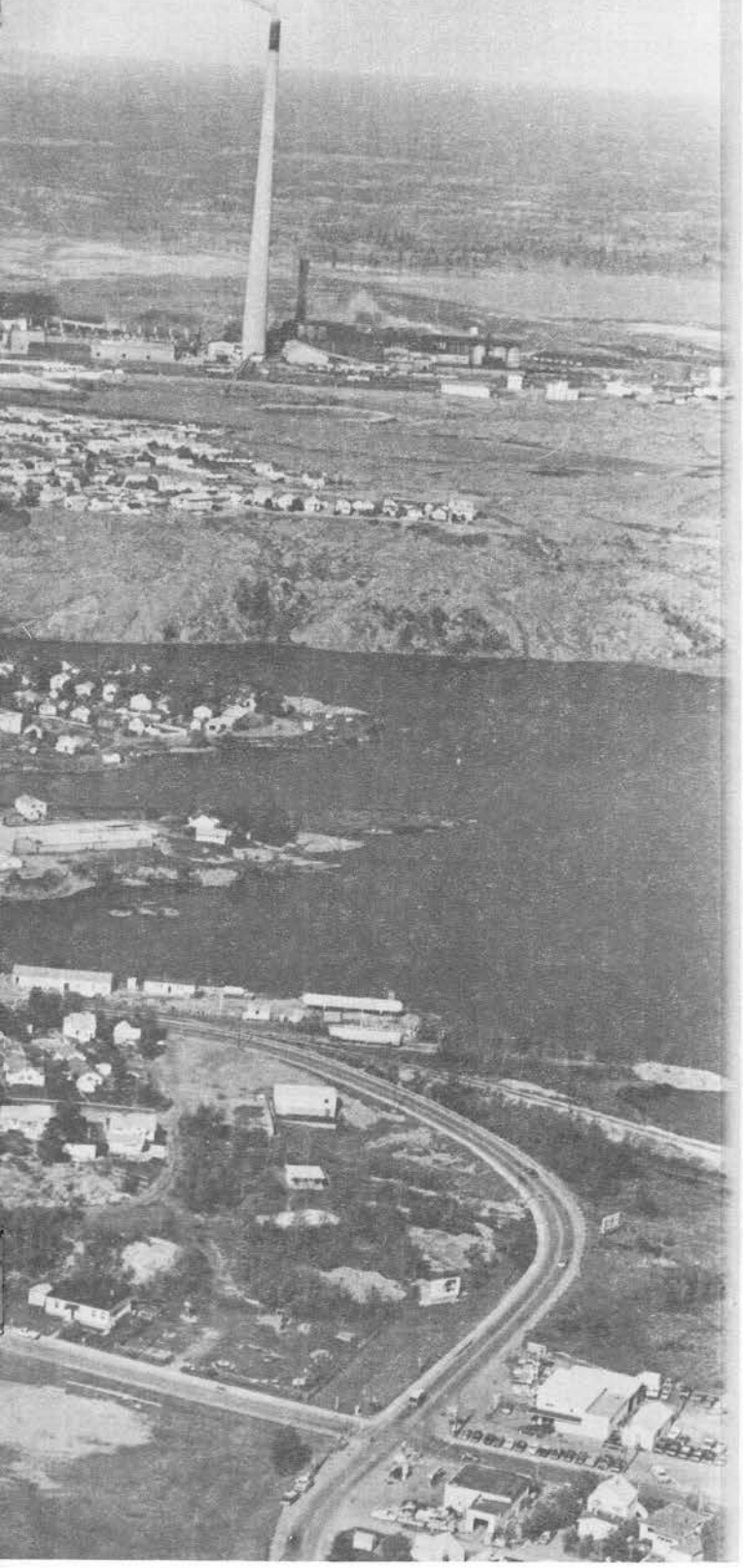
SELF-GUIDED TOURS

of the

FLIN FLON REGION



Enjoy the Precambrian Edge!

On behalf of the residents of our community, we would like to welcome you to our region! We hope you will take the time to explore our natural environment and gain an understanding of the forces that have shaped our community.

Additional information about the region can be obtained from:

Greenstone Community Futures Development Corporation
84 Church Street
Flin Flon, Manitoba R8A 1L8
Telephone: (204) 687-6987
Fax: (204) 687-4456
E-mail: greencom@mb.sympatico.ca

You can also visit us at our home page on the internet at: http://www.greenstone.mb.ca./gs/

INTRODUCTION

Welcome to Flin Flon, located at 54°41' north latitude and 101°41' west longitude, close to the geographic centre of Canada, and at about the same latitude as Belfast, Copenhagen and Moscow! We enjoy a subarctic climate with a yearly average of 115 frost-free days (tomatoes are a challenge to grow here). Official records show that our lowest temperature was -45.6°C, recorded on February 4, 1974, and our highest temperature reached 35.0°C on June 5, 1988 and July 21, 1989. Flin Flon has recorded both sub-zero temperatures and snow during every month of the year. Annual precipitation averages 46 cm (18 in.).

Our community was founded and continues to be dependent on the mineral resources located in the area. The Flin Flon orebody, a rich concentration of zinc and copper ore with important quantities of gold, was discovered in 1914 when David Collins showed Thomas Creighton some sulphide mineralization along the shore of what became Flin Flon Lake. Continued exploration in the area led to the discovery of additional orebodies that eventually became mines: the Mandy deposit in 1915; the Cuprus deposit prior to 1926; the Callinan deposit about 1927; the Schist Lake deposit about 1946; the White Lake deposit in 1963; the West Arm and Centennial deposits in 1970; the Trout Lake deposit in 1976. At present (1996) ore is being mined from the West Arm, Callinan and Trout Lake deposits, and exploration for additional orebodies continues throughout the region.

The mineral exploration and mining activities in the Flin Flon area have provided a rich backdrop for the unique history of our communities. Many of the cultural features dating back to the 1930's can still be seen. We hope that this guide will help you gain a more complete appreciation of both the cultural and natural history of the City of Flin Flon and Town of Creighton. A map has been included to show the location of places in the Flin Flon area indicated in the guide. Letters on the map indicate stops for the Flin Flon Historical Tour, and numbers for the Geological Walking Tour.

HISTORICAL WALKING TOUR OF FLIN FLON

Gerry Clark
History teacher, Hapnot Collegiate, Flin Flon

Welcoming visitors to Flin Flon is our 8 metre (26 ft.) high statue of Professor Josiah Flintabbatey Flonatin, designed by Al Capp, creator of the L'il Abner comic strip. "Flin Flon" is the central figure in a turn-of-the-century dime novel by J.E. Preston-Muddock entitled **The Sunless City**. A tattered copy was found by the prospectors who staked the first claims here in 1915. It's the story of Josiah Flintabbatey Flonatin who set out in his home-made submarine to explore a bottomless lake, and ends up journeying to the centre of the Earth. During the descent, Flin Flon describes all kinds of precious metals on the sides of the lake. When the prospectors saw their orebody went under a lake, they named the lake and their camp "Flin Flon". In 1929 the Canadian National Railway telegraphed the newly created Hudson Bay Mining & Smelting Company (HBM&S) stating that, unless it heard differently, the name "Flin Flon" would be on the new station. Nobody bothered to reply and Flin Flon became the only city in the world named after a science fiction character.

THE TOURIST PARK

*The statue of Flin Flon, or "Flinty" ("**A**" on the location map), is a good place to start a tour.*

Visitors can stock up on brochures and maps in the tourist bureau. Right outside you can see the "Radisson", the huge freighter canoe paddled to first place by the Manitoba team in the 1967 cross-Canada Centennial Canoe Race. Most of the crew was from Flin Flon. In fact, most of the Saskatchewan crew was also from this area.

Nearby, you might stop to appreciate the incredible Linn tractor. A Linn could haul more than 100 tons across frozen lakes and up over portages at an average speed of 5 kilometres per hour (3 miles per hour). Linn tractor trains moved 24 hours a day, and were manned by two crews. One slept in the bunkhouse "caboose" while the other worked. In 1929, 210 men were involved in hauling materials some 120 km (75 mi.) from Flin Flon to construct the hydroelectric dam at Island Falls on the Churchill River. This was the first hydroelectric generating facility in Saskatchewan. It is still the largest.

Linn tractor train hauling supplies to the Mandy mine ca. 1916-20 (courtesy of Flin Flon archives).

Don't miss the opportunity to visit the Flin Flon Station Museum. Built in the early 1930's, this station, originally located downtown, was the hub of the community - the scene of countless emotional partings and reunions. Now it houses many artifacts that remind us of our colourful past. For example, check out the Flin Flon curling trophy. We like to think it's the world's largest, a 290 kilogram (640 lb.) replica of the HBM&S plant. Or the diver's suit originally used during the building of the Panama Canal. Or the suitcase-size organ used by early missionaries in this area.

The Flin Flon Station Museum. The station was moved from the downtown area to this site. The museum is open 7 days a week from May until September. Call (204) 687-2946 for more information.

ROSS LAKE

*Enjoy the most beautiful panoramic view of our community by taking a stroll on the Ross Lake boardwalk. Access is from Third Avenue adjacent to Stittco Energy Ltd. (**B**), or off Manitoba Avenue near East Street (**C**), just across the tracks.*

The rock you see around you was deposited almost two billion years ago. Much of it was deposited under water, as a series of submarine volcanoes. Later, these rocks were faulted and folded as part of a huge mountain range. All that is left now are the rounded hills on which the community has been built.

As you gaze across the lake at our magnificent cliffs, imagine that 60 years ago there was a two-story ski jump on top and the jumpers used to finish their run-out on the frozen lake. Or consider the enterprise of a gentleman by the name of Paddy Faubert who built a floating dance hall on the lake near the bottom of those cliffs.

The famous Flin Flon Trout Festival starts the beginning of June, with the final awards being presented the beginning of July. If you come the last weekend in January you might see the Flin Flon Friendship Centre Annual Sled Dog Races.

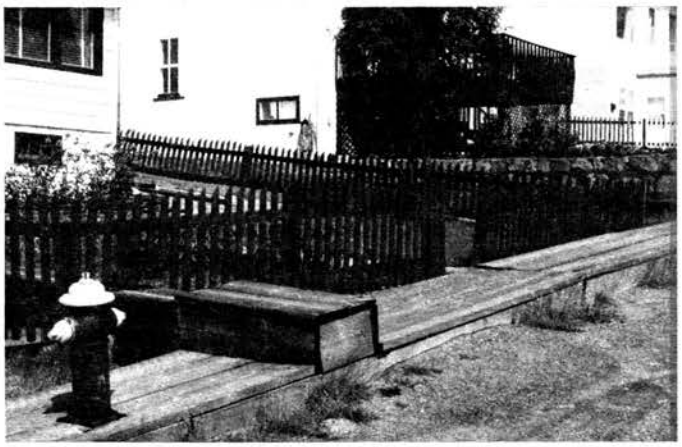
*Spectacular views of Ross Lake and the surrounding area can be had from Bellevue Avenue at the top of the cliffs (**D**). Other places that provide outstanding views of our community are at the end of Grandview Street (**E**), and at the corner of Fifth Avenue and Harrison Street (**F**) overlooking Hapnot Lake.*

*When you've had enough of looking at Ross Lake from Bellevue, come down on First Avenue. Just after you go by Second Avenue, pay particular attention to the wooden boxes on your left (**G**).*

SEWER BOXES

One of the problems with building a community on top of rock is supplying water and disposing of sewage, especially when the ground is frozen half the year.

Sewer boxes are not quite unique. In northern communities, above-ground sewage disposal systems are probably fairly common, but Flin Flon's was likely the first, and the way ours works is certainly unique. It was designed by University of Manitoba Engineering Professor, Dr. Norman Hall, in the early 1930's. The only other community with a similar system is Inuvik, Northwest Territories.



Sewer and water supply box also doubled as a sidewalk.

Modern materials and technology have modified the system only a little. The original boxes were quite a bit bigger, measuring about 1 metre by 1½ metres. The pipe inside used to be corrugated metal culvert and today we use PVC (plastic). The insulation, however, is still wood shavings!

The original sewage system was built by HBM&S to service just the uptown area from Creighton Street to Hill Street. The key to the above-ground system not freezing up in winter is that heated water is constantly being pumped through. In the early days, the water was warmed by mixing process water (water used by HBM&S) with fresh water in the company reservoir. Today the water is kept at approximately 6°C by oil-fired boilers at the corner of Third Avenue and Ross Street, and behind the Aqua Centre.

What makes our system different is that it isn't just the main lines that have warm water constantly flushing them. Two pipes connect every home and business to the main pipes and water is constantly pumped through them as well.

To fully appreciate Flin Flon's ingenious sewage system, one must only consider how sewage was disposed of prior to its construction. Many of the homes in the uptown area had to have their sewage carried out in five gallon buckets. Never an easy task, this became downright tricky when stairs became icy in winter. An additional occupational hazard for men driving the "honey wagon" was the traditional Christmas drink insisted upon by every satisfied customer during the Yuletide.

*There is an interesting walk along the "lane" between Hill Street and Hapnot Street from Third to First Avenue (**H**). You'll be walking on a sewer box!*

THE HILL

From the early 1930's until the early 1940's, North Avenue was Flin Flon's red light district. Known simply as "The Hill", it was certainly this community's most colourful neighbourhood.

In the Great Depression (1929-39), Flin Flon was one of the few places offering employment. Its population jumped from 270 in 1928, to 2000 in 1930, 3500 in 1931 and 5000 by 1934. The vast majority were men. Their work was hard and often dangerous. Getting out of town for a little relaxation and recreation was pretty much out of the question for men who took lunch buckets to work, so establishments like Miss Dorothy's place (44 North Avenue; **I**), Rita's Place (#55; **J**), and Miss Molly's (#69; **K**) did a thriving business offering companionship, bootleg booze and gambling. Many of the women who worked on "The Hill" were young farm girls determined not to remain a burden for their poverty-stricken parents. No doubt there were mixed feelings about these girls from the other women in town. While there was disapproval, envy of their stylish clothes and hairdos was inevitable. It is said that when Blonde Annie walked down Main Street in her 3 inch heels, black leather suit and fox fur, everyone stopped and gawked.

"The Hill" was basically regarded as a necessary evil. The police raided the houses on a regular basis, but it was more a form of tax collection than law enforcement. However, there was the time when our police chief, incensed over being turned down by the city for a pay raise, vindictively raided a certain establishment on "The Hill", knowing full well he'd catch the mayor and his council in a compromising situation.

As the community grew and acquired respectability, "The Hill" gradually transformed into a residential neighbourhood. Many of the girls married and settled here. Their pioneering role was unknown to those who arrived later.

FLIN FLON'S BOMB SHELTER

At the bottom of the 100 Stairs, there is a large wooden door in the base of the rock face (**L**). Though local wags have dubbed this Flin Flon's "bomb shelter", it is actually all that is visible of what would have been a remarkable project if completed.

In 1947, a 140 m (467 ft.) tunnel connecting Third Avenue at the bottom of the ridge to Main Street at Third Avenue was undertaken. The idea was to provide a storm sewer for Main Street and a pedestrian walkway. For $32,000.00 in 1947 they got within 4 m (12 ft.) of completion. Unfortunately, enthusiasm waned, the dimensions of the tunnel shrank correspondingly, and today it is just a storm sewer outlet. The walkway is no more than a crawlspace for about a quarter of its length.

During the Cold War, when our neighbours further south were building bomb shelters in their basements, we figured, if worse came to worst, we could all hide in the tunnel - our "bomb shelter".

*Make your way over to the visitors' parking area in front of the main gate at HBM&S (**M**). If you're fit, count to see if there are 100 steps in the 100 Stairs!*

The 100 stairs leading from Third Avenue to the downtown area ca. 1935. The pedestrian tunnel ("bomb shelter") was started in the rock face under the stairs. Note the outhouse precariously perched on the rock outcrop (courtesy of Flin Flon archives).

THE STACK

Our stack, at 251 m (825 ft.) tall, is the tallest free-standing structure in Western Canada. By comparison, the Eiffel Tower is about 305 m (1000 ft.) tall, Sudbury's stack is 366 m (1200 ft.) and the CN Tower in Toronto is 506 m (1660 ft.). Built in 1973, it tapers from a 20 m (65 ft.) diameter at the base to 7.6 m (25 ft.) at the top. It has a 5.2 m (17 ft.) diameter steel liner. The wall thickness tapers from 66 cm (26 in.) of concrete at the base to 25.4 cm (10 in.) at the top. It has enough steel in it to build 100 cars and enough concrete to pour 150 house basements.

If you look carefully at the top 15 metres (50 ft.) from the south side, you shouldn't have any trouble noticing our stack has a flaw. The taper doesn't carry up evenly to the top. The stack was created with a continuous pour using a slip form. The last day of the pour there was a strong wind and the contractor over-compensated for it.

Employee cottages built by Hudson Bay Mining and Smelting Co., Ltd. near the main gate, ca. 1933. Some of the cottages can still be seen (photograph courtesy of Flin Flon archives, Flin Flon Public Library).

While you're in the neighbourhood you should walk down the block-long unnamed street that runs south from the company gate. The residences here are "company cottages", part of the company-built residential area that was constructed in the 1930's (area **N**). Their style, positioning on their lots, and type of fencing are unique features of the architectural heritage of our community. It is one of the few places left in North America where this "look", this kind of neighbourhood, is preserved.

OUR MINE

The Flin Flon orebody was discovered by David Collins, a local trapper, and shown to Tom Creighton, a prospector, in 1914. The first claims were registered the following year, but despite heroic efforts by the legendary mining promoter, Jack Hamell, it took more than a dozen years to bring the mine into production. There were a variety of reasons for the delay. It was a huge orebody, but of relatively low grade, so it would require a smelter to make it economically viable. It was very isolated and required a railway link with the CNR line at The Pas, 140 km (87 mi.) away. To supply electric power required construction of a dam and generating station at Island Falls on the Churchill River. The price tag for all these, including the smelter, was about 90 million dollars. It was no small gamble, especially during a worldwide recession.

In 1927, the Whitney family of New York created HBM&S, which took over controlling interest in the Flin Flon property. By 1930 the mine, smelter, hydroelectric dam and railroad were in full operation. Up until 1936 the ore was mined by the open pit method and then by two shafts. North Main went down 670 m (2200 ft.) and South Main 1280 m (4200 ft.). The last ore from the main deposit came out in 1992 after some 62 million tons had been excavated.

Today the smelter and the rest of the plant depend upon ore hauled from a variety of mines around Flin Flon, Snow Lake and Leaf Rapids. The North Main shaft is closed, but South Main is used to hoist ore to the surface from the Callinan deposit, some three kilometres away by tunnel. There is an experimental greenhouse at the 360 m (1170 ft.) level that has received international publicity for its success in growing a variety of plants, including the Pacific yew tree, used to make the cancer-fighting drug, Taxol.

THE PILOT MILL

*The pilot mill is the unpainted, blackish-looking building just south of North Main. A good place to see it is from behind the chain link fence at the top of the HBM&S employee parking lot (**O**), just west of the Whitney Forum. If you're a hockey fan, you'll want to visit our Hockey Hall of Fame in the forum. You'll see photos of Bobby Clarke, Ken Baumgartner and many other stars of the NHL.*

In 1927, the Whitney family took out a one year option on the Flin Flon property. This means that they had one year to site test the processes worked out in their Denver, Colorado laboratories. On top of all the other complications, a process for economically extracting copper and zinc from such complex ore had to be invented. For most of the year, all the energy and all the dreams of everyone involved were focused on this little building that housed a scaled-down version of the plant that would eventually be built. On December 27, 1927 HBM&S was incorporated after a year of what everyone agreed was an emotional rollercoaster.

The Flin Flon pilot mill in 1928 (photograph courtesy of Sid Hudson).

As you look out past the old mill and over the open pit, you may be able to reconstruct the way it looked the day David Collins showed a mineralized outcrop to Tom Creighton. There was a pretty little lake, called by the prospectors Flin Flon Lake, which covered much of what you see. The tailing pond, the area that looks like a big dam, has displaced the lake water. The discovery outcrop would have been just down in front of the mill, more or less at the north end of the open pit.

Until 1930, Flin Flon was basically just a camp. Shacks and tents clustered as close to the mill as possible. Most of the community would have been scattered down along the hill in front of you and along the old lake shore to your right and left. In 1930 the company ordered all residences and businesses up the hill behind you and east of Creighton Street. Blasting in the open pit was doing so much damage to the roofs of the nearby buildings that it kept a crew of carpenters busy making repairs. In 1931, one blast used 150 tons of dynamite to move 1 000 000 tons of ore.

Blasting in the Flin Flon open pit, 1931. This blast used 15 tons of dynamite (photograph courtesy of John Sorensen).

You might find it interesting to know that for 20 years, from 1931-1951, there was a golf course down there on the other side of the open pit. HBM&S drained more lake than it needed and, relatively flat ground being rare, we built the world's only lake-bottom golf course. To make it even more unique, a golfer could tee off on number one and easily hit his or her ball from Manitoba into Saskatchewan. The border makes one of its corrections right here.

The mine workings and smelter complex straddle the provincial border. As a consequence a suspiciously high percentage of accidents were reported to Saskatchewan's Workman's Compensation. For many years Saskatchewan's Workman's Compensation paid 100% while Manitoba's only 66%.

MAIN STREET

The Flin Flon townsite should never have been built where it is. As early as 1924, Scott Turner, an engineer for Mining Corporation of Canada, had foreseen that the townsite should be north of the smelter. However everyone wanted to live as close to work as possible, and by the time HBM&S got tired of repairing roofs, there were several hundred buildings to move. Basically, town planning consisted of making the best of a bad situation. Main Street ended up crossing a bog, which took a few years to fill in with rock and slag. Sam Swick, who owned the building at 81 Main Street, claimed that he came to work one day and found a huge hole in the street out in front of his establishment. Thirteen loads of rock had been piled there the day before. When the owners of 74 Main Street put in a basement, they discovered the remains of a beaver dam.

Pedestrians went from store to store on a crude boardwalk, but got in the habit of wearing rubber boots all the time. For one thing, you never knew when you were going to meet a drunk and somehow it would always result in you having to step off the boardwalk. Although according to oldtimers, a few men who went missing in those days were last seen staggering down Main Street. There is some conjecture that they disappeared into the bog. We know that, when the bog was wet enough, it could swallow a wagon. According to local legend, a wagon loaded with beer barrels sank out of sight in front of the Royal Hotel (**P**), but this is kind of hard to believe. Flin Flonners would never allow good beer to go to waste.

As you walk along Main Street notice the false fronts on the old buildings. Our pioneer merchants wanted their humble shops to look as impressive as possible. You'll also notice fire walls at intervals. Fear of fire was a great concern with all those little wood frame businesses crowded together.

81 Main Street, Flin Flon in 1931 (courtesy of Flin Flon archives).

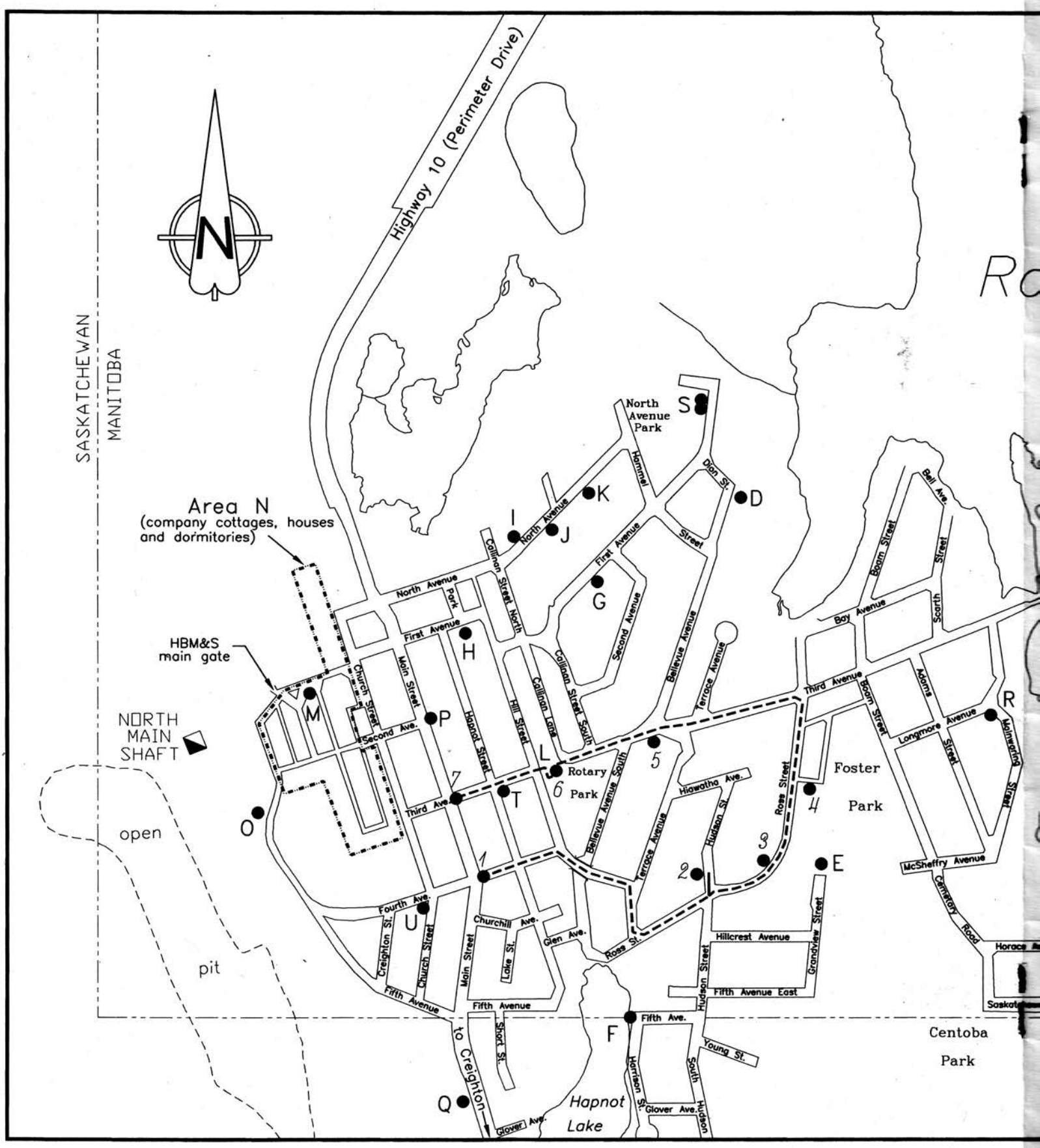
THE CEMETERY

On your right as you travel south down Main Street a short distance into Saskatchewan, you'll find our original cemetery (**Q**). It is located up the hill from the original townsite. Only 10 of the 34 people buried here were adults, so it has often been called the Childrens' Cemetery. It has also been said there was an epidemic that killed the children, but this isn't true either. They died of a variety of causes: thirteen were stillborn. And the reason there are so few adults? If an adult died in those early years, their body generally was sent home for burial.

THE HOMES

Nothing about Flin Flon more clearly demonstrates the enterprise and resourcefulness of its pioneers than their homes. From a distance, from across Ross Lake for example, they look like so many little matchboxes scattered over the rocks. On the outside they are unimposing. They are small because materials were scarce, expensive and, for men used to living in tents, houses of any dimension seemed like mansions. (Flin Flonners like to joke that, if HBM&S could invent a magnet that would pull back all the nails that went home in lunch buckets, the town would collapse.) If you could visit inside these homes, you'd be impressed with the energy that has been put into making them comfortable and pleasant. If you look across the street from 22 Mainwaring (**R**), you'll discover tons of rock rubble. Frank Stewart, like many others, just chipped away over the years until he had a basement, hauling everything out in 5 gallon buckets. Others were content to have a basement enclosing a big boulder or two. More than a few do-it-yourselfers did their wiring using blasting wire. The houses at 112 and 114 First Avenue East (**S**), like many of our older homes, started out as log dwellings. If the roof of 47 Hapnot (**T**) looks like a coffin lid, it might be because it used to be the funeral home.

Perhaps the most amazing house is 26 Church (**U**). The original dwelling was a tent that gradually became a one-room shack. Then the old Bank of Commerce building, itself not much more than a one-room shack, was purchased, hauled over and attached. Finally a railway car completed the structure! As if that isn't incredible enough, the house became a teacherage. At one time the upstairs quarters were home to fourteen teachers upstairs while the family that owned the place lived downstairs.


N
Highway 10 (Perimeter Drive)
SASKATCHEWAN
MANITOBA
Area N
(company cottages, houses
and dormitories)
HBM&S
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open
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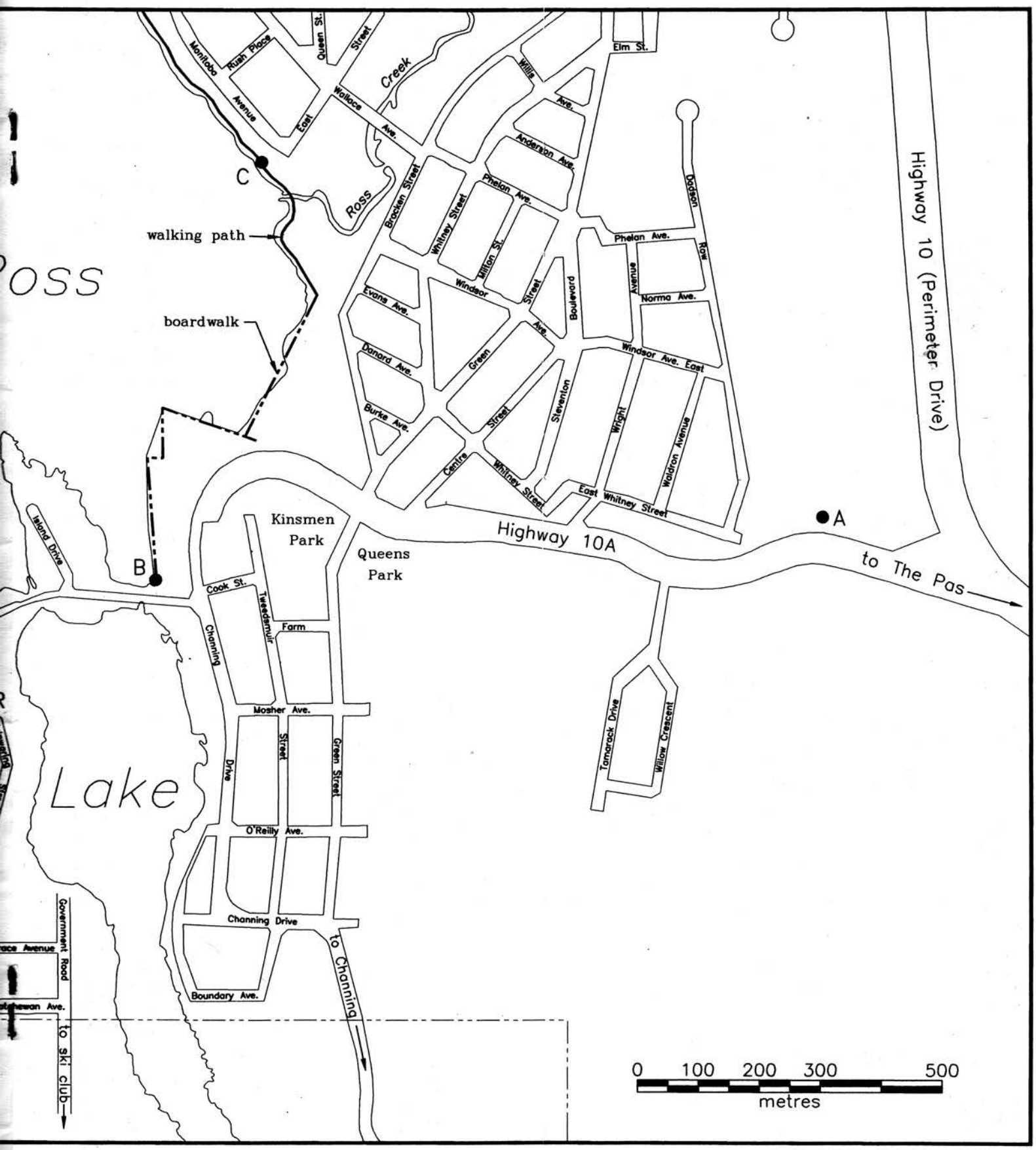
Park
to Creighton
North Avenue
First Avenue
Second Ave.
Third Ave.
Fourth Ave.
Fifth Avenue
Fifth Ave.
Callinan Street North
Callinan Street South
Callinan Lane
Hill Street
Hapnot Street
Main Street
Church Street
Creighton St.
Lake St.
Short St.
Churchill Ave.
Glen Ave.
Ross St.
Hiawatha Ave.
Hudson St.
Terrace Avenue
Bellevue Avenue
Bellevue Avenue South
Second Avenue
Dion St.
Hommel
Street
Boom Street
Bell Ave.
Scarth Street
Bay Avenue
Third Avenue
Adams
Longmore Avenue
Mainwaring Street
McSheffry Avenue
Cemetery Road
Rose Street
Hillcrest Avenue
Grandview Street
Hudson Street
Fifth Avenue East
Horace
Young St.
Harrison St.
Glover Ave.
South Hudson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East
St. Queen Street
Wallace Ave.
Creek
Willis Ave.
Elm St.
Anderson Ave.
Phelan Ave.
Brocken Street
Whitney Street
Milton St.
Windsor Street
Boulevard
Dodson Row
Avenue
Norma Ave.
Windsor Ave. East
Evans Ave.
Donard Ave.
Burke Ave.
Green Ave.
Centre Street
Whitney Street
Steventon
Wright
Waldron Avenue
East Whitney Street
Highway 10 (Perimeter Drive)
Ross
walking path
boardwalk
C
B
A
Island Drive
Kinsmen Park
Queens Park
Highway 10A
to The Pas
Cook St.
Tweedsmuir
Farm
Channing
Mosher Ave.
Drive
Street
Green Street
O'Reilly Ave.
Channing Drive
Boundary Ave.
to Channing
Tamarack Drive
Willow Crescent
Government Road
to ski club
0 100 200 300 500
metres

THE CREIGHTON-DENARE BEACH AREA

Catherine Hynes
Economic Development Coordinator, Creighton-Denare Beach

A pleasant drive around the communities of Creighton and Denare Beach will give you a greater understanding of the makeup of our region. More detailed location information, maps and a visitor package can be obtained from the Creighton - Denare Beach Visitor Information Centre at 216 Creighton Avenue (Highway 167, also known as the Creighton Freeway). The telephone number is ***(306) 688-3538****.*

PHANTOM LAKE

In earlier times, before the area was properly mapped, travellers were commonly lost on this lake because of its odd shape and many confusing bays. Because of this, it was given the name Phantom Lake.

Phantom Lake was established as a summer resort in 1932, and began as a rocky, scenic lake with a good location. Through the help of volunteers, a sandy beach was established, the portage road to Hapnot Lake was cleared, and various buildings were built. Diving platforms and a 400 foot boardwalk extended into the water in those early years.

By 1943, Hudson Bay Mining & Smelting Company (HBM&S) had taken over the development of Phantom Lake, and a picturesque footpath led from the Flin Flon townsite to the beach. There were expanses of grass, elaborate picnic sites, a playground area, docks, change houses and a dance hall, all gleaming white with red trim. A quaint bandstand provided a venue where entertainment and concerts were provided. Tennis courts were laid out in two locations. The landscaped grounds at Phantom Lake were accented by formal flower beds and stonework ledges, paths, and a pond. A community grassroots organization, *Friends of Phantom Lake*, has recently begun a revitalization project to again make it the popular recreation spot it was during the 1940's.

Access to Phantom Lake is from Highway 167 just west of the turnoff to the South Main shaft south of Flin Flon. Just follow the signs that will also take you to the golf course.

PHANTOM LAKE GOLF COURSE

The Phantom Lake Golf Course is located between Flin Flon and Creighton. If you are a golf enthusiast, and are up for a challenge, then our nine-hole course is for you. When playing Phantom Lake there is no question you have entered the Precambrian Shield. The fairways roll with hills studded with barren rock outcrops and pockets of muskeg. Besides adding a distinctive character to the course, these features also provide some truly hazardous conditions for the game. The muskeg is well know for swallowing errant golf balls, and who can guess the final resting place of a ball after having ricocheted from a rock?

TOWN OF CREIGHTON

The Town of Creighton had its beginning in the 1930's, when some twenty homes were built on either side of the winter trail between Flin Flon and Sandy Bay (Denare Beach). The community increased in size after the Saskatchewan Department of Natural Resources constructed a road from Flin Flon to Amisk Lake. Creighton was named in honour of Tom Creighton, one of the discoverers of the mineral deposits that were eventually developed by HBM&S as the Flin Flon mine. A commemorative cairn is located on Main Street near Creighton School.

ROAD TO DENARE BEACH

Following Highway 167 from the Town of Creighton south will take you to the Northern Village of Denare Beach. This 18 km road is now a scenic ride that takes about 15 minutes. In 1934 the same trip required a 16 km (10 mi.) drive over a corduroy road from Creighton to Loon Lake, followed by a canoe ride over Loon Lake, a portage from Loon to Mosher Lake, continuing by canoe over Mosher Lake to its south end, and finally walking 3 km (2 mi.) to Denare Beach. This amounted to an all-day trip. Highway 167 was finally opened to general traffic the summer of 1937; however, weather conditions affected the quality of the road, and often it was impassable. At one point this road was in the *Guinness Book of World Records* for having the most curves within a given distance for any highway in the world! It has since been somewhat straightened out.

NORTHERN VILLAGE OF DENARE BEACH

Originally called Sandy Beach by the local residents, this was the first resort project in the north established by the Saskatchewan Department of Natural Resources in 1933. As a quick means of reference in the Regina office, the first two letters of the words Department of Natural Resources were used, and the project called "Denare". Several names were proposed later, including the name "Green Flon". This name did not suit the residents, and no agreement could be reached for another name, so the government officially named the community "Denare Beach". The decision not to name the community "Beaver Lake" was arrived at because of the many places named after this creature in the north, which officials believed would cause confusion. Some of this confusion exists to this day. Denare Beach is located on the shores of Amisk Lake, "amisk" being Cree for "beaver", and many local residents still refer to the lake and community as Beaver Lake.

With the completion of the road, Denare Beach quickly became a popular resort area. The cottage atmosphere continues to characterize the community today, with numerous public beaches, tennis courts, boat launches and both camping sites and lakeside accommodations available.

NORTHERN GATEWAY MUSEUM

The Northern Gateway Museum, located on Moody Drive in Denare Beach, was constructed in 1956, making it one of the oldest museums in Saskatchewan. It holds many fascinating pieces of history, from native artifacts such as stone tools, pottery and beadwork, to artifacts of the first European explorers to pass through this area, including Alexander Henry, Joseph and Thomas Frobisher, and Sir John Franklin. The museum also has displays about the settling and mining activities in the Amisk Lake - Denare Beach area. One of the "not to miss" displays at the museum is the "birch bark biting", an ancient art form once commonly practised by the Cree women of the area.

The museum is open seven days a week during July and August. Its hours of operation are from 1:00 to 5:00 PM and 6:00 to 9:00 PM. Additional information can be obtained by calling (306) 362-2141.

Northern Gateway Museum in Denare Beach.

LIMESTONE CREVICES

The limestone crevices are a spectacular natural feature of the area. They are located approximately 10 km south of Denare Beach on Highway 167. If you pass Meridian Creek, you have gone too far. Turn around and drive back towards Denare Beach for about 2 km. Watch on the right side of the highway. At the 1-lane road, turn east (right) down it and drive to the end, several hundred metres. You can park in the area at the end of this road. Follow the trail east a short distance to the crevices.

Please be extremely careful when exploring the crevices! It is very easy to slip and fall a long way with resulting severe injury or death! Rescue would take a long time because this is an isolated area! Watch and supervise your children closely so that a tragedy does not happen! Also, please respect the natural beauty of this area. Take all garbage back to town with you, and leave the plants in their natural state!

The limestone crevices south of Denare Beach.

These crevices occur in carbonate rock that is part of the Red River Formation, deposited on the Canadian Shield during the Ordovician period 500 to 440 million years ago. The crevices are recent features, formed since the glaciers from the last ice age receded from the area about 10 000 years ago. Water percolates along thin cracks in the rock. As water freezes, it expands. The repeated expansion of ice during the freeze-thaw cycle in fall and spring forces the joints to expand, wedging the rocks apart and eventually forming the crevices. The crevices range up to 12 metres (40 ft.) deep. Even in the summer, you can look down and see snow or ice at the bottom of some of the deeper crevices.

BEAVER CITY

A monument to Beaver City stands at the south end of Highway 167 at the Sturgeon-Weir River 30 km south of Denare Beach.

In 1910, some prospectors discovered gold on the west side of Amisk Lake, the first major discovery of gold west of the Ontario border. These included Jack and Dan Mosher, Thomas Creighton, and Leon and Isidor Dion, people who were also involved with the base metal discoveries of the Flin Flon area. The Mosher-Creighton party's gold strike at Amisk Lake in 1913 was the first significant mineral discovery in the region, and it caused the increased exploration activity that ultimately led to the discovery of the Flin Flon deposits. More than a thousand men and women from all over Canada came to make their fortune. Kathleen Rice, a well-educated woman from Ontario who eventually settled on Wekusko Lake near Snow Lake, was one of the early pioneers of this region. Beaver City had its beginning in 1914, when a row of tents and log cabins, along with two cookhouses capable of feeding two hundred people at a time, sprang up. A freighting outfit began business, and barns and boarding houses were built to look after the many travellers. With the gold rush, the freighting industry, and the fishing industry, it seemed that the boom town of Beaver City would continue to flourish. However, when the Great War broke out, many returned home or moved to Sturgeon Landing where the Mandy mine hauled its ore. Beaver City began to deteriorate, and by 1918 it was practically a ghost town.

Left to right: Thomas Creighton, Leon J. Dion, Dan Mosher, Jack Mosher and Jack Hammell, prospectors and promoters of the region, ca. 1917 (photograph courtesy of Flin Flon archives).

THE GEOLOGY OF FLIN FLON - A WALKING TOUR

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INTRODUCTION

The Earth comprises several discrete layers, roughly similar to the structure of an onion. The **crust**, the rigid, outer 20 to 40 kilometre thick layer of the Earth, is a very dynamic part of our planet. Plates of this thin, relatively rigid, surface veneer are slowly being moved across the surface of the Earth by convection systems in the plastic **mantle** that underlies the crust. A simple model for this process would be the foam on a pot of simmering jam slowly moving across the surface towards the cooler edges of the container. As these rigid plates move across the surface of the Earth, they can interact in a variety of ways. If they collide head-on, huge mountain ranges can result. The Himalayas, currently the largest mountain range exposed on the planet, are the result of the continuing collision of the India and Eurasia plates. Huge earthquakes are periodically reported from this region, a direct result of this continuing interaction. Plates can converge and slide under one another to form a ***subduction zone***, as under the west coast of South and Central America, or slide past each other along a series of ***transform faults*** as under the western margin of most of North America. The circum-Pacific Ring of Fire is seismically (earthquakes are common) and volcanically very active because it marks the interaction of the Pacific and marginal continental plates. Volcanoes such as Mount St. Helens and continuing seismic activity along the western margin of North America occur along transform faults associated with the collision of the Pacific and North America plate. Volcanoes also occur where plates are moving apart along ***spreading centres***, as at the Mid-Atlantic Ridge. Iceland, a volcanic island, straddles this feature.

The City of Flin Flon is located on the remains of submarine volcanoes that erupted between 1920 and 1880 million years ago. Crustal plates were smaller then than they are now, and probably moved at a faster rate. The chemical characteristics of the volcanic rocks in the Flin Flon area indicate that they formed near a convergent plate margin, that is, an area where two plates collided to form a subduction zone. As the collision progressed the rocks were put under increasing pressure and temperature, causing them to be recrystallized (a process called ***metamorphism***), faulted and folded, eventually forming a mountain range. Between 1850 and 1830 million years ago, volcanism ceased and the mountain range, now exposed above sea level, began to erode. Erosion and associated weathering were probably very rapid then as land plants had another 1400 million years to evolve before they could provide protection to the Earth's surface.

This tour will examine some of the primary volcanic features that are well preserved in rock exposures in Flin Flon, structural features associated with the folding and faulting of the volcanic sequence, and the features associated with the weathering and erosion of the mountainous terrane following cessation of volcanic activity in the region.

THE WALKING TOUR

*Proceed to the corner of Main Street and Fourth Avenue at the south end of the downtown shopping area (**Stop 1** on the map). You will be at the Co-op store. Stay on the north side of Fourth Avenue and proceed east past Hapnot and Hill Street, over Bellevue Ave., veer south (right) past Terrace, then east (left) along Ross Street. At the three-way stop turn north (left) on Hudson Street and proceed to the rock outcrop behind the house at 32 Ross Street. This is **STOP 2**.*

STOP 2. The volcanic rocks in Flin Flon are dominated by basalt that was erupted underwater. Basalt lava has a temperature of about 1200°C, and the water it was erupted into was much cooler, probably no more than about 2°C. This caused the surface of the lava to freeze extremely rapidly. The rapid freezing combined with continued movement of the underlying still-liquid rock resulted in the breaking up (***brecciation***) of the frozen lava flow surface. As the lava advanced it was able to incorporate fragments of the frozen rock into the still-liquid underlying flow, forming a ***flow breccia***. At this stop you can see interlayered massive, rather featureless rock that represents the main basalt flow, and heterogeneous rock consisting of basalt fragments enclosed in a matrix of similar composition. This type of rock is a basaltic ***flow breccia***. If you look closely at the basalt you will note millimetre-size rectangular white spots. These are feldspar crystals, a common mineral that formed when the magma started to cool. The geological name for these crystals is ***phenocrysts***, and the basalt can be described as being ***feldspar-phyric***. Individual flows that comprise the volcanic sequence in Flin Flon can be classified on the basis of their phenocryst content: some flows are ***aphyric*** (they have no phenocrysts), some are feldspar-phyric, while still others are feldspar-amphibole (a dark-coloured mineral) phyric.

Return to Ross Street and continue down Sipple Hill to 50 Ross Street.

Flow breccia (A) interlayered with massive basalt flow (B) at Stop 2 behind Ruth Betts school. Fragments of solidified lava have been reincorporated into the still-liquid underlying basalt, reheated, and stretched like taffy as the flow moved.

STOP 3. Across the street, along the east side, you can see a white quartz vein. This vein was deposited in a fault zone, in part represented by the valley that Ross Street follows to Third Avenue. The rock behind the fault (to the east) is a basalt flow that contains many gas cavities. We will have another chance to look at ***amygdules*** (gas cavities now filled with minerals) at a later stop.

Continue down Sipple Hill along the west side of Ross Street until you get to the first house on the east side (77 Ross Street). Walk across Ross Street (watch for cars!) to the bottom of the north-facing cliff.

STOP 4. If you look closely, the rocks in some of the low outcrops at the base of the hill have a much different appearance than the volcanic rocks that we examined at the first two stops: they are more granulose and occasionally you can see some rounded pebbles. Parts of this metamorphosed ***sandstone*** are layered (bedded), with some of the beds defined by thin black bands of a heavy, magnetic mineral, magnetite. This sandstone and associated coarser metamorphosed sedimentary rocks (***metasediments***), part of the Missi Formation, are the erosional products of the weathering and erosion of the surrounding terrane between 1850 and 1830 million years ago. You have just crossed over a time interval of some 20 million years. Studies of this sequence of metasedimentary rocks indicate that they were deposited by a series of braided streams located at the front of a mountain range. Periodically these streams overflowed their banks and the sediments gradually accumulated in an ever-thickening sequence. In the Flin Flon area the Missi Formation is preserved to the east only as far as Perimeter Drive (Highway 10), the loop around the main residential section of the town.
If you look a short distance to the west of the Missi Formation sandstone you will see a rock showing irregular dark patches. A closer examination will reveal that this is a volcanic rock, part of the sequence that we examined earlier, but its texture is somewhat different from what we saw