

3.0 Site selection process

This chapter outlines the site selection process used to determine the location of the proposed 230-66 kV station. The objectives of the site selection process were to:

- reduce potential effects to the biophysical environment;
- reduce potential effects to the socioeconomic environment;
- reduce potential effects on traditional use of the area;
- consider transmission planning (e.g. minimize distance to the proposed St. Vital to Letellier 230 kV line);
- consider distribution planning (proximity to the load centre; the need for up to six 66 kV lines leaving the station); and
- consider station construction, operation and maintenance (ease of construction, access, and maintenance).

3.1 Site selection approach and summary

The site selection process was initiated by undertaking a desktop analysis of available information and the identification of proposed sites based on the above considerations.

Following the desktop analysis, Manitoba Hydro conducted a field reconnaissance survey on November 17, 2015. Members of the environmental assessment and project management teams surveyed the area and possible station sites.

Ten possible site locations were developed based on the preliminary desktop analysis and field reconnaissance surveys (Figure 3-1). The possible site locations were discussed during three Site Selection Workshops.

A modified Delphi approach was used to select a preferred site. The modified Delphi approach is a widely used and accepted approach for gathering data from respondents within their area of expertise. “The technique is designed as a group communication process which aims to achieve a convergence of opinion on a specific real-world issue” (Hsu et. al 2007). The technique develops consensus using multiple iterations of data and discussion from a group to facilitate decisions.

3.1.1 Initial site selection workshop

Manitoba Hydro held the first Site Selection Workshop on November 30, 2015, to discuss the ten proposed site locations and site selection criteria. Representatives from transmission line design, distribution planning, station design, property, public engagement, Indigenous engagement, biophysical and socioeconomic specialists, and project management were present. The objectives of the workshop were to identify site preferences and opportunities from each representative as well as eliminate site locations that presented constraints to the Project. Two rounds of site selection and discussions occurred during the initial workshop.

During the first round, each representative was asked to identify their top five sites using a 1-5 ranking. Furthermore, each representative was asked to identify their least preferred site. The workshop group agreed to remove Sites 2, 3, 5, 7, 8 and 9 because they were not preferred by any representative. Some of the concerns/challenges with the sites included:

- property acquisition challenges;
- distance to load centre;
- distance to proposed St. Vital to Letellier line; and
- presence of existing infrastructure.

The workshop group agreed that sites 1, 4, 6 and 10 would be feasible options and these sites were further reviewed in the second round of the workshop.

During the second round, the remaining sites were discussed by the representatives in greater detail. The sites were renumbered 1 through 4b (Figure 3-2) for simplicity. Once discussions were complete, the following sites remained:

- site 1 – Southwest corner of SW-11-7-4-E (formerly Site 10);
- site 2 – Northwest corner of SW-2-7-4-E (formerly Site 10);
- site 3 – South half of NE-35-6-4-E and all of SE-35-6-4-E (formerly Site 1);
- site 4a – Southeast corner of SE-13-6-4-E (formerly Site 5); and
- site 4b – Southeast corner of SE-14-6-4-E (new site).

Site 4b was added after the first round due to the benefits of the site from a distribution planning perspective.

The following general characteristics were noted for the remaining five proposed site locations:

- biophysical environment;
 - minimal wildlife concerns because areas are primarily cultivated land;
- socio-economic environment;
 - little existing infrastructure generally;
 - areas with fewer potential landowner concerns;
- traditional use;
 - areas are primarily used for agriculture therefore there is limited potential for traditional use;
- transmission planning;
 - minimized distance to the proposed St. Vital to Letellier line;
 - minimal transmission planning concerns;
- distribution planning;
 - closer proximity to the load centre;
 - shorter length of the 66 kV lines for sites 1, 2 and 3;
- station construction, operation and maintenance;
 - minimal construction, maintenance and access concerns.

The remaining sites were further reviewed and evaluated during the second Site Selection Workshop.

3.1.2 Second site selection workshop

Manitoba Hydro held the second Site Selection Workshop on March 8, 2016, to discuss the five remaining proposed site locations. The objective of the workshop was to share more in-depth information about each site and reach consensus among the representatives on a preferred site.

The workshop began with a high-level review of the opportunities and constraints identified for each site during the first Site Selection Workshop. Each site was then examined in greater detail with representatives providing detailed comments on their perspective during a round table discussion.

Some of the key points raised for each site during the round table discussion included:

- **biophysical environment;**
 - all sites are on cultivated land therefore there are limited wildlife concerns.
- **socioeconomic environment;**
 - there are no identified heritage sites on any of the remaining sites.

- Site 1
 - no residential development present; and
 - Challenges related to constructability due to congestion of existing and planned infrastructure.
- Site 2
 - could interact with agricultural activities (aerial application, biosecurity, manure spreading, etc.);
 - major agricultural operation and residential development on adjacent quarter section; and
 - require larger area for acquisition and easement due to disruption to agricultural operations.
- Site 3
 - no development on the quarter section (i.e., active or proposed);
 - no residential development on the quarter section;
 - Constructability challenges relating to existing and planned infrastructure; and
 - reduced visual impacts to surrounding landowners because nearby homes are treed.
- Site 4a
 - no development on the quarter section (i.e., active or proposed);
 - no existing infrastructure on the quarter section; and
 - a new access road would provide improved access to nearby residents and may be perceived as beneficial – currently there is only access from PR 215.
- Site 4b
 - existing infrastructure on adjacent quarter section;
 - possible manure spreading issue;
 - potential stray voltage concerns with proximity to livestock operations; and
 - a new access road would provide improved access to nearby residents and may be perceived as beneficial – currently there is only access from PR 215.
- **traditional use**
 - all sites are on cultivated land, and no indication of traditional use on these specific sites has been identified.
- **transmission planning**
 - Site 1
 - congestion with other transmission lines in the immediate vicinity creates design

- challenges; and
 - short distance to proposed St. Vital to Letellier line.
 - Site 2
 - congestion with other transmission lines in the immediate vicinity creates design challenges; and
 - short distance to proposed St. Vital to Letellier line.
 - Site 3
 - congestion with other transmission lines in the immediate vicinity creates design challenges; and
 - longest distance from the proposed St. Vital to Letellier line.
 - Site 4a
 - short distance to proposed St. Vital to Letellier line.
 - Site 4b
 - short distance to proposed St. Vital to Letellier line.
- **distribution planning**
 - Site 1
 - closest to load centre and most cost effective from a distribution perspective due to line length.
 - Site 2
 - located near load centre, slightly further than Site 1.
 - Site 3
 - located near load centre, further than Sites 1 and 2.
 - Site 4a
 - furthest distance to load center creates high distribution costs.
 - Site 4b
 - furthest distance to the load center creates high distribution costs.
- **station construction, operation and maintenance**
 - Site 1
 - congestion of transmission lines and distribution lines around the proposed station (i.e., construction challenges);
 - highly visible site that would lessen potential security issues;
 - site allows for future development if necessary; and
 - good access.
 - Site 2

- congestion of transmission lines and distribution lines around the proposed station (i.e., construction challenges); and
- good access.
- o Site 3
 - congestion of transmission lines and distribution lines around the proposed station (i.e., construction challenges); and
 - good access
- o Site 4a
 - the site would require the construction of a lengthy access road from PTH 59 and may be cost prohibitive.
- o Site 4b
 - a new road would need to be constructed, but much shorter than Site 4a.

Following the review of each site, a facilitated discussion occurred to start the process of characterizing the sites. The representatives quickly reached consensus to eliminate Site 2 and Site 4a because neither site was desirable from any perspective. It was agreed that Site 2 would be eliminated due to the potential for a larger area required for acquisition (increased cost) and easement due to agricultural impacts. Site 4a was also eliminated because of the high cost associated with the construction of a new access road to PTH 59. Through further discussion, the representatives agreed to eliminate Site 4b because of concerns regarding access to the site, the distance to the load center and associated future 66kV transmission line costs.

With only Site 1 and Site 3 remaining, site-specific details were discussed. Site 1 is closest to the load centre, therefore the least expensive, requiring the fewest kilometers of distribution (66kV) lines; however, there were significant concerns about the constructability due to existing and planned infrastructure on the site as well as configuration of the infrastructure. Site 3 had no accessibility issues given the proximity to the highway and poses limited security concerns due to its visibility from the highway. There were fewer constructability concerns for site 3.

Site 3 was selected as the preferred site because it presented potentially reduced effects to both the biophysical and socio-economic environment, the lowest concern from a constructability perspective, there were no access issues to the site from a construction perspective, presented a low security risk and allowed easy maintenance access because of

its proximity to PTH 52, had few homes in proximity to the site and concentrated the infrastructure in one location.

At the conclusion of the meeting, it was decided by the group that each representative conduct further investigation of the two remaining sites including orientation of the station and that a follow-up meeting be held to confirm that site three was the preferred site location.

3.1.3 Third site selection workshop

On April, 7th, 2016, the group re-convened for the final workshop to finalize its selection of the preferred station location. A facilitated discussion of the two remaining sites (site one and site three) occurred to determine if site three remained the preferred station location upon detailed investigation by each representative. Further investigation into the two remaining sites did not alter the decision to proceed with site three as the preferred station location. The following are some of the key reasons for the decision:

- site one had considerable construction challenges due to existing and planned infrastructure on the property;
- site three is further away from residences;
- from an electrical perspective site three was a more favourable option given the infrastructure to be installed on the site for other projects;
- concentration of infrastructure (aesthetic concerns) in one location is often preferred from the public rather than using multiple locations making site three a preferred location; and
- the location of site three is adjacent to PTH 52 and is a better option from a security and maintenance perspective.