

Average Winter Effluent Chloride Loading
Lower Des Plaines River Watershed-Chloride Variance

Waterway	Average Chloride mg/L	Harmonic Mean Flow^e cfs	Conversion Factor Flow	Average Chloride Load lbs/day	Average Chloride Load metric ton/day
Des Plaines River at CSSC confluence ^a	199	450	5.39	482,675	219
Lower Des Plaines River (downstream of CSSC, Ruby St) ^b	255	3,350	5.39	4,604,408	2,089
Hickory Creek at Joliet (USGS 0053900) ^c	323	19	5.39	33,078	15

a Based on the average modeled chloride based on continuous conductivity from USGS gage at Channahon

b Based on the average measured chloride concentration in Des Plaines River at Ruby St Bridge from December 2015-April 2017

c Based on the average measured chloride concentration in Hickory Creek at GG-14 from 2012-2017

e The harmonic mean flows of the Des Plaines River and CSSC at the point of merger are 450 cfs (upper Des Plaines River) and 2,900 cfs for the CSSC, or a 3,350 cfs total (Singh and Stall, 1984). At the United States Geological Survey (USGS) Stream Gage 0053900 on Hickory Creek near Joliet, IL the harmonic mean is 19 cfs (Singh and Stall, 1984). The DuPage River at Shorewood has an harmonic mean flow of 185 cfs. Design flow statistics are provided in Appendix C of Huff & Huff (2016).

10 Percent Reduction of Load (Lower Des Plaines at Ruby St)

1,880

30 Percent Reduction of Load (Lower Des Plaines at Ruby St.)

627

Harmonic Mean Flow

The harmonic mean flows of the Des Plaines River and CSSC at the point of merger are 450 cfs (upper Des Plaines River) and 2,900 cfs for the CSSC, or a 3,350 cfs total (Singh and Stall, 1984). At the United States Geological Survey (USGS) Stream Gage 0053900 on Hickory Creek near Joliet, IL the harmonic mean is 19 cfs (Singh and Stall, 1984). The