Non-Residential Wastewater Flow Contributions

Table 1: Typical Wastewater Flowrates from Commercial Sources

Source	Unit	Typical Flowrate [LPCD]	Peaking Factor
Airport	Passenger	11	Harmon
Automobile Service Station	Vehicles served	30	1.67 (minimum)
	Employee	38	Harmon
Bar / Cocktail Lounge	Seat	43	Harmon
	Employee	37	Harmon
Boarding House	Person	115	Harmon
Conference Centre	Person	24	Harmon
Department Store	Toilet room	1,100	1.67 (minimum)
	Employee	30	Harmon
Hotel	Guest	200	Harmon
	Employee	30	Harmon
Laundry (self-service)	Machine	1,280	1.67 (minimum)
	Load	145	1.67 (minimum)
Mobile Home Park	Unit	400	1.67 (minimum)
Motel	With kitchen - guest	145	Harmon
	Without kitchen - guest	130	Harmon
Office	Employee	38	Harmon
Public Lavatory	User	12	Harmon
Restaurant	Conventional customers	24	Harmon
	With bar / cocktail lounge - customers	26	Harmon
Shopping Centre	Employee	30	Harmon
	Parking space	6	1.67 (minimum)
Theater (indoor)	Seat	9	Harmon

Source: Metcalf and Eddy, Inc., 2014, Wastewater Engineering: Treatment and Resource Recovery, 5th ed. (New York: McGraw-Hill)

Table 2: Typical Wastewater Flowrates from Institutional Sources

Source	Unit	Typical Flowrate [LPCD]	Peaking Factor
Assembly Hall	Guest	9	Harmon
Child Care Centre [a]*	No meals – Child	70	Harmon
	With meals - Child	85	Harmon
Church	Seat	9	Harmon
Hospital	Bed	570	Harmon
	Employee	30	Harmon
Institutions (non-hospitals)	Bed	285	Harmon
	Employee	28	Harmon
Prison	Inmate	340	Harmon
	Employee	28	Harmon
School – Day*	With cafeteria, gym and showers - student	70	Harmon
	Cafeteria - student	42	Harmon
School – Boarding *	Student	140	Harmon

a - City of Winnipeg value

** - Child Care Centres / Schools shall be assumed to operate 10 and 8 hours a day, respectively – generated flows shall be factored accordingly*

Source: Metcalf and Eddy, Inc., 2014, Wastewater Engineering: Treatment and Resource Recovery, 5th ed. (New York: McGraw-Hill)

Non-Residential Wastewater Flow Contributions

Table 3: Typical Wastewater Flowrates from Recreational Sources

Source	Unit	Typical Flowrate [LPCD]	Peaking Factor
Cafeteria	Customer	9	Harmon
	Employee	28	Harmon
Swimming Pool	Customer	26	Harmon
	Employee	28	Harmon

Source: Metcalf and Eddy, Inc., 2014, Wastewater Engineering: Treatment and Resource Recovery, 5th ed. (New York: McGraw-Hill)

Table 4: Typical Wastewater Flowrates from Additional Sources

Source	Unit	Typical Flowrate [LPCD]	Peaking Factor
Bowling Alley [b]	Alley	760	1.67 (minimum)
Car Wash	Vehicles Served	200	1.67 (minimum)
Coffee Shop [b]	Customer	23	Harmon
	Employee	38	Harmon

b Source: USEPA Onsite Wastewater Treatment Systems Manual, 2002 - cites Crites and Tchobanoglous, 1998