The Pedagogical Potential of Multimedia Dictionaries Lessons from a Community Dictionary Project

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Although traditionally used as a documentation device, dictionaries are being reconceived and explored for pedagogical potential through the use of multimedia technology. This paper looks at some considerations for creating a dictionary aimed at facilitating Indigenous language acquisition, including the possibilities and limitations of multimedia, educational approaches and the needs of Heritage language learners. Through a case study of the Burt Lake Band of Ottawa and Chippewa Indian's bilingual Anishinaabemowin dictionary project, some specific approaches to enhancing the educational potential of a multimedia dictionary and future directions are discussed.

For communities working on language reclamation and revitalization projects, choosing the direction in which to commit limited energy and resources can be difficult. There may be a need to document language, create learning materials, and facilitate language learning, all as rapidly as possible.² In these contexts the efficient allocation of resources to meet holistic needs is crucial, and there are many creative ways that communities are addressing these issues, from language nests and apprenticeships to video-games and I-pods (Hinton, 2001). This paper looks at multimedia dictionaries as an increasingly popular medium with the potential to address both documentation and educational needs. Specifically, I will address some considerations about creating a multimedia dictionary intended to be an effective pedagogical, as well as documentation, tool in the context of community-focused language revitalization. Relating the experiences of different communities is the best way to add to the shared knowledge about best practices for creating quality materials (May & Aikman, 2003). To this end I will discuss an ongoing community multimedia dictionary project, the problems encountered during the project and the approaches taken to address them. My discussion is based on my experience as an assistant to the tribal Language Preservation Program³ that produced the dictionary, and as a participant of several Indigenous language education programs in the same language family over the past three and a half years. While not all of the considerations I will mention may be relevant in all community contexts,⁴ it is hoped that some of the approaches taken by the Burt Lake Band Dictionary project team will be of interest to other community initiatives and educators engaged in creating multimedia learning tools.

Dictionaries and language revitalization

Multimedia dictionaries are tools that have been created in increasing numbers, with a variety of formats, and presumably an equal variety of intended purposes. Although dictionaries are traditionally a documentation device, multi-

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media enables us to conceive dictionaries with increasing creativity, in ways that can make them effective learning devices (Amith, 2002), as well as status-raising or advocacy tools for a language (Miyashita & Moll, 1999; Buszard-Welcher, 2001). Dictionaries can be "a repository of tribal identity" and as such may serve many purposes beyond their traditional use as a documentation device (Hinton & Weigel, 2002, p. 156). While a documentation-focused dictionary is also a support for a language learner, it does not actually engage the learner or have an explicit pedagogical aim, and is thus not likely to facilitate much language learning. Although in the past dictionaries designed to aid learners were considered incompatible with "serious" linguistic documentation, with current technologies the achievement of both goals may be possible (Amith, 2002). Creating learning materials that aid in language maintenance and revitalization may well be a more difficult task than scientific documentation (Hinton & Weigel, 2002). The language-learner audience is more varied than the academic documentation audience, necessitating an in-depth awareness of learner needs and a broad range of pedagogical approaches. Language documentation, on the other hand, is conducted largely with explicit standards of how materials must be presented. While the linguistic and lexicographic complexities of creating dictionaries inevitably impact the educational usefulness of the dictionary, a discussion of these issues is beyond the scope of this paper (for further discussion see e.g., Frawley, Hill & Munro, 2002; Warner, Butler & Luna-Castillas, 2006; Rice & Saxon, 2002). Rather I will focus on aspects unique to multimedia dictionaries that directly relate to pedagogical potential.

Technology and language revitalization

Multimedia tools have clear potential to meet some of the needs of language revitalization projects, however the best ways to use multimedia in education are far from established. There are also drawbacks and issues to be aware of when using technology for education, which warrant close scrutiny, and have been discussed elsewhere (e.g., Hinton, 2001; Chapelle, 2005). For communities that choose to use this medium, therefore, it is important to pay heed to options and ways to use it effectively. Previous multimedia projects have shown that multimedia can allow communities to "create their own representation in response to what is usually a lack of culturally appropriate curricular materials" (Kroskrity & Reynolds, 2001, p. 328). The possibility of combining audio, text and image opens a wide horizon of possibilities. Most would agree with Miyashita and Moll (1999) that "language revitalization efforts can benefit from more active use of computer resources," albeit with proper consideration to the format and the intended audience. Most would also agree with Parks et al. (1999), who observe that language programs (and electronic language resources) vary "dramatically in teaching materials, pedagogical approach, and in effectiveness." With the everexpanding choices of multimedia, it is important to consider how technology may most effectively be used to meet language revitalization objectives.

Indigenous language learning

In the case of Indigenous language dictionaries, an important first consideration is the intended audience of the dictionary (Rice & Saxon, 2002); when creating a dictionary with a pedagogical aim, this question becomes: how best to facilitate language learning for the intended users? In attempting to answer the question of how best to use multimedia dictionaries to meet learning needs, some help may be gained from considering the fields of Second Language Acquisition (SLA), Heritage Language Acquisition (HLA) and Indigenous Education as they relate to language revitalization.

The traditional grammar-translation approach to SLA is still employed by some indigenous language programs, although many Indigenous language educators recognize that it is not effective (K. Dickie, Nov. 2007, personal communication; K. Pheasant, Sept. 2004, personal communication). This approach uses English as the language of instruction, explaining and translating the target language entirely in English, and emphasizing memorization of rules and vocabulary. As Buszard-Welcher (2001) notes, grammar-translation pedagogy "runs counter to modern theories of SLA, which stress the importance of language learning in context" (p. 341). In her survey of indigenous language online resources, she found that despite the multimedia capacity of online language materials, text remains primary in indigenous language websites. She stresses that de-contextualized vocabulary (the content of a typical dictionary) is a common but ineffective approach and states that ongoing thought and development are needed in order to use internet technology for effective language learning. Chapelle (2005) also urges that the "fascinating array of options offered by hyper media" be researched to identify "ideal pedagogical strategies" (p.749). Immersion education is now widely considered the best pedagogical approach to language revitalization (e.g., Grenoble & Whaley, 2006), and although multimedia cannot be a substitute, it can attempt to approximate the rich audio-visual-interactive input far better than simple text, tape, or audio (Hinton, 2001; Parks et al., 1999). Research in learning strategies shows that providing a variety of input sources is beneficial to learners, for example the use of writing as well as speech may help students with diverse learning styles (Bennett, Mattz, Jackson & Campbell, 1999). It has also been suggested that allowing Heritage language (HL) learners to set their own pace, with the ability to return and review material as they choose, is beneficial (Parks et al., 1999). This is emphasized by HL researchers, who stress that cultural and linguistic background impacts the needs of HL learners and must be taken into account (Valdés, 2005; Kondo-Brown, 2005). As Kondo-Brown (2005) states, "the language learning behaviors and needs of HL learners are distinctly different from those of traditional FL [Foreign Language] students" (p. 564). The students' cultural connection with the language may impact their affective behaviors as learners, and their (often) minority social status may impact the amount of educational support and language learning resources that they receive, to name a few of these differences.

Indigenous education practitioners and researchers have found that community control and participation is a crucial element in supporting the diverse

learning needs of indigenous, heritage language learners (McCarty, 2003; Smith, 2005; May & Aikman, 2003). Smith (2005) encourages the use of "indigenous frameworks for thinking about schooling" (p. 94), which enable education to be part of the "potential for evolving cultural identities as a rich range of alternatives to assimilation and cultural loss" as stated by Stairs (1994, p.155). Stairs further discusses that education is not neutral, but must be negotiated as a form of identity reclamation. An important part of a learning approach that supports indigenous identity is "education for wholeness" (Cajete, 1994, p. 209), or "the realization that ritual, myth, vision, art, and learning the art of relationship in a particular environment facilitates the health and wholeness of the individual, family, and community" (p. 209). It is important to bring these understandings into the development of learning materials. In the past "Schooling has been explicitly and implicitly a site of rejection of indigenous knowledge and language" (May & Aikman, 2003, p. 143), and in order to heal this damage indigenous knowledge must guide the creation of new learning materials. This can include making the materials relevant to the community through use of people, activities, and designs from the local culture. In fact "local control" may be the crucial factor allowing a language project to "take root and flourish" (May & Aikman, 2003, p. 143). Thus, when creating materials for the unique conditions of indigenous language learners, it is important to consider pedagogical issues of language acquisition, with a grounding in the cultural reality of learners, and through a process that is community-focused.

Putting principles into practice

Drawing together all of the above considerations, and exploring pedagogical potentials to create a dictionary which addresses both documentation and education needs holistically is not something that can be explained in a formula. Each community ultimately needs to address these issues in their own context. Through sharing the experiences of different communities, both good and bad, all of our efforts are strengthened, and best practices will continue to emerge. In this spirit I will discuss a case study of the Burt Lake (Cheboiganing) Band of Ottawa and Chippewa Indian's work on a multimedia dictionary project, beginning with a general background of the community, then discussing the aims and evolution of the project. Throughout I will note problems and limitations encountered, and the attempts made to address them.

Community and language background

The Burt Lake (Cheboiganing)⁵ Band of Ottawa and Chippewa Indians is a State-recognized tribe in the tip of the Lower Peninsula of Michigan, between Lakes Michigan and Huron, in the USA. Tribal membership is 320, many of whom have moved away from the tribal homelands for economic purposes since the middle of the 20th century, and return seasonally for visits with relatives still living near Indian Point on Burt Lake. Sharing a common language and culture with neighboring tribes, the Burt Lake Band (BLB) has a much lower economic profile than its neighbors, due to the BLB's ongoing struggle for federal recog-

nition. The BLB is thus reliant on grants for educational initiatives. However, tribal members have been involved in a wide variety of social, cultural, and educational projects in recent decades, most recently a grant project through the Federal Administration for Native Americans (ANA) to document the speech of their remaining Elder-Speakers and preserve it in a multimedia dictionary.

The indigenous language of Michigan, a member of the Algic language family, is known by several European names; Ojibwe, Chippewa, Ottawa and Odawa being the most common. Its indigenous name is Anishinaabemowin.⁶ While there are an estimated 50,000 speakers of various dialects of the Anishinaabe language around the Great Lakes in Ontario and Michigan, and stretching into Wisconsin, Minnesota, and Saskatchewan (Treuer, 2001), the language is highly endangered in Northern Lower Michigan. There are seven Elders in the BLB with varying levels of language fluency; this is actually a high ratio compared to neighboring tribes who have much larger populations, but equally low or lower numbers of speakers. Previous language initiatives in the tribe drew upon resources created elsewhere, although the dialectical variations among speakers of Anishinaabemowin (or in some cases the different names used to identify the language) were a source of complaint from tribal members. Members identify with the term Ottawa, but many of the available materials use the term Ojibwe. Vowel syncope, or loss of unstressed vowels, occurred in Michigan and Southern Ontario in the 20th century, as well as other phonological deletions which contribute to dialectical differences today (Valentine, 2001). Nonetheless, outside resources including two well-respected dictionaries (Nichols & Nyholm, 1995; Rhodes, 1993), which include dialect variants, have been an invaluable support to the BLB Language Preservation projects.

The aim of the multimedia dictionary project was two-fold: to document the language of the Elder-speakers, and to meet the learning needs of the dispersed tribal members with the same limited grant money. During the course of the project difficulties arose and compromises were made in both areas. In an extensive project like this there are clearly far more issues than can be conveyed in a brief summary, but important points relating to the difficulties encountered and approaches taken to overcome them will be discussed.

Creating a dictionary for language learners

The dictionary was initiated in 2002, with the intent to record Elders and input the material into the multimedia dictionary template developed by the American Indian Studies Research Institute at Indiana University. Two-hundred entries were inputted into the Indiana Dictionary Database (IDD), and a CD-ROM and corresponding print version were produced and distributed to tribal members. The CD-ROM had several technical glitches and was not considered very user-friendly. The IDD allowed for extensive audio and video files and language information in each entry; the intent of the program was to "develop tools that allow scholars and language teachers to work with linguistic data" (Parks et al., 1999). Although the IDD accomplished this goal, the lack of learner focus was apparent; users did not enjoy squinting at the small window in which video

clips appeared and did not find the solid grey panel of linguistic information very engaging. The project was distributed to members and had successfully documented speech, but it was not considered by community members to be a pedagogical success.

When a new language revitalization grant was obtained in 2004 from the Administration for Native Americans under the Native American Languages Act, the members of the Language Preservation Program determined that it was necessary to redesign the format of the dictionary in order to make it more accessible to language learners before inputting an additional 200 entries. A new interface was designed by an externally-contracted web-designer with a colorful background featuring the BLB tribal logo, and including a Help page, an Introduction page, and Biography pages for each of the speakers included in the dictionary (see Figure 1).

Figure 1. Opening page of revised dictionary format



This interface retained the ability to hold many audio, video, and image files and many linguistic notes in each entry. English-to-Anishinaabemowin and Anishinaabemowin-to-English databases can be browsed (but not searched). The Anishinaabemowin database also contains all the multimedia files, including still images, video, audio, and text-audio transcriptions. Designed in html format, this version was intended to become an online dictionary.

Language content

In expanding the dictionary into this user-friendly format, an important issue was the elicitation of new language, the heart of the dictionary. While a dictionary typically consists of individual lexical entries, a decontextualized list of vocabulary alone is of limited benefit to learners as discussed above. In addition, individual words often proved the hardest for speakers to produce. The Elders of the BLB, although several of them remember speaking Anishinaabemowin before English and continuing to use the language into their late teens, have almost entirely ceased to use the language on a regular basis for several decades. Their experiences in Catholic schools and discriminatory Anglo-dominant com-

munities influenced them away from "speaking Indian"; experiences that were shared by Indigenous people across North America. It can be very difficult for them to recall certain words and phrases, and this is especially the case when they are asked to provide a translation of an English word out of context. In order to record language in a more naturalistic way and to provide rich input for learners, a "Speakers Get-Together" was planned as a day-long event in coordination with the pre-existing annual tribal reunion. A fluent language instructor⁷ was also invited to help provide an Anishinaabe-dominant environment in which the Elders might feel more at ease and be able to recall their language more comfortably. While this was successful to a degree, it is impossible to ignore the effects of recording equipment and a meeting setting on speakers who have traditionally used their language as an informal, in-group form of communication. A large amount of language was recorded nonetheless, including conversation, stories, jokes, and some independent vocabulary, interspersed with English discussion and reminiscence. Appreciation for the opportunity to meet and the desire for future gatherings were expressed by participants. Unfortunately the speakers currently live far apart, and thus repeated get-togethers were not possible during the project time-frame due to the limited budget of the project to cover travel expenses. Repeated get-togethers may have increased the ease of conversation and language use. Ongoing exploration is needed to document rich varieties of language and to find appropriate ways to capture natural language despite the presence of machines, which may feel very unnatural to Elder-speakers.

Cultural reclamation

The inclusion of Speakers' biographies (see Figure 2) and an introduction page with historical information and photographs from the tribal archives were an important addition to the revised dictionary. All of the Elders relate having been put down in school and the wider society for their use of the language; honoring them for their knowledge and contribution to the dictionary and tribal community may go a small way towards reversing this injustice.

Select A Biography
Entry

HELEN KIOGIMA

HELEN (SHAWA) KIOGIMA, RESIDENT OF HARBOR SPRINGS,
WAS BORN AND RAISED AT BURT LAKE. SHE MARRIED
AUGUSTINE KIOGIMA WHEN SHE WAS NINETEEN. THEN MOVED
AUGUSTINE KIOGIMA WHEN SHE WAS NINETEEN. THEN MOVED
AUGUSTINE KIOGIMA WHEN SHE WAS NINETEEN. THEN MOVED
BUT NOW IT IS PAYING OFF. HELEN AND AUGUSTINE SPEND
BILL NOW IT IS PAYING OFF. HELEN AND AUGUSTINE SPEND
OF HER BOYS, HELEN LOOKS FORWARD TO THE COCASIONS
OF HER BOYS, HELEN LOOKS FORWARD TO THE COCASIONS
TEVE ARE TOGETHER SPEAKING THEIR NATIVE LANGUAGE. ITS
ENDOYABLE FOR EVERYONE. READING HISTORICAL REFERENCES
ABOUT INDIAN CULTURE IS A FAVORTIE PASTINE ALONG WITH
VARIOUS PUZZLES AND CROSSWORDS. HELEN ELEN ELEN SELS ALOSS
AMD FRUSTRATION WHEN YOU CANT'C COMMUNICATE IN
OTTAWA BECAUSE THERE IS NO ONE TO COMPREHEND HER
WORDS.

Figure 2. Biography of Elder-Speaker Helen Kiogama

Through the multimedia videos, tribal members can see the Elders speaking in a naturalistic way. In addition, photos from the tribal archive were included in as many individual entries as possible when relevant to the entry. Discussion of place names and family stories and telling of jokes were all part of the "Speakers Get-Together," and made their way into the dictionary entries. Consideration was also given to create entries for activities of traditional cultural importance, such as hunting, fishing, and porcupine quill-box making. Finally, the multimedia CD-ROM (or online) format has the potential to reach out across the geographical distance that divides community members, allowing for greater participation.

Language acquisition

As discussed, best practices for language learning through multimedia are still being explored, and the BLB dictionary constitutes one example of this exploration. Making the overall dictionary user-friendly, attractive and relevant to the community were important steps in engaging learners and were approached through the methods discussed in the two previous sections. Another priority determined by the Language Preservation Program members was to make the language input accessible, clear, and rich, to facilitate language acquisition for learners at different levels. Rich language input was created through the use of video, audio, text and image for each entry. Users can watch and listen to each clip as often as they choose, and can browse for words in the bilingual indexes depending upon their interests, allowing them to pace and structure their interaction with the language. Rather than building the dictionary around a vocabulary list, the entries were created around the language used by speakers, which included conversation as well as individual words.

Hearing conversation is important for language learners, especially in the paradigm of Immersion education (Hinton, 2001), but it must also be made comprehensible, or accessible. Many tribal members' Anishinaabemowin language proficiency is limited, and thus conversational language would be difficult for them to process. With this in mind, both conversational and single-word entries were included to support learners at various levels, and meet the second consideration of accessible language input. For example, one clip contains a conversational exchange "Gbakadem na? Enh, gbakadewok" [Are you (plural) hungry? Yes, they're hungry.], while another clip in the same entry contains only "bakade" (hungry). Both versions of the video are included in the entry. Entries also contain one video clip showing the speakers as they speak, and another where the words are heard, but a written transcription of Anishinaabemowin appears on the black screen with an English translation underneath to support learners who prefer to learn language through written forms. The same clip is also available as audio-only, giving learners a variety of ways to take in the language. A final consideration of accessibility was to break up salient morphemes and provide semi-technical glosses for some of the simple phrases underneath the Anishinaabemowin transcription, to indicate some of the morphological and syntactic properties of the language for any learners interested in going beyond vocabulary acquisition. An example of this reads:

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"Kaawiin ngii-kend-sii
(Not I-know-negative suffix)
I don't know"
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Multiple variants are also given for most words, in order to accommodate the variety of dialects that learners may encounter in other Anishinaabe communities and language resources. While a "one-spelling one-word" paradigm may seem more logical from a documentation standpoint, as Rice and Saxon (2002) argue this is a Eurocentric assumption, and variation may be more appropriate in indigenous language dictionaries for communities with internal diversity. Related words (plurals, different tenses of the same verb, etc.) are also provided where possible (see Figure 3).

Figure 3. Example of spelling variants and related vocabulary



In order to meet the third consideration of providing clear language, the speech of the fluent teacher was included as well as that of tribal Elders. Although the teacher is from a different region⁸ and a younger generation, it was deemed beneficial to include her because her use of the language was clearly articulated and delivered with learners in mind. In addition, the Elders comprehended and responded to her speech. The decision whether to include only community members, as a true documentation of the BLB community, or to include a non-community member, was made on the basis of potential benefit to learners. Overall the BLB dictionary compromised in the direction of pedagogical priorities, and put most effort into educational, rather than documentation aspects of the dictionary.

Future directions

An important future direction is continued community engagement through training in technology. The current dictionary has been distributed in CD-ROM format, but due to some design flaws cannot currently be hosted online, as was

the initial hope. Through some re-designs, this is still the intent, although the lack of a community member with time to address the technological problems makes this a slow process. The maintenance of the site, and addition of more entries are future needs, which at present no one in the community is prepared to take on. Community control is thus an important aspect of this project.

Another crucial factor is collecting more feedback from the members, as to the cultural and educational relevance the dictionary has for them, and ways to improve it. Initial feedback to members of the Language Preservation Program from other tribal members has been positive, but no extensive survey has been undertaken, largely due to the dispersed nature of the membership, and the current lack of funding for language-related work. Despite the diverse language input, the dictionary remains largely a passive tool, excepting the user's navigation of the entries. There is no formal progression to guide the learner to acquire the language. This may suit learners who prefer their own pace and control over the material, but the effectiveness of the BLB Dictionary as a learning device will need to be explored further before any conclusions can be made.

In the context of Indigenous language revitalization, ultimately it is the users who instill value in a dictionary through their engagement with it. An excellent trend in online dictionaries is the concept of a living dictionary, where community members have access to input and expand the dictionary. This enables an ongoing confirmation and sharing of local knowledge and has great potential for maximizing the benefits of a multimedia project to communities with limited resources. The updating of the dictionary could involve community members in language production and thus has a greater educational potential. On-going developments in Computer Assisted Language Learning (CALL) technologies are creating ways to give learners feedback and engage them in communication (Chapelle, 2005; Amaral, 2007). Whether this communicative capacity can be incorporated into a dictionary database remains to be seen.

Conclusion

There are many possibilities for creative solutions to problems of indigenous language documentation and education. For the Burt Lake Band Dictionary, the primary considerations were an accessible and engaging format, collaboration with and honoring of Elder-speakers, cultural relevance to users, and variety of language input (audio, video, transcription, translation, and meta-linguistic gloss) available for learners. It is hoped that the discussion of this project, and the continued sharing of other community projects, will contribute to a body of knowledge about how best to achieve both useful language documentation and effective educational materials.

Notes

¹I am honored to be writing about a project that has come to be due to the work and dedication of many people over many years: the Burt Lake Band Language Preservation Committee, Tribal Council and Tribal members are the source of this project and are all co-authors of this paper. I am very thankful that they

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have encouraged me to share their language revitalization efforts with a wider audience through this paper. Special acknowledgement is due to the Speakers whose voices are the heart of the Burt Lake Band Dictionary: Doris Beaudin, Helen Kiogama, Julius Lewis, Bill Massey, Bernard Parkey, Hank Parkey, Loretta Parkey, Helen Roy, George Roy, Sam Shananaquet, Ben Shawa and Steve Shawa. Chii-migwech!

²The pressures that shape community language revitalization initiatives are complex, beyond the scope of this paper, and have been discussed at length elsewhere (e.g., Grenoble & Whaley, 2006; Hinton & Hale, 2001; Romaine, 2007).

³The Language Preservation Program (LPP) of the Burt Lake Band of Ottawa and Chippewa Indians consists of community volunteers and a fluctuating number of staff members (most of whom are also community members, and all of whom also fulfill several other duties within the Tribal Office). The LPP has engaged in documentation of community Elders' speech, as well as the creation of learning materials, dependant upon the sporadic availability of funding and the varying amounts of time members are able to donate.

⁴Throughout this paper the terms "community context" and "community" are used broadly to refer to a group engaged in a project for a common language, and all of the potential beneficiaries of that project, rather than a geographic or politically distinct group. Owing to the geographically dispersed, yet culturally intertwined nature of indigenous language families in North America, a language community may transcend both of the above categories.

⁵Cheboiganing is the traditional name for the tribe, as printed on the 1833 Treaty of Detroit to which the tribe is a signatory. It refers to a place of crossing, or passing through; the inland waterway stretching from Lake Huron to Lake Michigan across the tip of the Lower Peninsula of Michigan was an important trade route and the homeland of the tribe. The name 'Burt Lake Band' has gradually come to be used, after the name of the main lake in the inland waterway was changed to Burt Lake, in token of the European cartographer who mapped the region (http://www.burtlakeband.org).

⁶Anishinaabemowin can be broken down to *Anishinaabe* (good person/ Anishinaabe Indian) and *–mowin* (speech/ way of speaking).

⁷Several fluent speakers of Anishinaabemowin from communities in Canada work as language teachers in Michigan.

⁸The fluent language instructor is from the Unceded Indian Reserve of Wikwemikong, directly across Lake Huron on a traditional trading route from the Burt Lake region.

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