as tornadoes or extreme widespread
- 7 precipitation events such as those discussed in section 20.3.2 of the EIS require more than just
- 8 Project-specific management. As described in Chapter 21 of the EIS, in addition to regular
- 9 inspections, issues such as severe weather are identified through ongoing monitoring by
- 10 Manitoba Hydro's Systems Control Centre. Chapter 21 also references the 2014 Corporate
- 11 Emergency Management Plan, which discusses topics such as emergency preparedness plans,
- 12 emergency response plans and hazard risk assessment, the Incidence Command System, roles,
- 13 accountabilities and duties. Chapter 21 also discusses how the potential impacts of severe
- 14 weather, such as power outages tower collapses, erosion/sediment issues, are addressed.

SUBJECT AREA: Sustainable Development

REFERENCE: MWL-IR-052

QUESTION:

As the response to MWL-IR-052 does not confirm the Manitoba Government Sustainable Development Principles and Guidelines, please confirm that Manitoba's Principles and Guidelines are part of the regulatory and legislative regime for Manitoba and that they are in the terms of reference for the CEC review of MMTP.

RESPONSE:

- 1 The terms of reference for the CEC review of the MMTP states that
- 2 *"The Commission's recommendation shall incorporate, where appropriate, the Principles*
- 3 *of Sustainable Development and Guidelines for Sustainable Development as contained in*
- 4 *Sustainable Development Strategy for Manitoba."*¹

¹ http://www.gov.mb.ca/sd/eal/registries/5750mbhydrombminnesota/dec232015cec_termsofreference.pdf

SUBJECT AREA: Community Health and Well-being

REFERENCE: MWL-IR-048

QUESTION:

Was a health and well-being assessment conducted by Manitoba Hydro that included how changes in ecosystem services affect the human health and well-being of the communities? If so, please provide the assessment and/or documentation. If not, why not?

RESPONSE:

- 1 The effect of potential Project-related changes in ecosystem services on human health and
- 2 well-being were not addressed in the EIS. The scoping for effects on community health and
- 3 well-being was guided by several documents, including the final Scoping Document for the
- 4 Project, posted by the Manitoba Clean Environment Commission on June 11, 2015, the National
- 5 Energy Board Electricity Filing Manual, as well as results from public and Aboriginal Group
- 6 engagement. The requirement to consider ecosystem service related health effects is not
- 7 identified in the Scoping Document (which itself underwent a public review process) or the
- 8 National Energy Board filing manual, and it was not identified as an issue for consideration
- 9 through public and Aboriginal engagement.