

FLOW AND STRENGTH PROJECTIONS

MONTH: April 2020

	<u>PROJECTED</u>	<u>ACTUAL</u>	<u>DIFFERENCE</u>	<u>PROJECTED INCOME FOR MONTH</u>	<u>ACTUAL INCOME FOR MONTH</u>	<u>SURPLUS OR DEFICIT</u>
FLOW (GALLONS)	232,500,020	197,767,800	-34,732,220	\$ 161,820.01	\$ 137,646.39	\$ (24,173.63)
B.O.D. (#s)	319,814	376,744	56,930	\$ 70,359.08	\$ 82,883.68	\$ 12,524.60
S. SOLIDS (#s)	319,824	410,525	90,701	\$ 81,235.30	\$ 104,273.35	\$ 23,038.05
PHOSPHORUS (#s)	6,568	7,551	983	\$ 41,516.33	\$ 47,729.87	\$ 6,213.54
AMMONIA-N (#s)	40,720	50,787	10,067	\$ 53,750.40	\$ 67,038.84	\$ 13,288.44
CHLORIDES (#s)	776,398	898,481	122,083	\$ 2,329.19	\$ 2,695.44	\$ 366.25
			TOTAL:	\$ 411,010.31	\$ 442,267.57	\$ 31,257.26

(THRU APRIL 2020)

PROJECTED FOR 2020

	<u>END OF YEAR PROJECTED</u>	<u>YEAR TO DATE SURPLUS/ DEFICIT</u>	<u>YEAR TO DATE SURPLUS/ DEFICIT \$\$</u>
FLOW (GALLONS)	2,053,099,003	85,637,040	\$ 59,603.38
B.O.D. (#s)	3,755,281	396,649	\$ 87,262.74
S. SOLIDS (#s)	3,909,560	336,624	\$ 85,502.51
PHOSPHORUS (#s)	80,410	2,386	\$ 15,080.45
AMMONIA-N (#s)	505,265	38,486	\$ 50,802.01
CHLORIDES (#s)	8,748,079	559,731	\$ 1,679.19
		TOTAL:	\$ 299,930.29

HEART OF THE VALLEY METROPOLITAN SEWERAGE DISTRICT

MONTH: April 2020

HYDRAULIC AND ORGANIC LOADINGS DATA

INFLUENT*

TOTAL FLOW TO PLANT: 192,150,000 GALLONS
 AVERAGE B.O.D. : 203 mg/L
 AVERAGE SUSPENDED SOLIDS : 179 mg/L
 AVERAGE PHOSPHORUS : 4.24 mg/L
 AVERAGE AMMONIA-N : 31.20 mg/L
 AVERAGE CHLORIDES : 576.92 mg/L

MAXIMUM DAILY FLOW TO PLANT: 8,699,000

PERCENT (%) BY COMMUNITY OF TOTAL MONTHLY VOLUME TREATED AT WWTP

<u>COMMUNITY</u>	<u>FLOW</u>	<u>BOD</u>	<u>TSS</u>	<u>PHOSPHORUS</u>	<u>AMMONIA</u>	<u>CHLORIDES</u>
KAUKAUNA	40.47	27.28	29.52	28.91	26.33	30.20
LITTLE CHUTE	27.52	36.40	29.85	28.83	43.15	30.52
KIMBERLY	11.85	10.05	10.82	11.90	7.49	18.96
COMBINED LOCKS	6.07	5.07	5.11	6.48	5.40	2.12
DARBOY	14.09	21.21	24.70	23.89	17.63	18.20

AVERAGE DAILY INFLUENT LOADINGS

FLOW : 6,405,000 GALLONS
 B.O.D. : 10,735 POUNDS
 SUSPENDED SOLIDS : 9,414 POUNDS
 PHOSPHORUS : 223.49 POUNDS
 AMMONIA-N : 1,594 POUNDS
 CHLORIDES : 29,558 POUNDS

PLANT DESIGN CRITERIA

<u>%</u>	<u>MAX</u>		<u>AVG</u>	<u>%</u>
53.8	11,900,000	GALLONS/DAY	8,500,000	75.35
73.3	14,651	POUNDS/DAY	12,209	87.93
57.8	16,278	POUNDS/DAY	13,565	69.40
54.9	407	POUNDS/DAY	339	65.93
83.0	1,920	POUNDS/DAY	1,600	99.64

FINAL EFFLUENT

<u>MONTHLY AVERAGE</u>	<u>MONTHLY AVG PERMIT LIMIT</u>
FLOW: 3,508,467	
SUSPENDED SOLIDS : 7.44 mg/L	24.8
SUSPENDED SOLIDS : 218.64 lbs	27.3
B.O.D. : 7.39 mg/L	29.5
PHOSPHORUS : 0.26 mg/L	25.6
AMMONIA-N : 0.83 mg/L	7.6
CHLORIDES : 568.46 mg/L	

FOX ENERGY CENTER PUMPED: 86,896,000 GALLONS

Effluent to Fox Energy
45%

* INCLUDES HAULED WASTE

RAIN GAUGES

DAILY RAINFALL TOTALS

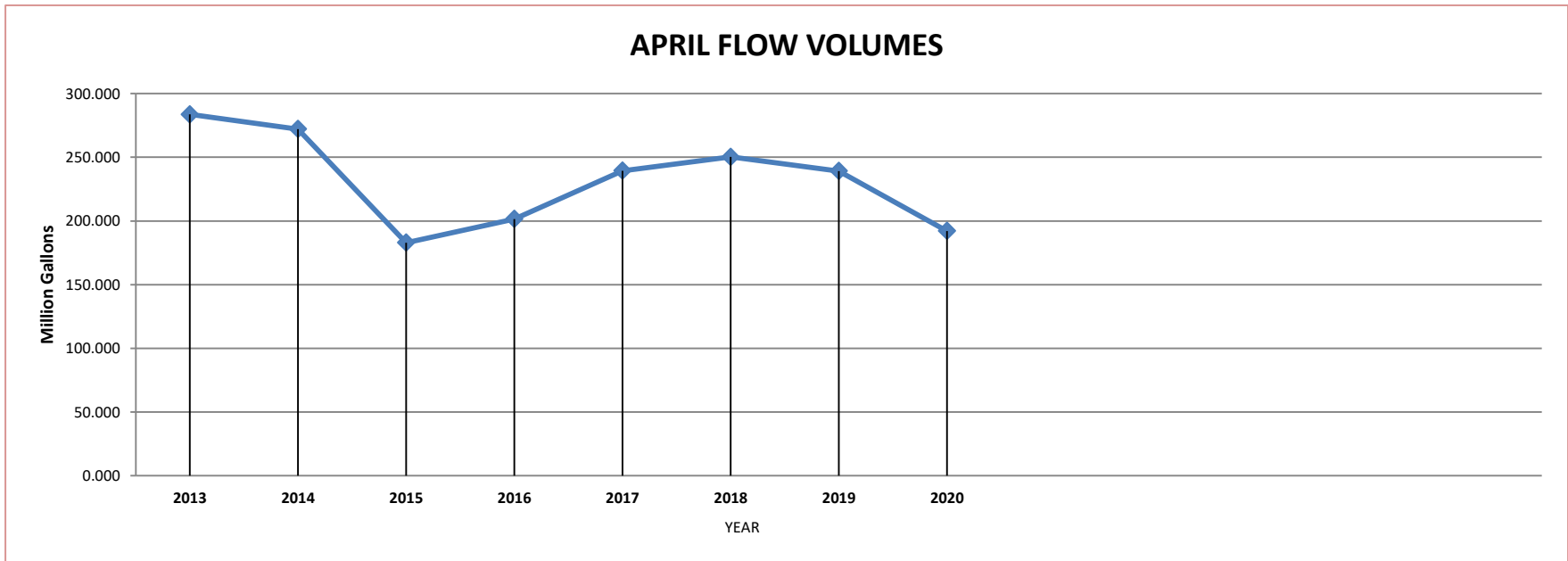
MONTH: APRIL

YEAR: 2020

<u>DATE</u>	<u>PLANT INCHES</u>	<u>KAUKAUNA INCHES</u>	<u>LITTLE CHUTE INCHES</u>	<u>KIMBERLY INCHES</u>	<u>DARBOY INCHES</u>
1	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00
3	0.02	0.02	0.01	0.00	0.00
4	0.03	0.03	0.02	0.03	0.04
5	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00
7	0.01	0.01	0.01	0.01	0.01
8	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.01	0.01
10	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00
12	0.43	0.52	0.52	0.66	0.66
13	0.00	0.03	0.01	0.02	0.02
14	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00
18	0.05	0.05	0.05	0.05	0.05
19	0.01	0.01	0.01	0.00	0.01
20	0.06	0.09	0.06	0.10	0.07
21	0.00	0.00	0.00	0.00	0.00
22	0.00	0.01	0.01	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00
27	0.26	0.22	0.23	0.21	0.20
28	0.06	0.05	0.07	0.08	0.05
29	0.13	0.17	0.11	0.12	0.22
30	0.01	0.01	0.00	0.00	0.00
TOTAL:	1.07	1.22	1.11	1.29	1.34

HEART OF THE VALLEY METROPOLITAN SEWERAGE DISTRICT

<u>Year</u>	<u>April Flow</u> <u>Million Gallons</u>	<u>Precipitation</u> <u>Inches</u>
2013	283.615	3.19
2014	272.038	4.08
2015	182.911	1.91
2016	201.541	0.89
2017	239.329	3.44
2018	250.232	1.02
2019	239.147	2.33
2020	192.15	1.21

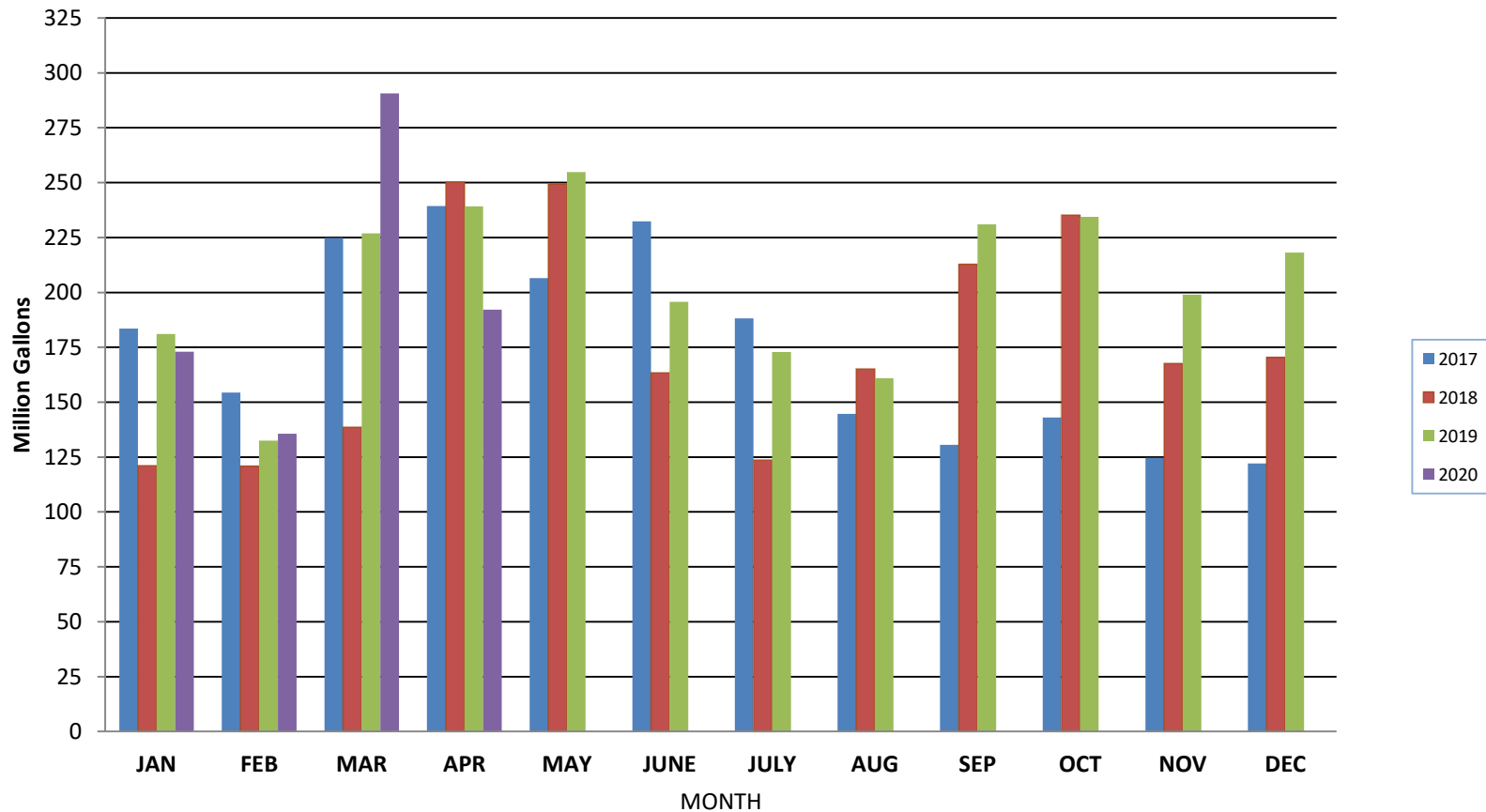


HEART OF THE VALLEY METROPOLITAN SEWERAGE DISTRICT

	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUNE</u>	<u>JULY</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>
2017	183.493	154.391	224.799	239.329	206.521	232.395	188.142	144.717	130.601	143.016	124.659	122.136
2018	121.122	120.841	138.664	250.232	249.379	163.461	123.780	165.254	212.799	235.273	167.657	170.368
2019	181.037	132.459	226.921	239.147	254.810	195.654	172.916	160.932	231.033	234.439	199.024	218.097
2020	172.999	135.703	290.643	192.150								

*** FLOW VOLUMES REPORTED IN MILLION GALLONS ***

MONTHLY FLOW VOLUMES



HEART OF THE VALLEY METROPOLITAN SEWERAGE DISTRICT

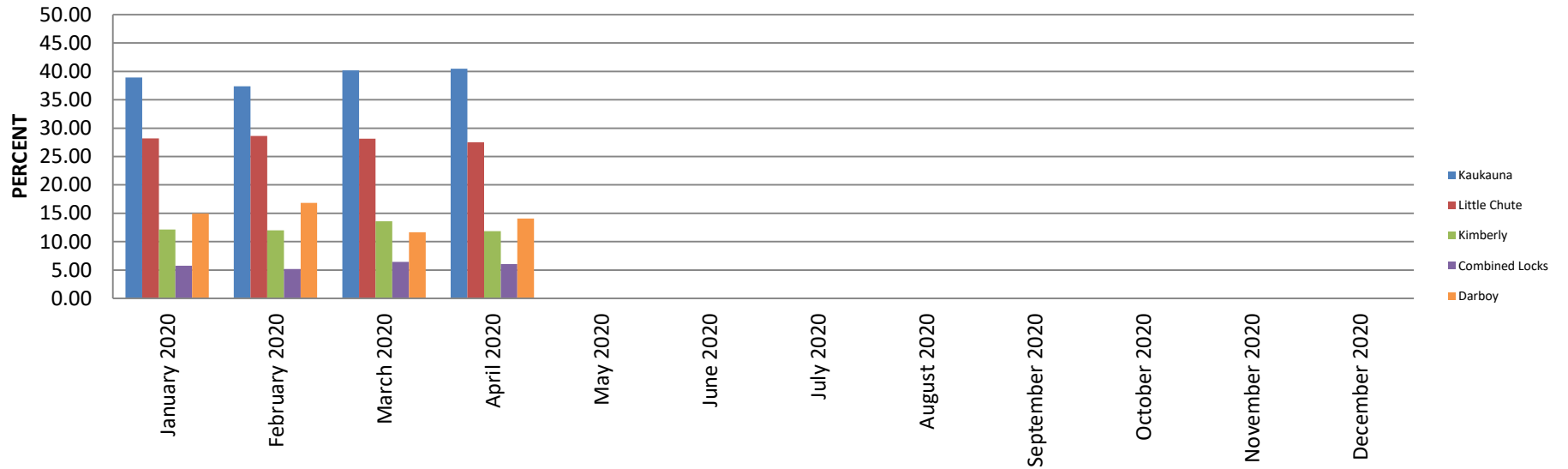
% CONTRIBUTION BY COMMUNITY - FLOW GALLONS

	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>	<u>Rainfall - Inches</u>
January 2020	38.93	28.17	12.15	5.79	14.97	1.54
February 2020	37.38	28.60	12.01	5.18	16.84	1.02
March 2020	40.17	28.12	13.59	6.46	11.67	4.17
April 2020	40.47	27.52	11.85	6.07	14.09	1.21
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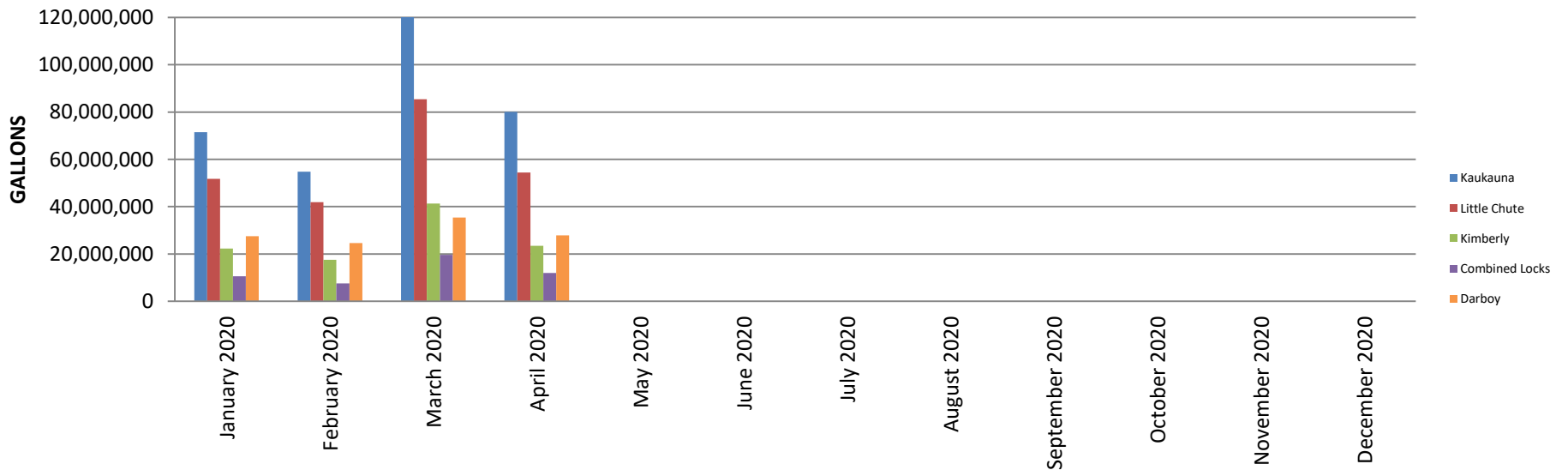
GALLONS CONTRIBUTION BY COMMUNITY - FLOW GALLONS

	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>
January 2020	71,501,500	51,734,000	22,308,000	10,633,000	27,501,000
February 2020	54,742,700	41,878,000	17,584,000	7,585,000	24,662,000
March 2020	122,009,300	85,409,000	41,277,000	19,612,000	35,449,000
April 2020	80,039,800	54,420,000	23,426,000	12,010,000	27,872,000
May 2020					
June 2020					
July 2020					
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% CONTRIBUTION BY COMMUNITY - FLOW GALLONS



GALLONS CONTRIBUTION BY COMMUNITY - FLOW GALLONS



HEART OF THE VALLEY METROPOLITAN SEWERAGE DISTRICT

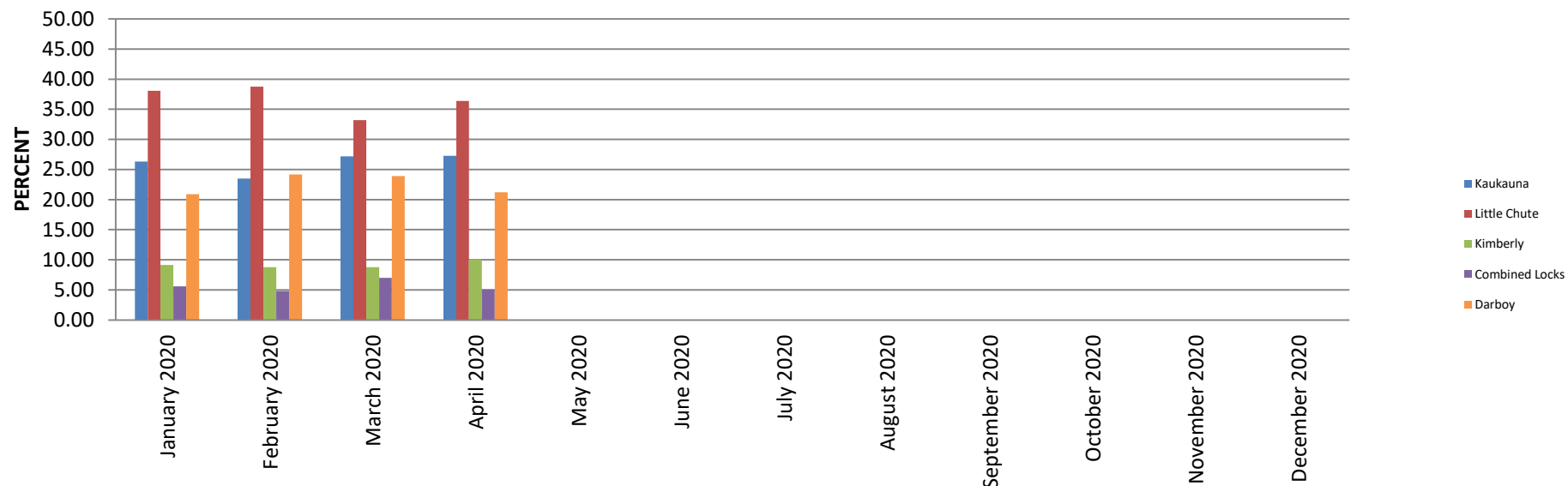
% CONTRIBUTION BY COMMUNITY - B.O.D. POUNDS

	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>
January 2020	26.31	38.06	9.14	5.61	20.89
February 2020	23.51	38.75	8.78	4.80	24.16
March 2020	27.16	33.17	8.77	7.00	23.90
April 2020	27.28	36.40	10.05	5.07	21.21
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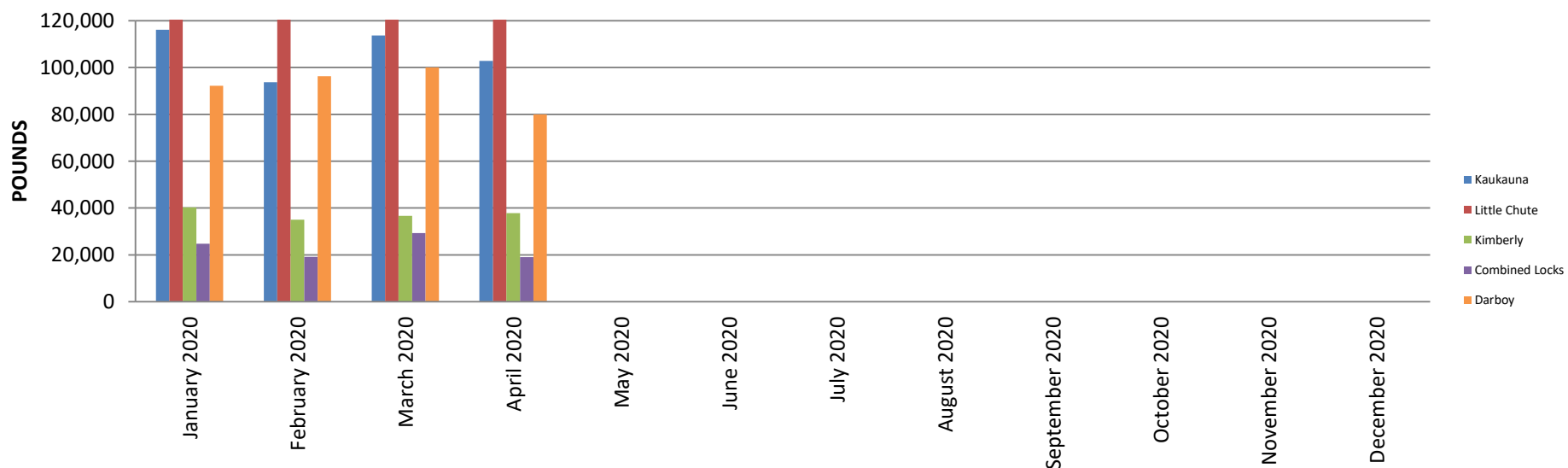
POUNDS CONTRIBUTION BY COMMUNITY - B.O.D. POUNDS

	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>
January 2020	116,126	167,978	40,327	24,751	92,218
February 2020	93,736	154,514	35,010	19,140	96,334
March 2020	113,644	138,814	36,687	29,304	99,993
April 2020	102,764	137,139	37,865	19,083	79,894
May 2020					
June 2020					
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November 2020					
December 2020					

% CONTRIBUTION BY COMMUNITY - B.O.D. POUNDS



POUNDS CONTRIBUTION BY COMMUNITY - B.O.D. POUNDS



HEART OF THE VALLEY METROPOLITAN SEWERAGE DISTRICT

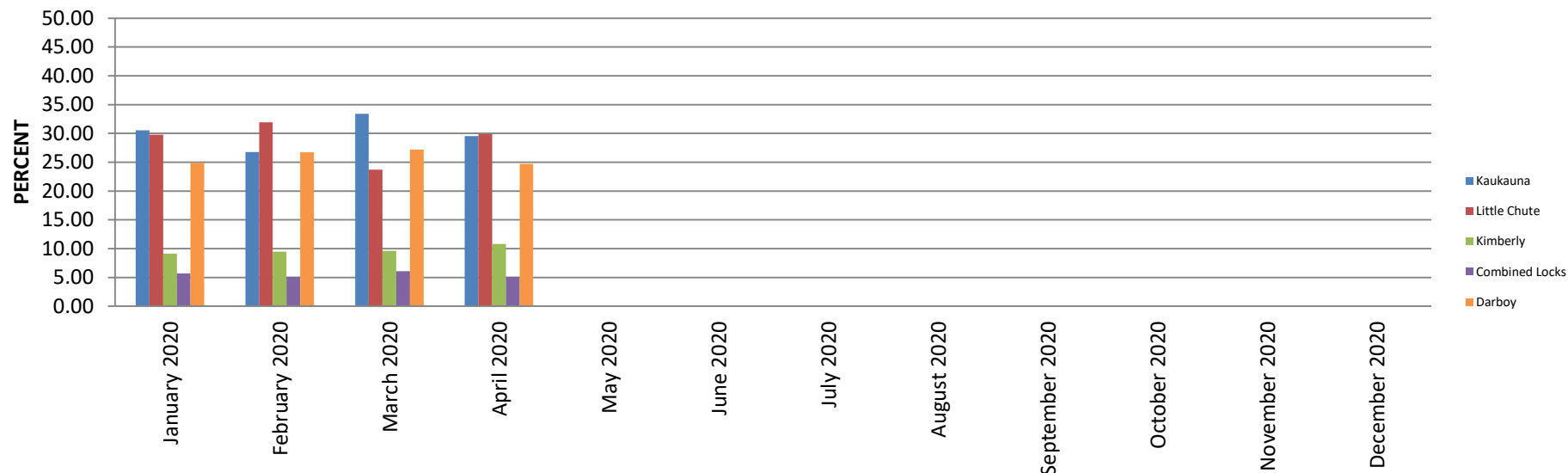
% CONTRIBUTION BY COMMUNITY -TOTAL SUSPENDED SOLIDS POUNDS

	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>
January 2020	30.55	29.76	9.13	5.69	24.88
February 2020	26.76	31.92	9.47	5.13	26.72
March 2020	33.43	23.71	9.62	6.07	27.18
April 2020	29.52	29.85	10.82	5.11	24.70
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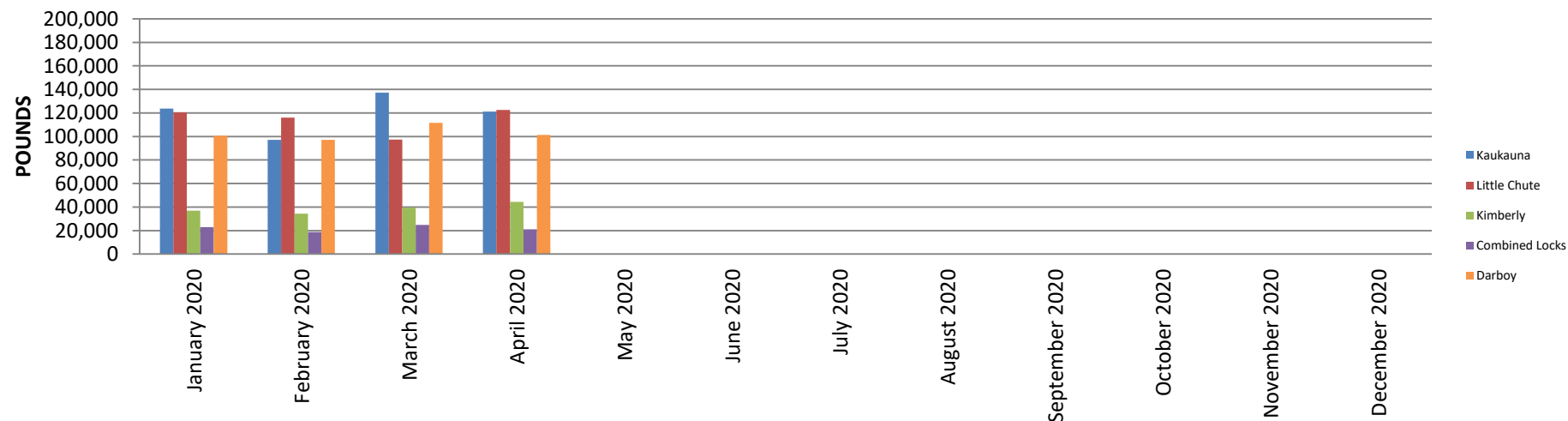
POUNDS CONTRIBUTION BY COMMUNITY - TOTAL SUSPENDED SOLIDS POUNDS

	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>
January 2020	123,653	120,453	36,933	23,018	100,685
February 2020	97,202	115,929	34,406	18,648	97,055
March 2020	137,248	97,336	39,475	24,911	111,578
April 2020	121,195	122,555	44,409	20,961	101,405
May 2020					
June 2020					
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September 2020					
October 2020					
November 2020					
December 2020					

% CONTRIBUTION BY COMMUNITY -TOTAL SUSPENDED SOLIDS POUNDS



POUNDS CONTRIBUTION BY COMMUNITY - TOTAL SUSPENDED SOLIDS POUNDS



HEART OF THE VALLEY METROPOLITAN SEWERAGE DISTRICT

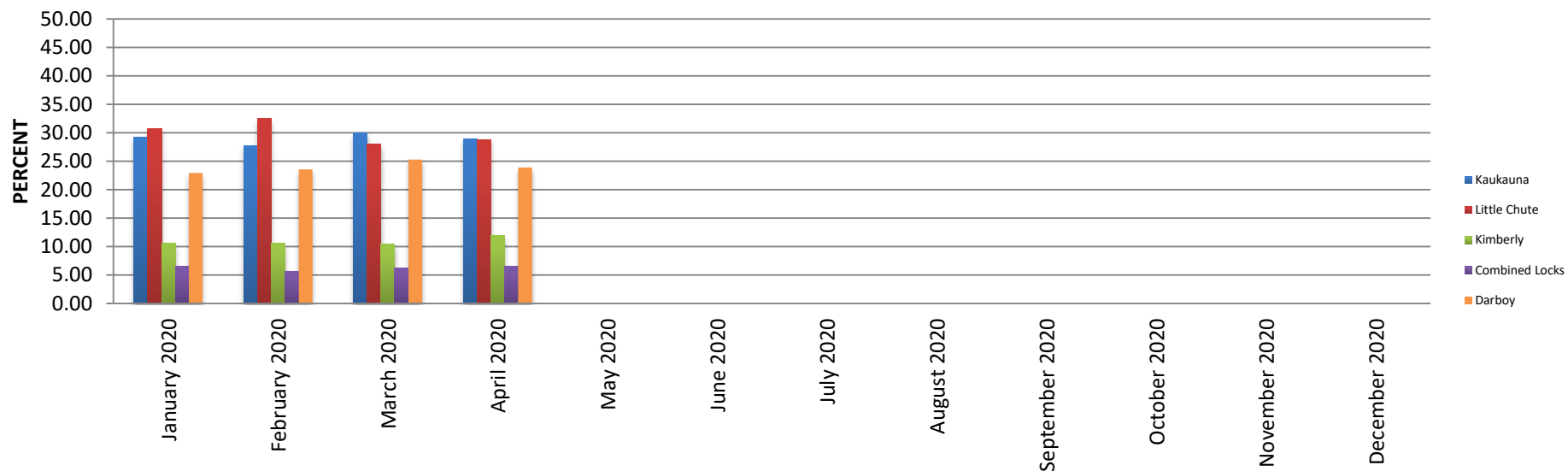
% CONTRIBUTION BY COMMUNITY - PHOSPHORUS POUNDS

	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>
January 2020	29.15	30.78	10.62	6.50	22.95
February 2020	27.70	32.49	10.59	5.65	23.56
March 2020	29.92	28.02	10.51	6.27	25.27
April 2020	28.91	28.83	11.90	6.48	23.89
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December 2020					

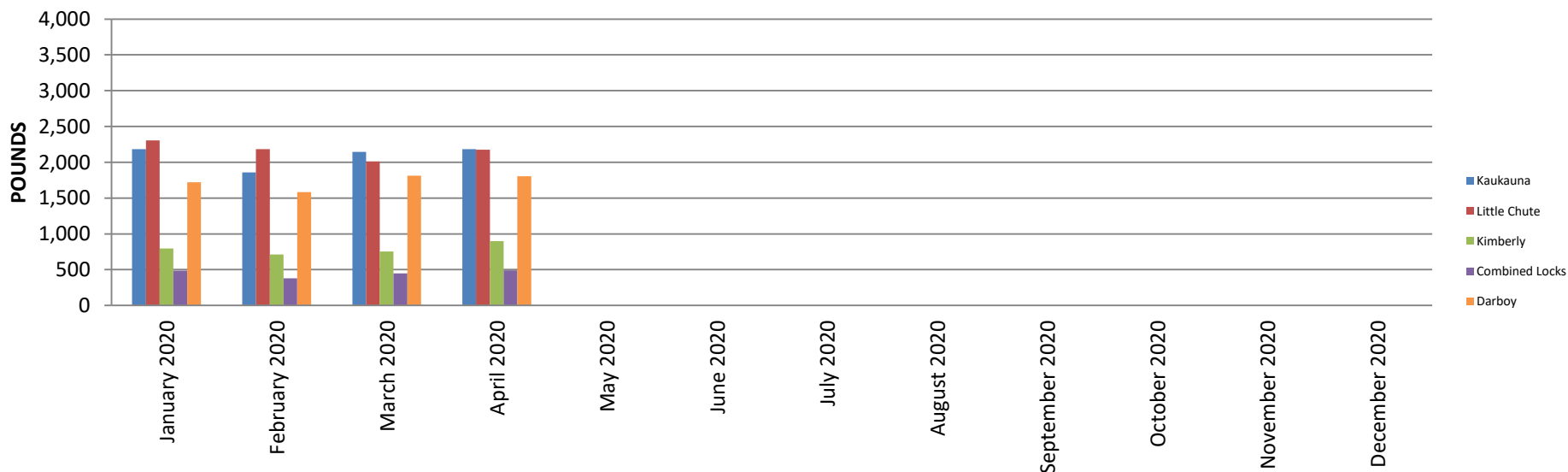
POUNDS CONTRIBUTION BY COMMUNITY - PHOSPHORUS POUNDS

	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>
January 2020	2,185	2,306	796	487	1,720
February 2020	1,860	2,182	711	380	1,582
March 2020	2,146	2,010	754	450	1,813
April 2020	2,183	2,177	899	489	1,804
May 2020					
June 2020					
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August 2020					
September 2020					
October 2020					
November 2020					
December 2020					

% CONTRIBUTION BY COMMUNITY - PHOSPHORUS POUNDS



POUNDS CONTRIBUTION BY COMMUNITY - PHOSPHORUS POUNDS



HEART OF THE VALLEY METROPOLITAN SEWERAGE DISTRICT

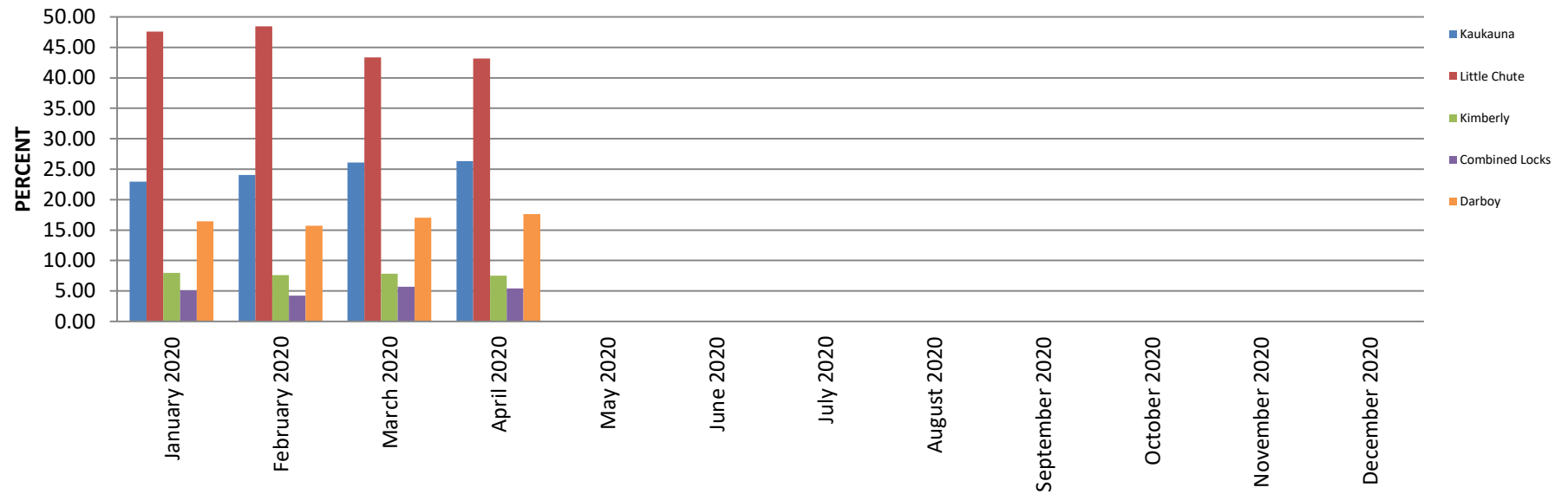
% CONTRIBUTION BY COMMUNITY - AMMONIA POUNDS

	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>
January 2020	22.94	47.58	7.96	5.10	16.42
February 2020	24.04	48.44	7.60	4.22	15.70
March 2020	26.10	43.35	7.82	5.68	17.04
April 2020	26.33	43.15	7.49	5.40	17.63
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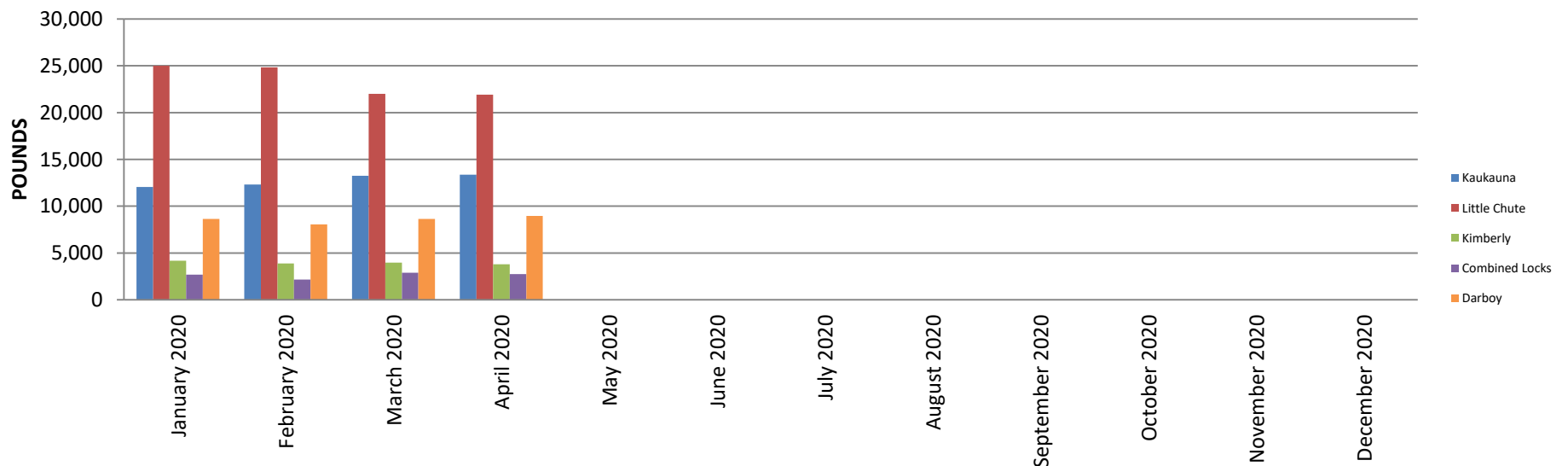
POUNDS CONTRIBUTION BY COMMUNITY - AMMONIA POUNDS

	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>
January 2020	12,057	25,004	4,184	2,679	8,628
February 2020	12,321	24,825	3,892	2,161	8,046
March 2020	13,244	21,996	3,969	2,883	8,644
April 2020	13,372	21,915	3,806	2,742	8,953
May 2020					
June 2020					
July 2020					
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% CONTRIBUTION BY COMMUNITY - AMMONIA POUNDS



POUNDS CONTRIBUTION BY COMMUNITY - AMMONIA POUNDS



HEART OF THE VALLEY METROPOLITAN SEWERAGE DISTRICT

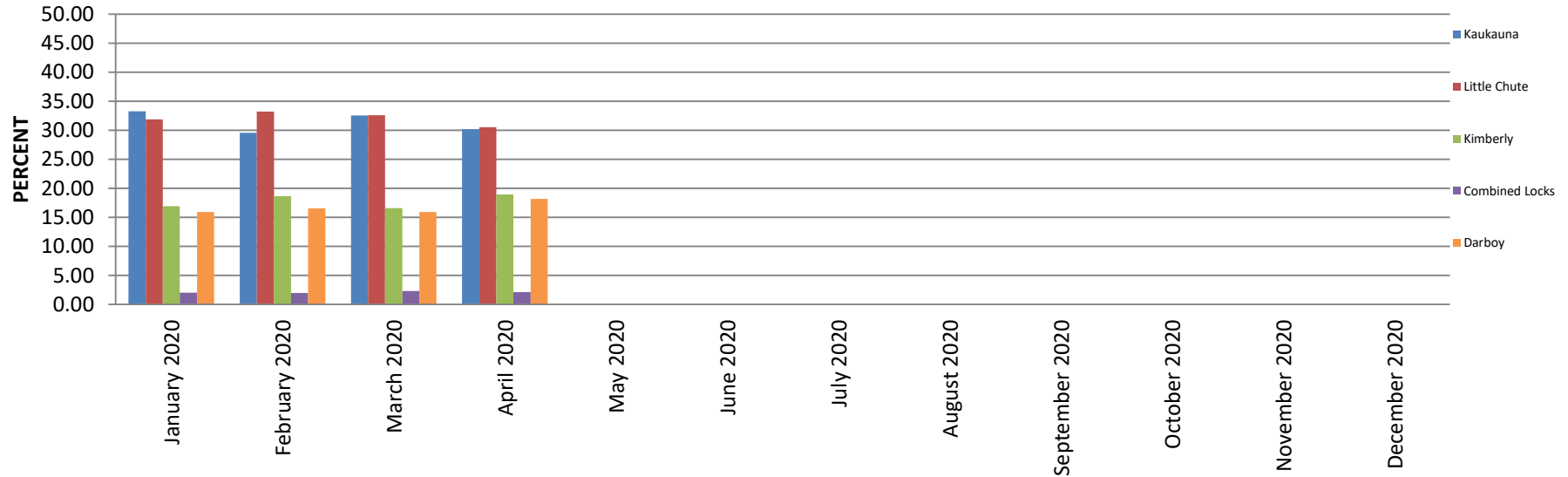
% CONTRIBUTION BY COMMUNITY - CHLORIDE POUNDS

	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>
January 2020	33.27	31.86	16.93	2.04	15.91
February 2020	29.57	33.23	18.68	1.97	16.54
March 2020	32.56	32.60	16.60	2.34	15.91
April 2020	30.20	30.52	18.96	2.12	18.20
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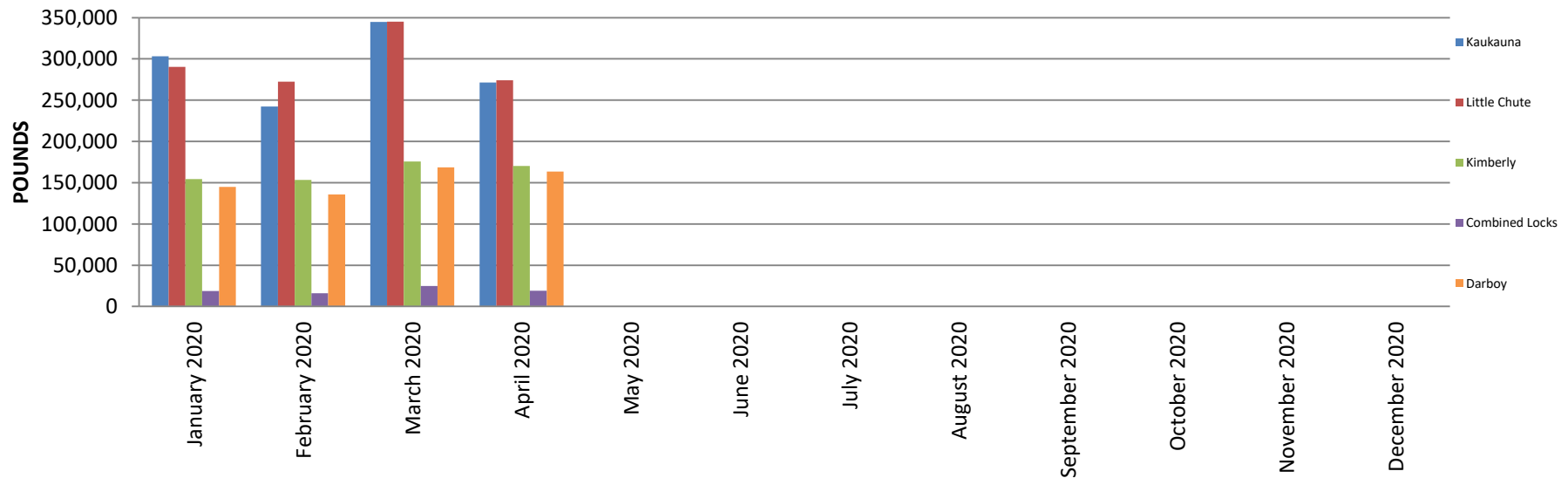
POUNDS CONTRIBUTION BY COMMUNITY - CHLORIDE POUNDS

	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>
January 2020	303,362	290,456	154,342	18,577	145,056
February 2020	242,458	272,495	153,190	16,145	135,618
March 2020	344,863	345,310	175,792	24,776	168,557
April 2020	271,348	274,226	170,357	19,010	163,541
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% CONTRIBUTION BY COMMUNITY - CHLORIDE POUNDS

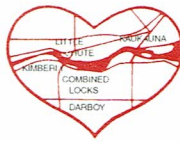


POUNDS CONTRIBUTION BY COMMUNITY - CHLORIDE POUNDS



DISTRICT DIRECTOR:

Brian M. Helminger

**COMMISSIONERS:**

David J. Casper, President
 Bruce M. Siebers, Vice-Pres.
 Patrick E. Hennessey, Secretary
 Kevin P. Coffey
 John W. Sundelius

SERVING:

Combined Locks
 Kaukauna
 Kimberly
 Little Chute
 Darboy S.D.

Heart of the Valley**METROPOLITAN SEWERAGE DISTRICT**

801 THILMANY ROAD
 KAUKAUNA, WISCONSIN 54130
 (920) 766-5731 FAX (920) 766-5733
www.hvmsd.org

Facility: Wisconsin Public Service Corporation - Fox Energy Center
 P.O. Box 5651
 Bismarck, ND 58506

Attn: Account # N2310E

Month: April

Year: 2020

Gallons of Final Effluent Purchased (Billing)

<u>Date</u>	<u>Gallons</u>	<u>Date</u>	<u>Gallons</u>
4/1/2020	2,931,000	4/21/2020	3,082,000
4/2/2020	2,939,000	4/22/2020	2,785,000
4/3/2020	3,046,000	4/23/2020	2,488,000
4/4/2020	3,115,000	4/24/2020	2,899,000
4/5/2020	3,126,000	4/25/2020	2,618,000
4/6/2020	3,125,000	4/26/2020	2,899,000
4/7/2020	3,116,000	4/27/2020	2,948,000
4/8/2020	3,116,000	4/28/2020	2,115,000
4/9/2020	3,121,000	4/29/2020	2,864,000
4/10/2020	2,823,000	4/30/2020	2,671,000
4/11/2020	2,777,000		
4/12/2020	2,764,000		
4/13/2020	2,783,000		
4/14/2020	2,752,000		
4/15/2020	2,817,000	Total:	86,896,000
4/16/2020	3,093,000		
4/17/2020	3,120,000		
4/18/2020	3,015,000		
4/19/2020	2,857,000		
4/20/2020	3,091,000		

Facility: Wisconsin Public Service Corporation - Fox Energy Center
P.O. Box 5651
Bismarck, ND 58506

Attn: Account # N2310E

MONTHLY BILLING

Month: April

Year: 2020

GALLONS PURCHASED: 86,896,000

BILLING RATE: \$0.1592812 PER 1000 GALLONS

TOTAL AMOUNT DUE: \$13,840.90

**Heart of the Valley
Metropolitan Sewerage District**

**Fox Energy Revenue
From the Sale of Final Effluent**

2020

Final Effluent Sent to Fox Energy Facility

Gallons: 338,849,000

Charge Per 1000 Gallons: \$0.1592812 Per 1000 Gallons

Sale of Final Effluent (Revenue Collected): \$53,972.28