Welcome to the *Routes on the Red* self-directed tour: ***THE RED RIVER – ITS FLOODS AND FLOODWAY***

This itinerary guides you through the history and the geography of the beautiful and interesting Red River Valley landscape surrounding Winnipeg, and is one of a series of self-guided drive-and-walk *Routes on the Red* tours. Featuring driving, cycling, walking and canoeing/kayaking opportunities, these guides lead you on the exploration of four historical and cultural themes: Fur Trading Routes on the Red; Settler Routes on the Red; Natural and First Nations Routes on the Red; and Art and Cultural Routes on the Red.

*Today's tour takes you from the Floodway Inlet Control Structure 4km south of the perimeter on St. Mary's Road, through Winnipeg, 26km north to the Floodway Outlet where the waters of the Red are united again near Selkirk, and back to Winnipeg. Depending upon time spent driving, walking, or in museums, restaurants, recreational areas, and other optional attractions, this tour may take between two and eight hours, or even more. It is advisable to verify hours of operation of museums and other amenities you may wish to visit in advance. In winter, ice conditions should be confirmed before venturing onto rivers or undertaking activities. Places where high water may be viewed safely are marked* 👍.

*Road conditions may vary and may be affected by weather, construction, or other events. It is possible to complete this tour by bicycle but requires travel on highways and some busy city thoroughfares. Any walking described includes public lands and trails. While enjoying yourself, please drive, ride and walk carefully. You are responsible for your own safety and ensuring that any activity is within your ability. Efforts have been made to provide accurate and current information at time of publication; however, we cannot accept responsibility for any inconvenience, loss, or injury sustained due to of reliance upon this information.*

**PLEASE NOTE:**
Conditions are dependent upon the time of year of your visit. In summer, unless there is flooding from heavy rainfall or other causes, river levels will be normal and the Floodway may carry only a small amount of water. In winter, river and Floodway levels are low and snow covered. In spring and other times of high water, channels may be filled, floodgates may be in operation, and some roads and bridges may be closed.

This tour examines the history and development of the Red River Valley and the impact of its waterways, including the Red River Floodway, and offers several opportunities for short exploratory walks, along with valuable visits to museums and historical sites. Some specific areas offer cycling, canoeing and extended hiking opportunities, and these should be planned in advance if they are to be included within this itinerary. There are numerous places to stop for meals or refreshments.

***On this tour you will visit:***
The Inlet Control Structure for the Red River Floodway
The Forks National Historic Site
St. Andrews Lock and Dam
Lower Fort Garry National Historic Site
The Selkirk Waterfront
and many other historic features

***The following background information will enhance your understanding of how the waters of the Red River, and its more recent management, have shaped the cultural and economic development of Manitoba and Western Canada.***

**A Little Geography**
The Red River Valley was carved from the bedrock by retreating glaciers in the late Pleistocene era. This is one of the largest, truly flat landscapes in the world. Some 12,000 years ago, glacial meltwater filled this vast, flat, shallow basin forming Lake Agassiz, and covering much of what is now Manitoba, Saskatchewan, North Dakota, Minnesota and northwestern Ontario. As centuries passed and Agassiz gradually drained, rich sedimentary deposits formed the lush prairie landscape that we see today: one of the world's most productive agricultural areas, dotted with thousands of lakes and etched by meandering rivers.

This landscape continues to change through the process of isostatic rebound. The weight of the continental glaciers depressed the land over which they moved. Even today, a hundred centuries later, the land, especially to the north, is still rising up from the recession of that great load.

Lake Winnipeg, into which the Red River flows, is the 10$^{th}$ largest body of fresh water in the world. The Lake Winnipeg watershed, at 953,000 square kilometres, is one of the largest on the planet and spans four provinces (Manitoba, Ontario, Saskatchewan, Alberta) and four U.S. States (North Dakota, South Dakota, Minnesota and Montana). The Red and Assiniboine Rivers are at the heart of this massive watershed, the shadow of glacial Lake Agassiz, which ultimately drains north into Hudson Bay.

**The Red River**
The Red River began to flow some 8,000 years ago. Its headwaters, with those of the Mississippi River, are found at the continental divide in North Dakota. Gravity pulls the waters of the Red north, however the slope is slight: elevation at the headwaters is less than 70m higher than Lake Winnipeg at the northern end. The Red River is approximately 885km in length, but not as the crow flies! It is a wide, shallow river: ranging from 60m to 150m across, with depths averaging between 3m and 9m. The flat terrain and shallow slope of the riverbed guarantees spring flooding: as melting occurs in the south, flows are blocked by still frozen lakes in the north.

As with any meandering river, the action of flow is fastest on the outside edges of each curve, and this is where the impact of erosion is the greatest. In spring especially, fast moving surface ice and water is very destructive, often tearing out chunks of riverine forest, undercutting the riverbank, and subsequently causing further slumping and loss of vegetation.

Rivers were the highways of the past. Long before the arrival of European explorers, the Red River was a central part of the major trade network that stretched across the continent, reaching to South America.

The Red River is a designated *Canadian Heritage River*.

**OUR TOUR BEGINS** just 4 km south of the Winnipeg perimeter on Highway 200 (St. Mary's Road) at Courchaine Road, near the site of the ***Floodway Inlet Control Structure***. *(W97.1256, N49.7574)*

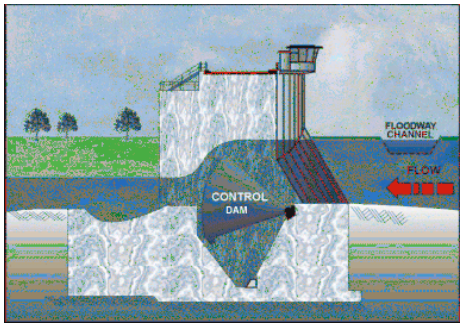
**WHAT'S TO SEE:**
There is a road along the top of the dike to the Control Dam and it may be possible to drive across, but this road is frequently closed to vehicles, particularly in seasons of high water. Pedestrian traffic is generally permitted. It's a short and worthwhile walk to the Control Structure where there is an excellent view of the inlet and the man-made floodway channel.

In times of high water, the power of the river is palpable here.

The Inlet Control Structure consists of two submersible dams 10.7m in height and 34.3m wide. When these are raised, as much as 4,000 cubic metres of water per second are diverted from the river stream into the floodway.

**FOOD FOR THOUGHT:**

***How the Floodway works:***




While the term "opening the floodgates" is often used, it is really a misnomer – it's not a mechanism that swings into place to change direction of flow the way a train is moved onto another track. The floodway structure functions as a controlled dam. When the dam is raised it restricts downstream flow and backs up water into a reservoir area. Once the reservoir is filled, the overflow then spills into the floodway channel, thus diverting some of the river flow into the floodway. The amount of the diversion is controlled. However, in this case, the reservoir is adjacent to a rural residential area with a population of about 5,000. Almost all the properties in the area are protected with permanent berms and dikes. Nevertheless, when the floodway is in operation it is challenging for these residents.

Over its entire 47-kilometre length, the floodway was originally designed to carry water at a velocity of 1.5 metres per second to prevent erosion. The channel depth varies but averages about 9 metres. The sloping sides rise gently at a ratio of 1 to 6, which is a third of a metre over a distance of about 2 metres. (This can also be expressed as a 10.5° slope or a 16% grade.) At capacity, the floodway is now capable of carrying as much as 4,000 cubic metres of floodwater per second.

A small trickle of water can usually be seen in the pilot channel running the length of the floodway. This channel, a metre deep and 16.5m across, collects groundwater and

carries seepage and runoff from various sources.

There is often public comment regarding when and how the Floodway should be activated, often a result of a lack of understanding regarding the impact of its use. There are strict Rules of Operation defined within the environmental license issued by the Provincial Department of Conservation and Water Stewardship. These rules protect the broader public as well as natural habitats and fauna throughout affected areas.

***How The Red River Floodway Came to Be***
Following the devastation of the 1950 flood, Manitoba Premier Duff Roblin was determined to ensure protection for the citizens of Winnipeg through the creation of a diversion channel around the city. The project was highly controversial, but Roblin never wavered. Risking his political career, he made the floodway an election issue. Roblin won and construction began in October 1962.

Some 76.5 million cubic metres of earth were moved, at that time, a project in scale second only to the Panama Canal. A full 6 years and $63 million later, the floodway opened, providing 1-in-100 year flood protection to Winnipeg.

Affectionately dubbed "Duff's Ditch" the 47 km channel diverts a controlled portion of the Red River's flow east from St. Norbert, around the City of Winnipeg, emptying back into the river at Lockport, just south of the City of Selkirk. Activated about 30 times since construction, it is estimated that the Red River Floodway has spared Manitoba from more than $40 billion in flood damages. http://www.floodwayauthority.mb.ca/duffsditch_history.html

In July 2008, the Red River Floodway was recognized internationally as one of the world's engineering marvels, placing it alongside Stonehenge, the Eiffel Tower, the Channel Tunnel and the artificial islands of Dubai.

There are plans to establish a park and Interpretive Centre nearby, in honour of Duff Roblin. http://www.gov.mb.ca/conservation/parks/popular_parks/central/duff_info.html

***Optional Excursion:*** *(bike, drive - approximately 10+ minutes by car)*
*If it is possible to traverse Courchaine Road in your vehicle you may be interested to explore the area south along Red River Drive (also called Turnbull Drive) on the west side of the Inlet Control Structure. Notice how all the homes have been built on high mounds and most have permanent surrounding dikes. Return to the Inlet Structure to continue the tour.*

- With the Inlet Structure behind you, turn left on PTH 200 (St. Mary's Road) to head north **4km** to the Perimeter Highway.
- Cross the perimeter and continue north along Route 52 (St. Mary's Road) **3.1km** to the River Road/Vista Drive intersection.
- Turn west (left) on River Road and follow it along the river but take the time to consider the riverside views. The roofline of the football stadium can be seen above the trees across the river.

***Optional excursion:*** Watch for Parks Canada signs and, on the left at 330 River Road, you will find ***Riel House National Historic Site***
*(W97.1352, N49.8192)*

- Continue north on River Road the short distance (**0.4km**) to Bishop Grandin Boulevard. Cross Bishop Grandin and continue a further **1km**. ***St. Vital Park*** will soon be on your left. *(W97.1322, N49.8299)*

***Optional excursion:*** *(walk, bike, drive - approximately 10 minutes by car)*

- *The **2.1km** loop drive through this lovely riverside park brings you close to the water's edge and through natural riparian forest, typical of the Red River Valley.*

- Continue north on River Road **1.2km** to St. Vital Road.
- Turn east (right) to Route 62 (Dunkirk Drive), and then turn left on Dunkirk Drive to continue north.
- Follow Dunkirk for **1.4km** crossing Fermor Avenue to the ***Kingston Row*** exit on the right. Keep to the right. Don't be confused by the bus loop! At the stop sign turn left on to Kingston Row.

*(Junction of exit ramp and Kingston Row: W97.1247, N49.8548)*

**WHAT'S TO SEE:**
This road is a **2.5km** loop through a residential area surrounded by the river. It is a designated bike route in summer. At Riverdale (**1.2km)** you pass the ***Elm Park Bridge*** on the right.

**FOOD FOR THOUGHT:**

***Elm Park***


By late 1890, Winnipeg was well serviced with trolleys. One line ran from the city centre along Osborne Street south as far as the Red River. Summer cottages appeared along the north side of the river and some can still be seen today, in whole or in part, in homes along Jubilee Avenue. Elm Park was developed across the river on the land within the natural oxbow. A pontoon bridge provided access and it quickly became a popular summertime destination. If a young man took a girl to Elm Park on a Sunday afternoon a proposal would surely soon follow!

The pontoon bridge was replaced by the current steel truss structure in 1912 as a toll bridge. St Vital area residents crossed free but all others paid: pedestrians 5 cents, cars 10¢, and 25¢ for trucks. The bridge was put up for sale in 1941 and purchased by a group of local residents. After a year of squabbling, the Province and the Cities of St. Vital and Winnipeg jointly acquired the bridge, reducing the speed limit to 8mph. It was restricted to pedestrian traffic in 1965.

This area suffered significantly in 1950 and homes were evacuated. In other years of high water, particularly 1997, and again in 2009, volunteers mounted Herculean efforts to build sandbag dikes around the oxbow, keeping a 24-hour watch to ensure no breaches occurred.

- Continue along Kingston Row, from the underpass, east **1km**, to Route 52/St. Mary's Road.
- Turn left to follow St. Mary's Road north **1.6km** to Lyndale Drive.

*(Junction St. Mary' Road and Lyndale Drive: W97.1153, N49.8728)*

- Turn west (left) on Lyndale Drive and head toward the river.

**NOTE:** Use Vehicle Route B on weekends and holidays when Lyndale Drive is a designated bike path, closed to vehicular traffic (Victoria Day in May to Labour Day in September).

***Route A:***

- Follow Lyndale Drive **2.1km** along the river to Walmer Street.

***Route B:***

- Park your vehicle at the foot of Gauvin Street and walk or bike to the edge of the embankment to view the river. The parkway here is approximately 1.5km if you wish to explore further.
- Return to your vehicle, turn right at Gauvin, then turn left onto Coniston Street.
- Continue along Coniston to Birchdale Avenue, turning right onto Birchdale.
- Follow Birchdale until it intersects with Walmer Street to rejoin Route A.

**WHAT'S TO SEE:**

Today this neighbourhood is protected by the substantial riverbank reinforcement seen here along Lyndale Drive. In the spring the water is generally to the top of the embankment. Without the retaining wall the entire neighbourhood would be threatened by extreme erosion caused by undercutting and slumping of the riverbank. (Photo: Lyndale Drive - 1950 flood)

- Turn right (east) on Walmer to look towards St. Boniface. The area to your left is the Norwood Community Centre.

The neighbourhoods of Norwood and St. Boniface were hard hit in the 1950 flood. The popular playing fields on the land now occupied by the community recreation centre have been known as the Flood Bowl ever since: the "bowl" was formed as the area was excavated to create protective dikes.

**FOOD FOR THOUGHT:**

***The 1950 Flood***

In the spring of 1950, floodwaters over nine metres inundated nearly one tenth of Winnipeg, forcing 100,000 residents to flee their homes. For almost two months the waters remained above flood stage, ultimately resulting in $125 million in damages – almost $3 billion in today's economy. Large areas of St. Vital, St. Boniface,

Norwood, Riverview, the north end and the downtown were flooded more than 4.5 metres deep. Some 10,000 homes were destroyed; schools and hospitals devastated; and many businesses were lost.

- Continue along Walmer to Ferndale then turn north (left) to the lights at St. Mary's Road (Route 52).
- Take St. Mary's Road north (left) over the Bridge of The Old Forts (over the Red River) along Queen Elizabeth Way for **0.9km**.
- At the second bridge that spans the Assiniboine River, turn right into ***The Forks***.

*(W97.1327, N49.8866)*

- Drive past the buildings to the parking lot on your right. The Forks is frequently busy, be prepared to explore the parking areas to find a spot. There is free 3-hour parking in surface lots and in a parkade. There are also metered spaces near The Forks Market. There are two main roads at The Forks: Forks Market Road runs east/west and Waterfront Drive runs north/south.

**FOOD FOR THOUGHT:**

***The Forks***

This land has seen many changes over the millennia. Imagine how it looked during the Ice Age, when woolly mammoth roamed the area. At the time of Glacial Lake Agassiz, the water would have been 6 times higher than the top of the Market Tower. Much more recently, before the arrival of European explorers, prairie tall grass rippled in the breeze, giving way to dense riverine forests. The 2 metre high buffalo grass and other tall grass plants hid all but the largest animals. Rich in game and other wildlife: bear, moose, wapiti (elk) and herds of bison roamed the area freely. These rivers teemed with fish centuries ago. Early diarists frequently referred to the abundance of sturgeon, catfish (in 1880 the Pacific Hotel on Main Street included catfish on the menu as Red River Salmon), pike, sauger, pickerel and fresh water drum (Red River Bass).

For some 3,000 years, Aboriginal peoples from across North America came here to trade, to hunt, to fish, and to celebrate. As explorers ventured westward across the country, the area became a natural location for forts and a major centre for the flourishing fur and pemmican trade. Pioneers followed, beginning what was to be 150 years of immigration, laying the foundation for the City of Winnipeg and the settlement of the Canadian West.

The heart of the Hudson's Bay Company operations, this was the site of Forts Gibraltar I and II, possibly Fort Rouge, and two later forts named Fort Garry. Construction of the stone fort, Upper Fort Garry, began in 1835 and it served as the commercial and administrative centre of the Hudson's Bay Company for almost 50 years. By 1882, the last Fort Garry was demolished and Main Street and rail tracks now run through what was once the centre of the fort. A courthouse was also located here. In 1894 Fort Garry Park, a grandstand and horseracing track, was opened here.

By 1860, steamboats were plying the Red River, earning it the nickname the "Mississippi of the North". The arrival of the first

steam locomotive in 1877 heralded the end of a glorious riverboat era. This area at the junction of the rivers soon became a major rail terminus and a critical link between east, south and west. Over the next 80 years, railway activity increasingly dominated the site as people and freight moved across the country.

When modernized rail facilities were built on the outskirts of the city in the 1960s, the marshalling yards at The Forks became obsolete. In 1989 miles of track were removed and refurbishment of existing buildings began. Today, The Forks is a "Meeting Place" once more; a place for celebration, for commerce, for visiting, and for lingering – just as it had been for centuries.

For more about The Forks and its heritage try these web sites:
http://www.pc.gc.ca/eng/lhn-nhs/mb/forks/natcul/histo.aspx
http://www.theforks.com/about/history/heritage-research

*The Forks is worth another visit as there is much to see and do here. For the purposes of this tour we suggest viewing just the riverside areas.*

**WHAT'S TO SEE:**

Step out on the observation platform of The Forks Market tower. The ***Assiniboine River*** lies at your feet as you face south. Across the river is the ***South Point***, the wedge of land between the two rivers. It is higher ground, which safeguarded it from many of the floods that inundated the north bank, and it has remained more heavily treed. When he arrived in 1738, La Verendrye noted the point was the location the Aboriginal preferred for their encampments. It was a favoured summer spot for fishing and even today you will often see someone with a line in the water.

A distinct difference in the waters of the two rivers can be seen here where they meet, and is especially conspicuous in spring. Winnipeg derives its name from the Cree for "muddy waters". The heavily clay-based soil that clouds the river water is also the reason Winnipeg's Main Street and Portage Avenue are so broad. During the fur trade, Red River Cart brigades several hundred strong, would head out across the prairies. In order not to become mired in the gumbo the carts would fan out as many as a dozen across. Emporiums, businesses and other buildings sprang up along these very wide roadways, and they are evidenced today as Winnipeg's multi-lane main arteries. A former riverboat man himself, when Samuel Clemens (Mark Twain) came to Winnipeg by steamer in July of 1895 a reporter quotes him as saying: "I have never seen real mud since I left the Missouri till today."

**FOOD FOR THOUGHT:**

***The Assiniboine River and the Assiniboine Riverwalk***

Originating in eastern Saskatchewan, the Assiniboine River meanders across the prairies, joining the Red after winding 960 kilometres from the west. It hasn't always done so. Over the centuries the rivers shifted. Eight thousand years ago the Assiniboine met the Red about 15 kilometres south of here where the La Salle River flows today. About 4,000 years ago, the Assiniboine drained directly into Lake Manitoba. Some 1,500 years later, in a process called spring evulsion, the river jumped its banks to join the Red where we see it today.

As with other prairie rivers, the Assiniboine is prone to spring flooding and its overflow is diverted into Lake Manitoba, west of Lake Winnipeg. In western Manitoba during the spring and summer of 2011, 1-in-300 year flood levels were experienced on the Assiniboine River, the affects of which were still being felt.

The ***Assiniboine Riverwalk*** is over 2km of riverside pathway west from The Forks to the Manitoba Legislature Building and east and north to the Riel Esplanade. The Riverwalk is accessible in all seasons except during periods of high water. It is often argued that the Riverwalk is subject to flooding because it was built "too low". However, this is not at all the case. The Riverwalk was intentionally constructed at a level that provided close proximity to the water. Spring flooding and the natural seasonal dynamics of the rivers were well considered in the creation of the year-round public amenity. The river may fluctuate as much at 9 metres from winter low (drawn down by the provincial hydroelectric utility) to flood stage high. A Riverwalk built higher than projected floodwaters would mean pedestrians would be several metres above the river level (near the level of the Lower Plaza) all year round – hardly an engaging riverside experience. Building the Riverwalk to withstand flooding has allowed for more intimate enjoyment of the rivers, providing ease of access even in winter, protected from winds by the high banks. In addition, the facility provides the public an opportunity to experience in a very direct and tangible manner, the true rhythms of our waterways and their dramatic effect on our environment.

**WHAT'S TO SEE:**
As in many urban centres, Winnipeg's riverside properties are mostly privately owned and there are limited locations where public enjoyment of the rivers can occur. The Forks has been developed to draw people to the rivers along specific sight lines. The first of these is expressed in a pathway that visually and physically joins the dome of the CN Rail Station with the imposing façade of the ***St. Boniface Cathedral-Basilica*** across the Red River. Another such sight line leads to the Assiniboine River through The Forks Market Plaza.

Looking east you will see the ***Johnston Terminal,*** a dry storage facility built in 1928, and the ***Archaeological Preserve*** with its Prairie Plantings. Beyond that can be seen the Red River where it merges with the Assiniboine.

*Other areas to explore at The Forks include the Explore Manitoba Travel Idea Centre, Johnston Terminal (across The Plaza), Manitoba Theatre for Young People, Manitoba Children's Museum, Inn at The Forks, Oodena: Celebration Circle, Low Line Rail Bridge, and Scotiabank Stage. Native tall grass plantings can be seen on the Archaeological Preserve. The National Historic Site operated by Parks Canada along the Red River also offers interpretive information.*

***Optional Excursion:*** *(walk, bike)*

*Walk along the Assiniboine Riverwalk north and cross the Esplanade Riel. Across its span, the vehicle bridge has graphic depictions of the history of the area, created by renowned local architect Etienne Gaboury. Continue to Taché Avenue to explore the St. Boniface Cathedral-Basilica, cemetery, and Le Musée de Saint-Boniface Museum.*

***Optional Excursion:*** *(walk, bike)*
*The Assiniboine Riverwalk is 2km of accessible riverside pathway open in all seasons except during spring high water. For approximately six weeks each winter, the river ice is groomed with walking and skating trails. Called The RiverTrail, it comprises over 8.5km from The Forks along the Assiniboine and Red Rivers and holds a Guinness World Record.*

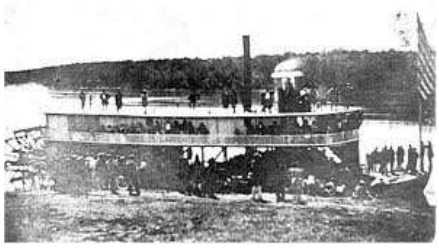
***Optional Excursion:*** *(waterbus)*
*The Splash Dash Waterbus Service operates throughout the summer connecting the Exchange District and The Forks to Osborne Village and offering a delightful view of downtown Winnipeg from the river.*

**WHAT'S TO SEE:**
Stroll across ***The Market Plaza*** towards the river and make your way to the bottom of the stairs. This is ***The Forks Historic Port***. It is here that paddlewheel steamboats nosed in to the bank to unload goods and immigrants arriving from the south.

**FOOD FOR THOUGHT:**

***Steamboats on the Red and the Arrival of the Railway***

The Red River has a short but illustrious riverboat history, no less colourful than that depicted by Mark Twain in the famous adventures of his characters, Tom Sawyer and Huckleberry Finn.



The first steamship to cross the US-Canada divide did so on a wager. On Friday June 10, 1859, The *Anson Northup*, a stern wheel riverboat built on the Mississippi and dragged over the snow the previous winter to be launched into the Red River, became the first steamboat to arrive at Fort Garry. She was greeted with cannon fire, chimes of the St. Boniface Cathedral bells, and throngs of cheering people. The trip had taken a mere four days and her Captain won the $2000 prize offered by the St. Paul Chamber of Commerce to the first person to successfully put a steamer on the Red. St. Paul was the northern terminus of the Mississippi and its docks were crowded with paddle wheelers. The Red River soon came to be known as the "Mississippi of the North."

Steamboats meant bulk cargo could now be transported around and beyond the region more quickly than by Red River cart and York boat or canoe. The shallow draft stern-wheelers, some drawing as little as 30cm, easily nosed into the soft clay riverbank. A carrying capacity of several hundred tons increased their commercial potential and soon, as many as 30 steamboats were plying the Red.

Vessels such as *The International* brought immigrants, including the first Mennonites and Icelanders (photo). By 1872, most of the Fort had been demolished and immigration sheds were erected as temporary holding facilities. Within 20 years of the *Anson Northup's* arrival, steamships were operating on the Assiniboine and Saskatchewan Rivers as well. Colonization inched across the Prairies as the thousands of immigrants arrived at The Forks and migrated west, establishing farms and new communities.

Until 1878, the Hudson's Bay Company held a monopoly over river traffic on the Red and all steamboats docked at Upper Fort Garry. However, the days of the railway were also dawning and in 1877, the first engine arrived in Winnipeg on a barge, landing in St. Boniface just across from The Forks. By 1888, a large area at The Forks had been cleared to make room for the central marshalling yards for various rail companies and over the next eight decades rail activity increasingly dominated the area.
http://www.mhs.mb.ca/docs/mb_history/49/riverboats.shtml

**WHAT'S TO SEE:**

Two large stone cairns are positioned on the walkway at the foot of the ***Wall Through Time***. Walk up the ramp along the Wall and follow the lines of tile marking each historic era of the region. Back at the top of the ramp, on the Plaza, notice the bands of amber tiles around the pillars of the canopy. The lower bands mark the 1950 flood pronounced "the most devastating of all time" in newspapers across the nation. This statement lacked considerable accuracy, as can be seen by the upper band of tiles marking the height of floodwaters in 1826. That spring, the water rose three metres in one day alone! It was reported that a farmhand dozed off as he rested on the cart he had loaded with hay; the water came up so quickly that when he awoke he had been carried several miles downstream.

**FOOD FOR THOUGHT:**

***Of Floods and Drought***

While the floods of 1950 and 1997 were significant, they paled in comparison to earlier floods on record. In 1852 the river rose more than 10.5 metres. 1861 saw a similar occurrence. However, in 1826 the inundation was such that residents of the area were forced to flee to higher ground, some as far as Stony Mountain, 30 km to the northwest. It had been wet autumn and a brutally cold winter (-43C) with heavy snows. Spring came late but suddenly and was followed by heavy rains. The river ice was almost two metres thick and it is likely that ice jams caused the rapid rise in river levels. The waters reached over 11 metres. At least a dozen people perished and losses of livestock and property were heavy. Nearly every building in the Red River Colony was destroyed.

Over the millennia, other massive floods were experienced. Archaeological investigations have indicated that a flood some six times greater than that of 1826 had occurred about 1800 years ago. There is evidence that significant floods had occurred in 1776, 1790 as well as 1809.

While this tour is focused on floods, it is important to remember that there have been years of drought as well, and these have had an equally dramatic effect on both the rivers and the river valley. Settlers reported major droughts in the 1800s. However, drought did not preclude spring flooding and some years offered the cruel irony of a fierce flood followed by a season of severe drought. As dry conditions continued, river levels fell. Slower flowing water dropped more silt making navigation more difficult, even for the shallow draft steamships. It was reported that one riverboat captain, upon seeing a farmer draw a bucket of water from the river for his cattle, was impelled to shout out "Put that back!"

The hardships of the "Dirty Thirties" are well known, and Winnipeg was not immune. The 10-year period of drought and dust storms that began late in 1929 affected one quarter of the arable land in Canada and caused intense hardship across the agricultural belt as far to the east as Winnipeg and surrounding farmlands. While this drought was extreme, the paleo-record shows that over the past 2000 years at least seven other severe drought events have occurred, some lasting two decades. The last drought experience in this region occurred in 1988-89.

Time to leave The Forks.

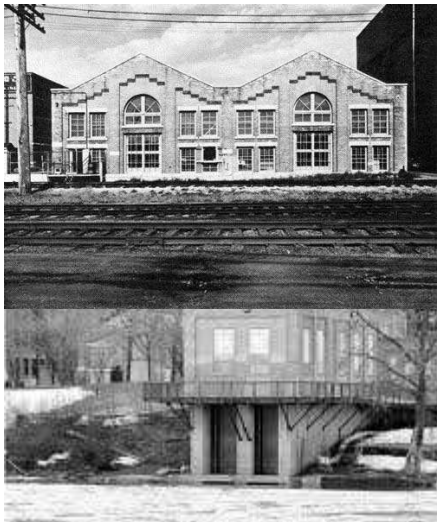
- Head north on Waterfront Drive to William Stephenson Way.

As you pass the *Canadian Museum of Human Rights* you will see the York Avenue underpass on your left. Notice how the road rises up to Main Street – this is second stage flood level and evidence of how centuries of flooding have shaped the lands along the river.

- Cross William Stephenson Way. The baseball stadium is on your left.
- Continue another **0.8km** north on Waterfront Drive just past James Avenue.

**WHAT'S TO SEE:**

The now defunct ***James Avenue Pumping Station*** is on your left.
A small, white brick, rather non-descript building is perched on the riverbank to your right.



**FOOD FOR THOUGHT:**

***Measuring Floods***

Water levels are measured, in feet, by a gauge located here at James Avenue, well downstream from Assiniboine River inflows. This device measures water pressures and transmits data every 15 minutes to a Control Centre. In the years prior to electronic

transmission, the station was staffed round the clock. Normal winter ice level is expressed as 0 feet James Avenue Datum (this is about 221m above sea level). The St. Andrews Lock and Dam in Lockport, 27km north of Winnipeg, regulates "normal" summer levels on the Red River at 6.5 feet (2m) James Avenue Datum. Together, James Avenue and the dam at Lockport, work in concert with other gauges to control river levels in Winnipeg and the information provided is used to determine activation of the Floodway during periods of high water.
http://www.winnipeg.ca/services/citylife/historyofwinnipeg/flood/james_ave_datum.stm

- Turn west (left) at the next street – Pacific Avenue and left again at Lily Street.
- Continue on Lily, passing the ***Manitoba Theatre Warehouse***, to Market Avenue and the ***Manitoba Theatre Centre***.
- Turn right (west) on Market and continue up to the lights at Main Street. (Ahead is **City Hall** (Winnipeg Civic Centre) and on your right is the **Centennial Concert Hall** and **Manitoba Museum and Planetarium**)
- Turn north (right) on Main Street (Route 52)
- At the corner of Main Street and Higgins Avenue is ***Thunderbird House***, an Aboriginal Community Centre designed by famed Aboriginal architect Douglas Cardinal (on the right); diagonally across the intersection on the left, is the ***Centre for Youth Excellence***.
- Travel a further **2km** on Main Street, using the centre lane. Move to the right hand lane after you pass Redwood Avenue and Mountain Avenue.
- Turn right (east) at the next street: to St. Johns Avenue. ***St. Johns Park*** is on your right.
- Turn left at the end of St. Johns Avenue onto Fowler Street and ***St. Johns Cathedral*** is directly ahead.

**NOTE:** This is another area where streets may be closed to vehicular traffic on weekends and holidays from May to September for the dedicated use of cyclists and pedestrians. If the road is open follow Route A. If closed Continue on Route B.

**Route A:**

- Follow the streets towards the river: turn right on Anderson, St. Cross, and right on Cathedral, to Scotia Street.
- Continue on Scotia Street for **1km** to Rupertsland Boulevard. Turn left and follow Rupertsland to Mac Street. *The Seven Oaks House Museum* is ahead.

**Route B:**

- Turn left on Anderson, right on O'Meara Street, then right again on Church Avenue to Emslie Street.
- Follow Emslie three blocks to Bannerman and turn right.
- Follow Bannerman to St. Cross Street.
- Turn left on St. Cross and follow it to Smithfield Avenue.
- Turn left and follow Smithfield to Mac Street at Rupertsland Boulevard. *The Seven Oaks House Museum* is on your left.

**FOOD FOR THOUGHT:**

This is one of Winnipeg's oldest neighbourhoods, originally settled by Selkirk's pioneers in 1812. High water

here has been a serious perennial threat since the first homesteads were founded. This area was among the hardest hit in the 1950 flood. Many homes were lost. To offer additional protection, sandbag dikes have been required in several flood years since.

**WHAT'S TO SEE:**
As you pass streets such as Lansdowne and Matheson Avenues, look to your left towards Main Street. Note how the road rises to from first flood stage level to second level, again illustrating how annual flooding has shaped the land, just as could be seen earlier in the area around The Forks.

**FOOD FOR THOUGHT:**

***The Flood of the Century***

In the spring of 1997, conditions were ripe for a severe flood. The previous fall had been wetter than normal, with abundant late rainfall; winter came early and it remained cold and snowfalls were heavy; then in early April the worst blizzard on record this century hit, dumping 48 cm on the Red River region. Spring came late but suddenly and above normal rainfall added to rapid snowmelt. Because the Red River Valley is so flat, floodwaters easily seep across it. In 1997, the flood zone reached as much as 40km across in some areas, due to overland flows. The Red River crested at 7.5m with the floodway operating at near capacity. Clearly without the floodway damages would have been colossal.

***Optional excursion:***
If you wish to visit *Seven Oaks House Museum*, street parking is available. The Museum is open May through September, with admission by donation.
http://www.mhs.mb.ca/docs/pageant/04/sevenoaksmuseum.shtml

**FOOD FOR THOUGHT:**

***Seven Oaks House Museum***

Two houses are found on the site, both built by Orkneyman John Inkster and are named for their location in the area known as Seven Oaks. The smaller log building is the original house. Construction began in 1851, but was interrupted by the flood of 1852 when four feet of water covered this property. The structure endured and became one of Winnipeg's oldest surviving inhabitable houses, in use as a private residence for well over a century. The house is furnished with many of the Inkster Family's personal items. It opened as the Museum in 1958.

- Rupertsland Boulevard continues on the other side of the Museum grounds.
- From Mac Street take either Colleen Road or Tait Ave, up the hill to Jones Avenue to reconnect with Rupertsland Avenue.
- Head west on Rupertsland towards Main Street.
- Turn right onto Main Street and continue north **1.6km** to ***Kildonan Park.*** 

***Optional Excursion:*** *(bike, walk, drive - approximately 10 minutes by car)*
*(Kildonan Park: W97.0716, N49.5554) Park entrance is on your right*
*Established in 1909, Kildonan Park is known for colourful formal gardens, an outdoor theatre (Rainbow Stage), seasonal swimming pool, skating pond, toboggan slides, and many lovely*

*picnic spots. As you enjoy the scenic **2km** loop, notice the deep creek bed that winds through the park (Lord Selkirk Creek).*

- Continue north on Main Street **1.0km** to Chief Peguis Trail
- Turn east (right) on Chief Peguis Trail (Route 17) and travel over the ***Kildonan Settlers Bridge*** to Henderson highway.

**WHAT'S TO SEE:**
The lamps standards along the bridge bear the names of the original Kildonan settlers to the area and for whom this part of Winnipeg is named. These names remain prominent in Manitoba today. It was the Saulteaux Chief, Peguis, who granted the land along the Red River to the settlers and signed the treaty with Lord Selkirk, (Thomas Douglas). It has always been acknowledged that without the help of Peguis and his people, the early settlers would never have survived.

- As you approach the end of the bridge be sure you are in the left hand lane.
- Turn north (left) on Henderson Highway (Route 42/Highway 204) and follow it north **13.2km**.

**WHAT'S TO SEE:**
Here you are on the "high" side of the river and as you travel along the road you will see that some houses are very close to the edge of the bank. Here flooding is not as much a concern as is erosion. The outer curve of the river is eaten away by the action of the flow, which is accelerated further when water levels are high. Fast moving ice in spring further scours the banks, promoting collapse.

You are never far from the river here, but there are areas where the road is quite near the bank. In several places, houses appear to be perched on the edge of the waterway. Over the years, a few have been lost to bank erosion.

**FOOD FOR THOUGHT:**

***Parish Lots Along the Rivers***

The rivers were the lifeblood of early settlements. As communities grew, ownership and division of property along the rivers became contentious issues. Many Métis settled along the river constructing houses near the river and farming the remainder of the land. Although they did not own the property, some of these loosely established communities became permanent. Survey systems were introduced and in most areas, properties were allotted in narrow strips, stretching a mile in length out from the river. Remnants of these early allotments are still discernable today as small farm operations, especially here along the river.

For several decades in the mid-1900s, the area along the river was famous for independent market gardens. However, the demand for luxury riverside homes increased and larger properties were subdivided for development. Few market gardens remain.

- At Donald Road turn east (right) and drive **3.7km** to Highway 202.

**WHAT'S TO SEE:**

Here you can see how flat the floodplain is. In an earlier time this prairie landscape was dotted with small marshy areas, thickets of willow, poplar and scrub oak, all common to the region. Prairie grasses, some two metres tall, would have blanketed open areas. Centuries of flooding have created some of the most fertile land in the country, with each year of high water depositing a rich new layer of fine river silt on the land.

The berm you see ahead is the west side of the Floodway Channel.

- Cross PTH 202 and drive up to the viewing area.

*(Recreation Node: W96.9491, N50.0233)*

This is one of several spots providing access to the parkway areas of the Floodway Channel. Here, near Birds Hill Provincial Park, the Channel is much deeper, approximately 20m, and you may notice that the side slope is slightly sharper, rising a metre over 2 metres in run (a 1 to 2 ratio) or a 27° angle. The pedestrian/cycling bridge linking Bird's Hill Park to the floodway parkway system can be seen to the east as well as the light standards at the entrance to the Park.

**FOOD FOR THOUGHT:**

***Floodway Expansion Project***

Initial Floodway construction allowed floodwater capacity at a rate of up to 2,550 cubic metres (91,700 cubic feet) per second and provided Winnipeg with one-in-100-year flood protection. Following review of the 1997 flood, a five-year, $665 million Federal/Provincial expansion project was launched in 2005, increasing the capacity of the channel, replacing and upgrading eight bridge crossings, and improving inlet and outlet controls. Another 35 million cubic metres of earth were moved in the process. The improvements now provide almost double the water capacity of the original channel to 4,000 cubic metres per second, and offers 1-in-700 year flood protection.

Completed in 2011, the project incorporated a recreational development strategy, including this enhanced greenway, providing trails as part of the Trans-Canada Trail system. Hiking, cycling, skiing and other recreational pursuits are now available along a network of nodes connected along both sides of the floodway. This Red River North Trail extends from North Winnipeg to Birds Hill Provincial Park, Lockport, Selkirk, and across the river, north to Grand Beach; 110 km in all.

- Continue north (right) on Highway 202 for **6.2km** to the next viewing area, just over the rail tracks.

*(Recreation Node: W96.9238, N50.0754)*

From this point you can see north to Highway 44, crossing over the floodway. The Floodway Outlet Control Structure lies just beyond your view.

- Continue on 202 to Henderson (204).
- Turn north (right) on 204.

Hungry? In operation since 1938, today the ***Half Moon*** is a classic 50s style diner and a popular destination following a leisurely family drive along the Red River.

- Continue **0.8km** to the stop sign at PTH 44.

***Optional Excursion****: Floodway Outlet Control Structure*

- *Cross PTH 44 and **0.5km** ahead is the Outlet Control Structure.*

*Note: This is not a maintained roadway. Vehicles should proceed at your own risk considering conditions. Walking recommended.*
*(Outlet Control Structure: W96.9348, N50.0905)*

*Here you can see the outlet dam and the spillway into the Red River. The extensive limestone stabilization along the west bank of the river is also visible.*
*Return to PTH 44.*

- Turn west onto Highway 44 and continue **0.2km** towards the bridge but don't go over the bridge just yet.
- Pull to the right (as if you were going to the A&W) and enter Lockport Heritage Park. Park your vehicle and walk down to the water's edge to view the ***St. Andrews Lock and Dam***.

**WHAT'S TO SEE:**
A riverside marker provides information about this famous Caméré lock and dam, which has been functioning since it was opened by Prime Minister Sir Wilfred Laurier 1910.

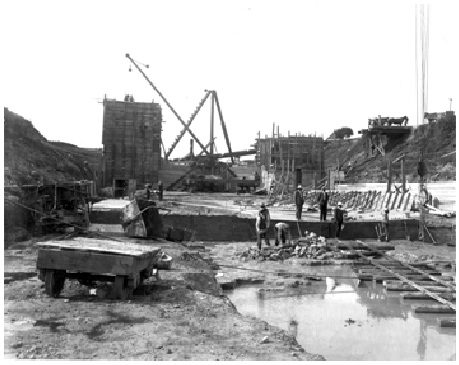
Depending on the season you may see hundreds of white pelicans in this area. This is a very popular spot for people to fish and there are fishers here virtually year round: in winter the river is dotted with ice fishing huts and vehicles, in summer people fish from shore and boats. Pickerel, sauger, walleye and catfish are the catch of the day!

**FOOD FOR THOUGHT:**

***St. Andrew's Lock and Dam***

For nearly a century, Lister Rapids, a stretch of river about 5km south of Lockport not navigable by canoe or York boat, had impeded travel on the Red River to Lake Winnipeg. Here the river dropped almost five metres over a run of 16 kilometres. This meant cargo had to be portaged or taken by ox cart around the rapids and loaded into vessels waiting on the other side, a backbreaking and time consuming ordeal. A more practical circumvention of this barrier was needed as steamboats had become critical to river travel and essential to the trade economy. Access through the rapids would allow river passage west as far as the Rocky Mountains.

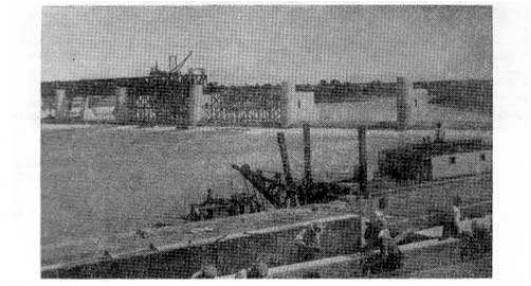
Late in the 1890s, attempts to dredge the rapids failed and it was determined that a dam and lock system to raise the water level would be the best solution. However, this presented some critical challenges: fast-moving ice was thick and heavy during spring break-up. Ice jams and upstream flooding were serious threats to be avoided.



Resolution was found in adapting a curtain-style dam design of the French engineer, Caméré. This style of dam was popular in Western Europe, but on a small scale: one as large as that planned at Lockport had never been built. Men armed with picks, shovels and wheelbarrows, along with teams of horses, began working on the project in 1907. It was dangerous work, several men lost their lives, and the pay was meagre: between 15 and 25 cents per hour.

The 270-metre Dam was completed in 1910 and remains the largest curtain dam ever constructed. The roadway bridge was added above the dam structure in 1913 and is a major section of Provincial Highway 44 linking west and east sides of the river.

The Dam consists of steel frames set between concrete piers. Electrically powered wooden "curtains" roll up and down the steel frames like window blinds. Thus, the water level can be adjusted to allow a free flow during the spring thaw and controlled to ensure safe navigation at other times of the year. A canal lock on the west side carries river traffic around the Dam and can accommodate vessels up to 1600 tons. The steamship *Winnitoba* was the first to pass through the lock.



Construction, St. Andrew's Locks, 1910 Manitoba Archives

More than a century after it was constructed, the St. Andrew's Lock and Dam remains fully operational. Working in concert with James Avenue, the Dam is a critical component of the flood control system for the city of Winnipeg.

Declared a National Historic Site in 1990 and a Canadian Civil Engineering Historic Site, the St. Andrew's Dam is considered an architectural marvel and the last example of a Caméré-style curtain dam in the world.

The significance of its construction to the development of Western Canada was evidenced by the presence of then Prime Minister Sir Wilfred Laurier at the grand opening event.

http://www.mhs.mb.ca/docs/sites/standrewslockanddam.shtml

- Now return to PTH 44 and continue over the bridge **1.5km** to Highway 9.

- Take Hwy 9 north (right); follow the signs **2.3km** to the ***Lower Fort Garry National Historic Site*** exit. (W96.9357, N50.1097)

***Optional excursion:***
*A visit to Lower Fort Garry is certainly worthwhile. Now a National Historic Site operated by Heritage Canada, it is the oldest, intact, stone fur trade fort in North America. In summer, guided tours are available. (Admission fee) From October through May, the historic buildings of the Fort are closed but the grounds remain open and allow for some enchanting strolls.*

*The Interpretive Centre and café are open year round.* 👍
http://www.pc.gc.ca/eng/lhn-nhs/mb/fortgarry/natcul.aspx

**FOOD FOR THOUGHT:**

***Lower Fort Garry***

Construction on Lower Fort Garry, 32km downstream from the Upper Fort, was completed in 1840. The administrative operations of the Hudson's Bay Company were transferred here where annual spring flooding was less problematic. Ultimately, however, development at Winnipeg prevailed and Upper Fort Garry was rebuilt at The Forks.

- Exit the Fort onto Highway 9 and continue north (right) **1.1km** to River Road and turn right.

**WHAT'S TO SEE:**
As you drive along, again note the effects of flooding on the banks on both sides of the river. For the most part, River Road is at second flood stage level. The first stage flood level is easily seen in places here and also on the opposite side of the river.

- Continue along River Road, and it becomes Eveline Street. You are now within the City of Selkirk.
- A further **2.8km**, and you will come to a four-way stop at Eaton Street.
- Continue through the intersection and turn right at the next street. Find a place to park and walk to the water's edge. 👍

*(Selkirk Waterfront: W96.8684, N50.1434)*

**WHAT'S TO SEE:**
This is the Selkirk waterfront area. In summer it is frequently used as an amphitheatre for concerts and other special events. From here you can see the river flowing towards you from the south. In times of high water the bridge crossing to East Selkirk has been closed, and occasionally has been engulfed by water and ice. Now, special amphibious excavators, or *amphibex*, are used to break up the ice in this area and allow flows to continue north to Lake Winnipeg, significantly reducing ice damage and flooding.

At the water's edge is a bronze depiction of the arrival of the York boatmen, by noted Manitoba artist Peter Sawatsky. A short distance north is Selkirk Park, home to the ***Marine Museum of***

***Manitoba***. Tourist information is also available here in the summer.

The Marine Museum presents six historic ships, dating back to the early 1900s, connected with walkways. A modest admission is charged and tours are self-guided. www.marinemuseum.ca

- Head west to Main Street (Highway 9) and turn left to drive south and begin the return trip to Winnipeg.
- Drive south on Main Street, pass Lower Fort Garry, and turn left at River Road. (There is a small sign with a Viking ship and the words "River Road" on the right hand side of Highway 9 marking the route, but this turn is easy to miss. The larger sign for St. Margaret's Church is your cue to prepare to turn left!)
- Follow River Road **0.4km** towards the river.

**WHAT'S TO SEE:**
As you make you way around the first curve you will have an excellent view of the Outlet Control area where the waters of the Red River are united once again. During the recent upgrades to the floodway, considerable erosion protection was established on the riverbank you now travel. In 2007, the outlet was rebuilt at a cost of $35 million. Some 81,000 tonnes of limestone were deposited along 1.8kms of the west bank to mitigate the increased potential outflow of water from the floodway.

- Continue along River Road and under the Lockport Bridge. The Lock and a small riverside park are on your left.

From here you will continue along River Road, on a return route to Winnipeg. This is one of Manitoba's most charming drives, with many enviable properties and homes along the river. It also provides some of the best views of the meandering river. As you follow along the winding river's edge you will have ample opportunity to see the effects of annual flooding on the banks and surrounding areas, including those across the river, which you toured past earlier. As the river meanders you can clearly see the effect of flood erosion on the higher outside curves, while the lower inside curves gently slope to the water. In some places, the landowner has terraced the (opposite) riverbank.

Several historic structures may by visited along this route including:

- ***Captain Kennedy House*** *(W96.9702, W50.0661)*
- ***St. Andrew's Rectory and St. Andrew's-on-the-Red Anglican Church*** *(W96.9769, N50.0667)*
- ***Twin Oaks*** *(W96.9877, N50.0558)*
- the remnants of ***Scott House*** *(W96.9902, N50.0526)*

Along the way are good views of the river meander and its affect on the riverbanks. Look across the river to properties along the east bank and you can see how the lots were laid out in long narrow strips out from the edge of the river.

- Continue south along River Road until you reach the junction with Highway 9.

- Turn south (left) on PTH 9. This will lead you back to the centre of Winnipeg, a drive of about 15 – 20 minutes.

**FOOD FOR THOUGHT:**

As you continue homeward let your eye follow the level prairie landscape to the western horizon and consider the dramatic impact of floodwaters on the entire Red River Basin and its inhabitants over the millennia. For example, during the inundation of 1826, everything you have seen today and stretching west beyond Stony Mountain would have been submerged beneath as much as 12 metres of water. This was not an isolated occurrence; it was just the first one that was well documented. The archaeological record shows there were several earlier significant floods. There have been many moments in history where these flat prairies have appeared as an inland sea, a virtual recreation of that ancient glacial giant: Lake Agassiz.

Thank you for joining *Routes on the Red* with this self-directed excursion. We hope that you had an enjoyable trip. You can discover more of the Red River Valley through our other self-directed itineraries.

*To further explore the flow of the Red River from the US border to Lake Winnipeg take our other self-directed tours.*

We value your comments. If something was not clear, a road sign changed, or if you found a delightful picnic site or visit that you would like to share with future travellers, please let us know. Write your suggestion, referring to the page or paragraph and send it to us. Thank you in advance for your contributions!

*Rivers West, officially known as Red River Corridor Inc./L'Association du Corridor Rivière Rouge, is a not-for-profit organization with an overall objective to develop the Red River Corridor as a destination. Our mandate is to create and implement a long-term tourism and conservation strategy focusing on the development, promotion and management of the natural, tourism, cultural and heritage, and recreational resources of the Red River from Emerson to Lake Winnipeg. We are pleased to receive financial support through participation of rural municipalities, towns and cities along the length of the river. A variety of projects are underway in the Red River region. These include the preservation of special lands for conservation, designation of the Red River as a heritage river, increasing opportunities for public access to the River, and the development and promotion of the river valley's natural, cultural, recreational and tourism resources.*

Contact us for more information at:
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