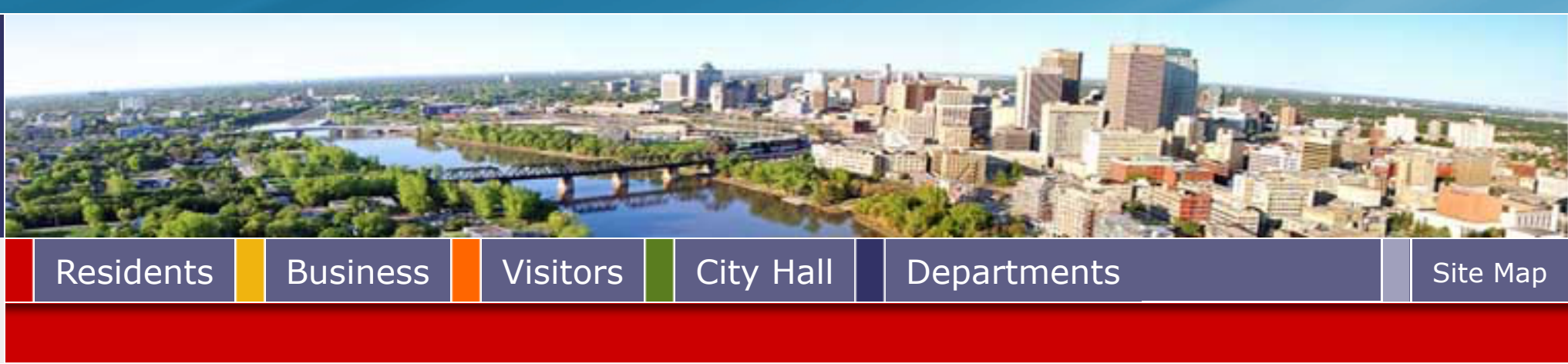




Winnipeg
311
City Services

History
Pathways
to Winnipeg History
Site Map



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Flood of the Century

▶ [Current River Levels](#)

What does James mean?

Winnipeg references its primary water level to a guage located on the Red River at James Avenue. The guage is just downstream of the Forks, at the junction of the Assiniboine River. In a "normal" summer, water levels are maintained around James 6.5 ft. In the spring, a moderate flood will exceed James 18 ft. The zero point for this guage is normal winter ice level and is established as 727.57' above mean sea level.

While James Avenue serves as a useful single reference to water levels in the city, technically its water level only applies to this location as rivers have a slope to them, as opposed to lakes which have constant a water level. North of the James Avenue guage, which is downstream, water levels will be lower. In the south end of the city, which is upstream, water levels will be higher depending on the flow in both the Red and Assiniboine Rivers.



In the summer, St. Andrews Lock and Dam (SALD) regulates water levels and the structure is operated to try to maintain 6.5 ft at James Avenue. Under relatively low flow conditions, SALD maintains a relative constant level throughout the city as flows increase there is a noticeable gradient in the river. When flows exceed 13,000 cubic feet per second (cfs), the SALD structure is wide open and levels at James begin to rise above 6.5 ft.

During the spring flood with much higher flows, there is a steeper gradient in the river and the amount of flow coming from the Assiniboine River has a significant impact on the water levels in Winnipeg. During the 1997 flood, the Flood of the Century, the majority of the flow was on the Red River and very little on the Assiniboine River (~3,000 cfs). In the 2011 flood, there were very high flows on the Assiniboine River and levels in the south end of the city were considerably lower for a comparable James Avenue level. During floods, the flow on both our main rivers (Red and Assiniboine) are important factors. These flows are plugged into the City's Flood Manual to define a water level profile for the Red, Assiniboine and Seine rivers to base our flood fighting efforts on.

While James Avenue is the City's main guage, water levels are monitored at a number of other locations on the [Red and Assiniboine rivers](#). These levels are monitored ultrasonically, measuring the distance between the probe and the water level by bouncing a signal off the water. It works a lot like radar. The information recorded is then fed back to the McPhillips Control Centre. During a flood, the City monitors water levels at all these points as well as guages operated by other agencies. When levels are monitored at other locations, the James Avenue datum is not used and the actual geodetic elevation (above sea level) is used.

How does James record water levels?

At the James Avenue guage, there is a downtown City facility, James Ave High Pressure Pumping Station, located on the riverbank. Within the pumping station, vital pieces of equipment (e.g., chart recorder, control box, electronic level transmitter) give the City a water level reading from the James Avenue location. An electronic level transmitter (a measuring tape) drops into a culvert that goes out to the Red River. It measures water pressure as it comes up or down, sends a signal to the control box, which transmits every 15 minutes via the telephone line to the McPhillips Control Centre. In earlier years, prior to electronic readings, the station was staffed 24 hours a day and was used to collect information for the operation of St. Andrews Lock & Dam.

Water pressure is measured through this culvert that goes into the Red River.

Recent Flood History

Peak Red River Levels in Winnipeg at James Avenue (in feet)		
Year	Spring Floods	Summer Floods
2011	20.7 April 9	17.6 July 7
2009	22.6 April 16	15.0 July 4
2007	17.9 April 11	16.1 June 29
2006	20.4 April 7	
2005	19.2 April 7	20.2 July 3 & 4
2004	19.0 April 4	15.3 June 9
2003	no spring flood	
2002	no spring flood	17.3 June 15
2001	18.5 April 7	
2000	no spring flood	15.6 July 8 & 9
1999	17.4 April 10	
1998	17.2 March 31	
1997	24.5 May 3	
1996	19.4 April 28	
1995	17.9 March 28	

Historic Flood Levels

Peak Red River Levels in Winnipeg at James Avenue (in feet)	
Year	Feet
1979	19.3
1966	26.3*
1950	30.3*
1861	33*
1852	35*
1826	37*

* Before construction of the Floodway. Historic 1800's flood highwater data comes from Sir Sanford Fleming Surveys (1879) and recorded in 1 foot intervals only.

Only peaks over 15 feet James are shown

As reference, the normal summer river level is 6.5 feet James while the River Walkway level is 8.5 feet James.

Water Level at James Avenue 1997

