APPENDIX O

LIST OF LANDOWNERS ALONG AND ADJACENT TO ROUTE OPTIONS

Parcel Number	Name	Name 2	Current	Address	City/State/Zip
395-0092-00015	A G OBRIEN PLUMBING & HEATING		OR CURRENT OCCUPANT	4907 LIGHTNING DR	DULUTH MN 55811
Project Mailing List	Alan Widell		OR CURRENT OCCUPANT	3537 Park Drive	HERMANTOWN MN 55810
010-3265-00020	ALDRICH TERRY E & MARY E		OR CURRENT OCCUPANT	2119 MILLER CREEK DR	DULUTH MN 55812
010-0385-00220	ALEXANDER NICHOLAS		OR CURRENT OCCUPANT	1919 MIDDLE LN	DULUTH MN 55811
395-0010-04540	ALEXSON ELIZABETH E & BLOW ERIK A		OR CURRENT OCCUPANT	5433 MAPLE GROVE RD	DULUTH MN 55811
010-2710-02550	ALLETE INC / MINNESOTA POWER		OR CURRENT OCCUPANT	30 W SUPERIOR ST	DULUTH MN 55802
010-2710-02050	ALLETE INC / MINNESOTA POWER		OR CURRENT OCCUPANT	30 W SUPERIOR ST	DULUTH MN 55802
010-2741-00595	ALLETE INC / MINNESOTA POWER		OR CURRENT OCCUPANT	30 W SUPERIOR ST	DULUTH MN 55802
395-0010-03825	ALLETE INC / MINNESOTA POWER		OR CURRENT OCCUPANT	30 W SUPERIOR ST	DULUTH MN 55802
395-0010-09220	ALLETE INC / MINNESOTA POWER		OR CURRENT OCCUPANT	30 W SUPERIOR ST	DULUTH MN 55802
395-0010-09212	ALLETE INC / MINNESOTA POWER		OR CURRENT OCCUPANT	30 W SUPERIOR ST	DULUTH MN 55802
010-2710-02150	ALLETE INC / MINNESOTA POWER		OR CURRENT OCCUPANT	30 W SUPERIOR ST	DULUTH MN 55802
010-2741-00580	ALLETE INC / MINNESOTA POWER		OR CURRENT OCCUPANT	30 W SUPERIOR ST	DULUTH MN 55802
010-2741-00070	ALLETE INC / MINNESOTA POWER		OR CURRENT OCCUPANT	30 W SUPERIOR ST	DULUTH MN 55802
010-2741-00910	ALLETE INC / MINNESOTA POWER		OR CURRENT OCCUPANT	30 W SUPERIOR ST	DULUTH MN 55802
010-2741-00080	ALLETE INC / MINNESOTA POWER		OR CURRENT OCCUPANT	30 W SUPERIOR ST	DULUTH MN 55802
010-3520-00350	ALLETE INC / MINNESOTA POWER		OR CURRENT OCCUPANT	30 W SUPERIOR ST	DULUTH MN 55802
010-3520-00210	ALLETE INC / MINNESOTA POWER		OR CURRENT OCCUPANT	30 W SUPERIOR ST	DULUTH MN 55802
010-2741-00615	ALLETE INC / MINNESOTA POWER		OR CURRENT OCCUPANT	30 W SUPERIOR ST	DULUTH MN 55802
010-2741-00660	ALLETE INC / MINNESOTA POWER		OR CURRENT OCCUPANT	30 W SUPERIOR ST	DULUTH MN 55802
010-3520-00070	ALLETE INC / MINNESOTA POWER		OR CURRENT OCCUPANT	30 W SUPERIOR ST	DULUTH MN 55802

Parcel Number	Name	Name 2	Current	Address	City/State/Zip
395-0010-09015	ALLETE INC / MINNESOTA POWER		OR CURRENT OCCUPANT	30 W SUPERIOR ST	DULUTH MN 55802
395-0010-09182	ALLETE INC / MINNESOTA POWER		OR CURRENT OCCUPANT	30 W SUPERIOR ST	DULUTH MN 55802
395-0010-09215	ALLETE INC / MINNESOTA POWER		OR CURRENT OCCUPANT	30 W SUPERIOR ST	DULUTH MN 55802
395-0010-09170	ALLETE INC / MINNESOTA POWER		OR CURRENT OCCUPANT	30 W SUPERIOR ST	DULUTH MN 55802
395-0010-09225	ALLETE INC / MINNESOTA POWER		OR CURRENT OCCUPANT	30 W SUPERIOR ST	DULUTH MN 55802
395-0180-00040	ALLETE INC / MINNESOTA POWER		OR CURRENT OCCUPANT	30 W SUPERIOR ST	DULUTH MN 55802
395-0010-04405	ALLETE INC / MINNESOTA POWER		OR CURRENT OCCUPANT	30 W SUPERIOR ST	DULUTH MN 55802
010-0070-00010	ALLETE INC / MINNESOTA POWER		OR CURRENT OCCUPANT	30 W SUPERIOR ST	DULUTH MN 55802
395-0092-00161	ALUCAB LLC	ATTN: KELLY OTOOLE	OR CURRENT OCCUPANT	957 86TH AVE W	DULUTH MN 55808
010-0164-00231	AMERICAN PRECISION ASSEMBLERS INC		OR CURRENT OCCUPANT	3815 PROSPERITY RD	DULUTH MN 55811
010-0164-00160	AMERICAN PRECISION ASSEMBLERS INC		OR CURRENT OCCUPANT	3815 PROSPERITY RD	DULUTH MN 55811
395-0012-00060	AMERIKS ROBERTS	C/O BROWN VIJA	OR CURRENT OCCUPANT	13224 N VISTA DEL LAGO	FOUNTAIN HILLS AZ 85268
395-0010-08700	ANDERSON ANGELA		OR CURRENT OCCUPANT	8384 COLTON AVE	WOODBURY MN 55125
010-0070-00190	ANDERSON KAROLE AILENE		OR CURRENT OCCUPANT	3230 N 77TH AVE W	DULUTH MN 55810
010-0070-00410	ANDERSON KAROLE AILENE		OR CURRENT OCCUPANT	3230 N 77TH AVE W	DULUTH MN 55810
010-0070-00200	ANDERSON KAROLE AILENE		OR CURRENT OCCUPANT	3230 N 77TH AVE W	DULUTH MN 55810
010-3520-00240	ANKARLO MAGNUS		OR CURRENT OCCUPANT	4117 N 79TH AVE W	DULUTH MN 55810
395-0070-00988	ASHBAUGH TIMOTHY A		OR CURRENT OCCUPANT	5371 MAPLE GROVE RD	HERMANTOWN MN 55811
395-0010-08410	ATCHISON LEE & MEREDITH		OR CURRENT OCCUPANT	5611 ROSE RD	DULUTH MN 55811
395-0010-08415	ATCHISON LEE & MEREDITH		OR CURRENT OCCUPANT	5611 ROSE RD	DULUTH MN 55811
395-0010-08405	ATCHISON LEE & MEREDITH		OR CURRENT OCCUPANT	5611 ROSE RD	DULUTH MN 55811

Parcel Number	Name	Name 2	Current	Address	City/State/Zip
010-3265-00040	AUS JOY		OR CURRENT OCCUPANT	2123 MILLER CREEK DR	DULUTH MN 55811
010-2741-00031	AUTIO JOSEPH M & BOCHNA LAUREN L		OR CURRENT OCCUPANT	2901 GETCHELL RD	DULUTH MN 55810
010-0385-00240	BARKLEY SANDRA M		OR CURRENT OCCUPANT	1905 MIDDLE LANE	DULUTH MN 55811
395-0010-08591	BATES THOMAS & JOANNE		OR CURRENT OCCUPANT	5369 MORRIS THOMAS RD	HERMANTOWN MN 55810
395-0092-00085	BDS GROUP LLC		OR CURRENT OCCUPANT	5977 WARGIN RD	DULUTH MN 55810
395-0092-00080	BDS GROUP LLC		OR CURRENT OCCUPANT	5977 WARGIN RD	DULUTH MN 55810
395-0010-08430	BEADLE PHILIP D		OR CURRENT OCCUPANT	5418 HERMANTOWN RD	HERMANTOWN MN 55810
395-0010-08440	BEADLE PHILIP D		OR CURRENT OCCUPANT	5418 HERMANTOWN RD	HERMANTOWN MN 55810
395-0012-00392	BELLMORE BRIAN		OR CURRENT OCCUPANT	3511 GARDEN PARK DR	HERMANTOWN MN 55811
395-0010-04525	BENNETT FAY		OR CURRENT OCCUPANT	4150 LINDAHL RD	DULUTH MN 55811
010-3263-00020	BERGERSON DONALD E & BARBARA		OR CURRENT OCCUPANT	2118 MILLER CREEK DR #34	DULUTH MN 55811
395-0102-00100	BERGH THOMAS & KAREN		OR CURRENT OCCUPANT	4087 MISTY MORNING DR	HERMANTOWN MN 55811
395-0086-00171	BERGSTEDT EMMILY R		OR CURRENT OCCUPANT	3521 LITTLE CREEK PLACE	HERMANTOWN MN 55811
010-2710-02600	BERGUM THOMAS & LADONNA		OR CURRENT OCCUPANT	3400 NORTON RD	DULUTH MN 55803
010-2710-00810	BERGUM THOMAS & LADONNA		OR CURRENT OCCUPANT	3400 NORTON RD	DULUTH MN 55803
395-0010-09761	BERNTSEN DALE L		OR CURRENT OCCUPANT	3684 WARGIN RD	DULUTH MN 55810
395-0010-05795	BIANCHI JAMES T		OR CURRENT OCCUPANT	5359 HERMANTOWN RD	HERMANTOWN MN 55810
010-3263-00030	BIRCH POINT FAMILY CABIN LLC	C/O GORDON C AMUNDSON	OR CURRENT OCCUPANT	1614 TREEHOUSE CIRCLE	SARASOTA FL 34231
395-0120-00070	BIRKLAND DUSTIN & MANDY		OR CURRENT OCCUPANT	3526 PARK DR	HERMANTOWN MN 55810
395-0120-00060	BIRKLAND DUSTIN & MANDY		OR CURRENT OCCUPANT	3526 PARK DR	HERMANTOWN MN 55810
010-0220-00010	BLAUROCK FAMILY PARTNERSHIP LLC		OR CURRENT OCCUPANT	9818 GREENSPORT RD	ASHVILLE AL 35953

Parcel Number	Name	Name 2	Current	Address	City/State/Zip
395-0012-00112	BODELL JOHN D		OR CURRENT OCCUPANT	5351 ST LOUIS RIV RD	HERMANTOWN MN 55810
395-0012-00100	BODELL JOHN D		OR CURRENT OCCUPANT	5351 ST LOUIS RIV RD	HERMANTOWN MN 55810
010-2741-00920	BODELL MARY & PAUL		OR CURRENT OCCUPANT	8101 VINLAND ST	DULUTH MN 55810
395-0012-00113	BODELL RONALD J & LINDA		OR CURRENT OCCUPANT	5349 ST LOUIS RIVER RD	DULUTH MN 55810
010-2741-00038	BODIN CHAD		OR CURRENT OCCUPANT	2925 GETCHELL RD	DULUTH MN 55811
010-3268-00010	BOESE DIANE & MICHAEL C		OR CURRENT OCCUPANT	2100 MILLER CREEK DR UNIT 57	DULUTH MN 55811
010-2710-01000	BOLF WAYNE P		OR CURRENT OCCUPANT	2512 NORTON RD	DULUTH MN 55803
395-0010-09382	BOOTH KEVIN M		OR CURRENT OCCUPANT	5510 MORRIS THOMAS RD	HERMANTOWN MN 55811
010-2710-00830	BORICH ZACH & ANDREA L		OR CURRENT OCCUPANT	3410 NORTON RD	DULUTH MN 55803
010-2710-00820	BORICH ZACH & ANDREA L		OR CURRENT OCCUPANT	3410 NORTON RD	DULUTH MN 55803
395-0120-00180	BOSTON MICHAEL A		OR CURRENT OCCUPANT	3536 PARK DR	DULUTH MN 55810
395-0180-00010	BOWEN RANDY & MARLENE		OR CURRENT OCCUPANT	4149 UGSTAD RD	DULUTH MN 55811
010-3267-00070	BRAUKMANN NORLEEN G		OR CURRENT OCCUPANT	2109 MILLER CREEK DR UNIT 51	DULUTH MN 55811
395-0012-00360	BREEMEERSCH DEREK A		OR CURRENT OCCUPANT	5265 ST LOUIS RIVER RD	HERMANTOWN MN 55811
010-0355-00020	BRIXMOR SPE 5 LLC		OR CURRENT OCCUPANT	500 E BROWARD BLVD STE 1130	FT LAUDERDALE FL 33394
395-0014-00185	BROWN MELANIE		OR CURRENT OCCUPANT	4781 STIMSON TRL	WOODBURY MN 55129
395-0012-00050	BRUTGER TAMMY L & RAYMOND F		OR CURRENT OCCUPANT	1317 KENWOOD AVE	DULUTH MN 55811
010-2741-00161	BURGESS STEVEN & KATHY		OR CURRENT OCCUPANT	8901 SAINT LOUIS RIVER RD	DULUTH MN 55810
010-2741-00160	BURGESS STEVEN & KATHY		OR CURRENT OCCUPANT	8901 SAINT LOUIS RIVER RD	DULUTH MN 55810
395-0092-00130	BUSINESS PROPERTIES LLC		OR CURRENT OCCUPANT	PO BOX 2706	FARGO ND 58108
010-0385-00160	CALDWELL MICHAEL P & NICOLE		OR CURRENT OCCUPANT	1949 MIDDLE LANE	DULUTH MN 55811

Parcel Number	Name	Name 2	Current	Address	City/State/Zip
395-0070-00989	CAMPBELL RONALD R & NANCY J		OR CURRENT OCCUPANT	5365 MAPLE GROVE RD	HERMANTOWN MN 55811
010-3264-00030	CARLSON DAVID C		OR CURRENT OCCUPANT	2155 MILLER CREEK DR	DULUTH MN 55811
010-3259-00030	CARLSON EDWIN N		OR CURRENT OCCUPANT	2138 MILLER CREEK DRV	DULUTH MN 55811
010-2710-01050	CARLSON GREGORY & TERI		OR CURRENT OCCUPANT	2202 NORTON RD	DULUTH MN 55803
395-0096-00040	CARLSON HOMES OF DULUTH INC		OR CURRENT OCCUPANT	PO BOX 15176	DULUTH MN 55815-0176
395-0096-00050	CARLSON HOMES OF DULUTH INC		OR CURRENT OCCUPANT	PO BOX 15176	DULUTH MN 55815-0176
010-2710-01040	CARLSON RICHARD H		OR CURRENT OCCUPANT	2010 NORTON RD	DULUTH MN 55803
395-0010-03700	CARLSON STEVEN R		OR CURRENT OCCUPANT	P O BOX 15176	DULUTH MN 55815-0176
395-0010-03705	CARLSON STEVEN R		OR CURRENT OCCUPANT	P O BOX 15176	DULUTH MN 55815-0176
395-0010-04110	CARLSON STEVEN R		OR CURRENT OCCUPANT	P O BOX 15176	DULUTH MN 55815-0176
395-0010-09765	CARLSON THOMAS G JR		OR CURRENT OCCUPANT	3668 WARGIN RD	HERMANTOWN MN 55810
Project Mailing List	Carol Jeanne Hansen		OR CURRENT OCCUPANT	611 Walnut Street	DULUTH MN 55811
010-3520-00360	CARR JAMES R & JANE M		OR CURRENT OCCUPANT	4108 N 79TH AVE W	DULUTH MN 55810-1149
010-3520-00380	CARR JAMES R & JANE M		OR CURRENT OCCUPANT	4108 N 79TH AVE W	DULUTH MN 55810-1149
010-3520-00230	CARROLL CODY J		OR CURRENT OCCUPANT	4121 N 81ST AVE W	DULUTH MN 55810
010-3520-00190	CARROLL JAMES P		OR CURRENT OCCUPANT	4121 NO 81ST AVE W	DULUTH MN 55810
010-3520-00220	CARROLL JAMES P		OR CURRENT OCCUPANT	4121 NO 81ST AVE W	DULUTH MN 55810
010-3520-00090	CARROLL JAMES P		OR CURRENT OCCUPANT	4121 NO 81ST AVE W	DULUTH MN 55810
010-3520-00180	CARROLL JAMES P		OR CURRENT OCCUPANT	4121 NO 81ST AVE W	DULUTH MN 55810
010-3520-00050	CARROLL JAMES P		OR CURRENT OCCUPANT	4121 NO 81ST AVE W	DULUTH MN 55810
010-3520-00100	CARROLL JAMES P		OR CURRENT OCCUPANT	4121 NO 81ST AVE W	DULUTH MN 55810

Parcel Number	Name	Name 2	Current	Address	City/State/Zip
010-3255-00040	CARTIE JANICE M		OR CURRENT OCCUPANT	2150 MILLER CREEK DR	DULUTH MN 55811
010-0385-00270	CEDAR RIDGE ESTATES HOMEOWNERS ASSN		OR CURRENT OCCUPANT	1919 MIDDLE LN	DULUTH MN 55811
395-0072-00150	CEKALLA HEATHER & MORGAN		OR CURRENT OCCUPANT	3518 GARDEN PARK DR	HERMANTOWN MN 55810
395-0114-00040	CHIPS HOLDINGS LLC		OR CURRENT OCCUPANT	23350 COUNTY RD 10	CORCORAN MN 55357
395-0114-00010	CHIPS HOLDINGS LLC		OR CURRENT OCCUPANT	23350 COUNTY RD 10	CORCORAN MN 55357
010-2710-04660	CITY OF DULUTH	C/O CITY AUDITOR	OR CURRENT OCCUPANT	107 CITY HALL	DULUTH MN 55802
010-2741-01120	CITY OF DULUTH	C/O CITY AUDITOR	OR CURRENT OCCUPANT	107 CITY HALL	DULUTH MN 55802
010-2710-02300	CITY OF DULUTH	C/O CITY AUDITOR	OR CURRENT OCCUPANT	107 CITY HALL	DULUTH MN 55802
010-2710-02381	CITY OF DULUTH	CITY ATTORNEYS OFFICE	OR CURRENT OCCUPANT	CITY HALL	DULUTH MN 55802
010-3257-00050	CITY OF DULUTH	C/O CITY CLERK	OR CURRENT OCCUPANT	411 W 1ST ST RM 330	DULUTH MN 55802-1104
010-2710-02340	CITY OF DULUTH	C/O CITY CLERK	OR CURRENT OCCUPANT	411 W 1ST ST RM 330	DULUTH MN 55802-1104
010-2710-02382	CITY OF DULUTH	C/O CITY CLERK	OR CURRENT OCCUPANT	411 W 1ST ST RM 330	DULUTH MN 55802-1104
395-0010-04340	CITY OF HERMANTOWN	ATTN: CITY CLERK	OR CURRENT OCCUPANT	5105 MAPLE GROVE RD	DULUTH MN 55811
395-0010-04400	CITY OF HERMANTOWN	ATTN: CITY CLERK	OR CURRENT OCCUPANT	5105 MAPLE GROVE RD	DULUTH MN 55811
395-0010-08595	CITY OF HERMANTOWN	ATTN: CITY CLERK	OR CURRENT OCCUPANT	5105 MAPLE GROVE RD	DULUTH MN 55811
395-0092-00185	CITY OF HERMANTOWN	NANCY SIROIS CLERK	OR CURRENT OCCUPANT	5255 MAPLE GROVE RD	HERMANTOWN MN 55811
395-0092-00100	CITY OF HERMANTOWN		OR CURRENT OCCUPANT	5105 MAPLE GROVE RD	HERMANTOWN MN 55811
395-0010-04380	CITY OF HERMANTOWN		OR CURRENT OCCUPANT	5105 MAPLE GROVE RD	HERMANTOWN MN 55811
395-0010-04390	CITY OF HERMANTOWN		OR CURRENT OCCUPANT	5105 MAPLE GROVE RD	HERMANTOWN MN 55811
395-0069-00110	CITY OF HERMANTOWN		OR CURRENT OCCUPANT	5105 MAPLE GROVE RD	HERMANTOWN MN 55811
395-0037-00070	CITY OF HERMANTOWN		OR CURRENT OCCUPANT	5255 MAPLE GROVE RD	HERMANTOWN MN 55811

Parcel Number	Name	Name 2	Current	Address	City/State/Zip
395-0010-09042	CLEMONS JACOB E		OR CURRENT OCCUPANT	5796 OLD HWY 2	HERMANTOWN MN 55810
395-0010-04102	COBB RACHEL M		OR CURRENT OCCUPANT	4155 GETCHELL RD	HERMANTOWN MN 55811
185-0240-00041	CONDON KELLY & KARL		OR CURRENT OCCUPANT	2405 VENICE ST	PROCTOR MN 55810
010-2671-00030	COSTCO WHOLESALE CORPORATION		OR CURRENT OCCUPANT	999 LAKE DR	ISSAQUAH WA 98027
010-3520-00320	COWEN MARY L & BANTLE ELENA R		OR CURRENT OCCUPANT	4116 N 79TH AVE W	DULUTH MN 55810
010-2741-00593	COX DEAN		OR CURRENT OCCUPANT	7820 ST LOUIS RIVER RD	DULUTH MN 55810
395-0010-03615	CROSSAMERICA PARTNERS LP		OR CURRENT OCCUPANT	PO BOX 385	ALLENTOWN PA 18105-0385
395-0010-03833	CRW HERMANTOWN LLC		OR CURRENT OCCUPANT	10301 WOODCREST DRIVE NW	COON RAPIDS MN 55433
395-0010-03834	CRW HERMANTOWN LLC		OR CURRENT OCCUPANT	10301 WOODCREST DRIVE NW	COON RAPIDS MN 55433
395-0010-03832	CRW HERMANTOWN LLC		OR CURRENT OCCUPANT	10301 WOODCREST DRIVE NW	COON RAPIDS MN 55433
395-0010-03760	CS DULUTH OWNER LLC		OR CURRENT OCCUPANT	910 HARVEST DR STE 105	BLUE BELL PA 19422
395-0010-03770	CS DULUTH OWNER LLC		OR CURRENT OCCUPANT	910 HARVEST DR STE 105	BLUE BELL PA 19422
010-3255-00050	CUMMINGS KARIN E		OR CURRENT OCCUPANT	2153 MILLER CREEK DR	DULUTH MN 55811
010-2710-01045	CURRENT OCCUPANT			2016 Norton Rd	DULUTH MN 55803
010-2710-00970	CURRENT OCCUPANT			2410 Norton Rd	DULUTH MN 55803
010-2710-01010	CURRENT OCCUPANT			2622 Norton Rd	DULUTH MN 55803
010-2710-00780	CURRENT OCCUPANT			3122 Norton Rd	DULUTH MN 55803
010-2710-01460	CURRENT OCCUPANT			3716 Norton Rd	DULUTH MN 55803
010-0070-00190	CURRENT OCCUPANT			3232 N 77th Ave W	DULUTH MN 55810
010-2741-00595	CURRENT OCCUPANT			3301 N 77th Ave W	DULUTH MN 55810
010-3520-00535	CURRENT OCCUPANT			4039 N 77th Ave W	DULUTH MN 55810

Parcel Number	Name	Name 2	Current	Address	City/State/Zip
010-0070-00040	CURRENT OCCUPANT			7430 Mineral St	DULUTH MN 55810
010-3520-00600	CURRENT OCCUPANT			7701 Saint Louis River Rd	DULUTH MN 55810
010-2741-00592	CURRENT OCCUPANT			7718 Saint Louis River Rd	DULUTH MN 55810
010-2741-00593	CURRENT OCCUPANT			7820 Saint Louis River Rd	DULUTH MN 55810
010-2741-00590	CURRENT OCCUPANT			7902 Saint Louis River Rd	DULUTH MN 55810
010-2741-00630	CURRENT OCCUPANT			8110 Saint Louis River Rd	DULUTH MN 55810
395-0120-00070	CURRENT OCCUPANT			3530 Park Dr	HERMANTOWN MN 55810
395-0011-00040	CURRENT OCCUPANT			3539 Hahn Rd	HERMANTOWN MN 55810
395-0012-00380	CURRENT OCCUPANT			3548 Ugstad Rd	HERMANTOWN MN 55810
395-0012-00090	CURRENT OCCUPANT			3549 Ugstad Rd	HERMANTOWN MN 55810
395-0010-09772	CURRENT OCCUPANT			3632 Wargin Rd	HERMANTOWN MN 55810
395-0010-09770	CURRENT OCCUPANT			3636 Wargin Rd	HERMANTOWN MN 55810
395-0010-08625	CURRENT OCCUPANT			3719 Ugstad Rd	HERMANTOWN MN 55810
395-0014-00186	CURRENT OCCUPANT			5060 Willoughby Ln	HERMANTOWN MN 55810
395-0014-00182	CURRENT OCCUPANT			5070 Willoughby Ln	HERMANTOWN MN 55810
395-0014-00181	CURRENT OCCUPANT			5075 Willoughby Ln	HERMANTOWN MN 55810
395-0014-00184	CURRENT OCCUPANT			5080 Willoughby Ln	HERMANTOWN MN 55810
395-0014-00180	CURRENT OCCUPANT			5101 Sheridan Rd	HERMANTOWN MN 55810
395-0120-00200	CURRENT OCCUPANT			5104 Sheridan Rd	HERMANTOWN MN 55810
395-0120-00310	CURRENT OCCUPANT			5105 Sheridan Rd	HERMANTOWN MN 55810
395-0120-00190	CURRENT OCCUPANT			5120 Sheridan Rd	HERMANTOWN MN 55810

Parcel Number	Name	Name 2	Current	Address	City/State/Zip
395-0120-00010	CURRENT OCCUPANT			5127 Sheridan Rd	HERMANTOWN MN 55810
395-0120-00040	CURRENT OCCUPANT			5139 Youngdahl Rd	HERMANTOWN MN 55810
395-0013-00020	CURRENT OCCUPANT			5185 Youngdahl Rd	HERMANTOWN MN 55810
395-0012-00370	CURRENT OCCUPANT			5253 Saint Louis River Rd	HERMANTOWN MN 55810
395-0012-00360	CURRENT OCCUPANT			5265 Saint Louis River Rd	HERMANTOWN MN 55810
395-0012-00350	CURRENT OCCUPANT			5273 Saint Louis River Rd	HERMANTOWN MN 55810
395-0012-00343	CURRENT OCCUPANT			5279 Saint Louis River Rd	HERMANTOWN MN 55810
395-0012-00113	CURRENT OCCUPANT			5349 Saint Louis River Rd	HERMANTOWN MN 55810
395-0012-00112	CURRENT OCCUPANT			5351 Saint Louis River Rd	HERMANTOWN MN 55810
395-0012-00050	CURRENT OCCUPANT			5369 Saint Louis River Rd	HERMANTOWN MN 55810
395-0010-09040	CURRENT OCCUPANT			5768 Old Hwy 2	HERMANTOWN MN 55810
395-0010-09220	CURRENT OCCUPANT			5816 Morris Thomas Rd	HERMANTOWN MN 55810
395-0010-09212	CURRENT OCCUPANT			5818 Morris Thomas Rd	HERMANTOWN MN 55810
395-0010-09016	CURRENT OCCUPANT			5829 Morris Thomas Rd	HERMANTOWN MN 55810
395-0010-09014	CURRENT OCCUPANT			5833 Morris Thomas Rd	HERMANTOWN MN 55810
010-2710-04565	CURRENT OCCUPANT			1710 Sundby Rd	DULUTH MN 55811
010-2710-02550	CURRENT OCCUPANT			1820 North Rd	DULUTH MN 55811
010-0385-00240	CURRENT OCCUPANT			1905 Middle Ln	DULUTH MN 55811
010-0385-00200	CURRENT OCCUPANT			1929 Middle Ln	DULUTH MN 55811
010-0385-00190	CURRENT OCCUPANT			1933 Middle Ln	DULUTH MN 55811
010-0385-00180	CURRENT OCCUPANT			1939 Middle Ln	DULUTH MN 55811

Parcel Number	Name	Name 2	Current	Address	City/State/Zip
010-0385-00170	CURRENT OCCUPANT			1945 Middle Ln	DULUTH MN 55811
010-0385-00160	CURRENT OCCUPANT			1949 Middle Ln	DULUTH MN 55811
010-0385-00130	CURRENT OCCUPANT			1950 Middle Ln	DULUTH MN 55811
010-0385-00150	CURRENT OCCUPANT			1953 Middle Ln	DULUTH MN 55811
010-0385-00140	CURRENT OCCUPANT			1954 Middle Ln	DULUTH MN 55811
010-3269-00030	CURRENT OCCUPANT			2096 Miller Creek Dr	DULUTH MN 55811
010-3268-00010	CURRENT OCCUPANT			2100 Miller Creek Dr	DULUTH MN 55811
010-3267-00060	CURRENT OCCUPANT			2103 Miller Creek Dr	DULUTH MN 55811
010-3267-00050	CURRENT OCCUPANT			2105 Miller Creek Dr	DULUTH MN 55811
010-3267-00080	CURRENT OCCUPANT			2107 Miller Creek Dr	DULUTH MN 55811
010-3267-00070	CURRENT OCCUPANT			2109 Miller Creek Dr	DULUTH MN 55811
010-3266-00020	CURRENT OCCUPANT			2110 Miller Creek Dr	DULUTH MN 55811
010-3264-00010	CURRENT OCCUPANT			2111 Miller Creek Dr	DULUTH MN 55811
010-3267-00020	CURRENT OCCUPANT			2115 Miller Creek Dr	DULUTH MN 55811
010-3257-00010	CURRENT OCCUPANT			2115 Miller Trunk Hwy	DULUTH MN 55811
010-3263-00010	CURRENT OCCUPANT			2116 Miller Creek Dr	DULUTH MN 55811
010-3263-00020	CURRENT OCCUPANT			2118 Miller Creek Dr	DULUTH MN 55811
010-3263-00030	CURRENT OCCUPANT			2120 Miller Creek Dr	DULUTH MN 55811
010-3263-00040	CURRENT OCCUPANT			2122 Miller Creek Dr	DULUTH MN 55811
010-3256-00040	CURRENT OCCUPANT			2130 Miller Creek Dr	DULUTH MN 55811
010-3254-00020	CURRENT OCCUPANT			2131 Miller Creek Dr	DULUTH MN 55811

Parcel Number	Name	Name 2	Current	Address	City/State/Zip
010-3254-00010	CURRENT OCCUPANT			2133 Miller Creek Dr	DULUTH MN 55811
010-3259-00030	CURRENT OCCUPANT			2138 Miller Creek Dr	DULUTH MN 55811
010-3259-00080	CURRENT OCCUPANT			2139 Miller Creek Dr	DULUTH MN 55811
010-3261-00010	CURRENT OCCUPANT			2142 Miller Creek Dr	DULUTH MN 55811
010-3254-00040	CURRENT OCCUPANT			2143 Miller Creek Dr	DULUTH MN 55811
010-3261-00030	CURRENT OCCUPANT			2146 Miller Creek Dr	DULUTH MN 55811
010-3255-00060	CURRENT OCCUPANT			2151 Miller Creek Dr	DULUTH MN 55811
010-3255-00010	CURRENT OCCUPANT			2152 Miller Creek Dr	DULUTH MN 55811
010-3262-00040	CURRENT OCCUPANT			2158 Miller Creek Dr	DULUTH MN 55811
010-3262-00020	CURRENT OCCUPANT			2162 Miller Creek Dr	DULUTH MN 55811
010-2710-02266	CURRENT OCCUPANT			2508 Swan Lake Rd	DULUTH MN 55811
010-2710-04521	CURRENT OCCUPANT			2521 Miller Trunk Hwy	DULUTH MN 55811
010-2710-02050	CURRENT OCCUPANT			3001 Swan Lake Rd	DULUTH MN 55811
010-2710-02410	CURRENT OCCUPANT			3626 Kruger Rd	DULUTH MN 55811
010-0164-00170	CURRENT OCCUPANT			3805 Prosperity Rd	DULUTH MN 55811
010-2710-02280	CURRENT OCCUPANT			4009 W Arrowhead Rd	DULUTH MN 55811
010-2710-02190	CURRENT OCCUPANT			4010 Kruger Rd	DULUTH MN 55811
010-2710-02267	CURRENT OCCUPANT			4023 W Arrowhead Rd	DULUTH MN 55811
010-2710-04625	CURRENT OCCUPANT			4152 Haines Rd	DULUTH MN 55811
010-2710-04628	CURRENT OCCUPANT			4180 Haines Rd	DULUTH MN 55811
010-2710-02160	CURRENT OCCUPANT			4319 W Arrowhead Rd	DULUTH MN 55811

Parcel Number	Name	Name 2	Current	Address	City/State/Zip
010-2710-02040	CURRENT OCCUPANT			4330 Kruger Rd	DULUTH MN 55811
010-2710-02516	CURRENT OCCUPANT			4348 Rice Lake Rd	DULUTH MN 55811
010-2710-02070	CURRENT OCCUPANT			4414 Kruger Rd	DULUTH MN 55811
010-0355-00020	CURRENT OCCUPANT			5115 Burning Tree Rd	DULUTH MN 55811
010-0355-00010	CURRENT OCCUPANT			5401 Burning Tree Rd	DULUTH MN 55811
395-0086-00171	CURRENT OCCUPANT			3521 Little Creek Pl	HERMANTOWN MN 55811
395-0010-05660	CURRENT OCCUPANT			4076 Lindahl Rd	HERMANTOWN MN 55811
395-0010-04126	CURRENT OCCUPANT			4114 Lavaque Rd	HERMANTOWN MN 55811
395-0010-04340	CURRENT OCCUPANT			4118 Ugstad Rd	HERMANTOWN MN 55811
395-0180-00050	CURRENT OCCUPANT			4119 Ugstad Rd	HERMANTOWN MN 55811
395-0010-04127	CURRENT OCCUPANT			4122 Lavaque Rd	HERMANTOWN MN 55811
395-0010-04195	CURRENT OCCUPANT			4133 Stebner Rd	HERMANTOWN MN 55811
395-0155-00010	CURRENT OCCUPANT			4165 Loberg Ave	HERMANTOWN MN 55811
395-0092-00086	CURRENT OCCUPANT			4171 Thunderchief Ln	HERMANTOWN MN 55811
395-0092-00035	CURRENT OCCUPANT			4172 Thunderchief Ln	HERMANTOWN MN 55811
395-0155-00020	CURRENT OCCUPANT			4181 Loberg Ave	HERMANTOWN MN 55811
395-0010-03821	CURRENT OCCUPANT			4190 Loberg Ave	HERMANTOWN MN 55811
395-0010-03725	CURRENT OCCUPANT			4195 Westberg Rd	HERMANTOWN MN 55811
395-0010-03822	CURRENT OCCUPANT			4197 Haines Rd	HERMANTOWN MN 55811
395-0125-00010	CURRENT OCCUPANT			4221 Haines Rd	HERMANTOWN MN 55811
395-0010-03652	CURRENT OCCUPANT			4702 Miller Trunk Hwy	HERMANTOWN MN 55811

Parcel Number	Name	Name 2	Current	Address	City/State/Zip
395-0139-00030	CURRENT OCCUPANT			4703 Market St	HERMANTOWN MN 55811
395-0139-00020	CURRENT OCCUPANT			4707 Market St	HERMANTOWN MN 55811
395-0090-00105	CURRENT OCCUPANT			4712 Lindgren Rd	HERMANTOWN MN 55811
395-0010-03824	CURRENT OCCUPANT			4712 Miller Trunk Hwy	HERMANTOWN MN 55811
395-0010-03825	CURRENT OCCUPANT			4725 Lindgren Rd	HERMANTOWN MN 55811
395-0010-03831	CURRENT OCCUPANT			4725 Market St	HERMANTOWN MN 55811
395-0010-03836	CURRENT OCCUPANT			4726 Loberg Ave	HERMANTOWN MN 55811
395-0096-00160	CURRENT OCCUPANT			4833 Adrian Ln	HERMANTOWN MN 55811
395-0096-00150	CURRENT OCCUPANT			4839 Adrian Ln	HERMANTOWN MN 55811
395-0086-00210	CURRENT OCCUPANT			4904 Wild Rose Trl	HERMANTOWN MN 55811
395-0086-00200	CURRENT OCCUPANT			4908 Wild Rose Trl	HERMANTOWN MN 55811
395-0086-00170	CURRENT OCCUPANT			4910 Wild Rose Trl	HERMANTOWN MN 55811
395-0086-00160	CURRENT OCCUPANT			4912 Wild Rose Trl	HERMANTOWN MN 55811
395-0092-00030	CURRENT OCCUPANT			4917 Lightning Dr	HERMANTOWN MN 55811
395-0092-00165	CURRENT OCCUPANT			4918 Lightning Dr	HERMANTOWN MN 55811
395-0092-00162	CURRENT OCCUPANT			4940 Lightning Dr	HERMANTOWN MN 55811
395-0092-00170	CURRENT OCCUPANT			4950 Lightning Dr	HERMANTOWN MN 55811
395-0092-00160	CURRENT OCCUPANT			4970 Lightning Dr	HERMANTOWN MN 55811
395-0092-00100	CURRENT OCCUPANT			4971 Lightning Dr	HERMANTOWN MN 55811
395-0092-00130	CURRENT OCCUPANT			4981 Lightning Dr	HERMANTOWN MN 55811
395-0092-00230	CURRENT OCCUPANT			4992 Lightning Dr	HERMANTOWN MN 55811

Parcel Number	Name	Name 2	Current	Address	City/State/Zip
395-0092-00145	CURRENT OCCUPANT			4995 Lightning Dr	HERMANTOWN MN 55811
395-0010-04140	CURRENT OCCUPANT			5035 Maple Grove Rd	HERMANTOWN MN 55811
395-0010-04400	CURRENT OCCUPANT			5105 Maple Grove Rd	HERMANTOWN MN 55811
395-0010-04360	CURRENT OCCUPANT			5211 Maple Grove Rd	HERMANTOWN MN 55811
395-0010-04362	CURRENT OCCUPANT			5223 Maple Grove Rd	HERMANTOWN MN 55811
395-0010-04352	CURRENT OCCUPANT			5233 Maple Grove Rd	HERMANTOWN MN 55811
395-0069-00030	CURRENT OCCUPANT			5321 Split Rail Dr	HERMANTOWN MN 55811
395-0010-04780	CURRENT OCCUPANT			5565 Maple Grove Rd	HERMANTOWN MN 55811
395-0010-04757	CURRENT OCCUPANT			5639 Maple Grove Rd	HERMANTOWN MN 55811
395-0010-08910	CURRENT OCCUPANT			5771 Hwy 2	HERMANTOWN MN 55810
395-0010-08872	CURRENT OCCUPANT			5537 Morris Thomas Rd	HERMANTOWN MN 55810
450-0010-00010	CURRENT OCCUPANT			5389 Hwy 2	DULUTH MN 55810
185-0240-00050	CURRENT OCCUPANT			436 Saint Louis River Rd	PROCTOR MN 55810
185-0102-00010	CURRENT OCCUPANT			432 Saint Louis River Rd	PROCTOR MN 55810
185-0240-00030	CURRENT OCCUPANT			431 Saint Louis River Rd	PROCTOR MN 55810
185-0240-00035	CURRENT OCCUPANT			421 Saint Louis River Rd	PROCTOR MN 55810
395-0010-08712	CURRENT OCCUPANT			3819 Almquist Rd	HERMANTOWN MN 55810
395-0010-08740	CURRENT OCCUPANT			3792 Almquist Rd	HERMANTOWN MN 55810
395-0010-08713	CURRENT OCCUPANT			3762 Midway Rd	HERMANTOWN MN 55810
395-0114-00040	CURRENT OCCUPANT			3761 Midway Rd	HERMANTOWN MN 55810
395-0120-00125	CURRENT OCCUPANT			3503 Lavaque Rd	HERMANTOWN MN 55810

Parcel Number	Name	Name 2	Current	Address	City/State/Zip
395-0012-00115	CURRENT OCCUPANT			3501 Ugstad Rd	HERMANTOWN MN 55810
185-0160-00120	CURRENT OCCUPANT			1717 Lavaque Rd	PROCTOR MN 55810
010-3262-00030	DAILEY JAMES & SHARYL		OR CURRENT OCCUPANT	2156 MILLER CREEK DR	DULUTH MN 55811
395-0010-04195	DALCO	C/O STARK TED III	OR CURRENT OCCUPANT	300 5TH AVE NW	NEW BRIGHTON MN 55112
395-0010-04800	DAVIS RANDY M		OR CURRENT OCCUPANT	5543 MAPLE GROVE RD	HERMANTOWN MN 55811
395-0092-00146	DAWE ENTERPRISES LLC	ATTN: ERIC DAWE	OR CURRENT OCCUPANT	5247 LAVAQUE JUNCTION RD	HERMANTOWN MN 55811
Project Mailing List	Dean Melbostad		OR CURRENT OCCUPANT	3914 Reinke Rd	HERMANTOWN MN 55811
010-3268-00020	DEGERSTEDT DEE & BARBARA		OR CURRENT OCCUPANT	2102 MILLER CREEK DR	DULUTH MN 55811
395-0010-04362	DEPT OF HUMAN SERVICES	STATE OPERATED SERVICE SUPPORT	OR CURRENT OCCUPANT	444 LAFAYETTE RD	ST PAUL MN 55155-3826
185-0160-00010	DEWALL TROY RUSSELL		OR CURRENT OCCUPANT	2317 VENICE ST	PROCTOR MN 55810
395-0010-09758	DIEHL MARSHALL ROBERT		OR CURRENT OCCUPANT	5334 MORRIS THOMAS RD	DULUTH MN 55810
010-3520-00580	DONOFRIO JACQUELINE C & WILLIAM J		OR CURRENT OCCUPANT	4009 N 77TH AVE W	DULUTH MN 55810
395-0010-09772	DOWNES GERARD & NORMA P		OR CURRENT OCCUPANT	3636 WARGIN RD	HERMANTOWN MN 55811
395-0010-08712	DOWNS NICHOLAS & KEELY		OR CURRENT OCCUPANT	3819 ALMQUIST ROAD	HERMANTOWN MN 55810
010-0385-00190	DOWNS SARA		OR CURRENT OCCUPANT	306 W SUPERIOR ST SUITE 200	DULUTH MN 55802
010-2710-02080	DULUTH BIBLE CHURCH		OR CURRENT OCCUPANT	201 W ST ANDREWS ST	DULUTH MN 55803
010-2710-02430	DULUTH YMCA PROPERTY INC		OR CURRENT OCCUPANT	302 W 1ST ST	DULUTH MN 55802
395-0120-00310	DUMARS CHAD M & NICOLE L		OR CURRENT OCCUPANT	5105 SHERIDAN DR	HERMANTOWN MN 55811
395-0120-00300	DUMARS CHAD MICHAEL		OR CURRENT OCCUPANT	5105 SHERIDAN DR	HERMANTOWN MN 55810
Project Mailing List	Dwight Morrison		OR CURRENT OCCUPANT	5560 Highway 194	HERMANTOWN MN 55811
395-0011-00040	EALES BRANDON M		OR CURRENT OCCUPANT	29 S 58TH AVE E	DULUTH MN 55804

Parcel Number	Name	Name 2	Current	Address	City/State/Zip
010-3266-00030	EDWARDS BONNIE		OR CURRENT OCCUPANT	2112 MILLER CREEK DR	DULUTH MN 55811
010-3254-00020	EGGEBRECHT RALPH JAMES & MARILYN R		OR CURRENT OCCUPANT	2131 MILLER CREEK DRIVE	DULUTH MN 55811
395-0072-00250	EHLE ROBERT J		OR CURRENT OCCUPANT	3524 GARDEN PARK DR	HERMANTOWN MN 55811
395-0072-00330	EHLE ROBERT J		OR CURRENT OCCUPANT	3524 GARDEN PARK DR	HERMANTOWN MN 55811
395-0072-00170	EHLE ROBERT J		OR CURRENT OCCUPANT	3524 GARDEN PARK DR	HERMANTOWN MN 55811
010-2710-02272	ELDEN KATHLEEN ANN		OR CURRENT OCCUPANT	4011 W ARROWHEAD RD	DULUTH MN 55811
010-2710-02275	ELDEN KATHLEEN ANN		OR CURRENT OCCUPANT	4011 W ARROWHEAD RD	DULUTH MN 55811
010-3264-00010	ELLIOTT SCOTT M & JACKSON DEEANN R		OR CURRENT OCCUPANT	2111 MILLER CREEK DR UNIT #37	DULUTH MN 55811
395-0072-00050	ELLISON NATHAN & BRITTANY		OR CURRENT OCCUPANT	3504 GARDEN PARK DR	HERMANTOWN MN 55810
395-0092-00030	ELSTAD PROPERTIES LLC		OR CURRENT OCCUPANT	6197 MUNGER SHAW RD	SAGINAW MN 55779
395-0010-08406	ELSTAD RICHARD L		OR CURRENT OCCUPANT	5324 HERMANTOWN RD	DULUTH MN 55810
395-0010-03725	EVI HERMANTOWN I LLC	ATTN JON STRINDEN	OR CURRENT OCCUPANT	322 DEMERS AVE STE 500	GRAND FORKS ND 58201
395-0010-03720	EVI HERMANTOWN I LLC	ATTN JON STRINDEN	OR CURRENT OCCUPANT	322 DEMERS AVE STE 500	GRAND FORKS ND 58201
395-0010-03710	EVI HERMANTOWN I LLC	ATTN JON STRINDEN	OR CURRENT OCCUPANT	322 DEMERS AVE STE 500	GRAND FORKS ND 58201
395-0010-09392	EWER GILBERT W		OR CURRENT OCCUPANT	5534 MORRIS THOMAS RD	HERMANTOWN MN 55811
395-0010-03831	EXPRESS INVESTORS OF DULUTH LLC	C/O LABOVITZ ENTERPRISES	OR CURRENT OCCUPANT	227 W 1ST ST SUITE 950	DULUTH MN 55802
395-0010-03837	EXPRESS INVESTORS OF DULUTH LLC	C/O LABOVITZ ENTERPRISES	OR CURRENT OCCUPANT	227 W 1ST ST SUITE 950	DULUTH MN 55802
185-0160-00070	FAIRBANKS ETHEL L		OR CURRENT OCCUPANT	2205 VENICE ST	PROCTOR MN 55810
395-0014-00910	FAIRBANKS STEVEN & CHRISTINE		OR CURRENT OCCUPANT	3500 STEBNER RD	DULUTH MN 55811
395-0010-09762	FERGUSON JAY M & MARY E		OR CURRENT OCCUPANT	3664 WARGIN RD	HERMANTOWN MN 55811
010-0070-00180	FISHER JANE E		OR CURRENT OCCUPANT	306 FLUBIA AVE	CORAL GABLER FL 33134

Parcel Number	Name	Name 2	Current	Address	City/State/Zip
395-0010-08910	FLAIG CHARLES P		OR CURRENT OCCUPANT	1511 MINNESOTA AVE	DULUTH MN 55802
395-0010-08922	FLAIG CHARLES P		OR CURRENT OCCUPANT	1511 MINNESOTA AVE	DULUTH MN 55802
395-0155-00010	FLEET FARM PROPERTIES LLC		OR CURRENT OCCUPANT	2401 S MEMORIAL DR	APPLETON WI 54915
395-0155-00020	FLEET FARM PROPERTIES LLC		OR CURRENT OCCUPANT	2401 S MEMORIAL DR	APPLETON WI 54915
395-0155-00030	FLEET FARM PROPERTIES LLC		OR CURRENT OCCUPANT	2401 S MEMORIAL DR	APPLETON WI 54915
185-0102-00010	FLETCHER STEVEN M & ASHLEY L		OR CURRENT OCCUPANT	432 ST LOUIS RIVER RD	PROCTOR MN 55810
395-0010-09183	FOLLETT DUSTIN & ALYSSA		OR CURRENT OCCUPANT	1529 LOCKLING RD	CLOQUET MN 55720
395-0120-00150	FREAR DAVID C		OR CURRENT OCCUPANT	3535 PARK DR	HERMANTOWN MN 55810
395-0010-09790	FRYDENLUND JEREMY L		OR CURRENT OCCUPANT	3615 UGSTAD RD	HERMANTOWN MN 55810
395-0096-00010	FUCHS MICHAEL J		OR CURRENT OCCUPANT	4864 ADRIAN LN	DULUTH MN 55811
395-0086-00180	GABLEMAN CLIFFORD D		OR CURRENT OCCUPANT	3519 LITTLE CREEK PL	DULUTH MN 55811-3783
010-2710-02267	GAGNON ANTHONY		OR CURRENT OCCUPANT	1904 N 51ST AVE E	DULUTH MN 55804
395-0092-00035	GAGNON ANTHONY L		OR CURRENT OCCUPANT	1904 N 51ST AVE E	DULUTH MN 55804
395-0014-00183	GAIDIS KENT M		OR CURRENT OCCUPANT	3504 LAVAQUE RD	HERMANTOWN MN 55810
395-0010-09010	GARRICK GAIL		OR CURRENT OCCUPANT	3738 SOLWAY RD	HERMANTOWN MN 55810
395-0010-09000	GARRICK GAIL		OR CURRENT OCCUPANT	3738 SOLWAY RD	HERMANTOWN MN 55810
395-0012-00020	GIBBONS MICHAEL A		OR CURRENT OCCUPANT	4273 GETCHELL RD	HERMANTOWN MN 55811
395-0012-00040	GIBBONS MICHAEL A		OR CURRENT OCCUPANT	4273 GETCHELL RD	HERMANTOWN MN 55811
395-0012-00030	GIBBONS MICHAEL A		OR CURRENT OCCUPANT	4273 GETCHELL RD	HERMANTOWN MN 55811
395-0012-00340	GIBBONS MICHAEL A		OR CURRENT OCCUPANT	4273 GETCHELL RD	HERMANTOWN MN 55811
395-0010-05700	GILBERT GARY M & TERRY A		OR CURRENT OCCUPANT	3986 LINDAHL RD	HERMANTOWN MN 55811

Parcel Number	Name	Name 2	Current	Address	City/State/Zip
395-0010-05710	GILBERT GARY M & TERRY A		OR CURRENT OCCUPANT	3986 LINDAHL RD	HERMANTOWN MN 55811
Project Mailing List	Gloria Wagner		OR CURRENT OCCUPANT	5083 Morris Thomas Rd	HERMANTOWN MN 55811
010-3470-00500	GOOSSENS PAUL J & JOAN O		OR CURRENT OCCUPANT	1816 NORTH RD	DULUTH MN 55811
010-3254-00040	GRAVELLE WILLIAM J		OR CURRENT OCCUPANT	2143 MILLER CREEK DR UNIT 16	DULUTH MN 55811
395-0180-00020	GRAZIER STEVEN & GRACE		OR CURRENT OCCUPANT	4143 UGSTAD RD	DULUTH MN 55811
395-0010-05636	GREEN BRUCE L & VERNON E		OR CURRENT OCCUPANT	5402 MAPLE GROVE RD	HERMANTOWN MN 55811
395-0010-04588	GREEN STEVEN R & CARMEN L		OR CURRENT OCCUPANT	5347 MAPLE GROVE RD	HERMANTOWN MN 55811
010-2741-00630	GROSNICK ERIK C & MEGGAN D		OR CURRENT OCCUPANT	8110 ST LOUIS RIVER RD	DULUTH MN 55810
010-2710-00780	GUROVITSCH SHARYL		OR CURRENT OCCUPANT	3122 NORTON ROAD	DULUTH MN 55803
010-2710-00790	GUROVITSCH SHARYL		OR CURRENT OCCUPANT	3122 NORTON ROAD	DULUTH MN 55803
010-2710-00800	GUROVITSCH SHARYL		OR CURRENT OCCUPANT	3122 NORTON ROAD	DULUTH MN 55803
395-0010-09016	GUSTAFSON ANGELA & KEITH		OR CURRENT OCCUPANT	4629 AIRPARK BLVD	DULUTH MN 55811
010-3261-00040	GUSTAFSON HOWARD F & BARBARA F		OR CURRENT OCCUPANT	2140 MILLER CREEK DR	DULUTH MN 55811
010-2710-02070	GUSTAFSON THOMAS L & CATHLEEN A		OR CURRENT OCCUPANT	4414 KRUEGER RD	DULUTH MN 55811
010-3520-00560	GUTMANN RENE & RICK		OR CURRENT OCCUPANT	4015 N 77TH AVE W	DULUTH MN 55810
395-0010-09860	HACKER NICHOLAS M &	TORVICK-HACKER JOELEEN	OR CURRENT OCCUPANT	3604 LINDAHL RD	HERMANTOWN MN 55810
010-2710-02410	HADSELFORD ALENE		OR CURRENT OCCUPANT	108 DAPPLE LN # 5825	ELLIJAY GA 30540
010-3266-00010	HALTER WILLIAM J JR & JEAN A P		OR CURRENT OCCUPANT	2108 MILLER CREEK DR	DULUTH MN 55811
395-0010-08820	HALVERSON DAVID B JR		OR CURRENT OCCUPANT	5817 HERMANTOWN RD	HERMANTOWN MN 55810
395-0010-09014	HANSEN BRYCE ROBERT &	MIRANDA SUSANNE	OR CURRENT OCCUPANT	5833 MORRIS THOMAS RD	HERMANTOWN MN 55810
395-0010-09135	HANSEN GLEN		OR CURRENT OCCUPANT	5786 MORRIS THOMAS RD	HERMANTOWN MN 55810

Parcel Number	Name	Name 2	Current	Address	City/State/Zip
395-0092-00230	HANSEN GLENN A & DEBRA L		OR CURRENT OCCUPANT	5786 MORRIS THOMAS RD	DULUTH MN 55811
395-0014-00955	HANSON ALAN L		OR CURRENT OCCUPANT	3511 STEBNER RD	HERMANTOWN MN 55811
395-0014-00960	HANSON ALAN L		OR CURRENT OCCUPANT	3511 STEBNER RD	HERMANTOWN MN 55811
185-0160-00030	HANSON MICHAEL E		OR CURRENT OCCUPANT	2225 VENICE ST	PROCTOR MN 55810
395-0010-04585	HARDER JOHN		OR CURRENT OCCUPANT	5313 MAPLE GROVE RD	DULUTH MN 55811
010-3254-00030	HARRIS GERALDINE		OR CURRENT OCCUPANT	2145 MILLER CREEK DR	DULUTH MN 55811
395-0013-00010	HARTLEY JOHN L		OR CURRENT OCCUPANT	5167 YOUNGDAHL RD	HERMANTOWN MN 55810
395-0012-00070	HEEHN JEFFREY W		OR CURRENT OCCUPANT	3544 HAHN RD	HERMANTOWN MN 55810
395-0086-00200	HENDRICKSON KIRSTI A REVOC TRUST		OR CURRENT OCCUPANT	409 WILDROSE TRL	DULUTH MN 55811
395-0139-00040	HERMANTOWN BUILDING LLC		OR CURRENT OCCUPANT	1701 W MICHIGAN ST	DULUTH MN 55806
395-0139-00010	HERMANTOWN BUILDING LLC		OR CURRENT OCCUPANT	1701 W MICHIGAN ST	DULUTH MN 55806
395-0092-00160	HERMANTOWN ECONOMIC DEV AUTH	ATTN ADMINISTRATOR	OR CURRENT OCCUPANT	5255 MAPLE GROVE RD	HERMANTOWN MN 55811
395-0092-00145	HERMANTOWN ECONOMIC DEV AUTH	ATTN ADMINISTRATOR	OR CURRENT OCCUPANT	5255 MAPLE GROVE RD	HERMANTOWN MN 55811
395-0092-00020	HERMANTOWN ECONOMIC DEV AUTH	ATTN ADMINISTRATOR	OR CURRENT OCCUPANT	5255 MAPLE GROVE RD	HERMANTOWN MN 55811
395-0092-00090	HERMANTOWN ECONOMIC DEV AUTH	ATTN ADMINISTRATOR	OR CURRENT OCCUPANT	5255 MAPLE GROVE RD	HERMANTOWN MN 55811
395-0010-04587	HERRBOLDT MICHAEL R & DANIKA		OR CURRENT OCCUPANT	5333 MAPLE GROVE RD	DULUTH MN 55811
010-2710-01065	HESKIN ERIC G		OR CURRENT OCCUPANT	2308 NORTON RD	DULUTH MN 55803
010-2710-00960	HESKIN ERIC G		OR CURRENT OCCUPANT	2308 NORTON RD	DULUTH MN 55803
010-3262-00020	HILLMAN MARILYN J		OR CURRENT OCCUPANT	2162 MILLER CREEK DR UNIT 2	DULUTH MN 55811
395-0010-04128	HINKS JARED & HEIDI		OR CURRENT OCCUPANT	4128 LAVAQUE RD	HERMANTOWN MN 55811
395-0096-00030	HINTSA LEROY R		OR CURRENT OCCUPANT	4852 ADRIAN LN	HERMANTOWN MN 55811

Parcel Number	Name	Name 2	Current	Address	City/State/Zip
395-0092-00162	HIUKKA KENNETH H & BONNIE F		OR CURRENT OCCUPANT	4265 STEBNER RD	DULUTH MN 55811
395-0012-00110	HOLDEN KEVIN & CRYSTAL		OR CURRENT OCCUPANT	3507 UGSTAD RD	HERMANTOWN MN 55810
010-3261-00030	HOLLINGSWORTH JOYCE M		OR CURRENT OCCUPANT	2146 MILLER CREEK DR #119	DULUTH MN 55811
395-0010-03836	HOM FURNITURE INC		OR CURRENT OCCUPANT	10301 WOODCREST DR NW	COON RAPIDS MN 55433
395-0010-05635	HOUSTON LETHA M		OR CURRENT OCCUPANT	2509 TIMBER OAK CIRCLE	KETTERING OH 45440
395-0010-05630	HOUSTON LETHA M		OR CURRENT OCCUPANT	2509 TIMBER OAK CIRCLE	KETTERING OH 45440
395-0014-00182	HOWE STEPHANIE		OR CURRENT OCCUPANT	5070 WILLOUGHBY LANE	DULUTH MN 55810
010-0164-00140	HUDYMA PROSPERITY PROPERTIES		OR CURRENT OCCUPANT	3814 PROSPERITY RD	DULUTH MN 55811
010-0164-00150	HUDYMA PROSPERITY PROPERTIES		OR CURRENT OCCUPANT	3814 PROSPERITY RD	DULUTH MN 55811
010-2710-02160	HUMES DAVID P		OR CURRENT OCCUPANT	4442 NORMANNA RD	DULUTH MN 55803
395-0010-08610	INDEPENDENT SCHOOL DISTRICT #700		OR CURRENT OCCUPANT	4307 UGSTAD RD	HERMANTOWN MN 55811
395-0096-00150	JACKSON JAY P		OR CURRENT OCCUPANT	4839 ADRIAN LANE	DULUTH MN 55811
010-2710-02266	JAMES KYLE AND	HARDWIG-EBERSPACHER CHARLIE	OR CURRENT OCCUPANT	2508 SWAN LAKE RD	DULUTH MN 55811
010-0385-00210	JAROSZ JAMES T & SUSAN H		OR CURRENT OCCUPANT	1925 MIDDLE LN	DULUTH MN 55811
010-2710-02170	JENSEN DENNIS E & SUSAN G		OR CURRENT OCCUPANT	4219 W ARROWHEAD RD	DULUTH MN 55811
010-2710-02230	JENSEN DENNIS E & SUSAN G		OR CURRENT OCCUPANT	4219 W ARROWHEAD RD	DULUTH MN 55811
010-2710-02245	JENSEN DENNIS E & SUSAN G		OR CURRENT OCCUPANT	4219 W ARROWHEAD RD	DULUTH MN 55811
010-3259-00060	JENSEN DONALD & KATHLEEN		OR CURRENT OCCUPANT	2135 MILLER CREEK DR	DULUTH MN 55811
395-0010-04135	JERKS FRANK & LISA		OR CURRENT OCCUPANT	5055 MAPLE GROVE RD	HERMANTOWN MN 55811
395-0070-00985	JLG ENTERPRISES		OR CURRENT OCCUPANT	3850 OLD MIDWAY RD	HERMANTOWN MN 55811
395-0010-04500	JLG ENTERPRISES OF HERMANTOWN LLP		OR CURRENT OCCUPANT	3850 OLD MIDWAY RD	HERMANTOWN MN 55810

Parcel Number	Name	Name 2	Current	Address	City/State/Zip
395-0010-08692	JLG ENTERPRISES OF HERMANTOWN LLP		OR CURRENT OCCUPANT	3850 OLD MIDWAY RD	HERMANTOWN MN 55810
Project Mailing List	Joe and Peggy Bullyan		OR CURRENT OCCUPANT	3953 LaVaque Rd	HERMANTOWN MN 55811
395-0010-04352	JOHNSON BRAD & JACKIE		OR CURRENT OCCUPANT	4958 MAPLE GROVE RD	HERMANTOWN MN 55811
395-0010-04354	JOHNSON BRAD & JACKIE		OR CURRENT OCCUPANT	4958 MAPLE GROVE RD	HERMANTOWN MN 55811
010-3520-00600	JOHNSON BRADLEY R		OR CURRENT OCCUPANT	7701 ST LOUIS RIVER RD	DULUTH MN 55810
395-0069-00100	JOHNSON CHAD W & GINA		OR CURRENT OCCUPANT	5340 SPLIT RAIL DR	DULUTH MN 55811
395-0010-04520	JOHNSON CHARLES R		OR CURRENT OCCUPANT	4168 LINDAHL RD	DULUTH MN 55811
010-0385-00200	JOHNSON GABRIEL D		OR CURRENT OCCUPANT	1929 MIDDLE LANE	DULUTH MN 55811
395-0070-00987	JOHNSON GEORGE W		OR CURRENT OCCUPANT	5351 MAPLE GROVE RD	DULUTH MN 55811
395-0010-05660	JOHNSON HOLLY		OR CURRENT OCCUPANT	2601 HAMMOND AVE	SUPERIOR WI 54880
395-0010-04541	JOHNSON JEFFREY		OR CURRENT OCCUPANT	5401 MAPLE GROVE RD	HERMANTOWN MN 55811
395-0120-00200	JOHNSON JEREMY & KRISTIN		OR CURRENT OCCUPANT	5104 SHERIDAN DR	HERMANTOWN MN 55810
395-0012-00350	JOHNSON KENNETH LEE & PAM		OR CURRENT OCCUPANT	5273 ST LOUIS RIVER RD	HERMANTOWN MN 55810
010-0385-00150	JOHNSON NATHAN & MAKENZIE		OR CURRENT OCCUPANT	2806 W 13TH RUN	DULUTH MN 55806
395-0010-08740	JOHNSON RANDALL JAMES		OR CURRENT OCCUPANT	4707 MORRIS THOMAS RD	HERMANTOWN MN 55811
395-0010-09770	JOHNSON STEVEN P		OR CURRENT OCCUPANT	3635 WARGIN RD	HERMANTOWN MN 55810
395-0010-09880	JOHNSON STEVEN P		OR CURRENT OCCUPANT	3635 WARGIN RD	HERMANTOWN MN 55810
395-0012-00090	JONES JOHN PAUL G & JENNIFER		OR CURRENT OCCUPANT	3549 UGSTAD ROAD	HERMANTOWN MN 55810
395-0012-00015	JONES JOHN PAUL G & JENNIFER		OR CURRENT OCCUPANT	3549 UGSTAD ROAD	HERMANTOWN MN 55810
395-0010-04790	JONES KATHLEEN		OR CURRENT OCCUPANT	5625 MARTIN RD	DULUTH MN 55811
395-0010-09380	JORGENSON TIMOTHY L		OR CURRENT OCCUPANT	3605 LINDAHL RD	HERMANTOWN MN 55810

Parcel Number	Name	Name 2	Current	Address	City/State/Zip
395-0010-04130	JP HOLDING CO		OR CURRENT OCCUPANT	106 S 15TH AVE E	DULUTH MN 55812
395-0098-00130	JUBALA JOHN W & GAIL		OR CURRENT OCCUPANT	4874 ADRIAN LN	HERMANTOWN MN 55811
395-0012-00380	JUDNICK ROSS M & JILL R		OR CURRENT OCCUPANT	4724 VAUX RD	DULUTH MN 55811
Project Mailing List	Julie Holm		OR CURRENT OCCUPANT	4708 Carlson Rd	HERMANTOWN MN 55811
395-0086-00170	JUST THOMAS & KRISTI		OR CURRENT OCCUPANT	4910 WILDROSE TRAIL	DULUTH MN 55811
010-2741-00900	KALDOR BOBBI & KARL		OR CURRENT OCCUPANT	3114 N 85TH AVE W	DULUTH MN 55810
395-0010-09381	KALENOWSKI JOSEPH C		OR CURRENT OCCUPANT	5520 MORRIS THOMAS RD	HERMANTOWN MN 55810
395-0010-08860	KANESKI TODD J		OR CURRENT OCCUPANT	5197 BIRCH ACRES RD	DULUTH MN 55803
395-0102-00150	KARP MICHAEL R & KARLY A		OR CURRENT OCCUPANT	4059 MISTY MORNING DR	HERMANTOWN MN 55811
010-2710-01055	KEENAN PATRICK W & MARY S		OR CURRENT OCCUPANT	2220 NORTON RD	DULUTH MN 55803
Project Mailing List	Ken Zwak		OR CURRENT OCCUPANT	351 Thurber Road	DULUTH MN 55803
395-0010-04757	KENDALL WILLIAM & DIANNE		OR CURRENT OCCUPANT	4108 MEADOW PKWY APT E	HERMANTOWN MN 55811
395-0010-04755	KENDALL WILLIAM & DIANNE		OR CURRENT OCCUPANT	4108 MEADOW PKWY APT E	HERMANTOWN MN 55811
395-0102-00140	KERR TERESA K		OR CURRENT OCCUPANT	4067 MISTY MORNING DR	HERMANTOWN MN 55811
185-0240-00050	KETCHER RANDY ALAN & SUSAN		OR CURRENT OCCUPANT	436 ST LOUIS RIVER RD	DULUTH MN 55810
185-0240-00066	KETCHER RANDY ALAN & SUSAN		OR CURRENT OCCUPANT	436 ST LOUIS RIVER RD	DULUTH MN 55810
010-3255-00070	KIMBER DEANA		OR CURRENT OCCUPANT	2149 MILLER CREEK DR	DULUTH MN 55811
010-3259-00010	KNUDSEN EDWARD L & SUSAN E		OR CURRENT OCCUPANT	2134 MILLER CREEK DR	HERMANTOWN MN 55811
010-3257-00010	KOHLS 219		OR CURRENT OCCUPANT	PO BOX 2148	MILWAUKEE WI 53201-5320
395-0069-00030	KOLQUIST DAVID WALLACE		OR CURRENT OCCUPANT	5321 SPLITRAIL DR	DULUTH MN 55811
395-0010-04370	KOPPY MICHAEL & BONDE CAROL		OR CURRENT OCCUPANT	5124 BEAVER CREEK RD	DULUTH MN 55811

Parcel Number	Name	Name 2	Current	Address	City/State/Zip
395-0120-00125	KOZLOWSKI THEODORE		OR CURRENT OCCUPANT	PO BOX 305	GRAND PORTAGE MN 55605-0305
395-0102-00130	KRAUSE ANDREW P & JENNA E		OR CURRENT OCCUPANT	4073 MISTY MORNING DR	HERMANTOWN MN 55811
010-2710-04625	KRENZEN PROPERTIES LLC		OR CURRENT OCCUPANT	2500 MALL DR	DULUTH MN 55811
395-0090-00105	KRENZEN PROPERTIES LLC		OR CURRENT OCCUPANT	2500 MALL DR	DULUTH MN 55811
010-2710-04624	KRENZEN PROPERTIES LLC		OR CURRENT OCCUPANT	2500 MALL DR	DULUTH MN 55811
010-2710-04631	KRENZEN PROPERTIES LLC		OR CURRENT OCCUPANT	2500 MALL DR	DULUTH MN 55811
395-0090-00072	KRENZEN PROPERTIES LLC		OR CURRENT OCCUPANT	2500 MALL DR	DULUTH MN 55811
010-2710-04629	KRENZEN PROPERTIES LLC		OR CURRENT OCCUPANT	2500 MALL DR	DULUTH MN 55811
010-3269-00040	KREUTZKAMPF JUNE E		OR CURRENT OCCUPANT	2098 MILLER CREEK DR	DULUTH MN 55811
010-0164-00241	KROPF CAROL L		OR CURRENT OCCUPANT	4120 KRUGER RD	DULUTH MN 55811
010-3261-00020	KURKI SUSAN J		OR CURRENT OCCUPANT	2144 MILLER CREEK DR	DULUTH MN 55811
010-3267-00020	KURSHOFF JOHN & ANN		OR CURRENT OCCUPANT	2115 MILLER CREEK DR 42	DULUTH MN 55811
395-0010-05620	LAFONTAINE ROBERT M & BONNIE		OR CURRENT OCCUPANT	4007 UGSTAD RD	DULUTH MN 55811-3651
185-0160-00160	LALONE CARLIE & BENJAMIN		OR CURRENT OCCUPANT	1735 LAVAQUE RD	DULUTH MN 55810
395-0120-00010	LAMBERT THOMAS & MARY		OR CURRENT OCCUPANT	5127 SHERIDAN DR	HERMANTOWN MN 55811
395-0120-00270	LAMBERT THOMAS & MARY		OR CURRENT OCCUPANT	5127 SHERIDAN DR	HERMANTOWN MN 55811
395-0120-00220	LAMBERT THOMAS & MARY		OR CURRENT OCCUPANT	5127 SHERIDAN DR	HERMANTOWN MN 55811
395-0120-00140	LAMBERT THOMAS L & MARY		OR CURRENT OCCUPANT	5127 SHERIDAN RD	DULUTH MN 55810
010-2710-02220	LANDWEHR KENNETH E		OR CURRENT OCCUPANT	2625 SWAN LAKE RD	DULUTH MN 55811
395-0069-00040	LARSON COREY J & JEAN M		OR CURRENT OCCUPANT	5343 SPLIT RAIL DR	HERMANTOWN MN 55811
395-0102-00120	LARSON SCOTT P & JENNY L		OR CURRENT OCCUPANT	4077 MISTY MORNING DR	HERMANTOWN MN 55811

Parcel Number	Name	Name 2	Current	Address	City/State/Zip
010-2710-04545	LEE CANDACE ESTELLE		OR CURRENT OCCUPANT	1819 W MORGAN ST	DULUTH MN 55811
010-2710-04540	LEE CANDACE ESTELLE		OR CURRENT OCCUPANT	1819 W MORGAN ST	DULUTH MN 55811
010-2710-00840	LEESON JAMES & SANDRA		OR CURRENT OCCUPANT	2812 NORTON RD	DULUTH MN 55803
395-0010-04126	LENDACKY JOSEPH P		OR CURRENT OCCUPANT	5205 MILLER TRUNK HWY	HERMANTOWN MN 55811
010-2710-02380	LEVINE & SON INC		OR CURRENT OCCUPANT	3453 ZIMMERMAN RD	DULUTH MN 55804
395-0125-00010	LGP REALTY HOLDINGS LP		OR CURRENT OCCUPANT	PO BOX 385	ALLENTOWN PA 18105
395-0010-03611	LGP REALTY HOLDINGS LP		OR CURRENT OCCUPANT	PO BOX 385	ALLENTOWN PA 18105
185-0160-00060	LINDBERG JOHN H		OR CURRENT OCCUPANT	2217 VENICE ST	PROCTOR MN 55810
185-0160-00057	LINDBERG JOHN H		OR CURRENT OCCUPANT	2217 VENICE ST	PROCTOR MN 55810
010-2710-00559	LINDER BRIAN T & KRISTINA A		OR CURRENT OCCUPANT	327 HOWARD GNESEN RD	DULUTH MN 55811
395-0090-00080	LINSKIE ELLA MAE		OR CURRENT OCCUPANT	4716 LINDGREN RD	DULUTH MN 55811
185-0160-00120	LIPPERT BERTA M		OR CURRENT OCCUPANT	4201 COLORADO ST	DULUTH MN 55804
185-0160-00110	LIPPERT BERTA M		OR CURRENT OCCUPANT	4201 COLORADO ST	DULUTH MN 55804
395-0010-09030	LITTLE DOG LAND CO LLC	MARK LEBLANC	OR CURRENT OCCUPANT	PO BOX 40	KNIFE RIVER MN 55609
010-3255-00030	LOVE CHERYL		OR CURRENT OCCUPANT	2148 MILLER CREEK DR	DULUTH MN 55811
395-0120-00110	LOWINSKI SARA J & CORREY W		OR CURRENT OCCUPANT	3509 LAVAQUE RD	HERMANTOWN MN 55811
395-0010-08924	LUCIA DAVID E		OR CURRENT OCCUPANT	3763 MIDWAY RD	HERMANTOWN MN 55811
395-0180-00050	LUND KEVIN J		OR CURRENT OCCUPANT	4214 AIRPARK BLVD STE 200	DULUTH MN 55811
395-0086-00210	LUNDEEN GREGORY J		OR CURRENT OCCUPANT	4904 WILDROSE TRAIL	HERMANTOWN MN 55811
395-0010-04365	LYNCH ROBERT J		OR CURRENT OCCUPANT	5217 MAPLE GROVE RD	HERMANTOWN MN 55811
010-3267-00050	MACFARLANE NORMAN D & LINDA M		OR CURRENT OCCUPANT	2105 MILLER CREEK DR UNIT 49	DULUTH MN 55811

Parcel Number	Name	Name 2	Current	Address	City/State/Zip
010-2710-01060	MARCHAND SUSAN L		OR CURRENT OCCUPANT	2306 NORTON RD	DULUTH MN 55803
Project Mailing List	Margaret Erickson		OR CURRENT OCCUPANT	4308 Lavaque Rd	DULUTH MN 55811
010-0385-00180	MARINOS ANTONIO E & GINA		OR CURRENT OCCUPANT	5783 MAPLE GROVE RD	DULUTH MN 55811
010-3256-00040	MARQUARDT WANDA A		OR CURRENT OCCUPANT	2130 MILLER CREEK DR UNIT 32	DULUTH MN 55811
395-0010-04530	MARTIN SUZYN K		OR CURRENT OCCUPANT	4119 UGSTAD RD APT 8	HERMANTOWN MN 55811-3673
010-3255-00010	MATARA MICHAEL & WITCHALL DIANE		OR CURRENT OCCUPANT	2152 MILLER CREEK DRIVE	DULUTH MN 55811
010-2710-02040	MCCUSKEY DAVID & ELIZABETH		OR CURRENT OCCUPANT	4330 KRUEGER RD	DULUTH MN 55811
010-2710-02250	MCDONALD DOUGLAS & JOHNSON HEATHER		OR CURRENT OCCUPANT	2600 SWAN LAKE RD	DULUTH MN 55811
010-3263-00010	MCDONALD GLORIA		OR CURRENT OCCUPANT	2116 MILLER CREEK DRIVE	DULUTH MN 55811
185-0240-00035	MCDONALD JENNIFER R		OR CURRENT OCCUPANT	421 ST LOUIS RIVER RD	PROCTOR MN 55810
395-0010-09400	MCKEAN TAMI R		OR CURRENT OCCUPANT	5566 MORRIS THOMAS RD	DULUTH MN 55810
010-3264-00040	MCLAUGHLIN CAROLE A		OR CURRENT OCCUPANT	2113 MILLER CREEK DR	DULUTH MN 55811
395-0093-00080	MCNUTT REAL ESTATE HOLDINGS LLC	MCNUTT RICHARD H	OR CURRENT OCCUPANT	10721 VIVALDI CT #903	MIROMAR LAKES FL 33913
395-0010-03810	MCNUTT REAL ESTATE HOLDINGS LLC	MCNUTT RICHARD H	OR CURRENT OCCUPANT	10721 VIVALDI CT #903	MIROMAR LAKES FL 33913
395-0010-03750	MCNUTT REAL ESTATE HOLDINGS LLC	MCNUTT RICHARD H	OR CURRENT OCCUPANT	10721 VIVALDI CT #903	MIROMAR LAKES FL 33913
395-0010-03800	MCNUTT REAL ESTATE HOLDINGS LLC	MCNUTT RICHARD H	OR CURRENT OCCUPANT	10721 VIVALDI CT #903	MIROMAR LAKES FL 33913
010-3520-00535	MENCEL ROBERT		OR CURRENT OCCUPANT	4041 N 77TH AVE W	DULUTH MN 55808
010-3520-00520	MENCEL ROBERT		OR CURRENT OCCUPANT	4041 N 77TH AVE W	DULUTH MN 55808
395-0014-00184	MERRIFIELD ARTHUR E		OR CURRENT OCCUPANT	5080 WILLOUGHBY LANE	HERMANTOWN MN 55811
010-0385-00140	MERTZ FRANK W & LISA J		OR CURRENT OCCUPANT	617 VALLEY DR	DULUTH MN 55804
395-0102-00110	METSA MICHAEL & LAURIE		OR CURRENT OCCUPANT	4083 MISTY MORNING DR	HERMANTOWN MN 55811

Parcel Number	Name	Name 2	Current	Address	City/State/Zip
010-3256-00030	MEYER LOUISE F		OR CURRENT OCCUPANT	2128 MILLER CREEK DR	DULUTH MN 55811
Project Mailing List	Michael Slag		OR CURRENT OCCUPANT	2703 Northridge Dr	DULUTH MN 55811
395-0012-00010	MILLER ARNOLD E		OR CURRENT OCCUPANT	3569 UGSTAD RD	DULUTH MN 55810
010-3262-00040	MILLER CREEK CONDO ASSOCIATION		OR CURRENT OCCUPANT	PO BOX 3278	DULUTH MN 55803
010-0355-00010	MINER'S INCORPORATED	ATTN: TIM KLEIMAN	OR CURRENT OCCUPANT	5056 MILLER TRUNK HWY	HERMANTOWN MN 55811
	Minnesota Department of Transportation	ATTN: STACY KOTCH-EGSTAD	OR CURRENT OCCUPANT	395 John Ireland Blvd	ST PAUL MN 55155
	Minnesota Department of Transportation Office of Aeronautics	ATTN: DON BERRE	OR CURRENT OCCUPANT	395 John Ireland Blvd	ST PAUL MN 55155
010-3268-00040	MITCHEM LIVING TRUST		OR CURRENT OCCUPANT	2106 MILLER CREEK DR	DULUTH MN 55811
395-0120-00040	MOLITOR LARRY D & CLAUDIA		OR CURRENT OCCUPANT	3502 PARK DR	DULUTH MN 55810
395-0120-00045	MOLITOR LARRY D & CLAUDIA		OR CURRENT OCCUPANT	3502 PARK DR	DULUTH MN 55810
395-0120-00020	MOLITOR LARRY D & CLAUDIA		OR CURRENT OCCUPANT	3502 PARK DR	DULUTH MN 55810
010-2710-02254	MORROW CODY A & MEGHAN E		OR CURRENT OCCUPANT	2616 SWAN LAKE RD	DULUTH MN 55811
185-0160-00020	MOSHER DANIEL C & KRISTIN L		OR CURRENT OCCUPANT	2315 VENICE ST	PROCTOR MN 55810
010-0070-00040	MUELLERLEILE DONNA M		OR CURRENT OCCUPANT	28 FIR CIRCLE	BABBITT MN 55706
010-0070-00060	MUELLERLEILE DONNA M		OR CURRENT OCCUPANT	28 FIR CIRCLE	BABBITT MN 55706
010-2741-00590	MUELLNER JEFF		OR CURRENT OCCUPANT	7902 ST LOUIS RIVER RD	DULUTH MN 55810
395-0102-00160	MURPHY DAVID		OR CURRENT OCCUPANT	4055 MISTY MORNING DR	HERMANTOWN MN 55811
010-3259-00080	MYERS RICHARD A & SANDRA Z		OR CURRENT OCCUPANT	2139 MILLER CREEK DRIVE UNIT 28	DULUTH MN 55811
395-0010-09038	N I PROPERTIES LLC		OR CURRENT OCCUPANT	3757 MIDWAY RD	HERMANTOWN MN 55810
395-0010-04360	NASH DANIEL S & LINDSAY L		OR CURRENT OCCUPANT	5211 MAPLE GROVE ROAD	DULUTH MN 55811
395-0010-08714	NATIONSTAR MORTGAGE LLC		OR CURRENT OCCUPANT	2780 LAKE VISTA DR	LEWISVILLE TX 75067

Parcel Number	Name	Name 2	Current	Address	City/State/Zip
395-0014-00180	NEITZEL ROBERT K & LISA		OR CURRENT OCCUPANT	5101 SHERIDAN DR	HERMANTOWN MN 55811
010-0385-00130	NELSON JEFFREY J & JENNIE M NELSON		OR CURRENT OCCUPANT	1950 MIDDLE LANE	DULUTH MN 55811
010-3265-00010	NELSON JUDITH MARIE		OR CURRENT OCCUPANT	2121 MILLER CREEK DR	DULUTH MN 55811
010-2710-01460	NELSON KENNETH W & MARCIA		OR CURRENT OCCUPANT	3716 NORTON ROAD	DULUTH MN 55803
395-0010-08623	NELSON RAYMOND N		OR CURRENT OCCUPANT	5325 MORRIS THOMAS RD	DULUTH MN 55810
010-0070-00120	NEUFELD JOHN M & HOLM TONIA		OR CURRENT OCCUPANT	7523 CARDIGAN ST	DULUTH MN 55810
395-0014-00900	NEUMANN HARLAN GERALD		OR CURRENT OCCUPANT	3512 STEBNER RD	HERMANTOWN MN 55811
010-2710-00990	NIXON KRISTINA		OR CURRENT OCCUPANT	2414 NORTON RD	DULUTH MN 55803
395-0010-09051	NORDIN JOHN C		OR CURRENT OCCUPANT	5789 MORRIS THOMAS RD	HERMANTOWN MN 55810
395-0010-08995	NORTHERN INVESTMENTS LLC	BRAD RUOHO	OR CURRENT OCCUPANT	1444 HWY 120	ELY MN 55731
395-0012-00115	NORTHERN NATURAL GAS CO	PROPERTY TAX DEPT	OR CURRENT OCCUPANT	PO BOX 3330	OMAHA NE 68103-0330
395-0139-00020	NORTHLAND SUBWAY INC		OR CURRENT OCCUPANT	4433 VENTURE AVE	DULUTH MN 55811
010-3461-00410	NORTHRIDGE ESTATES ASSOCIATION		OR CURRENT OCCUPANT	PO BOX 3255	DULUTH MN 55803
010-3461-00420	NORTHRIDGE ESTATES ASSOCIATION		OR CURRENT OCCUPANT	PO BOX 3255	DULUTH MN 55803
395-0010-03822	OBOS ECONO LP		OR CURRENT OCCUPANT	525 LAKE AVE S STE 100	DULUTH MN 55802
395-0010-03652	OBOS ECONO LP		OR CURRENT OCCUPANT	525 LAKE AVE S STE 100	DULUTH MN 55802
395-0010-03823	OBOS ECONO LP		OR CURRENT OCCUPANT	525 LAKE AVE S STE 100	DULUTH MN 55802
010-2741-00036	OHRT ANDREW & MARA		OR CURRENT OCCUPANT	3025 GETCHELL RD	DULUTH MN 55810
395-0069-00090	OLSEN DOUG & KIMBERLY		OR CURRENT OCCUPANT	5326 SPLIT RAIL DR	HERMANTOWN MN 55811
395-0010-04351	OLSON JEAN M		OR CURRENT OCCUPANT	5239 MAPLE GROVE RD	HERMANTOWN MN 55811
010-3265-00030	OLSON RICHARD & CAROL		OR CURRENT OCCUPANT	2125 MILLER CREEK DR	DULUTH MN 55811

Parcel Number	Name	Name 2	Current	Address	City/State/Zip
185-0240-00030	OLSON TIMOTHY J & LINDA M		OR CURRENT OCCUPANT	431 ST LOUIS RIVER RD	PROCTOR MN 55810
395-0010-08590	PACZYNSKI PAUL T & LISAANN J		OR CURRENT OCCUPANT	5381 MORRIS THOMAS RD	HERMANTOWN MN 55810
395-0010-08580	PACZYNSKI PAUL T & LISAANN J		OR CURRENT OCCUPANT	5381 MORRIS THOMAS RD	HERMANTOWN MN 55810
010-2741-00062	PALMI GENE W & REBECCA J		OR CURRENT OCCUPANT	2809 GETCHELL RD	DULUTH MN 55810
010-2741-00030	PALMI GENE W & REBECCA J		OR CURRENT OCCUPANT	2809 GETCHELL RD	DULUTH MN 55810
010-0385-00170	PANICHI JESS		OR CURRENT OCCUPANT	1945 MIDDLE LANE	DULUTH MN 55811
Project Mailing List	Patricia Keller		OR CURRENT OCCUPANT	4993 Maple Grove Rd	HERMANTOWN MN 55811
395-0012-00342	PAULLIN RICHARD		OR CURRENT OCCUPANT	3504 UGSTAD RD	DULUTH MN 55810
395-0010-04150	PEACE IN CHRIST LUTHERAN CHURCH		OR CURRENT OCCUPANT	5007 MAPLE GROVE RD	HERMANTOWN MN 55811
395-0010-08420	PEARSON PAUL E & JAIME L		OR CURRENT OCCUPANT	5382 HERMANTOWN RD	HERMANTOWN MN 55810
395-0010-04583	PELAWA ROGER & LENA		OR CURRENT OCCUPANT	5329 MAPLE GROVE RD	HERMANTOWN MN 55811
010-2710-02205	PETERSON CAROLE V		OR CURRENT OCCUPANT	2902 SWAN LAKE RD	DULUTH MN 55811
010-0070-00160	PETERSON FREDERICK ALLEN		OR CURRENT OCCUPANT	3312 N 77TH AVE W	DULUTH MN 55807
010-2710-04380	PETERSON RUTH E		OR CURRENT OCCUPANT	4220 W ARROWHEAD RD	DULUTH MN 55811
395-0010-04760	PETSOULIS CHRISTOS & LINDA		OR CURRENT OCCUPANT	5565 MAPLE GROVE RD	DULUTH MN 55811
395-0010-04510	PETSOULIS CHRISTOS & LINDA		OR CURRENT OCCUPANT	5565 MAPLE GROVE RD	DULUTH MN 55811
395-0010-04780	PETSOULIS CHRISTOS N	PETSOULIS LINDA M	OR CURRENT OCCUPANT	5565 MAPLE GROVE RD	HERMANTOWN MN 55811
395-0010-04700	PETSOULIS CHRISTOS N	PETSOULIS LINDA M	OR CURRENT OCCUPANT	5565 MAPLE GROVE RD	HERMANTOWN MN 55811
395-0010-04770	PETSOULIS CHRISTOS N	PETSOULIS LINDA M	OR CURRENT OCCUPANT	5565 MAPLE GROVE RD	HERMANTOWN MN 55811
010-2741-00610	PIRKOLA CHRIS & CONNIE		OR CURRENT OCCUPANT	8310 ST LOUIS RIVER RD	DULUTH MN 55810
395-0139-00030	PLAISTED RICKEY L & GLORIA H		OR CURRENT OCCUPANT	5031 PARSONS PT	DULUTH MN 55803

Parcel Number	Name	Name 2	Current	Address	City/State/Zip
395-0010-03824	PLUCINAK ROBERT J		OR CURRENT OCCUPANT	4984 PIKE LAKE PLACE	DULUTH MN 55811
395-0012-00343	PLUMMER DENNIS R		OR CURRENT OCCUPANT	5279 ST LOUIS RIVER RD	HERMANTOWN MN 55810
010-2741-00592	PODGORSEK DONALD F & MARGUERITE C		OR CURRENT OCCUPANT	7718 ST LOUIS RIVER RD	DULUTH MN 55810-1101
395-0012-00370	PODGORSEK MARK R		OR CURRENT OCCUPANT	5253 ST LOUIS RIVER RD	DULUTH MN 55810
395-0096-00060	POTTER STEVEN		OR CURRENT OCCUPANT	4848 ADRIAN LN	HERMANTOWN MN 55811
395-0014-00181	PRATT GLEN W		OR CURRENT OCCUPANT	PO BOX 1032	PROCTOR MN 55810
395-0014-00187	PRATT GLEN W		OR CURRENT OCCUPANT	PO BOX 1032	PROCTOR MN 55810
010-2710-04565	PREMIER BANK		OR CURRENT OCCUPANT	2866 WHITE BEAR AVE	MAPLEWOOD MN 55109
010-2710-04550	PREMIER BANK		OR CURRENT OCCUPANT	2866 WHITE BEAR AVE	MAPLEWOOD MN 55109
010-3258-00010	PREMIER BANK		OR CURRENT OCCUPANT	2866 WHITE BEAR AVE	MAPLEWOOD MN 55109
010-3257-00020	PREMIER BANK		OR CURRENT OCCUPANT	2866 WHITE BEAR AVE	MAPLEWOOD MN 55109
010-2710-04525	PREMIER BANK		OR CURRENT OCCUPANT	2866 WHITE BEAR AVE	MAPLEWOOD MN 55109
010-2710-04605	PREMIER BANK		OR CURRENT OCCUPANT	2866 WHITE BEAR AVE	MAPLEWOOD MN 55109
010-2710-04555	PREMIER BANK		OR CURRENT OCCUPANT	2866 WHITE BEAR AVE	MAPLEWOOD MN 55109
010-2710-04603	PREMIER BANK		OR CURRENT OCCUPANT	2866 WHITE BEAR AVE	MAPLEWOOD MN 55109
010-3267-00040	PRESTON KAREN M		OR CURRENT OCCUPANT	2127 MILLER CREEK DR	DULUTH MN 55811
450-0010-00010	PROCTOR JACK MEAD GUN CLUB	C/O HAMILTON SMITH	OR CURRENT OCCUPANT	3394 MATTSON RD	PROCTOR MN 55810
450-0010-00050	PROCTOR JACK MEAD GUN CLUB	C/O HAMILTON SMITH	OR CURRENT OCCUPANT	3394 MATTSON RD	PROCTOR MN 55810
395-0010-08872	PROESCH GRETCHEN M		OR CURRENT OCCUPANT	PO BOX 1005	PROCTOR MN 55810
395-0010-04396	PUFFER DUNCAN R		OR CURRENT OCCUPANT	5159 MAPLE GROVE RD	HERMANTOWN MN 55811
010-3266-00040	REGAS ELIZABETH J		OR CURRENT OCCUPANT	2114 MILLER CREEK DR	DULUTH MN 55811

Parcel Number	Name	Name 2	Current	Address	City/State/Zip
395-0010-09390	REGSTAD VAUGHN P & DENISE A		OR CURRENT OCCUPANT	5530 MORRIS THOMAS RD	HERMANTOWN MN 55810
395-0010-09890	RENDFIELD LAND CO INC		OR CURRENT OCCUPANT	30 W SUPERIOR ST	DULUTH MN 55802
395-0072-00090	RICHTMAN JEFFREY & EMMA		OR CURRENT OCCUPANT	5215 CHRIS DR	HERMANTOWN MN 55811
010-2710-04521	RIESGRAF JOHN M		OR CURRENT OCCUPANT	3403 325TH AVE NW	CAMBRIDGE MN 55008
010-3261-00010	RODNE KATHLEEN A		OR CURRENT OCCUPANT	2142 MILLER CREEK DRIVE	DULUTH MN 55811
185-0160-00082	ROHWEDER DANIEL R		OR CURRENT OCCUPANT	9004 JOHNSON RD	PROCTOR MN 55810
185-0160-00095	ROHWEDER JAMES & JANICE		OR CURRENT OCCUPANT	9001 JOHNSON RD	PROCTOR MN 55810
010-3255-00020	ROLLAND LINDA J		OR CURRENT OCCUPANT	2154 MILLER CREEK DR	DULUTH MN 55811
395-0096-00160	ROLLIN ROBERT DAVID & JULIE		OR CURRENT OCCUPANT	4833 ADRIAN LANE	DULUTH MN 55811
395-0010-08865	ROSATI JEFFREY A		OR CURRENT OCCUPANT	5571 MORRIS THOMAS RD	HERMANTOWN MN 55811
395-0086-00160	ROSE BRENDA & MARTIN		OR CURRENT OCCUPANT	4912 WILDROSE TRAIL	HERMANTOWN MN 55811
395-0010-09850	ROSS MARC W & DANA L		OR CURRENT OCCUPANT	3696 LINDAHL RD	DULUTH MN 55811
395-0010-09840	ROSS MARC W & DANA L		OR CURRENT OCCUPANT	3696 LINDAHL RD	DULUTH MN 55811
010-2741-00150	ROTENBERGER JEFFREY P & MELISSA S		OR CURRENT OCCUPANT	1760 LAVAQUE RD	DULUTH MN 55810
395-0070-00986	RULLA WILLIAM & JULIA		OR CURRENT OCCUPANT	424 LODGE POLE DR	PRESCOTT AZ 86301
395-0010-04580	RYSMAN RICHARD		OR CURRENT OCCUPANT	5339 MAPLE GROVE RD	HERMANTOWN MN 55811
010-3264-00020	SALO KENT R & KATHERINE A		OR CURRENT OCCUPANT	2157 MILLER CREEK DR	DULUTH MN 55811
010-3263-00040	SANDENO JOAN O		OR CURRENT OCCUPANT	2122 MILLER CREEK DR 36	DULUTH MN 55811
010-3254-00010	SARBERG DAVID BRUCE		OR CURRENT OCCUPANT	911 4TH AVE E	SUPERIOR WI 54880
010-2710-00860	SAVELA ALVIN A		OR CURRENT OCCUPANT	2920 NORTON RD	DULUTH MN 55803
010-2710-00870	SAVELA ALVIN A		OR CURRENT OCCUPANT	2920 NORTON RD	DULUTH MN 55803

Parcel Number	Name	Name 2	Current	Address	City/State/Zip
395-0010-09750	SAVRE JAMES & JAMIE		OR CURRENT OCCUPANT	3649 UGSTAD RD	HERMANTOWN MN 55810
395-0010-09753	SAVRE JAMES & JAMIE		OR CURRENT OCCUPANT	3649 UGSTAD RD	HERMANTOWN MN 55810
395-0096-00020	SCHADE KOLLIN S		OR CURRENT OCCUPANT	4858 ADRIAN LN	DULUTH MN 55811
395-0010-09760	SCHALL RYAN M		OR CURRENT OCCUPANT	3688 WARGIN RD	DULUTH MN 55810
395-0010-09763	SCHALL RYAN M & LAHTI LINDSAY A		OR CURRENT OCCUPANT	3688 WARGIN RD	DULUTH MN 55811
395-0010-04140	SCHMINSKI LORI		OR CURRENT OCCUPANT	3645 N 7TH AVE APT 22	PHOENIX AZ 85013
395-0010-04136	SCHMINSKI LORI		OR CURRENT OCCUPANT	3645 N 7TH AVE APT 22	PHOENIX AZ 85013
010-3255-00060	SCHNORTZ LARRY N & GERLINDE J		OR CURRENT OCCUPANT	2151 MILLER CREEK DR UNIT 10	DULUTH MN 55811
010-2710-01045	SCHOBER KATHRYN J REVOCABLE TRUST		OR CURRENT OCCUPANT	202 W OWATONNA ST	DULUTH MN 55803
010-2710-00970	SCHULER GARY		OR CURRENT OCCUPANT	2410 NORTON ROAD	DULUTH MN 55803
010-2741-00165	SCHWARTZ BRADY H & CHRISTINA M		OR CURRENT OCCUPANT	1754 LAVAQUE RD	PROCTOR MN 55810
395-0010-04393	SCOTT KRISTINA L & BRIAN C		OR CURRENT OCCUPANT	5171 MAPLE GROVE RD	HERMANTOWN MN 55811
395-0010-04392	SCOTT KRISTINA L & BRIAN C		OR CURRENT OCCUPANT	5171 MAPLE GROVE RD	HERMANTOWN MN 55811
010-0164-00180	SEAWAY PORT AUTHORITY OF DULUTH		OR CURRENT OCCUPANT	2305 W SUPERIOR ST	DULUTH MN 55806
010-0164-00230	SEAWAY PORT AUTHORITY OF DULUTH		OR CURRENT OCCUPANT	2305 W SUPERIOR ST	DULUTH MN 55806
395-0010-09045	SEMMELROTH JONATHON THOMAS		OR CURRENT OCCUPANT	3974 OLD MIDWAY ROAD	HERMANTOWN MN 55810
395-0010-09793	SEO KENGO		OR CURRENT OCCUPANT	3605 UGSTAD RD	PROCTOR MN 55810-2507
010-2710-01010	SESSER NANCY K		OR CURRENT OCCUPANT	2622 NORTON ROAD	DULUTH MN 55803
395-0098-00140	SHARMA SUMEET & ROOPALI		OR CURRENT OCCUPANT	4870 ADRIAN LN	HERMANTOWN MN 55811
395-0010-04582	SHOPA-OLSEN RYAN & MYJI		OR CURRENT OCCUPANT	5323 MAPLE GROVE RD	HERMANTOWN MN 55811
395-0014-00965	SHOVEIN DENNIS P		OR CURRENT OCCUPANT	3505 STEBNER RD	DULUTH MN 55811

Parcel Number	Name	Name 2	Current	Address	City/State/Zip
395-0014-00950	SHOVEIN DENNIS P		OR CURRENT OCCUPANT	3505 STEBNER RD	DULUTH MN 55811
010-3255-00080	SIEGFRIED KAREN J		OR CURRENT OCCUPANT	2147 MILLER CREEK DR	DULUTH MN 55811
395-0102-00090	SIMONSON CRAIG L		OR CURRENT OCCUPANT	4095 MISTY MORNING DR	HERMANTOWN MN 55811
395-0010-04361	SIROIS LEANNE JEAN & PATRICK ALLEN		OR CURRENT OCCUPANT	5201 MAPLE GROVE RD	HERMANTOWN MN 55811
010-3262-00010	SKOGLUND LARRY L & CAROL		OR CURRENT OCCUPANT	2160 MILLER CREEK DR	DULUTH MN 55811
395-0010-04137	SLATTENGREN EMILIE		OR CURRENT OCCUPANT	5061 MAPLE GROVE RD	HERMANTOWN MN 55811
395-0010-05790	SLEEN KEVIN R & PATRICIA		OR CURRENT OCCUPANT	5383 HERMANTOWN RD	HERMANTOWN MN 55811
395-0010-04750	SMITH ROBERT J		OR CURRENT OCCUPANT	5649 MAPLE GROVE RD	HERMANTOWN MN 55811
395-0010-04125	SODERBURG ROBERT		OR CURRENT OCCUPANT	4134 LAVAQUE RD	HERMANTOWN MN 55811
395-0120-00290	SOLBERG MATTHEW J		OR CURRENT OCCUPANT	4721 DODGE ST	DULUTH MN 55804
010-2710-04560	SORENSON DAVID H		OR CURRENT OCCUPANT	1820 W MORGAN ST	DULUTH MN 55811
010-3259-00040	SPEARS LAWRENCE D		OR CURRENT OCCUPANT	2132 MILLER CREEK DR	DULUTH MN 55811
010-3256-00010	SPENCER MARY P		OR CURRENT OCCUPANT	2124 MILLER CREEK DR	DULUTH MN 55811
010-2710-04522	ST LOUIS COUNTY		OR CURRENT OCCUPANT	100 N 5TH AVE W RM 515	DULUTH MN 55802
010-2710-04524	ST LOUIS COUNTY		OR CURRENT OCCUPANT	100 N 5TH AVE W RM 515	DULUTH MN 55802
395-0010-08705	ST LOUIS COUNTY		OR CURRENT OCCUPANT	100 N 5TH AVE W RM 515	DULUTH MN 55802
395-0010-03821	ST LUKES HOSPITAL OF DULUTH		OR CURRENT OCCUPANT	915 EAST 1ST STREET	DULUTH MN 55805
395-0010-03828	ST LUKES HOSPITAL OF DULUTH		OR CURRENT OCCUPANT	915 EAST 1ST STREET	DULUTH MN 55805
395-0092-00165	ST MARIE TRUST	C/O GOPHER NEWS	OR CURRENT OCCUPANT	10407 TWIN LAKES PKWY NW	ELK RIVER MN 55330
395-0012-00080	STAHL EMERSON G & NEOMA L		OR CURRENT OCCUPANT	3510 HAHN RD	PROCTOR MN 55810
010-0070-00030	STATE OF MINNESOTA	ST LOUIS COUNTY LANDS AND MINERAL DEPARTMENT	OR CURRENT OCCUPANT	100 North 5th Avenue West	DULUTH MN 55802

Parcel Number	Name	Name 2	Current	Address	City/State/Zip
010-3257-00040	STATE OF MINNESOTA	ST LOUIS COUNTY LANDS AND MINERAL DEPARTMENT	OR CURRENT OCCUPANT	100 North 5th Avenue West	DULUTH MN 55802
010-0070-00415	STATE OF MINNESOTA	ST LOUIS COUNTY LANDS AND MINERAL DEPARTMENT	OR CURRENT OCCUPANT	100 North 5th Avenue West	DULUTH MN 55802
010-0070-00150	STATE OF MINNESOTA	ST LOUIS COUNTY LANDS AND MINERAL DEPARTMENT	OR CURRENT OCCUPANT	100 North 5th Avenue West	DULUTH MN 55802
010-0230-00170	STATE OF MINNESOTA	ST LOUIS COUNTY LANDS AND MINERAL DEPARTMENT	OR CURRENT OCCUPANT	100 North 5th Avenue West	DULUTH MN 55802
010-0355-00060	STATE OF MINNESOTA	ST LOUIS COUNTY LANDS AND MINERAL DEPARTMENT	OR CURRENT OCCUPANT	100 North 5th Avenue West	DULUTH MN 55802
010-0230-00010	STATE OF MINNESOTA	ST LOUIS COUNTY LANDS AND MINERAL DEPARTMENT	OR CURRENT OCCUPANT	100 North 5th Avenue West	DULUTH MN 55802
010-2710-02270	STATE OF MINNESOTA	ST LOUIS COUNTY LANDS AND MINERAL DEPARTMENT	OR CURRENT OCCUPANT	100 North 5th Avenue West	DULUTH MN 55802
010-2710-02260	STATE OF MINNESOTA	ST LOUIS COUNTY LANDS AND MINERAL DEPARTMENT	OR CURRENT OCCUPANT	100 North 5th Avenue West	DULUTH MN 55802
010-2741-00060	STATE OF MINNESOTA	ST LOUIS COUNTY LANDS AND MINERAL DEPARTMENT	OR CURRENT OCCUPANT	100 North 5th Avenue West	DULUTH MN 55802
010-0450-00012	STATE OF MINNESOTA	ST LOUIS COUNTY LANDS AND MINERAL DEPARTMENT	OR CURRENT OCCUPANT	100 North 5th Avenue West	DULUTH MN 55802
010-2710-04650	STATE OF MINNESOTA	ST LOUIS COUNTY LANDS AND MINERAL DEPARTMENT	OR CURRENT OCCUPANT	100 North 5th Avenue West	DULUTH MN 55802
010-2710-04626	STATE OF MINNESOTA	ST LOUIS COUNTY LANDS AND MINERAL DEPARTMENT	OR CURRENT OCCUPANT	100 North 5th Avenue West	DULUTH MN 55802
010-2741-00020	STATE OF MINNESOTA	ST LOUIS COUNTY LANDS AND MINERAL DEPARTMENT	OR CURRENT OCCUPANT	100 North 5th Avenue West	DULUTH MN 55802
395-0010-08990	STATE OF MINNESOTA	ST LOUIS COUNTY LANDS AND MINERAL DEPARTMENT	OR CURRENT OCCUPANT	100 North 5th Avenue West	DULUTH MN 55802
395-0086-00240	STATE OF MINNESOTA	ST LOUIS COUNTY LANDS AND MINERAL DEPARTMENT	OR CURRENT OCCUPANT	100 North 5th Avenue West	DULUTH MN 55802
395-0098-00150	STATE OF MINNESOTA	ST LOUIS COUNTY LANDS AND MINERAL DEPARTMENT	OR CURRENT OCCUPANT	100 North 5th Avenue West	DULUTH MN 55802
395-0180-00030	STATE OF MINNESOTA	ST LOUIS COUNTY LANDS AND MINERAL DEPARTMENT	OR CURRENT OCCUPANT	100 North 5th Avenue West	DULUTH MN 55802
395-0010-03730	STATE OF MINNESOTA	ST LOUIS COUNTY LANDS AND MINERAL DEPARTMENT	OR CURRENT OCCUPANT	100 North 5th Avenue West	DULUTH MN 55802
395-0010-08713	STATE OF MINNESOTA	ST LOUIS COUNTY LANDS AND MINERAL DEPARTMENT	OR CURRENT OCCUPANT	100 North 5th Avenue West	DULUTH MN 55802
185-0160-00090	STATE OF MINNESOTA	ST LOUIS COUNTY LANDS AND MINERAL DEPARTMENT	OR CURRENT OCCUPANT	100 North 5th Avenue West	DULUTH MN 55802
010-3267-00010	STENBERG SUE & BRIAN		OR CURRENT OCCUPANT	2117 MILLER CREEK DR	DULUTH MN 55811

Parcel Number	Name	Name 2	Current	Address	City/State/Zip
010-2710-01500	STEVENS SCOTT T & SUSAN M		OR CURRENT OCCUPANT	3602 NORTON RD	DULUTH MN 55803-1621
010-2710-01505	STEVENS SCOTT T & SUSAN M		OR CURRENT OCCUPANT	3602 NORTON RD	DULUTH MN 55803-1621
010-3470-00010	STINGL PATRICK A		OR CURRENT OCCUPANT	1811 NORTH RD	DULUTH MN 55811
395-0010-09040	STOKKE MONICA R & DENNIS W		OR CURRENT OCCUPANT	5627 ST LOUIS RIVER RD	HERMANTOWN MN 55810
395-0010-08985	STOKKE MONICA R & DENNIS W		OR CURRENT OCCUPANT	5627 ST LOUIS RIVER RD	HERMANTOWN MN 55810
395-0010-09055	STOKKE MONICA R & DENNIS W		OR CURRENT OCCUPANT	5627 ST LOUIS RIVER RD	HERMANTOWN MN 55810
395-0014-00186	STONE SAMUEL W & ALLISON F		OR CURRENT OCCUPANT	5060 WILLOUGHBY LANE	HERMANTOWN MN 55810
010-3268-00030	STRAPPLE SUSAN ELIZABETH		OR CURRENT OCCUPANT	2104 MILLER CREEK DR	DULUTH MN 55811
395-0072-00010	SULLIVAN BRIAN C AND SHERI D		OR CURRENT OCCUPANT	5218 CHRIS DR	HERMANTOWN MN 55811
395-0010-08625	SUNDSTROM JAMES D		OR CURRENT OCCUPANT	3067 COUNTY ROAD 61	BARNUM MN 55707
395-0010-08570	SUNDSTROM JAMES D		OR CURRENT OCCUPANT	3067 COUNTY ROAD 61	BARNUM MN 55707
395-0010-08620	SUNDSTROM JAMES D		OR CURRENT OCCUPANT	3067 COUNTY ROAD 61	BARNUM MN 55707
395-0010-08874	SUNDSTROM PATRICIA L		OR CURRENT OCCUPANT	5543 MORRIS THOMAS RD	DULUTH MN 55810
395-0010-08877	SUNDSTROM PATRICIA L		OR CURRENT OCCUPANT	5543 MORRIS THOMAS RD	DULUTH MN 55810
395-0092-00170	SWAN VENTURES LLC		OR CURRENT OCCUPANT	682 39TH AVE NE	COLUMBIA HEIGHTS MN 55421
010-0164-00170	SWANSON & YOUNGDALE INC		OR CURRENT OCCUPANT	P O BOX 26070	MPLS MN 55426-0070
010-3267-00060	SWANSON ANITA		OR CURRENT OCCUPANT	2103 MILLER CREEK DR UNIT 50	DULUTH MN 55811
395-0010-05811	SYLVESTER JACK P		OR CURRENT OCCUPANT	5337 HERMANTOWN RD	HERMANTOWN MN 55811-9757
395-0010-05809	SYLVESTER JACK P		OR CURRENT OCCUPANT	5337 HERMANTOWN RD	HERMANTOWN MN 55811-9757
395-0010-04127	TAKES CHARLES & SHANNON		OR CURRENT OCCUPANT	4122 LAVAQUE ROAD	HERMANTOWN MN 55811
395-0010-08622	TALLAKSON BRUCE A & LINDA K		OR CURRENT OCCUPANT	5343 MORRIS THOMAS RD	HERMANTOWN MN 55810

Parcel Number	Name	Name 2	Current	Address	City/State/Zip
395-0010-08626	TALLAKSON BRUCE A & LINDA K		OR CURRENT OCCUPANT	5343 MORRIS THOMAS RD	HERMANTOWN MN 55810
395-0120-00190	TASKY KELLY & BRIAN		OR CURRENT OCCUPANT	3639 UGSTAD RD	HERMANTOWN MN 55810
395-0010-09791	TASKY KELLY & BRIAN		OR CURRENT OCCUPANT	3639 UGSTAD RD	HERMANTOWN MN 55810
010-3267-00080	TERVO KATHERINE L		OR CURRENT OCCUPANT	2107 MILLER CREEK DR UNIT 52	DULUTH MN 55811
395-0010-08710	TESSER ANDEN D		OR CURRENT OCCUPANT	842 LARCH ST	CLOQUET MN 55720-1328
395-0010-08750	TESSER DENNIS & DIANE		OR CURRENT OCCUPANT	3785 ALMQUIST RD	HERMANTOWN MN 55810
395-0010-05670	TESSIER BENJAMIN M & EMILY R		OR CURRENT OCCUPANT	5995 MAPLE GROVE RD	DULUTH MN 55810
010-0450-00010	TEZAK JAMES E & CLIKEMAN TRACY D		OR CURRENT OCCUPANT	1743 W MORGAN ST	DULUTH MN 55811
395-0010-05800	THOMPSON CRAIG WILLIAM		OR CURRENT OCCUPANT	5339 HERMANTOWN RD	PROCTOR MN 55810
010-2710-01470	THRALOW JONATHAN		OR CURRENT OCCUPANT	7 SAINT ALBANS RD	SUPERIOR WI 54880
395-0010-04100	TIMBER RIDGE PROPERTIES LLC		OR CURRENT OCCUPANT	PO BOX 15176	DULUTH MN 55815
010-2710-02516	TISCHER CREEK DULUTH BUILDING CO		OR CURRENT OCCUPANT	3301 TECHNOLOGY DR	DULUTH MN 55811
010-2710-01550	TISCHER CREEK DULUTH BUILDING CO		OR CURRENT OCCUPANT	3301 TECHNOLOGY DR	DULUTH MN 55811
395-0010-09393	TOMASSONI DANTE		OR CURRENT OCCUPANT	5546 MORRIS THOMAS RD	HERMANTOWN MN 55810
450-0010-00040	TOWN OF MIDWAY		OR CURRENT OCCUPANT	3230 Midway Rd	DULUTH MN 55810
010-3266-00020	TOWNE VIRGINIA A		OR CURRENT OCCUPANT	2692 NE HIGHWAY 70 LOT 785	ARACDIA FL 34266
395-0013-00014	TROTTIER GEORGE & LAURIE WALKER		OR CURRENT OCCUPANT	3515 PARK DR	HERMANTOWN MN 55810
395-0120-00210	TURCOTTE DANIEL & SARAH		OR CURRENT OCCUPANT	3517 LAVAQUE RD	HERMANTOWN MN 55810
395-0014-00390	TWIN RIDGES LLC		OR CURRENT OCCUPANT	11 E SUPERIOR ST STE 543	DULUTH MN 55802
395-0014-00190	TWIN RIDGES LLC		OR CURRENT OCCUPANT	11 E SUPERIOR ST STE 543	DULUTH MN 55802
395-0010-09320	UMPIERRE CARRIE A		OR CURRENT OCCUPANT	5747 ST LOUIS RIVER RD	HERMANTOWN MN 55810

Parcel Number	Name	Name 2	Current	Address	City/State/Zip
395-0010-09140	UMPIERRE MANNY & SHARON		OR CURRENT OCCUPANT	18 LOIS LANE	ESKO MN 55733
395-0010-09180	VAH SAMANTHA & JONATHAN		OR CURRENT OCCUPANT	5828 MORRIS THOMAS RD	HERMANTOWN MN 55810
395-0010-08450	VANLOON ALAN/KEVIN/LAUREN	VANLOON SUSAN/DARIN	OR CURRENT OCCUPANT	5426 HERMANTOWN RD	HERMANTOWN MN 55810
395-0010-08460	VANLOON ALAN/KEVIN/LAUREN	VANLOON SUSAN/DARIN	OR CURRENT OCCUPANT	5426 HERMANTOWN RD	HERMANTOWN MN 55810
010-2710-02285	VATH DANIEL RAY		OR CURRENT OCCUPANT	4001 W ARROWHEAD RD	DULUTH MN 55811
010-2710-02290	VATH DANIEL RAY		OR CURRENT OCCUPANT	4001 W ARROWHEAD RD	DULUTH MN 55811
010-2710-01020	VEATCH GREGORY & PAULA KAY LILLIAN		OR CURRENT OCCUPANT	1904 NORTON RD	DULUTH MN 55803
010-2710-01030	VEATCH GREGORY & PAULA KAY LILLIAN		OR CURRENT OCCUPANT	1904 NORTON RD	DULUTH MN 55803
010-2710-04405	VO VU & KIM PHUONG TRAN		OR CURRENT OCCUPANT	4320 W ARROWHEAD RD	DULUTH MN 55811
395-0010-08650	VOLKENANT LARRY R		OR CURRENT OCCUPANT	3820 ALMQUIST RD	DULUTH MN 55810
395-0010-05770	VUKONICH LYNN K & RICHARD TRUSTEES		OR CURRENT OCCUPANT	8432 SURAKKA ROAD	CLOQUET MN 55720
395-0010-05690	VUKONICH LYNN K & RICHARD TRUSTEES		OR CURRENT OCCUPANT	8432 SURAKKA ROAD	CLOQUET MN 55720
395-0010-05780	VUKONICH LYNN K & RICHARD TRUSTEES		OR CURRENT OCCUPANT	8432 SURAKKA ROAD	CLOQUET MN 55720
395-0010-05610	VUKONICH LYNN K & RICHARD TRUSTEES		OR CURRENT OCCUPANT	8432 SURAKKA ROAD	CLOQUET MN 55720
395-0010-05590	VUKONICH LYNN K & RICHARD TRUSTEES		OR CURRENT OCCUPANT	8432 SURAKKA ROAD	CLOQUET MN 55720
010-3267-00030	WALKOWIAK MARGARET		OR CURRENT OCCUPANT	2129 MILLER CREEK DR	DULUTH MN 55811
395-0086-00190	WALSH CHAD R & LAURA J		OR CURRENT OCCUPANT	3520 LITTLE CREEK PL	HERMANTOWN MN 55811
395-0010-09792	WALSTROM JEFFREY J & BEVERLY A		OR CURRENT OCCUPANT	3633 UGSTAD RD	HERMANTOWN MN 55810
010-3269-00030	WALTERS NETTIE J		OR CURRENT OCCUPANT	2096 MILLER CREEK DR #63	DULUTH MN 55811
450-0010-00060	WANQUIST ANDREW B		OR CURRENT OCCUPANT	5399 HWY 2	DULUTH MN 55810
395-0013-00020	WARE GLENN W		OR CURRENT OCCUPANT	1568 NETT LAKE RD	NICKERSON MN 55749

Parcel Number	Name	Name 2	Current	Address	City/State/Zip
010-3269-00020	WASKO ROBERT J		OR CURRENT OCCUPANT	2094 MILLER CREEK DR	DULUTH MN 55811
010-2710-01480	WASSERMAN ROBERT & ANN		OR CURRENT OCCUPANT	481 BATTERSEA COURT	MARCO ISLAND FL 34145
395-0010-09870	WATRY ANTOINETTE		OR CURRENT OCCUPANT	3560 LINDAHL RD	DULUTH MN 55810
Project Mailing List	Wayne and Lori Fichtner		OR CURRENT OCCUPANT	5174 Maple Grove Rd	HERMANTOWN MN 55811
010-3259-00050	WELLS E ROGER & JEAN A		OR CURRENT OCCUPANT	2137 MILLER CREEK DR	DULUTH MN 55811
010-2710-04628	WELLS FARGO BANK NA	C/O THOMSON PROPERTY TAX SERVICES	OR CURRENT OCCUPANT	PO BOX 2609	CARLSBAD CA 92018
395-0010-04350	WENTZLAFF JOHN A		OR CURRENT OCCUPANT	5245 MAPLE GROVE RD	HERMANTOWN MN 55811
395-0120-00170	WIDELL ALAN J		OR CURRENT OCCUPANT	3537 PARK DR	PROCTOR MN 55810
395-0120-00160	WIDELL ALAN J		OR CURRENT OCCUPANT	3537 PARK DR	PROCTOR MN 55810
395-0010-09190	WIETMAN BRANDON THOMAS		OR CURRENT OCCUPANT	5850 MORRIS THOMAS RD	DULUTH MN 55811
010-2710-02280	WILDWOODS PROPERTIES LLC		OR CURRENT OCCUPANT	1929 VALHALLA DRIVE	DULUTH MN 55811
Project Mailing List	William Chevalier		OR CURRENT OCCUPANT	5125 W Arrowhead Rd	HERMANTOWN MN 55811
Project Mailing List	William Ralph		OR CURRENT OCCUPANT	2425 Ozark Street	DULUTH MN 55811
395-0092-00086	WILLIAMS BRIAN D	HERMANTOWN TRANSMISSION & EXHAUST	OR CURRENT OCCUPANT	4171 THUNDERCHIEF LN	HERMANTOWN MN 55811
185-0160-00050	WILLIAMS JESSICA A		OR CURRENT OCCUPANT	2221 VENICE ST	PROCTOR MN 55810
010-3276-00010	WINES DANIELLE M		OR CURRENT OCCUPANT	7715 VINLAND ST	PROCTOR MN 55810
010-0385-00230	WINTERS LAURA & LEE		OR CURRENT OCCUPANT	1907 MIDDLE LN	DULUTH MN 55811
395-0010-08980	WISCONSIN CENTRAL LTD	ATTN: TAX DEPARTMENT	OR CURRENT OCCUPANT	17641 S ASHLAND AVE	HOMEWOOD IL 60430
395-0010-09076	WISCONSIN CENTRAL LTD	ATTN: TAX DEPARTMENT	OR CURRENT OCCUPANT	17641 S ASHLAND AVE	HOMEWOOD IL 60430
395-0010-09020	WISCONSIN CENTRAL LTD	ATTN: TAX DEPARTMENT	OR CURRENT OCCUPANT	17641 S ASHLAND AVE	HOMEWOOD IL 60430
010-2710-02190	WISOCKI STEPHEN R		OR CURRENT OCCUPANT	4010 KRUEGER RD	DULUTH MN 55811

Parcel Number	Name	Name 2	Current	Address	City/State/Zip
010-3259-00070	WITTENBERG FRANCES M		OR CURRENT OCCUPANT	2141 MILLER CREEK DR	DULUTH MN 55811
010-3256-00020	WITTICH NORMA		OR CURRENT OCCUPANT	2126 MILLER CREEK DR	DULUTH MN 55811
395-0010-03826	WLSSD		OR CURRENT OCCUPANT	2626 COURTLAND ST	DULUTH MN 55806-1894
395-0010-04395	ZAIDI NISAR & ANNA-MARIE		OR CURRENT OCCUPANT	5155 MAPLE GROVE RD	HERMANTOWN MN 55811
010-3259-00020	ZIEMSKI GALE & SUSAN		OR CURRENT OCCUPANT	2136 MILLER CREEK DR	DULUTH MN 55811
010-3269-00010	ZIMBINSKI WILLIAM R & CYNTHIA J		OR CURRENT OCCUPANT	2092 MILLER CREEK DR	DULUTH MN 55811
010-3520-00550	ZOMERFELT STEVEN J ETUX		OR CURRENT OCCUPANT	4140 FAYRE RD	DULUTH MN 55803

APPENDIX P

PROJECT AREA SUBSTATION LOAD DATA AND MINNESOTA POWER'S JULY 2021 ANNUAL ELECTRIC UTILITY FORECAST REPORT

Appendix P

Project Area Substation Load Data and Minnesota Power's July 2021 Annual Electric Utility Forecast Report

Pursuant to Minn. R. 7849.0270, Subp. 1 and Minn. R. 7849.0270, Subp. 2(A)-2(D), a Certificate of Need application must provide information related to peak demand and annual consumption data for an applicant's entire service territory and system. Minnesota Power requested and was granted an exemption from this rule requirement by the Minnesota Public Utilities Commission.[1] In lieu of the information required by Minn. R. 7849.0270, Minnesota Power agreed to substitute data in the form of historical substation load data for the Project area substations and to provide forecast information from Minnesota Power's most recent Annual Electric Utility Forecast Report ("AFR").[2]

Table 1 below provides historical substation peak demand data for the Project area substations.

Table 1: Historical Coincident Peak Demand for Project Area Substations

	2016		2017		2018		2019		2020	
	SUM	WTR	SUM	WTR	SUM	WTR	SUM	WTR	SUM	WTR
Peak Date	8/2/2016 16:00	1/18/2016 18:00	7/6/2017 16:00	1/4/2017 18:00	7/9/2018 14:00	12/27/2017 17:00	7/15/2019 14:00	1/29/2019 18:00	7/2/2020 16:00	2/13/2020 7:00
Total Load	122.70	138.76	118.95	139.05	117.30	137.90	118.90	139.70	120.10	129.00
Subtotals By Substation										
Haines Road	26.20	28.90	25.70	27.70	24.20	27.80	23.80	28.10	24.30	23.50
Swan Lake Road	31.60	27.70	31.10	30.40	28.70	26.00	32.50	25.60	28.90	28.50
Ridgeview	22.00	27.10	25.50	27.10	21.90	31.40	22.90	29.80	23.80	22.70
Colbyville	18.60	26.80	16.20	23.20	18.80	20.30	19.70	27.40	22.70	22.60
French River	3.44	3.55	2.26	4.57	3.17	4.45	1.69	3.53	1.95	3.78
Clover Valley (GRE)	1.54	2.41	1.49	3.39	1.48	3.63	2.42	2.86	1.80	3.76
Two Harbors	3.42	3.54	2.25	4.54	3.15	4.42	1.69	3.51	1.95	3.76
Big Rock	4.80	4.90	4.80	4.90	5.10	5.20	4.80	5.20	4.60	4.30
Waldo (GRE)	7.62	9.85	7.86	11.33	7.87	12.38	7.05	11.29	7.58	12.38
Silver Bay Hillside	3.48	4.01	1.79	1.92	2.93	2.32	2.35	2.41	2.52	3.72

[1] IN THE MATTER OF THE APPLICATION OF MINNESOTA POWER FOR A CERTIFICATE OF NEED FOR THE DULUTH LOOP RELIABILITY PROJECT, Docket No. E015/CN-21-140, *Order Approving Notice Plan and Granting Variances and Exemptions* (Feb. 26, 2021).

[2] IN THE MATTER OF THE APPLICATION OF MINNESOTA POWER FOR A CERTIFICATE OF NEED FOR THE DULUTH LOOP RELIABILITY PROJECT, Docket No. E015/CN-21-140, *Exemption Request* (Feb. 26, 2021).

Minnesota Power filed its 2021 AFR filing with the Commission on June 29, 2021 in Docket No. E-999/PR-21-11. A copy of Section I (Introduction) and Section III (Forecast Results) of the 2021 AFR filing is provided in this appendix.

minnesota power
AN ALLETE COMPANY

June 29, 2021

VIA E-FILING
Ms. Anne Sell
Department of Commerce – Division of Energy Resources
85 7th Place East, Suite 280
St. Paul, MN 55101-2198

Re: Minnesota Power's 2021 Annual Electric Utility Forecast Report
Docket No.: E-999/PR-21-11

Dear Ms. Sell:

Enclosed please find Minnesota Power's 2021 Annual Electric Utility Forecast Report pursuant to Minn. Stat. § 216C.17, subd. 2 and Minn. Rules Chapter 7610. As an electric utility with Minnesota service areas, Minnesota Power (or the "Company") is required to submit to the Minnesota Department of Commerce – Division of Energy Resources ("Department") by July 1 of each year an annual report specifying its short- and long-term energy demand forecasts and the facilities necessary to meet the demand.

Information included in the "**ELEC_68_2020 Largest Customer List.xlsx**" and "**ELEC_68_2020 Forecast Report.xlsx**" Excel workbooks, as well as the **Methodology** document has been designated as **TRADE SECRET**.

Minnesota Power has excised material from the public version of the attached report documents as they identify and contain confidential, competitive information regarding Minnesota Power's methods, techniques and process for supplying electric service to its customers. The energy usage by specific customers and generation by fuel type has been consistently treated as Trade Secret in individual filings before the Minnesota Public Utilities Commission. Minnesota Power follows strict internal procedures to maintain the privacy of this information. The public disclosure of this information would have severe competitive implications for customers and Minnesota Power.

Minnesota Power is providing this justification for the information excised from the attached report and why the information should remain trade secret under Minn. Stat. 13.37. Minnesota Power respectfully requests the opportunity to provide additional justification in the event of a challenge to the Trade Secret designation provided herein.

The following documents have been uploaded to the Department and Minnesota Public Utilities Commission eDockets/eFiling system using Docket Number 21-11:

- ELEC_68_2020 Annual Report.xlsx
- ELEC_68_2020 Forecast Report.xlsx (**TRADE SECRET** & Public versions)
- ELEC_68_2020 Largest Customer List.xlsx (**TRADE SECRET**)
- ELEC_68_2020 Monthly Power Cost Adjustments.xlsx
- ELEC_68_2020 MN Service Area Map.pdf
- ELEC_68_2020 USDOE EIA-861.pdf
- ELEC_68_2020 Rate Schedules.pdf
- METHOD21.pdf (**TRADE SECRET** & Public versions)

Please don't hesitate to contact either one of us if you need additional paper copies or have any questions.

Sincerely,

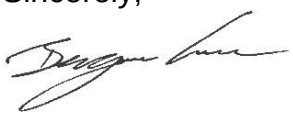

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Table of Contents

I. INTRODUCTION

The utility customer load forecast is the initial step in electric utility planning. Capacity and energy resource commitments are based on forecasts of energy consumption and seasonal peak demand requirements. Minnesota Power's forecast process combines a sound econometric methodology and data from reputable sources to produce a reasonable long-term outlook suitable for planning.

Minnesota Power (or the Company) is committed to continuous forecast process improvement, process transparency, forecast accuracy, and gaining customer insight. This 2021 forecast methodology document demonstrates Minnesota Power's continued efforts to meet these goals through comprehensive documentation, implementation of more systematic and replicable processes, and thorough analysis of results.

A history of increasing accuracy in load forecasting also speaks to the Company's commitment to innovate and enhance its forecast processes. Since 2000, current-year energy sales forecast error has decreased at an average rate of 0.05 percent per-year.[1] Minnesota Power owes its record of forecast accuracy to a combination of close contact with customers, continuous validation of forecast model inputs, and steady improvements in statistical analytic capabilities.

Since the 2019 Annual Forecast Report (AFR), Minnesota Power has included estimated impacts of energy efficiency, distributed generation (solar), and electric vehicles in the Expected scenario outlook. This expanded approach to forecasting can then be integrated into the Company's proactive and flexible planning to better inform the critical electric resource

[1] The error figure utilizes the LINEST function in Excel to estimate the trend in energy sales forecast accuracy based off of current-year historical accuracy metrics (Mean Absolute Percent Error, or MAPE), and was calculated excluding the recessionary years of 2009/2010, 2015/2016, and 2020 in which there are significant and unpredictable fluctuations in large industrial loads.

decisions ahead. Minnesota Power's forecasting approach helps keep the potential demand and energy outcomes transparent and robust.

A. 2021 FORECAST RESULTS OVERVIEW

Table 1 below shows the Expected case forecast for annual energy sales and seasonal peak demand. Annual energy sales are projected to decrease at a 0.3 percent per year rate (on average) from 2019 through 2035.[2] Summer and Winter peak demands are projected to decrease at average annual rates of 0.3 percent and 0.2 percent respectively. See Figures 1 and 2 on page 4 below for graphical representations of energy and peak demand. The AFR 2021 load forecast reflects 112 megawatts (MW)[3] of system load growth by 2035.

[2] Minnesota Power started growth calculations from 2019 levels to illustrate how the long-term energy and peak outlooks compare to pre-COVID-19 levels. Starting from 2020 would imply that the Company expects to see significant growth – while this is a true statement coming out of a pandemic-induced recession, it is not accurate compared to non-recessionary sales and peak levels.

[3] 112 MW = 2035 Summer Peak (1,599 MW) – 2020 Summer Peak (1,487 MW).

Table 1: Expected Case Energy Sales and Seasonal System Peak Demand Outlook

	Total Energy Sales			System Peak Demand					
	MWh	Y/Y Growth		Summer (MW)	Y/Y Growth		Winter (MW)	Y/Y Growth
2010	10,417,422		2010	1,732		2010	1,789	
2011	10,988,200	5.5%	2011	1,746	0.8%	2011	1,780	-0.5%
2012	11,107,357	1.1%	2012	1,790	2.5%	2012	1,774	-0.3%
2013	10,985,809	-1.1%	2013	1,782	-0.5%	2013	1,751	-1.3%
2014	11,038,979	0.5%	2014	1,805	1.3%	2014	1,821	4.0%
2015	10,059,466	-8.9%	2015	1,597	-11.5%	2015	1,554	-14.6%
2016	9,830,787	-2.3%	2016	1,609	0.8%	2016	1,692	8.9%
2017	10,654,217	8.4%	2017	1,688	4.9%	2017	1,789	5.7%
2018	10,638,691	-0.1%	2018	1,723	2.1%	2018	1,707	-4.5%
2019	10,482,913	-1.5%	2019	1,668	-3.2%	2019	1,687	-1.2%
2020	9,230,235	-11.9%	2020	1,487	-10.8%	2020	1,646	-2.4%
2021	9,395,177	**1.8%**	2021	1,522	**2.3%**	2021	1,547	**-6.0%**
2022	9,527,551	**1.4%**	2022	1,544	**1.5%**	2022	1,547	**0.0%**
2023	9,681,546	**1.6%**	2023	1,571	**1.7%**	2023	1,575	**1.8%**
2024	9,759,919	**0.8%**	2024	1,567	**-0.2%**	2024	1,574	**-0.1%**
2025	9,722,578	**-0.4%**	2025	1,566	**-0.1%**	2025	1,577	**0.2%**
2026	9,915,557	**2.0%**	2026	1,598	**2.0%**	2026	1,619	**2.7%**
2027	10,052,876	**1.4%**	2027	1,608	**0.6%**	2027	1,618	**0.0%**
2028	10,070,130	**0.2%**	2028	1,606	**-0.1%**	2028	1,618	**0.0%**
2029	10,033,190	**-0.4%**	2029	1,604	**-0.1%**	2029	1,618	**0.0%**
2030	10,028,288	**0.0%**	2030	1,603	**-0.1%**	2030	1,618	**0.0%**
2031	10,023,985	**0.0%**	2031	1,601	**-0.1%**	2031	1,620	**0.1%**
2032	10,060,694	**0.4%**	2032	1,601	**0.0%**	2032	1,622	**0.1%**
2033	10,037,766	**-0.2%**	2033	1,600	**0.0%**	2033	1,625	**0.2%**
2034	10,046,890	**0.1%**	2034	1,600	**0.0%**	2034	1,628	**0.2%**
2035	10,056,598	**0.1%**	2035	1,599	**0.0%**	2035	1,631	**0.2%**

Minnesota Power remains a Winter peaking utility and will continue to expect an approximate 20 MW difference in this seasonal profile. Figures 1 and 2 below show the projected energy sales and system peak demand, respectively for AFR 2021 compared to AFR 2020.

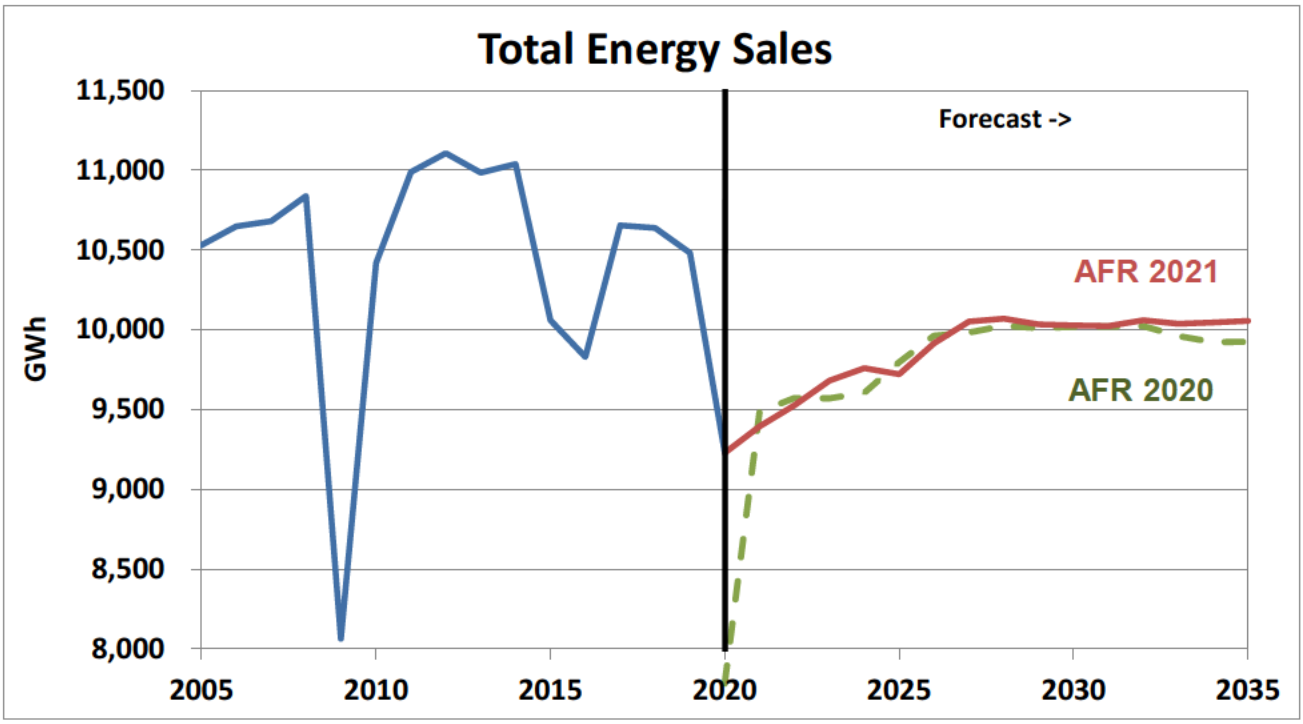


Figure 1: Expected Case Energy Sales Outlook

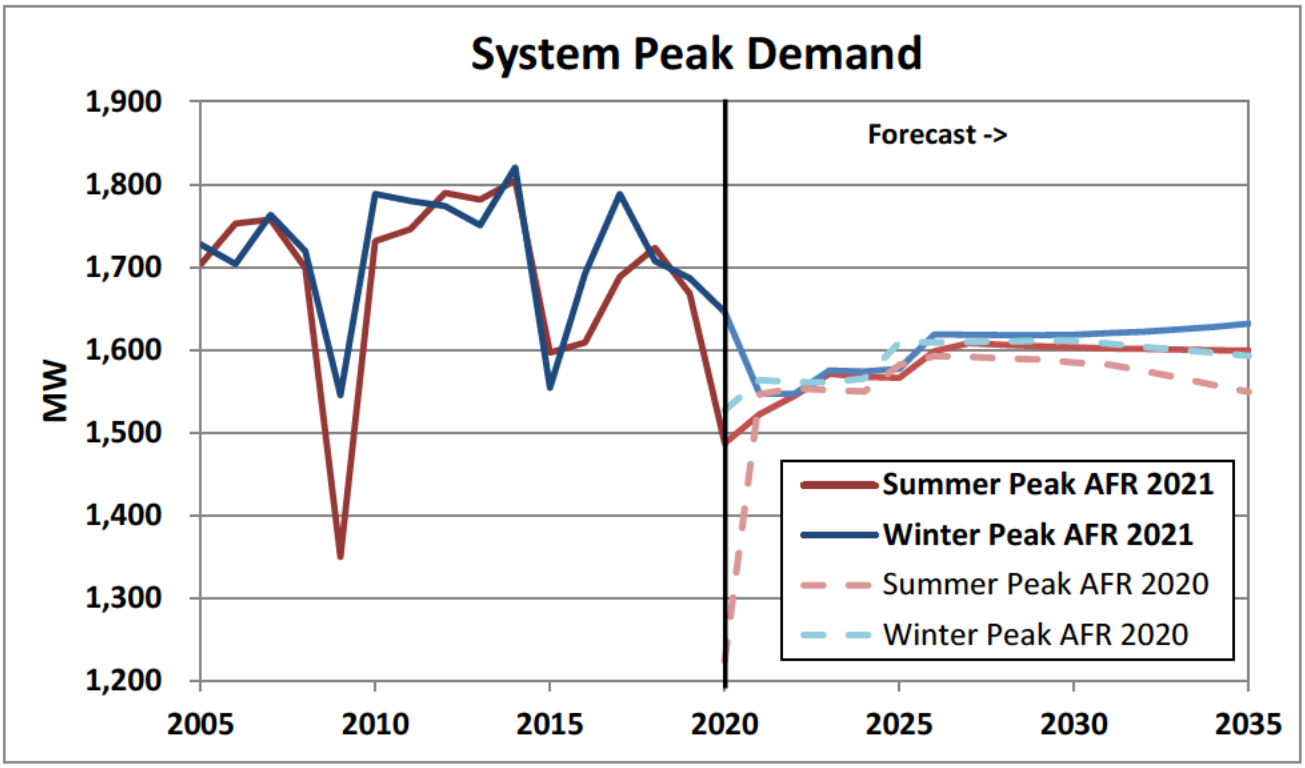


Figure 2: Expected Case Peak Demand Outlook

B. Document Structure

This report details the construction of the energy sales and demand forecast for Minnesota Power for the 2021-2035 timeframe. Each section is designed to convey the report requirements per Minn. Rules Chapter 7610, and give insight into the Company's forecasting process and results.

Section II: *Forecast Methodology, Data Inputs, and Assumptions* details the development of customer count, peak demand, and energy sales forecasts. This section contains a step-by-step description of Minnesota Power's forecasting process and details the development of databases and models.

Other information included in Section II:

- Descriptions of all forecast models used in the development of this year's forecasts, including:
    - Model specifications
    - Model statistics
    - Resulting forecast's growth rates
    - A discussion of each model's econometric merits and potential issues, as well as an explanation/justification of each variable
- Additional steps taken in 2021 to improve the forecast process and final product
- Strengths and weaknesses of Minnesota Power's methodology
- All data inputs and sources, including an overview of key economic assumptions
- A description of all changes made to the forecast database since last year's forecast
- A discussion of Minnesota Power's sensitivity to Large Industrial customer contracts
- Minnesota Power's confidence in the forecast

Section III: *Forecast Results* presents the Expected scenario forecast Minnesota Power developed for the AFR 2021 forecast. This forecast is the product of a robust econometric modeling process and careful consideration of potential industrial and resale customer load developments.

Section IV: *Other Information* presents other report information required by Minnesota law and cross-references the specific requirements to specific sections in this document.

III. AFR 2021 SCENARIO FORECAST DESCRIPTIONS

A. Expected Forecast Scenario Description

The AFR 2021 Expected scenario includes changes in customer operations that are not certain, but have a high likelihood of occurring. This high likelihood is characterized by formal communication from the customer, plus one or more of the following:

- An Electric Service Agreement is either executed or is in negotiation;
- The change in operation is supported by customer actions, such as construction or investment that will result in additional power requirements; and/or
- A timeframe for the operation and resulting power.

The Expected scenario assumes additional load from several new and existing customers. Most notably, this scenario accounts for a new industrial facility on the Iron Range; the facility is expected to reach full demand in mid-2026. Additionally, this scenario assumes the start-up of a new industrial facility in Duluth; the facility is expected to reach full demand in Q2 2023.

The scenario assumes a moderate, or "expected," rate of national economic growth as the basis for the regional economic model.[51]

The Expected scenario results in compound annual energy sales and Summer peak demand growth of 0.6 percent and 0.4 percent, respectively, from 2020 through 2035.

B. Other Adjustments to Econometric Forecast

Minnesota Power's forecast scenario is the summation of the econometric model results and arithmetic adjustments for impacts which cannot be accurately modeled. These exogenous impacts are documented as separate seasonal peak and energy adjustments in the Expected scenario tables. These adjustments fall into the following categories:

1. **Net Load/Energy Added**: are exogenous adjustments for load added due to Distributed Solar Generation, Electric Vehicle impacts, new customers or expansion by

[51] All econometric models use the "expected" rate of national economic growth per IHS Global Insight's January 2021 release.

existing customers, and lost load due to closure or loss of contract. This adjustment includes all load added or lost on the system, regardless of how that load is met; “Net Load/Energy Added” accounts for any change in load at the system level. To preserve customer confidentiality, the seasonal demand and energy impacts are netted to a single value before being applied to the econometric values.

2. **Customer Generation:** is the demand on Minnesota Power system that is met by customer owned generation. Customer generation can fluctuate without clear economic causes so this component of Minnesota Power system peak is removed to more accurately model demand for an econometric forecast. The process for this adjustment can be outlined in 3 steps:

   - Remove Customer Generation from the historical peak series.
   - Econometrically project a less volatile “FERC load coincident w/Monthly Minnesota Power System peak (MW)” monthly peak series.
   - Arithmetically account for Customer Generation after forecasting.

   This procedure has been a methodological staple of Minnesota Power forecasting for over a decade and increases the quality of the econometric processes and resulting forecasts.

   The forecast assumption for customer generation is determined by averaging the historical customer generation coincident with the monthly peak over a twelve-year historical timeframe. The result is a set of 12 distinct monthly values for each month of the year. The MWh adjustment is determined similarly through averaging the most recent twelve-year historical timeframe, but excluding 2009 due to its irregularly low value. These adjustments are credits that increase the estimated peaks and system energy use projection by the estimated amount.

   This Customer Generation adjustment to peak and energy forecasts also accounts for expected changes in the operation or ownership of generating assets that would affect deliveries to customers.

3. **Dual Fuel**: Minnesota Power has a robust Dual Fuel program for residential and commercial customers. The impacts of historical interruptions are assumed to be inherent in the forecast since curtailments affected historical monthly peak demand. Post-regression adjustments for dual fuel would produce an artificially low peak demand forecast. Minnesota Power will account for dual fuel interruption as a resource and not as an adjustment to the load forecast.

C. Expected Scenario Peak Demand and Energy Outlooks

Peak Forecast (MW)

	Econometric		+ Net Load Added		= MP Delivered Load		+ Customer Gen.		= MP System Peak			
	Sum	Win	Sum	Win	**Sum**	**Win**	Sum	Win	**Sum**	**Win**	*Annual*	
2000					1,469	1,503	242	281	1,711	1,784	*1,784*	2000
2001					1,383	1,421	150	175	1,533	1,595	*1,595*	2001
2002					1,464	1,456	165	180	1,629	1,636	*1,636*	2002
2003					1,408	1,496	163	175	1,570	1,671	*1,671*	2003
2004					1,449	1,533	168	189	1,617	1,721	*1,721*	2004
2005					1,535	1,555	169	172	1,703	1,727	*1,727*	**2005**
2006					1,584	1,534	169	170	1,753	1,704	*1,753*	2006
2007					1,582	1,584	176	179	1,758	1,763	*1,763*	2007
2008					1,552	1,575	147	145	1,699	1,719	*1,719*	2008
2009					1,200	1,369	150	176	1,350	1,545	*1,545*	2009
2010					1,591	1,599	140	190	1,732	1,789	*1,789*	**2010**
2011					1,573	1,630	173	150	1,746	1,780	*1,780*	2011
2012					1,603	1,605	187	169	1,790	1,774	*1,790*	2012
2013					1,645	1,589	136	162	1,782	1,751	*1,782*	2013
2014					1,620	1,637	184	184	1,805	1,821	*1,821*	2014
2015					1,442	1,461	155	94	1,597	1,554	*1,597*	**2015**
2016					1,453	1,520	156	173	1,609	1,692	*1,692*	2016
2017					1,538	1,594	150	195	1,688	1,789	*1,789*	2017
2018					1,585	1,557	139	150	1,723	1,707	*1,723*	2018
2019					1,560	1,588	108	99	1,668	1,687	*1,687*	2019
2020					1,410	1,548	78	97	1,487	1,646	*1,646*	**2020**
2021	1,458	1,464	(52)	(33)	**1,406**	**1,431**	116	116	**1,522**	**1,547**	**1,547**	2021
2022	1,464	1,464	(35)	(33)	**1,429**	**1,431**	116	116	**1,544**	**1,547**	**1,547**	2022
2023	1,462	1,464	(7)	(5)	**1,455**	**1,459**	116	116	**1,571**	**1,575**	**1,575**	2023
2024	1,460	1,463	(8)	(4)	**1,452**	**1,458**	116	116	**1,567**	**1,574**	**1,574**	2024
2025	1,459	1,462	(9)	(1)	**1,450**	**1,461**	116	116	**1,566**	**1,577**	**1,577**	**2025**
2026	1,459	1,462	24	41	**1,482**	**1,503**	116	116	**1,598**	**1,619**	**1,619**	2026
2027	1,458	1,461	34	41	**1,492**	**1,502**	116	116	**1,608**	**1,618**	**1,618**	2027
2028	1,457	1,460	33	42	**1,490**	**1,502**	116	116	**1,606**	**1,618**	**1,618**	2028
2029	1,456	1,460	32	43	**1,489**	**1,502**	116	116	**1,604**	**1,618**	**1,618**	2029
2030	1,456	1,459	31	43	**1,487**	**1,502**	116	116	**1,603**	**1,618**	**1,618**	**2030**
2031	1,455	1,460	30	44	**1,486**	**1,504**	116	116	**1,601**	**1,620**	**1,620**	2031
2032	1,456	1,460	29	46	**1,485**	**1,506**	116	116	**1,601**	**1,622**	**1,622**	2032
2033	1,457	1,461	28	48	**1,484**	**1,509**	116	116	**1,600**	**1,625**	**1,625**	2033
2034	1,458	1,462	26	50	**1,484**	**1,512**	116	116	**1,600**	**1,628**	**1,628**	2034
2035	1,458	1,463	25	52	**1,483**	**1,515**	116	116	**1,599**	**1,631**	**1,631**	**2035**

Energy Sales Forecast (MWh)

	Econometric	+ Net Energy Added	= MP Delivered Energy	- Customer Gen.	= System Energy Use	MP System Peak	MP System Load Factor	
2000			10,029,324					
2001			9,476,860					
2002			9,950,113	1,187,858	11,137,971	1,636	*0.78*	2002
2003			9,638,417	1,232,635	10,871,052	1,671	*0.74*	2003
2004			10,117,168	1,267,728	11,384,896	1,721	*0.76*	2004
2005			10,345,265	1,258,895	11,604,160	1,727	*0.77*	**2005**
2006			10,443,777	1,195,070	11,638,847	1,753	*0.76*	2006
2007			10,670,857	1,252,965	11,923,822	1,763	*0.77*	2007
2008			10,826,034	1,276,158	12,102,192	1,719	*0.80*	2008
2009			8,062,253	1,108,014	9,170,267	1,545	*0.68*	2009
2010			10,417,422	1,299,292	11,716,714	1,789	*0.75*	**2010**
2011			10,988,200	1,422,107	12,410,307	1,780	*0.80*	2011
2012			11,107,357	1,200,317	12,307,674	1,790	*0.79*	2012
2013			10,985,809	1,185,139	12,170,948	1,782	*0.78*	2013
2014			11,038,979	1,287,965	12,326,944	1,821	*0.77*	2014
2015			10,059,466	1,227,221	11,286,687	1,597	*0.81*	**2015**
2016			9,830,787	1,074,786	10,905,573	1,692	*0.74*	2016
2017			10,654,217	1,215,894	11,870,111	1,789	*0.76*	2017
2018			10,638,691	1,236,276	11,874,967	1,723	*0.79*	2018
2019			10,482,913	1,064,454	11,547,367	1,687	*0.78*	2019
2020			9,230,235	812,490	10,042,725	1,646	*0.70*	**2020**
2021	9,900,752	(505,575)	**9,395,177**	932,620	**10,327,796**	**1,547**	***0.76***	2021
2022	9,946,909	(419,358)	**9,527,551**	932,524	**10,460,075**	**1,547**	***0.77***	2022
2023	9,937,418	(255,872)	**9,681,546**	932,524	**10,614,070**	**1,575**	***0.77***	2023
2024	9,949,609	(189,690)	**9,759,919**	934,983	**10,694,902**	**1,574**	***0.78***	2024
2025	9,912,380	(189,802)	**9,722,578**	932,620	**10,655,198**	**1,577**	***0.77***	**2025**
2026	9,906,031	9,526	**9,915,557**	932,524	**10,848,081**	**1,619**	***0.77***	2026
2027	9,900,786	152,090	**10,052,876**	932,524	**10,985,400**	**1,618**	***0.78***	2027
2028	9,918,457	151,673	**10,070,130**	934,983	**11,005,113**	**1,618**	***0.78***	2028
2029	9,882,833	150,358	**10,033,190**	932,620	**10,965,810**	**1,618**	***0.77***	2029
2030	9,878,696	149,592	**10,028,288**	932,524	**10,960,811**	**1,618**	***0.77***	**2030**
2031	9,874,754	149,231	**10,023,985**	932,524	**10,956,509**	**1,620**	***0.77***	2031
2032	9,910,859	149,836	**10,060,694**	934,983	**10,995,677**	**1,622**	***0.77***	2032
2033	9,887,566	150,200	**10,037,766**	932,620	**10,970,386**	**1,625**	***0.77***	2033
2034	9,895,130	151,759	**10,046,890**	932,524	**10,979,414**	**1,628**	***0.77***	2034
2035	9,902,719	153,879	**10,056,598**	932,524	**10,989,122**	**1,631**	***0.77***	**2035**

Customer Count Forecast by Class

Year	Residential	Commercial	Industrial	Street Lighting	Public Authorities	Resale	Total
2005	116,072	20,040	460	490	233	18	137,313
2006	117,596	20,419	451	509	237	18	139,229
2007	118,870	20,630	435	548	241	18	140,742
2008	119,300	20,969	431	585	246	18	141,549
2009	121,217	21,287	429	618	262	18	143,831
2010	121,235	21,491	424	2,209	278	18	145,655
2011	121,251	21,603	421	5,335	281	18	148,909
2012	120,697	21,614	411	6,414	275	18	149,429
2013	121,314	21,915	402	655	287	18	144,591
2014	121,601	22,096	394	660	282	17	145,050
2015	121,515	22,170	394	673	281	17	145,050
2016	121,836	22,420	396	689	281	17	145,639
2017	122,295	22,695	390	695	278	17	146,370
2018	122,557	22,834	380	693	277	17	146,758
2019	122,926	23,059	379	701	275	17	147,356
2020	123,617	23,346	378	720	271	16	148,348
2021	**123,702**	**23,437**	**371**	**740**	**270**	**16**	**148,536**
2022	**123,854**	**23,647**	**369**	**746**	**269**	**16**	**148,902**
2023	**124,074**	**23,842**	**365**	**752**	**268**	**16**	**149,317**
2024	**124,292**	**24,040**	**361**	**757**	**267**	**16**	**149,733**
2025	**124,517**	**24,238**	**357**	**763**	**266**	**16**	**150,157**
2026	**124,746**	**24,453**	**353**	**769**	**267**	**16**	**150,604**
2027	**124,957**	**24,655**	**348**	**774**	**266**	**16**	**151,017**
2028	**125,155**	**24,859**	**344**	**780**	**266**	**16**	**151,419**
2029	**125,359**	**25,061**	**339**	**785**	**265**	**16**	**151,825**
2030	**125,567**	**25,266**	**334**	**791**	**265**	**16**	**152,239**
2031	**125,769**	**25,469**	**330**	**796**	**265**	**16**	**152,644**
2032	**125,962**	**25,673**	**325**	**802**	**264**	**16**	**153,041**
2033	**126,140**	**25,877**	**320**	**807**	**264**	**16**	**153,423**
2034	**126,298**	**26,082**	**316**	**813**	**263**	**16**	**153,787**
2035	**126,442**	**26,286**	**311**	**818**	**263**	**16**	**154,136**

Energy Sales Forecast (MWh) by Customer Class

Year	Residential	Commercial	Industrial	Street Lighting	Public Authorities	Resale	Total
2005	1,013,156	1,200,075	6,761,669	15,646	61,396	1,293,323	10,345,265
2006	1,011,699	1,206,607	6,782,975	15,831	60,882	1,365,783	10,443,777
2007	1,051,453	1,244,930	6,622,051	15,752	67,056	1,669,615	10,670,857
2008	1,079,837	1,240,324	6,737,333	15,983	64,912	1,687,645	10,826,034
2009	1,075,116	1,212,778	4,051,352	16,049	62,036	1,644,922	8,062,253
2010	1,057,476	1,221,754	6,364,080	15,833	61,768	1,696,511	10,417,422
2011	1,069,856	1,226,174	6,913,648	16,420	62,458	1,699,643	10,988,200
2012	1,043,281	1,237,386	7,037,843	15,954	54,074	1,718,819	11,107,357
2013	1,086,481	1,256,540	6,873,993	16,066	51,736	1,700,993	10,985,809
2014	1,112,579	1,262,464	6,946,536	16,400	53,237	1,647,763	11,038,979
2015	1,026,454	1,254,681	6,073,273	15,801	54,471	1,634,786	10,059,466
2016	1,015,465	1,243,045	5,855,829	15,588	51,455	1,649,405	9,830,787
2017	1,010,955	1,223,786	6,697,793	14,873	49,945	1,656,865	10,654,217
2018	1,052,800	1,233,117	6,677,892	14,206	49,884	1,610,791	10,638,691
2019	1,042,353	1,202,403	6,709,265	13,482	47,302	1,468,108	10,482,913
2020	1,046,910	1,131,101	5,652,942	12,617	46,375	1,340,290	9,230,235
2021	**1,039,073**	**1,159,875**	**5,749,865**	**11,195**	**44,201**	**1,390,968**	**9,395,177**
2022	**1,037,401**	**1,184,475**	**5,833,497**	**10,076**	**43,550**	**1,418,551**	**9,527,551**
2023	**1,036,816**	**1,195,779**	**5,892,149**	**9,524**	**43,208**	**1,504,070**	**9,681,546**
2024	**1,039,466**	**1,209,562**	**5,899,804**	**9,546**	**42,963**	**1,558,578**	**9,759,919**
2025	**1,035,239**	**1,212,042**	**5,863,912**	**9,512**	**42,289**	**1,559,583**	**9,722,578**
2026	**1,034,529**	**1,222,220**	**6,044,853**	**9,516**	**42,367**	**1,562,073**	**9,915,557**
2027	**1,035,014**	**1,228,425**	**6,166,005**	**9,529**	**42,267**	**1,571,637**	**10,052,876**
2028	**1,039,497**	**1,235,264**	**6,161,492**	**9,591**	**41,973**	**1,582,313**	**10,070,130**
2029	**1,036,761**	**1,234,350**	**6,125,173**	**9,587**	**41,356**	**1,585,963**	**10,033,190**
2030	**1,037,366**	**1,236,251**	**6,107,059**	**9,616**	**40,821**	**1,597,176**	**10,028,288**
2031	**1,038,131**	**1,239,758**	**6,093,257**	**9,640**	**40,596**	**1,602,603**	**10,023,985**
2032	**1,043,288**	**1,248,561**	**6,098,415**	**9,691**	**40,534**	**1,620,205**	**10,060,694**
2033	**1,042,247**	**1,248,269**	**6,071,658**	**9,678**	**39,993**	**1,625,920**	**10,037,766**
2034	**1,045,437**	**1,253,445**	**6,062,199**	**9,676**	**39,703**	**1,636,430**	**10,046,890**
2035	**1,049,178**	**1,258,707**	**6,053,480**	**9,667**	**39,376**	**1,646,189**	**10,056,598**

APPENDIX Q

DEMAND-SIDE MANAGEMENT AND CONSERVATION

APPENDIX Q
APPLICANT'S DEMAND-SIDE MANAGEMENT AND CONSERVATION

Pursuant to Minn. R. 7849.0290, a Certificate of Need application must provide information related to an applicant's energy conservation and efficiency programs and a quantification of the impact of these conservation and efficiency programs on forecast data. Minnesota Power requested and was granted an exemption from this rule requirement by the Minnesota Public Utilities Commission.[1] In lieu of the information required by Minn. R. 7849.0290, Minnesota Power agreed to provide a summary of the conservation and demand-side management information that was provided as part of Minnesota Power's Integrated Resource Plan and Conservation and Improvement Plan ("CIP") filings.[2]

Minnesota Power filed its 2020 CIP Consolidated Filing with the Commission on April 1, 2021 in Docket No. E015/M-21-199. A copy of the "Summary" section and the "2020 CIP Status Report" section of this filing is provided in this appendix.

Minnesota Power filed its 2021 Integrated Resource Plan ("2021 IRP") with the Commission on February 1, 2021 in Docket No. E015/RP-21-33. Appendix B of the 2021 IRP filing contained information regarding Minnesota Power's planning and strategies for demand-side management, Energy Efficiency, and CIP. A copy of Appendix B of the 2021 IRP filing is provided in this appendix.

Additional information regarding Minnesota Power's conservation and demand-side management programs can be found on Minnesota Power's website at: https://www.mnpower.com/ProgramsRebates/PO1.

[1] IN THE MATTER OF THE APPLICATION OF MINNESOTA POWER FOR A CERTIFICATE OF NEED FOR THE DULUTH LOOP RELIABILITY PROJECT, Docket No. E015/CN-21-140, *Order Approving Notice Plan and Granting Variances and Exemptions* (Feb. 26, 2021).

[2] IN THE MATTER OF THE APPLICATION OF MINNESOTA POWER FOR A CERTIFICATE OF NEED FOR THE DULUTH LOOP RELIABILITY PROJECT, Docket No. E015/CN-21-140, *Exemption Request* (Feb. 26, 2021).

minnesota power

AN ALLETE COMPANY

2020 Consolidated Filing

Conservation Improvement Program

Understanding • Tools and Resources • Informed Choices • Right Fit Options

April 1, 2021

Docket No. E015/M-21-[illegible]; E015/CIP-15-[illegible]

Summary

Minnesota Power
2020 Conservation Improvement Program ("CIP") Consolidated Filing

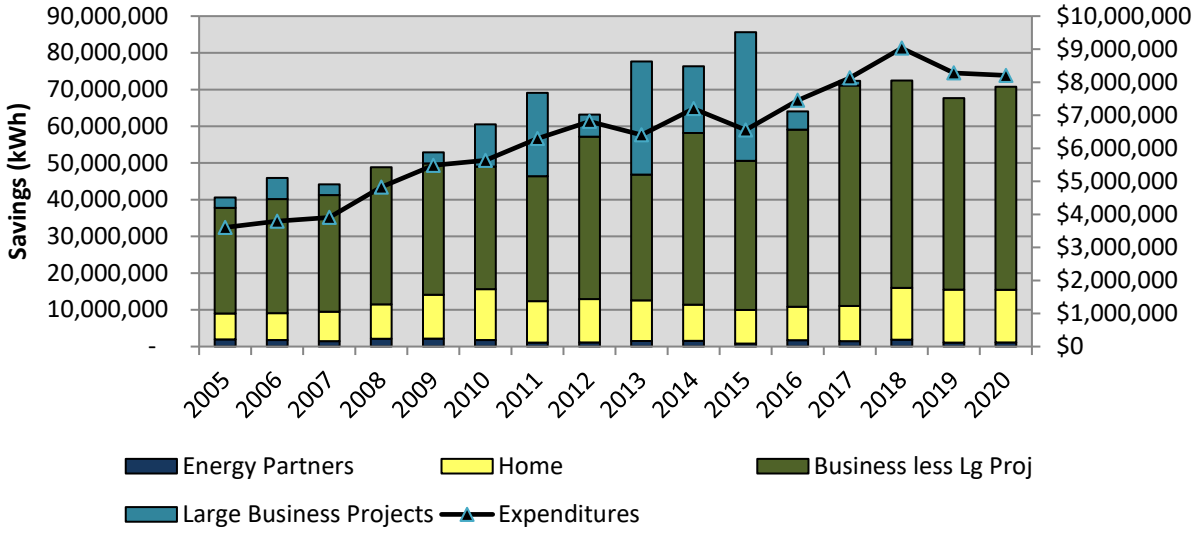
EXECUTIVE SUMMARY

Minnesota Power (or, "the Company") is pleased to report its 2020 energy conservation program results:

- Minnesota Power achieved energy savings of **2.6%** of retail energy sales,[1] well above the state's 1.5% energy-savings goal established in Minn. Stat. § 216B.241.[2]
- The Company achieved energy savings totaling **70,774,076 kWh**, which is **122%** of the approved energy-savings goal for the year. The Company also achieved demand savings of **6,811 kW**, which is **74%** of the approved demand-savings goal. The proposed energy-savings target for 2020 was well above the state 1.5% energy-savings goal for CIP.
- Expenditures totaled **$8,205,771**, which was **78%** of the approved program budget for 2020.

This is the eleventh year in a row that Minnesota Power has met or exceeded Minnesota's 1.5% energy savings goal since 2010, when the goal went into effect. The figure below illustrates historical and recent kWh energy-savings achievements, along with CIP expenditures. As noted in the chart below, large customer projects (one million kWh or greater) have become a much smaller portion of Minnesota Power's overall CIP energy savings, and in 2018, 2019 and 2020 there were no such projects.

Minnesota Power's 2005–2020 CIP Achievements



[1] In accordance with Minnesota Rules part 7690.1200, 2013–2015, weather-normalized average retail energy sales were used to calculate the electric savings goal for Minnesota Power's 2017–2019 Triennial CIP. This equated to 2,939,363,960 kWh, net of CIP exempt customers at the time of the Triennial Filing. Minnesota Power had one newly exempt customer in 2017. Adjusted weather-normalized average retail energy sales excluding this customer is 2,749,752,960 kWh. Savings for 2020 are calculated as a percentage of this adjusted figure.

[2] *In the Matter of Minnesota Power's 2020 Electric CIP Extension Plan*, Docket No. E015/CIP-16-117, November 26, 2019.

Minnesota Power's 2020 CIP Expenditures and Energy Savings

2020	*Expenditures*	*Energy Savings (kWh) at busbar*
Direct Savings Programs:		
Energy Partners (Low Income)	$344,822	1,118,250
Power of One Home (Residential)	$1,749,973	14,344,836
Power of One Business (Business/Commercial/Industrial/Agricultural)	$3,993,144	55,310,990
Indirect Savings Programs:		
Customer Engagement	$577,235	
Energy Analysis	$725,498	
Research & Development	$167,358	
Evaluation & Program Development	$480,877	
Regulatory Charges	$166,864	
Total	**$8,205,771**	**70,774,076**

STATE OF MINNESOTA
BEFORE THE
MINNESOTA PUBLIC UTILITIES COMMISSION

In the Matter of Minnesota Power's 2020 Conservation Improvement Program Consolidated Filing	Reporting on CIP Tracker Account Activity, Financial Incentives Report, Proposed CPA Factors and 2020 Project Evaluations Docket No. E-015/M-21-199 E-015/CIP-16-117.04

SUMMARY OF FILING

Minnesota Power (or, "the Company") hereby files with the Minnesota Public Utilities Commission ("MPUC or Commission") and the Department of Commerce, Division of Energy Resources ("Department") its annual Conservation Improvement Program ("CIP") Consolidated Filing in compliance with Minn. Stat. § 216B.241. Minnesota Power requests approval of the following:

- Recovery of the 2020 CIP Tracker Account activity year-end balance of ($380,310)
- A revised Conservation Program Adjustment ("CPA"), to be first implemented without proration on July 1, 2021, of $0.002015/kWh
- A variance of Minn. Rules 7820.3500 and 7825.2600 to permit the continued combination of the Conservation Program Adjustment with the Fuel and Purchased Power Clause Adjustment on customer bills

Minnesota Power submits its Conservation Improvement Program Consolidated Filing via eFiling with the Department of Commerce, Division of Energy Resources to comply with annual CIP project evaluation filing requirements.


Status
Report

2020 CIP STATUS REPORT

POWER OF ONE CONSERVATION PROGRAM

Minnesota Power's Power of One energy conservation strategy offers a wide variety of program offerings to best serve its diverse customer mix, while continuing to focus on targeted program objectives—quality installations, informed decisions, conservation and safety. The Company exercises a thoughtful, balanced approach in terms of traditional program design versus less established, emerging opportunities, using a combination of "direct savings" and "indirect savings" programs that complement each other and provide for a comprehensive customer experience. Refer to Figures 1 and 2 for a breakdown of spending by direct savings and indirect savings programs.

Figure 1: 2020 Program Spending By Direct and Indirect Savings Programs

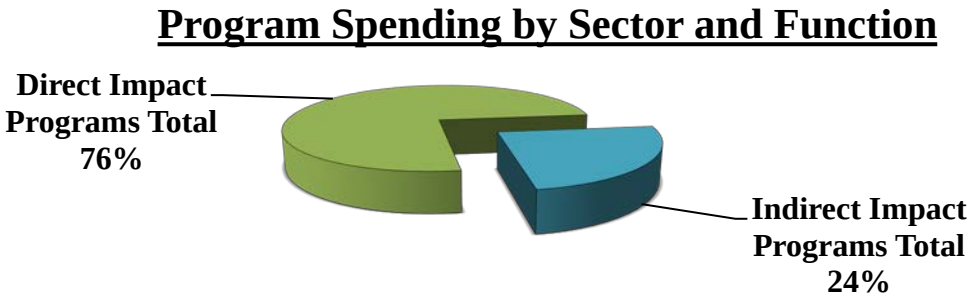
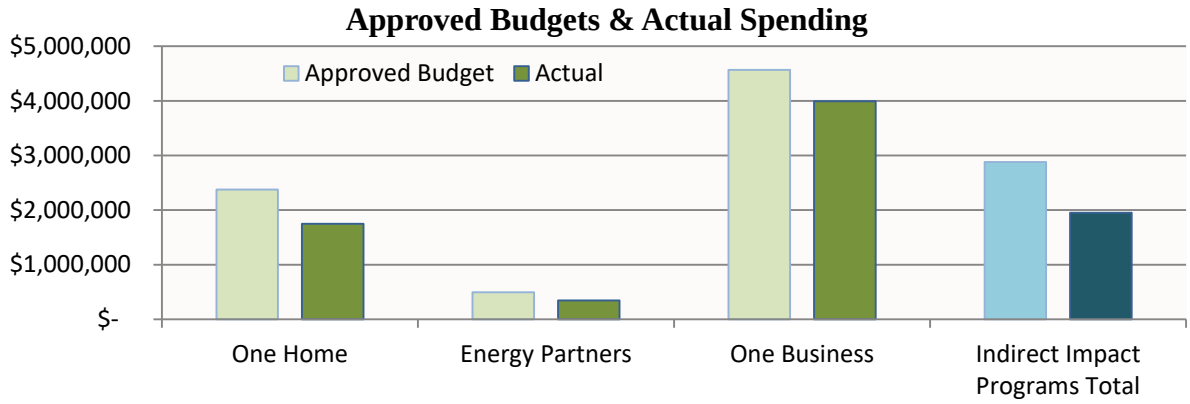


Figure 2: 2020 Approved Budgets & Actual Spending



Investing in a range of programs is essential to keep Minnesota Power's program portfolio strong well into the future. See Figures 3 and 4 for a breakdown of spending by program.

Figure 3: 2020 Direct Savings Program Spending Breakdown

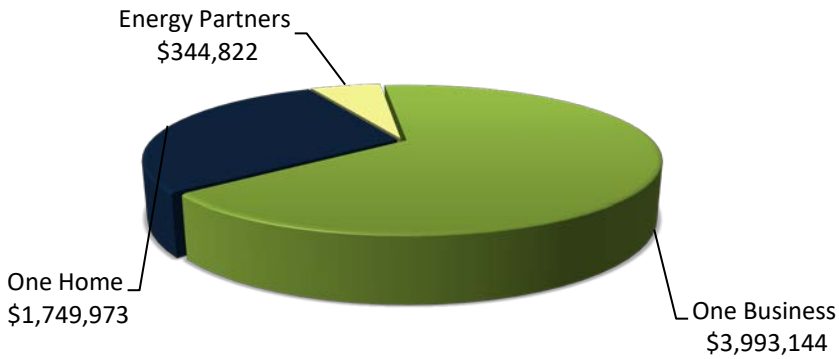
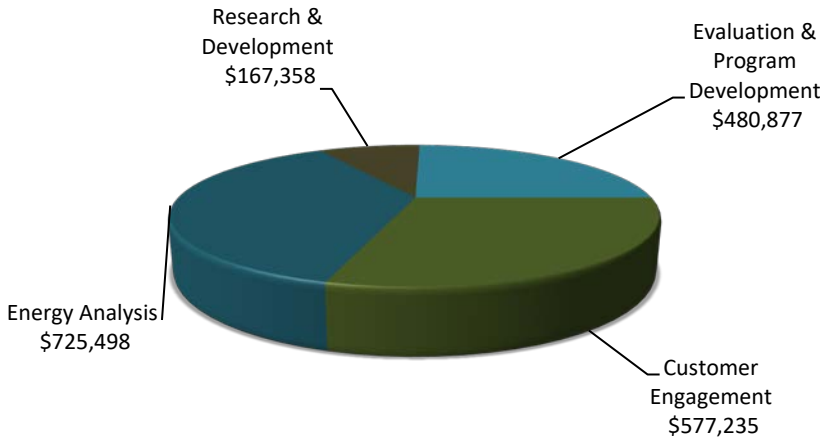
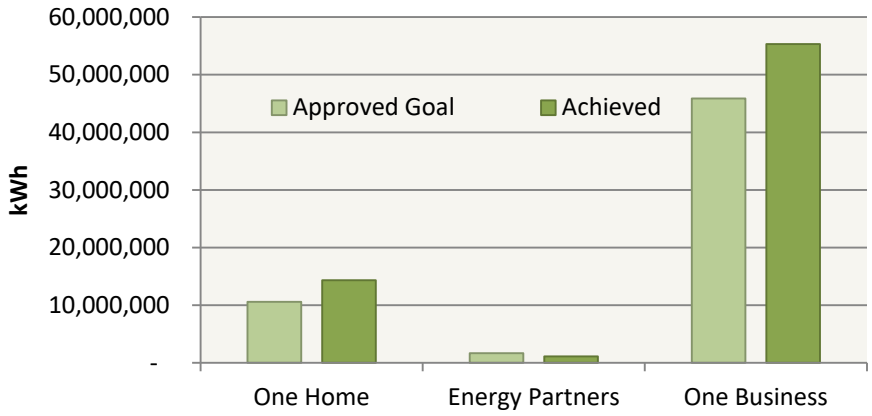


Figure 4: 2020 Indirect Savings Program Spending Breakdown



Power of One Home, Power of One Business and Energy Partners remain the foundational programs that consistently deliver energy savings within the Power of One portfolio—typically through established methods like incentives and direct installation of energy efficiency measures. See Figure 5 for a breakdown of approved savings goals vs. achievements by program.

Figure 5: 2020 Approved Savings Goals & Achievements



While rebates continue to be a large component of influencing customer choices, the value of Power of One program offerings and resources also comes from including a range of services such as education, training, research, performance studies, energy analysis and overall energy awareness. Minnesota Power provides customers with tools and resources they need to make informed choices, delivered through Minnesota Power's cross-market programs—Customer Engagement, Energy Analysis, Research & Development and Evaluation & Planning. These programs support direct savings programs and serve as a pipeline for projects that ultimately deliver on program objectives.

LOOKING FORWARD

The COVID-19 pandemic began in early 2020 and had varying impacts on customers across the region. Health concerns, supply chain disruptions and general uncertainty for residential and commercial customers limited Minnesota Power's ability to deliver programs through traditional channels and required the Company to find creative ways to engage and support customers virtually. Minnesota Power halted in-person audits and limited program communications for much of the 2020 program year, which impacted some programs more extensively than others. The Company anticipates that the effects of the COVID-19 pandemic will continue into 2021 and beyond as customer expectations and comfort levels evolve.

The current energy-efficiency environment is rapidly evolving in ways that will continue to present new challenges and opportunities. As a result of the strong focus on virtual program delivery in 2020, Minnesota Power has a backlog of customer site visits that will need to be performed as COVID-related restrictions are lifted and customers become more comfortable with having energy auditors and contractors on site. This will increase the need for Minnesota Power and its delivery partners to be in the field, completing outstanding projects and proactively engaging with customers that have been negatively impacted by the events of the last year. Minnesota Power, together with stakeholders and delivery partners, will need to understand, which programs can be effectively delivered virtually in the future to meet changing customer needs and expectations.

In addition to challenges related to the COVID-19 pandemic, the Company is working to modify its programs to reflect changes in technology, policy priorities, the regulatory framework in Minnesota, and the industry in general. As described in past filings, Minnesota Power has

historically achieved a significant portion of savings from large-scale commercial projects. Projects of this magnitude have become less available, as indicated by the lack of large projects completed in recent years. Additionally, cost-effective savings opportunities continue to decline due to market saturation and changing baselines, requiring the Company to explore new ways to engage customers.

Minnesota Power has taken steps to prepare for these challenges in recent years including an increased focus on new technologies, exploring new delivery strategies and modifying communication efforts to ensure continued effective outreach. The Company will continue to expand on efforts to engage customers in energy efficiency using new and innovative methods to promote underutilized technologies. While these efforts have been successful thus far, as evidenced by increased participation within the newer heat pump technologies in the heating, ventilation and air conditioning ("HVAC") portion of the One Home program, continuing to achieve this higher level of savings through less cost-effective measures is more time and resource intensive.

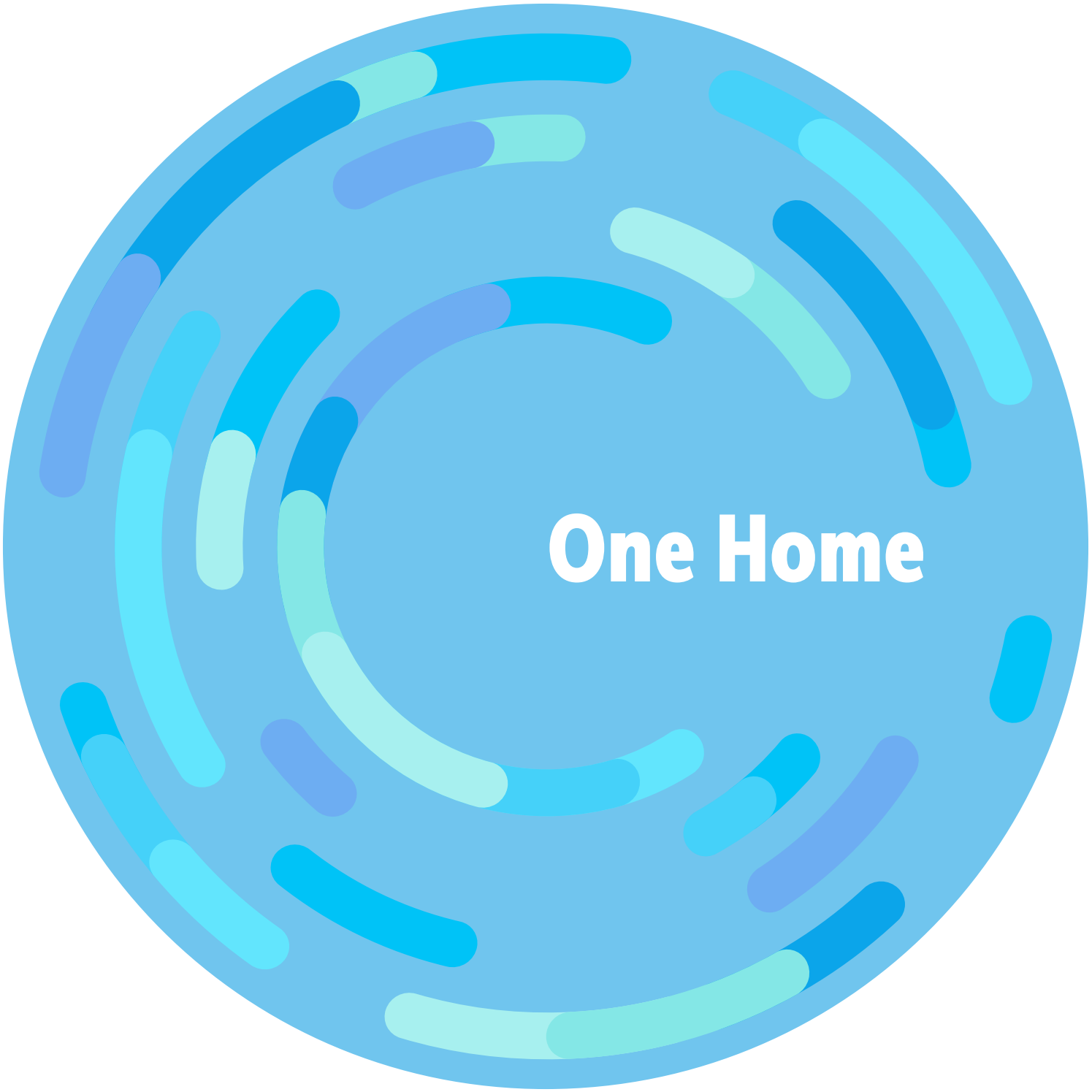
As utilities continue to navigate the changing conservation landscape, regulatory flexibility may be necessary to continue advancing Minnesota's energy policy as well as economic and environmental goals. Minnesota Power will monitor legislative changes, and engage in working groups as discussions around beneficial electrification, fuel switching within CIP, increased focus on equity and engaging underserved communities, and changes to evaluation and performance metrics, among other things, unfold. Minnesota Power remains committed to providing sustainable and cost-effective energy-efficiency programs, with ongoing program development and increased efforts to raise program awareness and participation.

Minnestota Power's 2020 Cip Expenditures & Achievements

2020	*Expenditures*				*Energy Savings (kWh @ Busbar)*				*Demand Savings (kW @ Busbar)*				*Participation*			
Direct Impact Programs	***Filed Budget***	***Approved Budget***	***Actual***	***Percent of Approved***	***Filed Goal***	***Approved Goal***	***Achieved***	***Percent to Goal***	***Filed Goal***	***Approved Goal***	***Achieved***	***Percent to Goal***	***Filed Goal***	***Approved Goal***	***Achieved***	***Percent to Goal***
One Home	$ 2,377,252	$ 2,377,252	$ 1,749,973	74%	10,590,448	10,590,448	14,344,836.3	135%	1,126	1,126	1,744.1	155%	122,841	122,841	217,554	177%
Energy Partners	$ 497,030	$ 497,030	$ 344,822	69%	1,682,164	1,682,164	1,118,249.8	66%	186	186	112.5	60%	19,098	19,098	11,875	62%
One Business	$ 4,565,608	$ 4,565,608	$ 3,993,144	87%	45,863,694	45,863,694	55,310,989.7	121%	7,881	7,881	4,954.4	63%	3,366	3,366	1,485	44%
Direct Impact Programs Total	**$ 7,439,890**	**$ 7,439,890**	**$ 6,087,939**	**82%**	**58,136,306**	**58,136,306**	**70,774,075.8**	**122%**	**9,193**	**9,193**	**6,811.0**	**74%**	**145,305**	**145,305**	**230,914**	**159%**
Indirect Impact Programs																
Customer Engagement	$ 925,025	$ 925,025	$ 577,235	62%									108,000	108,000	93,200	86%
Energy Analysis	$ 963,280	$ 963,280	$ 725,498	75%									5,942	5,942	4,258	72%
Renewable Energy (1)	$ -	$ -	$ -	-			-									
Research & Development	$ 243,800	$ 243,800	$ 167,358	69%												
Evaluation & Program Development	$ 746,775	$ 746,775	$ 480,877	64%												
Indirect Impact Programs Total	**$ 2,878,880**	**$ 2,878,880**	**$ 1,950,968**	**68%**	**-**	**-**	**-**						**113,942**	**113,942**	**97,458**	**86%**
Regulatory Charges	$ 200,000	$ 200,000	$ 166,864	83%												
Total	**$ 10,518,770**	**$ 10,518,770**	**$ 8,205,771**	**78%**	**58,136,306**	**58,136,306**	**70,774,075.8**	**122%**	**9,192.9**	**9,192.9**	**6,811.0**	**74%**	**259,247**	**259,247**	**328,372**	**127%**

(1) As a result of the February 10, 2017, MPUC approval of Minnesota Power's SolarSense program (Docket No. E015/M-16-485), the Company filed a Program Modification request on August 9, 2017, to remove the Customer Renewable Energy (RE) program from the 2017–2019 CIP Triennial Plan (Docket No. E015/CIP-16-117). On November 16, 2017, the Deputy Commissioner approved Minnesota Power's petition. Further, due to the enactment of new legislation in 2017 closing the Made in Minnesota (MIM) program, the MIM assessment will remain in CIP under CIP Regulatory Charges for 2017 and then be discontinued thereafter. The Customer Renewable Energy program section has therefore been removed from --Minnesota Power's Consolidated filing.

EXHIBIT 4


One Home

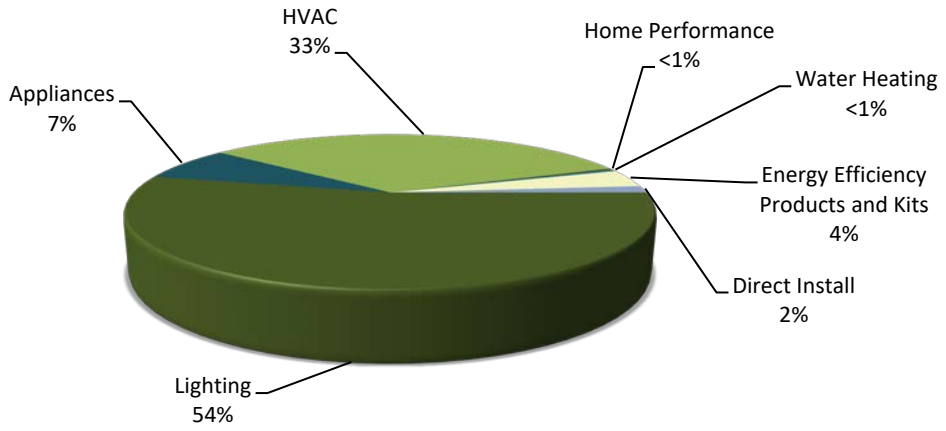
PROGRAM TITLE: POWER OF ONE HOME

PROGRAM DESCRIPTION

Power of One Home is Minnesota Power's portfolio-based residential program designed to help customers make informed decisions about how to save energy in their homes. The program includes rebates on energy-efficient lighting, appliances, heating and cooling, water heating and energy-efficient new construction.

While a variety of technologies are promoted through Power of One Home, lighting continues to be a primary driver of success, accounting for over half of reported savings. Heating and cooling measures represent 33% of the savings while appliances represent 7% of savings. Direct installations, home performance and energy-efficient kits represent a combined 6% of reported savings.

Figure 6: Power of One Home Program – 2020 Savings by Technology (kWh)



RESULTS

The table below details the Power of One Home 2020 approved goals versus actual results.

	Approved Goals		***Actual Results***		***% of Approved Goal***
Total Project Expenditures	$2,377,252		$1,749,973		74%
Total Project Energy Savings (at busbar)	10,590,448	kWh	14,344,836	kWh	135%
Total Project Demand Savings (at busbar)	1,125.5	kW	1,744.1	kW	155%
Participation (measures)	122,841		217,554		177%

EVALUATION METHODOLOGY

This program was evaluated based on the following items:

- Participation levels (number of measures implemented)
- Energy savings (kWh)
- Demand savings (kW)
- Net benefit/cost results (see the benefit/cost summary in the Evaluation section)

Minnesota Power strives to influence residential customers to choose energy efficiency, whether through single end-use technologies or bundling a variety of services and technologies together to optimize further energy savings within their home. Helping customers understand how a house functions and uses energy is a critical step in gaining energy savings. Interactive tools such as MyAccount (an online energy tracking and account management tool) offered by Minnesota Power help accomplish this step, along with experienced and well-versed energy auditors who are the boots on the ground educating homeowners on energy efficiency for their specific situation. These offerings are coupled with strong retailer and HVAC contractor networks that provide resources for customers to attain energy-efficient products and services.

In 2020, Minnesota Power continued its successful Power of One Home program, which relies predominantly on a prescriptive strategy. This strategy makes it easy for customers to participate in the program and streamlines the rebate process. The Company offers a more custom approach when projects require more in-depth analysis into the savings garnered from multiple energy-efficient measures bundled together. This happens, for example, when a customer participates in the Triple E New Construction program. Minnesota Power recognizes that each customer's situation may be unique and knows the importance of offering a variety of paths for them to achieve their goals in energy efficiency.

Many individual components make up the full portfolio known as the Power of One Home program. The following sections provide more information about specific aspects of this program for 2020.

ENERGY STAR® Lighting and Appliances – The challenges of 2020 affected the level of success normally experienced by the ENERGY STAR® lighting and appliance portion of the One Home portfolio. Lighting still accounted for the largest portion of achieved savings thanks to strong existing retailer and manufacturer relationships and consumer demand for LED lighting, though at a level less than previous years. Minnesota Power continues to leverage relationships that include a broad retailer mix of mass merchants, home improvement, warehouse club, independent hardware and drug and specialty stores throughout the service territory to ensure that Minnesota Power customers have access to a variety of LED technology wherever they choose to shop. The demand for LED lighting is driven by consumer awareness of the benefits of this long-lasting, energy-efficient technology. A large part of that educational messaging comes from Minnesota Power's efforts in social media, online advertising, bill inserts, point-of-purchase materials in the stores, and the Company's own website which includes a section devoted to energy efficiency. A strong emphasis is put on ENERGY STAR® options as the superior energy efficiency solution. With the increasing demand for LEDs, and as product lines expand, so does the need for the Company to ensure more rebates and discounts are available for specialty lighting, which was a focus in 2020. The Company anticipates that the growing number of LED products will continue to lead the program for the near future.

In 2020, Minnesota Power offered rebates on ENERGY STAR® refrigerators, freezers and dehumidifiers. Participation in every category was down in 2020 as compared to 2019 in large part due to the consequences of the ongoing COVID-19 pandemic. Most retailers experienced supply shortages of refrigerators and freezers, with many being out of stock for several months of the year. Foot traffic in stores decreased, meaning there were less people viewing point-of-purchase materials that assist in helping sway people to choose the more energy efficient option. Minnesota Power's refrigerator and freezer recycling offering took 837 inefficient refrigerators and 116 freezers off the secondary market in 2020, which is more than 350 units fewer than the previous year, following the trend of lower participation. These numbers are still impressive, as in-home appliance collection was halted starting in March to limit risk for customers and contractors. A quick change in delivery strategy to no contact pick-ups meant that customers were still able to participate in the offering despite pandemic hurdles. Minnesota Power ran an enhanced incentive promotion during the early stages of the stay-at-home orders in an attempt to reach customers who were spending more time at home than ever before. Almost 300 units were collected during the promotion timeframe alone. Although participation was lower in 2020 than in recent years for the appliance category, it is not reflective of the demand that customers have for programs like this.

The Company utilized a lighting and appliance field representative again in 2020 to visit participating retailers throughout the service territory. The field representative conducted in-store visits for the first part of the year but greatly reduced and ultimately suspended visits due to safety reasons around COVID-19 in the latter part of the year. Check-ins were conducted via phone and email when face-to-face meetings were not possible. These meetings are important to the ENERGY STAR® lighting and appliance portion of the One Home program because they allow continuous development of the relationship that Minnesota Power has with lighting and appliance retailers, whether small, family-owned hardware stores or global, big-box chains. The impact COVID-19 had on field outreach went beyond the routine store visits and also resulted in canceled in-store events for 2020. Minnesota Power will continue to explore opportunities for increased engagement with customers and participating retailers in the coming years as well as creative ways to execute these opportunities.

Water Heating – Water heating makes up a significant portion of residential energy use. As such, Minnesota Power offers the following energy-efficient products to help customers reduce electric water heating costs: a water- and energy-saving SmartPak kit, drain water heat recovery ("DWHR") rebates, and heat pump water heater ("HPWH") rebates. DWHR continues to be a part of the overall portfolio but Triple E New Construction presents the best opportunity for this technology as it allows easy access for installation. The demand for this product in Minnesota Power's service territory is minimal, with no participation in 2020. As a result the measure was not included in Minnesota Power's 2021-2023 triennial plan. There was, however, a tenfold increase in heat pump water heater participation over 2019. Minnesota Power continued a promotion started in 2019 that increased the rebate amount to make purchasing a HPWH more appealing based on cost. Additionally, the Company filed a program modification to remove size restrictions that have caused barriers to participation in the past.[24] Opportunities for water heating measures as part of the One Home program are somewhat limited overall, as the main requirement for customers is to use electricity to heat water. The Company is encouraged by the results of 2020 and hopes to see that continue in 2021 and beyond.

[24] Docket No. E015/CIP-16-117, August 20, 2020.

Triple E New Construction – Triple E New Construction is Minnesota Power's systematic approach to energy-efficient housing. Triple E stands for Energy Efficiency, Education and Evaluation and consists of a plan review followed by three on-site visits. The plan review ensures that prescriptive insulation values are being met and that energy-efficient lighting and appliances are being installed. This is followed by a framing visit, which is an opportunity to help the builder identify problem areas for air sealing such as can lights, cantilevers and bonus rooms. The second visit is the pre-sheetrock evaluation. This provides an opportunity to confirm that the insulation values are correct, identify any further air sealing opportunities and check the specifications on the mechanicals. Lastly, the final visit to the home consists of a blower door test, appliance check and light count to determine the home's performance level and eligible rebate amounts. Minnesota Power continues to report average actual savings from Triple E new homes based on modeling of appropriate standard conventional new homes.[25] In 2020, the program experienced half the participation compared to 2019, most likely a result of continued low prices of natural gas and delivered fuels such as propane. The Company recognizes this is one of the best opportunities to educate consumers on energy efficiency as it highlights lighting, appliances, HVAC and thermal integrity. The new construction program was revised in Minnesota Power's 2021-2023 triennial plan to simplify requirements and encourage more participation.

Builders – The Company works with area builders on both a one-on-one basis and through educational outreach such as the annual Energy Design Conference & Expo. This gives Minnesota Power an opportunity to update builders on the Triple E New Construction program standards and encourage them to meet Triple E standards for new homes they build, in addition to providing a vehicle for achieving continuing education requirements.

Direct Installations and Targeted Kit Offers – Direct installation of energy-efficient products during an energy analysis results in meaningful energy savings along with positive customer satisfaction during the time of installation. Minnesota Power offers free direct installation of products to customers participating in the HEA offering in addition to tenants within facilities that participated in the specific multifamily direct installation efforts in 2020. Direct installations were suspended for much of 2020 due to the COVID-19 pandemic. Alternative ways to get energy-efficient products in the hands of eligible Minnesota Power customers were needed and as such, delivery strategies were adjusted through courtesy notifications that were approved by the Department on May 13, 2020 and September 9, 2020. HEA participants were either sent a kit of general energy efficient products or were given a customized bag of products based on the results of an analysis of their home. Tenants in multifamily buildings still received direct installation of needed products, but instead of those being installed by a Minnesota Power contractor, they were installed by the building maintenance staff to reduce the number of third parties present in each unit. The Company will continue to evaluate this offering and work to ensure available products are meeting customer needs into the future.

Energy efficient product kits have been available to Minnesota Power customers for several years. The SmartPak Kit (which includes an energy-saving showerhead, faucet aerators, shower timer and water temperature card) and the Starter Kit (including three LEDs, refrigerator thermometer, shower timer and plug load information) were provided to customers upon request or by participation in various promotions and remote HEA offerings. Minnesota Power claimed full savings for kits delivered through the remote HEA offering, as approved by the Department in the May and September courtesy notifications referenced above. Energy-efficient kits are a good way

[25] Minnesota Power's 2011-2013 Triennial CIP, Docket No. E015/CIP-10-526.

to promote first steps in energy conservation and help generate interest in other program offerings. Minnesota Power promoted SmartPaks and Starter Kits through various methods such as its website, bill inserts and social media. In 2020, the Company recognized October as Energy Awareness Month by promoting the SmartPak to customers with an all-electric rate designation. Postcards sent to targeted customers as well as digital advertising through social media, digital ads and emails resulted in 582 households participating in this promotion. Not only do kits provide the customer with immediate energy savings opportunities with free products, but they are also given additional tools and resources to allow them to continue participating in energy conservation programs for years to come.

Heating, Cooling and Air Conditioning – The HVAC component of the Power of One Home program is an integral and growing part of the overall residential portfolio. In 2020, the program saw a 57% increase over 2019 in kWh savings in HVAC measures including air source heat pumps, ground source heat pumps, electronically commutated motors ("ECM") and circulators. Contributing to this success is an increased effort to engage more consistently with participating contractors, local distributers and HVAC manufacturers on a regular basis throughout the program year. The Company held an air source heat pump ("ASHP") training in February that focused on the advancements of this technology and its capabilities. These outreach efforts, combined with a 20% spring promotion on cold climate air source heat pumps, led to a 177% overall increase in the number of total air source heat pump rebates when compared to 2019. Cold climate rated systems were a main driver of increased participation with a total of 187 units (a 179% increase over 2019). The company also filed a program modification to rebate ductless air source heat pumps in non-electrically heated homes in 2020.[26] This was achieved by only rebating and claiming savings on cooling load. This modification enabled the company to rebate 95 systems that would not have been eligible previously. The increase in heat pump rebates demonstrates that the Company's efforts to move the market to more energy-efficient heating and cooling options are making an impact.

Joint ECM Furnace/Boiler Program with the City of Duluth/ComfortSystems – Minnesota Power and ComfortSystems (the City of Duluth natural gas utility) continued a partnership to offer a joint rebate program on high efficiency furnaces and boilers with ECMs to Duluth residents in 2020. This is the fifth year of this partnership meant to serve shared customers with natural gas and electric incentives with one joint application. This successful partnership is proof that both customers and contractors appreciate the streamlined process. A partnership with ComfortSystems will continue in 2021 in an effort to continually look for ways to enhance the experience for shared customers in the City of Duluth.

Contractor Network –Minnesota Power's contractor network grew by more than 29% as a result of targeted efforts to recruit new contractors. Due to pandemic related policies, in-person visits were limited in 2020. The Company instead leveraged phone calls and email to share information about Minnesota Power's programs in 2020 and will continue to do so in 2021. Minnesota Power conducts a survey of customers who participate in the HVAC program to better understand the customer experience. Gathering feedback on the equipment selection, installation process, equipment performance and overall satisfaction with contractor experience in terms of expertise and quality of service provides valuable insight to Minnesota Power's program offerings. In 2020, Minnesota Power again offered complimentary registration to all participating HVAC contractors to attend the 30th annual Energy Design Conference. This conference offers sessions on a variety of building science and technology topics focused around energy efficiency. The Company feels it is critical to ensure participating contractors are offered continuous education,

[26] Docket No. E015/CIP-16-117, February 7, 2020.

tools and resources on energy efficiency, as they are a trusted resource to customers for information on high efficiency equipment when making energy-related decisions.

Retailer Engagement Network – Minnesota Power strives to keep retailers engaged in lighting and appliance promotions through personal store visits, phone calls, emails, direct mailings, featured stories in newsletters and on its website. Minnesota Power encourages retailers to promote energy-efficient products to customers and provides point-of-purchase and informational materials to use for promotional purposes. The Company has participated in specific event and in-store promotions with key retailers in strategic situations. For example, the Company is a long-time exhibitor featured at the Arrowhead Home and Builders Show in Duluth, and has implemented special offers for customers attending that event in the past. While this wasn't a possibility in 2020 due to the COVID-19 pandemic, partnerships like these enhance utility/retailer relationships and the Company looks forward to continuing to strengthen these partnerships in the future. Also, the continuation of a lighting and appliance field representative to visit participating stores will grow relationships with the stores and help increase participation.

Third-Party Implementation Contractors – Minnesota Power works with several third-party implementation contractors as a fundamental part of its programs. Through these services, Minnesota Power helps customers understand energy efficiency and deliver savings. By tracking customer participation across these programs, Minnesota Power is able to help customers and the utility reap the program benefits, including cumulative impact, while leveraging the economies of scale these contractors can offer.

SUMMARY

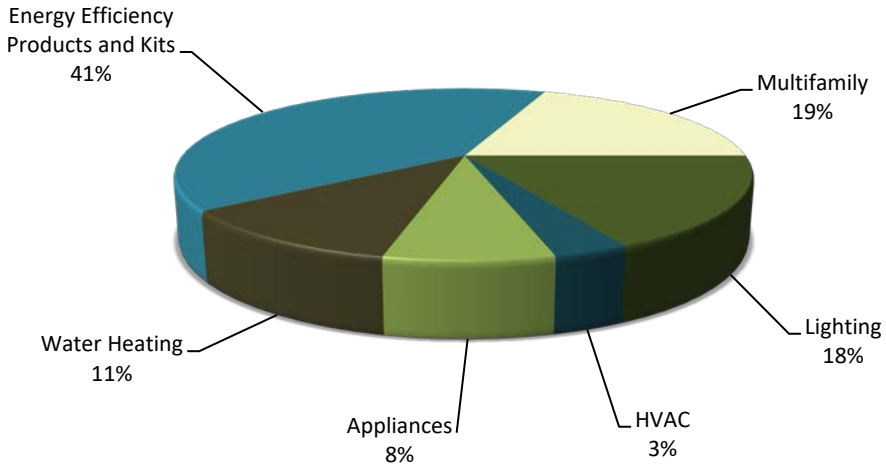
The Power of One Home program had a strong performance in 2020 despite the challenges it faced with the COVID-19 pandemic. The bulk of energy savings was achieved again this year by a successful lighting program, followed closely by a record-breaking year in HVAC savings. This, combined with a balanced portfolio of energy-efficient products and services tailored to customers' specific needs, resulted in a successful program that offers options for customers in different phases of their energy conservation journey. Increased efforts were made to grow the HVAC portion of the residential portfolio in 2020 to accommodate the technology advancements seen in heat pump technologies. Minnesota Power will continue to encourage cost-effective measures like energy-efficient lighting while also continuing to focus on promoting HVAC technologies and redesigning the residential new construction program in 2021.

PROGRAM TITLE: ENERGY PARTNERS LOW INCOME

PROGRAM DESCRIPTION

The Energy Partners Low Income program is designed to provide income-eligible customers with educational resources, HEA and direct installation of energy-efficient products and appliances to help them use energy more effectively for the long term. Program delivery is accomplished primarily through local Community Action agencies throughout Minnesota Power's service territory in conjunction with weatherization services, where possible. The Energy Partners program relies heavily on connecting with customers' in-person, either through HEA or events, which was significantly disrupted in 2020 due to the ongoing COVID-19 pandemic. While Minnesota Power took several steps to engage customers virtually, the pandemic impacted the success of the Energy Partners program in 2020 in several ways. These impacts are described in more detail in the following sections.

Figure 7: Energy Partners Programs – 2020 Savings by Technology (kWh)



RESULTS

The following chart summarizes and compares the results of the Energy Partners program with goals established at the time of program approval. As part of the 2020 extension filing[27], Minnesota Power proposed and received approval to increase the energy savings goal by nearly 80% in 2020 compared to the originally filed goal for Energy Partners in the 2017-2019 Triennial Plan. While the Company was able to achieve higher savings in 2020 than in 2019, unforeseen challenges directly related to the pandemic in 2020 prevented Minnesota Power from reaching these significantly increased goals. Additionally, to address the challenges in 2020, the Department approved a Minnesota Power courtesy notification on November 10, 2020 to allow increased distribution of kits.

	Approved Goals	***Actual Results***	***% of Approved Goal***
Total Project Expenditures	$497,030	$344,822	69%
Total Project Energy Savings (at busbar)	1,682,164 kWh	1,118,250 kWh	66%
Total Project Demand Savings (at busbar)	186.4 kW	112.5 kW	60%
Participants (measures)	19,098	11,875	62%
Energy Analysis - Multifamily Units *(1)*	185	490	265%
Energy Analysis - Single Family Homes *(1)*	900	390 *(2)*	43%

(1) The Energy Analysis figures reflected here are also included in the Energy Analysis section but are included here to indicate the number of individual households that participated in the Energy Partners program.

(2) Of the 390 single family homes that received an audit through the Energy Partners program, less than 5% also received weatherization through the Weatherization Assistance Program.

Minnesota Power provides the following table to summarize 2020 Energy Partners participation and average rebate costs by measure.

[27] Docket No. E015/CIP-16-117, July 1, 2019.

Measure Type	Quantity	Average Cost Per Measure
Lighting	**5,168**	**$7.50**
LED Bulb	4,854	$4.42
LED Torchiere	314	$55.20
HVAC	**19**	**$2,340.53**
Dehumidifier	10	$265.00
Furnace - Delivered Fuels	9	$4,646.67
Appliances	**113**	**$369.16**
Refrigerator Replacement	44	$779.71
Freezer Replacement	4	$328.28
Refrigerator Turn-In	55	$90.00
Freezer Turn-In	5	$90.00
Microwave Oven	5	$139.00
Water Heating	**606**	**$8.24**
Showerhead	153	$21.07
Aerator	271	$4.17
Pipe Insulation	34	$0.70
Shower Timer	140	$3.70
Water Heater Temperature Set-Back	8	$12.00
Energy Efficiency Products and Kits	**2,164**	**$30.56**
Energy Expo Kits	900	$33.53
High User Kits	730	$42.85
Refrigerator Thermometer	406	$3.10
Power Strip - Tier 1	128	$26.71
Multifamily	**3,805**	**$7.69**
LED Bulb	2,973	$5.93
Refrigerator Thermometer	431	$4.09
Refrigerator Replacement	9	$729.05
Refrigerator Turn-In	9	$90.00
Power Strip - Tier 1	20	$26.76
Showerhead	40	$17.94
Aerator – Bathroom	116	$4.75
Aerator – Kitchen	50	$5.43
Pipe Insulation	86	$1.50
Shower Timer	71	$4.16
Grand Total	**11,875**	**$18.98**

EVALUATION METHODOLOGY

This program was evaluated based on the following items:

- Participation levels (number of measures implemented)
- Energy savings (kWh)
- Demand savings (kW)
- Net benefit/cost results (see the benefit/cost summary in the Evaluation section)

As a result of strong historical performance in the Energy Partners program, Minnesota Power requested a significant increase to the 2020 Energy Partners savings goal through the CIP Triennial Plan extension filing submitted on July 1, 2019.[28] In this filing, the Company increased its targeted energy analysis of single family homes by more than double from 350 to 900, resulting in an increase to the energy savings goal for the program of nearly 80%. While Minnesota Power continues to have ambitious targets for the Energy Partners program, the unforeseen challenges associated with the COVID-19 pandemic prevented the Company from reaching these goals in 2020.

Minnesota Power halted in-home energy audit programs in March 2020 to protect the health and safety of customers and contractors. While other programs within Minnesota Power's CIP portfolio were able to continue through other channels including retail markdowns and rebates for energy-efficient technologies, the Energy Partners program relies almost solely on energy savings achieved through in-home energy audits. The Company adapted to these unexpected challenges by adding a virtual option to the Energy Partners program in June 2020. However, the interest from customers was minimal. Several customers spoke with one of Minnesota Power's auditors regarding a virtual energy analysis but ultimately the vast majority elected to postpone participation in the program until an in-home option was available.

In-home audits resumed in September 2020 with strict safety protocols and procedures in place. However, the Community Action agencies that deliver the majority of Minnesota Power's Energy Partners program were experiencing significant backlog associated with delivery of the Weatherization Assistance Program. Minnesota Power did recruit an independent auditor, not associated with the Community Action agencies, to assist with delivery of the Energy Partners program in the fall of 2020 and will continue to do so, at least until the pandemic-related backlog subsides. Supply chain interruptions from the COVID-19 pandemic have also impacted the ability for auditors to effectively serve income-qualified customers. Availability of refrigerators and freezers was limited for much of the year in 2020 and retailers that participate in the Energy Partners program have cautioned that delays are expected to continue into 2021. While Minnesota Power was able to replace over 50 refrigerators/freezers through the Energy Partners program in 2020, this is less than half of the refrigerators/freezers replaced in 2019. Additionally, there were over 50 refrigerator/freezer orders from 2020 that Minnesota Power was not able to fulfill during the program year due to inventory issues. Those orders will be fulfilled as appliances become available.

The 17th Annual Energy Awareness Expo was also impacted by the COVID-19 pandemic in 2020. The event, offered in partnership with ComfortSystems and AEOA, typically provides a warm meal for income-qualified customers in the Duluth area, access to information about energy assistance and a free energy-savings kit. Due to the inability to host large gatherings, Minnesota Power elected to host a virtual Energy Awareness Expo in October 2020. A webpage

[28] Docket No. E015/CIP-16-117.

was created with tools and information designed to connect customers to energy affordability resources including the Energy Assistance Program, utility bill information, energy saving tips and information about other available affordability programs. Eligible customers were sent an invitation to attend the virtual event with an offer for a free energy saving kit. Because the event was virtual, Minnesota Power was able to expand the event and include more customers than would typically be invited to the Energy Awareness Expo. Eligible customers in Duluth were sent an energy saving kit with electric and gas measures in partnership with ComfortSystems. Income-qualified customers with high usage (over 1,000 kWh per year) outside of Duluth were sent an energy saving kit with electric measures. In total, 1,630 kits were delivered to income-qualified customers through the event.

Minnesota Power also partnered with the Clean Energy Resource Team ("CERTs") to identify food shelves throughout its service territory to provide information about affordability programs. Customers received a flyer with information about the Energy Partners program, the Customer Affordability of Residential Electricity ("CARE") discount rate, COVID-19 protections and an offer for a free energy saving kit.

Further impacting participation in the Energy Partners program was a general sense of skepticism of free products and services that many customers expressed. The ongoing presidential election resulted in an influx of direct mailings through much of the year and the COVID-19 pandemic created an opportunity for increased scams. While Minnesota Power promoted options to participate remotely in the Energy Partners program including virtual energy audits, energy saving kit promotions and the virtual Energy Awareness Expo, the skepticism from customers paired with a lack of familiarity with technology made it difficult to engage with customers through remote avenues.

Minnesota Power recognizes that many customers need assistance now more than ever and as such, the Company is actively identifying opportunities to overcome the obstacles customers began facing in 2020 and continue to face today. Minnesota Power has contracted with additional vendors to supplement the limited availability of refrigerators and freezers to northern Minnesota and to provide support to Community Action agencies in performing energy audits. Minnesota Power will also continue to cross-promote the Energy Partners program with other available assistance programs, including the CARE discount rate, with a specific focus on customers with high electric usage.

SUMMARY

Energy Partners continues to be an important part of Minnesota Power's overall conservation program and is beneficial to the community at large. Despite the hurdles presented by the COVID-19 pandemic, the Company was able to deliver a successful program in 2020, achieving higher energy savings than the previous program year. Although the increased energy savings were not enough to meet the ambitious targets set by the Company prior to the unexpected challenges of 2020, Minnesota Power is confident that the modified delivery strategies implemented in 2020 will ensure a successful program in 2021. By working and collaborating with provider networks and communities, Minnesota Power has delivered an impactful program while connecting people with essential services and resources during a time of significant need. The Company will continue to find opportunities to meet customer needs through this important program.


One
Business

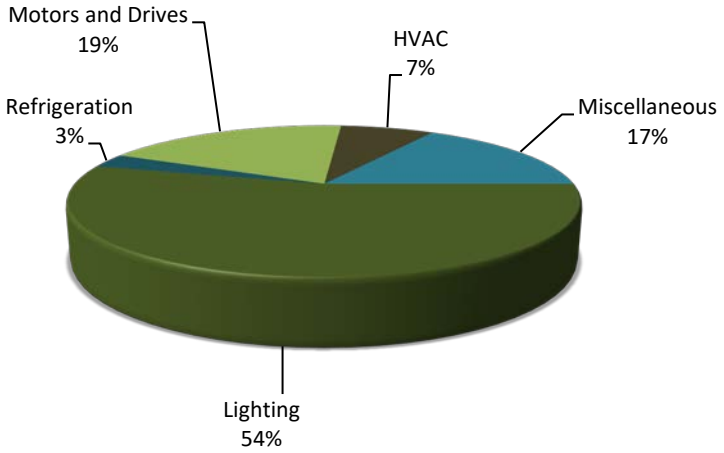
PROGRAM TITLE: POWER OF ONE BUSINESS

PROGRAM DESCRIPTION

The Power of One Business program serves as the primary forum for reaching and serving business, industrial, agricultural and public sector customers. Minnesota Power recognizes that customers have different priorities and objectives when it comes to investment decisions and this program provides the flexibility required to serve the unique circumstances of various business types. By utilizing a wide variety of resources, including rebates, incentives, tools, and expertise, Minnesota Power is able to respond to a dynamic mix of priorities, technical opportunities and specific economic factors.

The challenges caused by the COVID-19 pandemic in 2020 temporarily altered how Minnesota Power and its partners delivered the successful Power of One Business program. Minnesota Power halted in-person audits for much of the year to protect the safety of customers, contractors and employees. The Company identified opportunities to work with customers virtually to perform energy analysis, process rebates and provide technical guidance. While Minnesota Power was successful in meeting its energy savings goals in 2020, the virtual delivery channel has impacted the Company's ability to proactively identify projects in the field. In-person work with customers is a critical component to the success of the Power of One Business program and will be necessary to continue meeting aggressive energy-savings goals in the future.

Figure 8: Power of One Business Program—2020 Savings by Technology (kWh)



RESULTS

The table below details Power of One Business 2020 goal accomplishments.

	Approved Goals	*Actual Results*	*% of Approved Goal*
Total Project Expenditures	$4,565,608	$3,993,144	87%
Total Project Energy Savings (at busbar)	45,863,694 kWh	55,310,990 kWh	121%
Total Project Demand Savings (at busbar)	7,881.0 kW	4,954.4 kW	63%
Participation (measures)	3,366	1,485	44%

2020 Power of One Business Projects Overview by Customer Class

	Total $ Rebated	*Number of Measures*	*Total Estimated kWh Saved (meter)*
Agricultural	$ 12,413	29	359,149
Commercial	$1,983,300	1,263	35,206,751
Industrial	$584,262	193	14,491,876

EVALUATION METHODOLOGY

Minnesota Power evaluated energy and demand savings based on manufacturer end-use data, proven engineering methods, the Minnesota Technical Reference Manual and/or site-specific engineering studies. A component of all project savings and demand reduction estimates involves end-use calculations. In 2020, Minnesota Power continued its expanded emphasis on pre- and post-project analysis.

When considering energy-savings opportunities, Minnesota Power reviews projects with consideration toward not only energy savings, but also operating costs, effective design and technology utilization, unit output and overall productivity. By following a well-grounded model, energy conservation can become an integral part of sound investment decisions, supporting the customer's overall asset planning and informed resource considerations, and garnering buy-in from operations employees. This model leads to identification of effective short-term projects while also providing a path toward long-term effective use of energy resources by capturing the growing number of customers that have projects spanning across multiple years as opposed to a "one-and-done" approach. Awareness of how systems work together is critical and attention to "systems thinking" with regard to processes pertaining to energy usage is important in providing solutions to customers' energy challenges.

Through this program, both new and established technologies and process improvements are promoted and delivered. Other tools may include cost sharing for design assistance on a proposed new building, a compressed air study at an existing manufacturing facility, and/or monitoring facilities to identify "hot spots" to pinpoint the greatest opportunities for improvement. Power of One Business also reinforces the importance of the commissioning process when projects are implemented, both during initial start-up and during periodic tune-up periods. The Power of One Business delivery strategy is to influence customer choices through relationships and ongoing interactions. Minnesota

Power also works with manufacturers, distributers and contractors to assist in the delivery of conservation technologies. The program offers a wide range of services including education, training, research, performance studies, energy analysis and overall energy awareness, providing customers with tools and resources they need to make informed choices.

The Company's customer-driven marketing strategy ensures that customers' operational needs are addressed while retaining flexibility in program delivery. Customers with less complex projects are better suited to use prescriptive type rebates and delivery methods, while customers with larger or more complex processes are encouraged to potentially reach a greater level of energy savings through in-depth analysis of their facilities. In any case, customers are provided a simple pre-application to get the process started. They are assigned a field representative who can help them tap into the Power of One Business program and identify delivery methods at the appropriate level to fulfill their needs.

END-USE CATEGORIES & ENGAGEMENT

Lighting & Controls – Lighting continues to be one of the main contributors to the Power of One Business program. As recently as 2017, lighting accounted for 65% of the One Business kWh savings, while in 2020, lighting savings dropped to 54% of the One Business kWh savings. This is primarily due to Minnesota Power's effort to promote other energy savings technologies such as compressed air and process improvement. Minnesota Power continues to offer custom incentives for new and retrofit LED lighting projects. With LED technology, controls are also becoming a much more popular and cost-effective way to implement lighting savings. Although controls represent a smaller portion of the overall CIP savings, they are still an important part of the One Business program results.

Refrigeration – Minnesota Power offered incentives for new and retrofit refrigeration projects, which include refrigeration equipment, controls, appliances and evaporative fan motor retrofits.

Motors/Pumps – Minnesota Power offered incentives for new or replacement equipment such as premium efficient motors, variable frequency drives ("VFD") and electronically commutated motors ("ECM").

HVAC & Controls – Minnesota Power offered incentives for new or replacement commercial and industrial heating, ventilation and cooling equipment including roof top units, chillers, heat pumps and controls.

Miscellaneous – Minnesota Power offered incentives for new or retrofit projects with technologies including compressed air upgrades, commissioning, appliances, IT equipment or process improvements.

In 2020, Minnesota Power implemented the following engagement strategies as part of the One Business program.

Direct Installations – In 2020, Minnesota Power representatives visited two communities (Pine River/Backus and Park Rapids) and provided on-site analyses at local businesses with the direct installation of energy-saving products. By providing these measures, customers gained an increased awareness of products available, leading to conversations about

future projects. These visits also allowed Minnesota Power to gain valuable information about technologies used, helping the Company to identify additional energy-savings opportunities.

Multifamily Initiatives – Minnesota Power continued to work with multifamily facilities as part of the One Business custom commercial program, completing custom projects at 32 multifamily properties in the 2020 program year. Additionally, in 2020 Minnesota Power continued to explore direct installation options not only for in-unit applications but common area applications as well. For more information on Minnesota Power's Multifamily offerings see the Multifamily Summary included after the Energy Analysis program.

Lighting Enhanced Rebate Offering– In 2020, Minnesota Power provided an extra incentive for high bay lighting fixtures, exterior lighting fixtures, can light replacements, as well as extra incentives for dimming controls per fixture. These promotions allowed commercial and industrial customers with large indoor space and high ceilings to enter the LED market at a much lower cost. Emphasis was focused on energy savings, quality of light, safety for workers and the public, as well as lower maintenance costs. Personal contacts with businesses were made to assist these customers with understanding of the incentives and help in working through the projects.

Benchmarking – Minnesota Power uses benchmarking with facilities to help identify energy-savings opportunities when making facility upgrades and to identify maintenance improvements. In addition, Minnesota Power continues to share information with those responsible for facility management and serve as a resource for information on new technologies and application techniques.

Bonus Incentives – To further enhance participation in the Power of One Business program and make energy-saving resources a priority in business planning, Minnesota Power offers a bonus incentive to customers that agree to place the incentives they receive in a revolving account. Customers that agree to the terms of this program receive a 10% premium on top of their standard rebate as a reward to establish and maintain an account designated exclusively toward future energy-savings activities. These accounts have proven useful in funding smaller day-to-day projects as well as providing seed money for taking the next step towards even greater efficiencies.

ELECTRIC UTILITY INFRASTRUCTURE PROJECTS

In 2020, Minnesota Power did not claim savings from any EUI projects. However, CIP professionals worked closely with Minnesota Power's facility managers to identify energy-savings opportunities within its facilities and is working on a project to be completed in 2021.

SUMMARY

In 2020, Minnesota Power far exceeded its energy-savings goal for the Power of One Business program, achieving 121%. Though the actual participation numbers (listed as measures) are lower than the approved goals, this is more indicative of the types of projects than it is of actual participation.

The Power of One Business program is designed to empower customers to make informed and effective energy choices by asking the right questions early in projects and reinforcing that energy efficiency is a multi-step process that begins with design and goes well beyond any single isolated project. Through program tools and resources, customers can develop an energy management plan that will add value to their businesses for the long term.


One
Community

PROGRAM TITLE: CUSTOMER ENGAGEMENT

PROGRAM DESCRIPTION

The Customer Engagement program is an integral part of raising awareness about Minnesota Power's residential, commercial and community-based energy conservation programs to a wide variety of customers. Through this program, Minnesota Power connects with customers on multiple levels, creating relationships and engaging customers through events, training and education. Educational outreach and collaboration with local energy-conscious organizations continues to be the foundation for delivering Customer Engagement programs. Connecting with these civic organizations, businesses, schools, churches and a variety of community agencies increases awareness about programs and creates a more energy-conscious community. Educational outreach via interactive online tools, specialized trainings, advertising, literature and participation in community events gives customers a trusted ongoing resource for their questions and a sounding board for their ideas.

The COVID-19 pandemic impacted Minnesota Power's Customer Engagement program in several ways in 2020. The majority of planned community outreach events were cancelled and, due to stay at home orders, Minnesota Power was unable to conduct in-store promotions and several other planned outreach activities and special events. Additionally, several direct mail communications and promotions were postponed in order for Minnesota Power to focus on COVID-19-related customer support messaging. Although it was challenging navigating the pandemic, the Customer Engagement program worked to maintain relationships with customers and the community by adapting one of the Company's most impactful community events to a virtual platform and by pivoting to focus on online digital engagement channels whenever possible, ensuring that the programs offered remained meaningful, useful and relevant to evolving customer needs during an unprecedented time.

RESULTS

The following chart summarizes and compares the results of the 2020 Customer Engagement program with goals established in the Triennial Filing.

	Approved Goals	***Actual Results***	***% of Approved Goal***
Total Project Expenditures	$925,025	$577,235	62%
Utilization of the online energy tools and materials (visitors)	100,000	88,256	88%
Participation in community energy events	8,000	4,944	62%
Number of seminars, demonstrations and conferences	35	10	29%
Customer profiles or newsletters completed	15	16	107%

EVALUATION METHODOLOGY

Minnesota Power tracked the number of visitors (hits) who used online energy tools and program information via the Minnesota Power website, the number of participants at community events, the number of seminars and demonstrations presented or co-sponsored, and the number of customer profiles or newsletters published.

UNDERSTANDING

Collaboration

Collaboration is a key component in delivering meaningful programs to a wide variety of customers. Minnesota Power collaborates with HVAC contractors, business owners, area utilities, community agencies and energy-conscious organizations to expand outreach and availability of program involvement. The following sections provide examples of how Minnesota Power connected with various stakeholders to promote energy conservation in 2020.

HVAC Contractor Engagement – Minnesota Power continued to build on its existing relationships with participating HVAC contractors in 2020, while also encouraging new HVAC contractors to join the program. In addition to regular communications via email blasts distributed to participating contractors, information was provided on program offerings, rebate submittal requirements, special promotions and educational elements. Email blasts were also sent to HVAC contractors in the service territory who were not currently participating in programs to inform them of the benefits to both them and their customers. Minnesota Power's participating contractor list grew by 29% in 2020.

Lighting and Appliance Retailers – Minnesota Power works closely with lighting and appliance retailers. In 2020, the Company continued with a lighting and appliance field representative to increase outreach to retailers. The field representative adapted to the pandemic and conducted meetings remotely by phone and email when in-person visits were not possible. Between 40 and 100 contacts were made to ENERGY STAR® retailers each month in 2020. During these check-ins, the representative made sure the retailers had all the appropriate point-of-purchase materials available and gave retailers a chance to share any feedback they had about the program. Minnesota Power also shared resources with participating retailers around COVID relief and emergency loan opportunities available locally.

Community Action Agencies – Minnesota Power collaborates with community agencies to deliver the Energy Partners low income program through HEA, the direct installation of energy-saving measures, and the replacement of inefficient appliances. In an effort to keep the communication lines open with agencies, quarterly calls were held to give program updates and collaborate on ways to best reach customers. Minnesota Power continued to host an annual Listening Session with agencies in January 2020 to provide program updates and gather insights for continuing the success of this program. A close relationship with the agencies was even more critical in 2020 as auditors worked to balance safety and the need for assistance in both the Energy Partners and Energy Assistance/Weatherization Assistance programs.

Building Operator Certification Training – In 2020, Minnesota Power continued to sponsor and promote Building Operator Certification training by hosting one BOC I class that was held virtually due to the COVID-19 pandemic. This nationally recognized certification program provides education focused on building systems and energy efficiency in facilities. It also presents

an opportunity to tie course learning directly to energy savings by providing tuition reimbursement to attendees for completing the course and identifying a CIP-eligible project.

Utility Partnerships – Building relationships with neighboring utilities in an effort to provide the most comprehensive energy conservation services possible to shared customers is an important part of Minnesota Power's energy conservation delivery strategy. A long-standing relationship with Duluth's natural gas utility, ComfortSystems, has resulted in years of collaboration on several different programs including HEA, joint rebates and benchmarking commercial facilities. Minnesota Power partnered with Minnesota Energy Resources Corporation in 2020, to deliver energy analysis and direct installation of energy-efficient technologies to commercial and multifamily buildings as well as virtual home energy analyses. The Company will continue to look for ways to collaborate with other utilities who share the same customer base to streamline the customer experience.

Stakeholder Partnerships – Minnesota Power appreciates the integral role stakeholders have in creating successful conservation programs. Minnesota Power has a long-standing history of partnering with local and regional stakeholders to advance energy efficiency for all customer segments. In 2020, these partnerships included work with the Center for Energy and Environment ("CEE") on research specific to air source heat pumps for customers in Minnesota, continuation of the work that was started in previous years with the Minnesota Multifamily Affordable Housing Energy Network ("MMAHEN") on energy efficiency in multifamily facilities, and work with the CERTs on opportunities to engage with income-qualified customers through the Energy Partners program.

Community Blitz – Minnesota Power continued delivering community-based energy education in 2020 through a joint small business and residential strategy. In 2020, Minnesota Power representatives visited two communities (Pine River/Backus and Park Rapids) to provide a mix of on-site and virtual analysis along with either direct installation of energy-saving products or delivery of customized energy efficient product kits. Minnesota Power continues to partner with gas utilities to install both electric and gas measures, when applicable. By providing these products, customers gained an increased awareness of available technologies and conversations were spurred regarding future projects. While visiting both market segments, Minnesota Power gained valuable information about technologies used and identified additional energy-savings opportunities unique to these areas.

Educational Outreach Events

Through educational outreach events, Minnesota Power is able to expand on its information sharing, raise awareness about program offers, build relationships and seek valuable input from customers, trade allies and community members; however, nearly all of the planned community outreach events were cancelled in 2020 due to the COVID-19 pandemic.

Energy Design Conference – Minnesota Power hosted the 30th annual Energy Design Conference & Expo, in person, in February 2020, in Duluth, Minn. This two-day conference focused on energy-efficient building and sustainable design. With nearly 40 educational sessions, an exhibit hall filled with the best in the building business and an abundance of networking activities, this event is a staple in northern Minnesota for those interested in energy efficiency, high performance homes and responsible building choices. The Energy Design Conference was one of the only in-person events held in 2020.

17th Annual Energy Awareness Expo – The annual Energy Awareness Expo continues to be a worthwhile and meaningful educational outreach event designed to engage and empower income-qualified customers. The event typically brings together a variety of community outreach organizations, Community Action agencies and energy providers and gives attendees the opportunity to share ideas, learn ways to get the most for their energy dollars and receive energy-saving products. Due to the COVID-19 pandemic, this event was not able to take place in person in 2020, but Minnesota Power staff pivoted to create a virtual Energy Awareness Expo experience for customers, complete with personal invitations and custom online resources. Minnesota Power sent kits including energy saving technologies and resource materials directly to customer homes and, given the virtual nature of the event, the Company was able to include customers outside of the Duluth area for the first time. The virtual kits and remote audits were approved by the Department on May 13, 2020 and an updated courtesy notification that was approved on September 9, 2020.

Tenant Education Events – Minnesota Power offered an educational tenant event through its multifamily program again in 2020, with a goal of providing tenants the opportunity to learn about energy efficiency. One tenant event took place before COVID-19 restrictions were put into place with over 20 tenants in attendance. Tenants were provided information about the direct installation measures included in the program and were given an opportunity to ask questions about the technology, program and energy conservation in general. This is a valuable tool and educational opportunity for multifamily tenants and Minnesota Power will continue promoting events like this when in-person gatherings are available.

Tools and Resources

Power of One Internal Communications – In an ongoing effort to increase internal understanding and awareness of Power of One programs, Minnesota Power uses digital posters throughout company facilities to share current programs. The featured promotions and campaigns are integrated into a loop of company updates on screens throughout Minnesota Power's corporate office building and are also available on the internal company webpage. These efforts spurred additional interest and inquiries about Minnesota Power's conservation programs by employees of the Company. Though with much of Minnesota Power's workforce in a work-from-home circumstance since March, office building promotion decreased for much of 2020.

Energy-Efficient Kits – The SmartPak Kit (which includes an energy-saving showerhead, faucet aerators, shower timer and water temperature card) and the Starter Kit (includes three LEDs, refrigerator thermometer, shower timer and plug load information) were provided to customers upon request or by participation in various promotions and offers.

Power of One Education-Based Literature – In an ongoing effort to provide up-to-date and relevant information to customers, Minnesota Power developed a variety of literature, brochures and fact sheets focused on energy-efficient technologies and conservation programs. These items were distributed through direct mail, bill inserts, home energy analyses, tenant events and community events. A selection of literature was also provided online for downloading or mail distribution via an online order form.

The *Duluthian* – In an effort to raise awareness about the Power of One Business program, particularly for small- to mid-sized businesses, commercial-oriented ads were placed in the bi-monthly Duluth Chamber of Commerce publication, the *Duluthian.* Minnesota Power promoted

the Power of One Business pre-application (available online) and area businesses who have participated in the Power of One Business program and made energy-efficient changes within their businesses and facilities.

Power of One Section of Minnesota Power's Website – The Power of One is prominently featured on Minnesota Power's website and is a widely-used destination for energy education and information. Through interactive tools, energy and appliance calculators, rebate and incentive information and up-to-date program information, customers are able to learn how they use energy and develop an action plan based on this knowledge. The website also serves as a valuable resource for Minnesota Power Call Center Representatives and front line employees when answering customer questions about energy conservation programs. MyAccount continues to be a valuable tool in helping customers understand how they use energy and learn ways to take charge of energy costs. This secure online portal shows current and historical energy usage and offers energy markers to track energy-saving purchases, online bill payments, access to bill history and actions that may affect customer usage.

Promotion – A multi-faceted approach was taken to promote Minnesota Power's energy conservation programs for residential customers, commercial customers and the community at large. Ads were placed in newspapers, magazines and online to promote energy conservation, the Power of One programs, and community expos and events. Programs were also promoted via social media and through email blasts to opt-in members of the Power of One energy team. Facebook, Twitter and Instagram posts prove to be an effective method of communicating with customers, with a large amount of interaction through Likes, Shares and Comments. For the first time in 2020, Minnesota Power also utilized Google search ads to promote energy conservation programs.

SUMMARY

Through active participation within the community, an interactive website, internal and external promotions and specialized trainings, the Customer Engagement program serves as the communications vehicle for all of Minnesota Power's Power of One programs. The Customer Engagement program adapted to the COVID-19 pandemic and, wherever possible, continued to focus on key drivers to empower customers to make effective energy choices. Spending in the Customer Engagement program was under budget in 2020 due to the cancellation of several events and planned promotions as a result of the pandemic. Minnesota Power continues to believe that communication with customers strengthens conservation program offerings and serves as a foundation for an energy-conscious community. Minnesota Power anticipates that the Customer Engagement program will become an even more critical component of program success as savings goals increase.

PROGRAM TITLE: ENERGY ANALYSIS

PROGRAM DESCRIPTION

Energy Analysis is a cross-market program that provides a pipeline for energy efficiency projects through direct-savings programs. The goal of the Energy Analysis program is to help residential, commercial/industrial and agricultural customers develop a core understanding of how they use energy. With this knowledge, customers are able to make informed choices about their investment in energy-saving products and services. Energy Analysis focuses on working with customers to develop an action plan that translates recommendations into measurable, achievable steps. Participants are connected with a multitude of program resources such as online calculators, baseline energy consumption data, incentives, product training, technology specifications and online information. Where applicable, direct installation of products may be included during a customer visit.

Energy Analysis for residential customers consists of HEA and/or Home Performance. For commercial customers, it consists of three major categories: informational analysis (Level I), end-use analysis (Level II) and facility analysis (Level III). In addition, Minnesota Power offers design assistance. The focus of Energy Analysis is on identifying, evaluating and delivering the benefits of total energy savings, which includes reduced operating and maintenance costs, increased productivity and comfort and greater control over energy usage. Energy Analysis considers the unique needs of each customer and facility. Ultimately, the customer decides what their energy-savings objectives are and Minnesota Power helps them identify products and services to meet those requirements.

Energy auditors and third-party contractors are an integral part of Minnesota Power's Energy Analysis delivery network. Auditors and/or energy analysts are uniquely qualified and have the proper tools and training to better connect their services with conservation program opportunities and incentives. A major focus in 2020 was ensuring the safety of Minnesota Power's customers, employees and third-party contractors in light of the COVID-19 pandemic. As such, Energy Analysis was delivered virtually where possible.

EVALUATION METHODOLOGY

Minnesota Power documents the number and type of energy analysis activities delivered.

RESULTS

The following chart summarizes and compares the results of the Energy Analysis program with goals established at the time of program approval.

	Approved Goals	***Actual Results***	***% of Approved Goal***
Total Project Expenditures	$ 963,280	$725,498	75%
HEA *(1)*	565	307	54%
Home Performance *(2)*	616	259	42%
Energy Analysis – Low Income Multifamily (renters)	185	490	265%
Energy Analysis – Low Income Single Family Homes	900	390	43%
Business Energy Analysis *(3)*	3,211	2620	82%
Business Facility Performance *(4)*	465	192	41%
Total Participants	5,942	4,258	72%

(1) This includes remote and in-person audits
(2) This includes proper installation of CAC/ASHP and end-use analyses on ground source heat pumps, Triple E plan reviews and HEA with Building Diagnostics
(3) The analysis categories include: Level I; Level II; Level III & agricultural assistance.
(4) This includes engineering/design assistance (including plan reviews and lighting design) and benchmarking.

HEA – Energy Analysis for the residential sector includes HEA, excluding low income (as determined by Low Income Home Energy Assistance Program approval ("LIHEAP")). An HEA can help the customer determine how much energy is being used and what can be done to get the most for their energy dollars. Professional auditors help identify ways to save energy in homes and provide energy-saving direct installation products.

Minnesota Power's HEA offering looked very different in 2020 as compared to previous years. The Company suspended in-person HEAs in March of 2020 to reduce the risk of exposure to COVID-19. Less than two months after, Minnesota Power went live with a brand new remote HEA option, as approved by the Department in a courtesy notification approved by the Department on May 13, 2020 and an updated courtesy notification that was approved on September 9, 2020. The Company began allowing in-person visits in late 2020, but only in special circumstances. Overall, 144 customers participated in the remote HEA option, which encouraged customers to utilize a virtual platform to allow an experienced energy auditor to tour the customer's home, help identify energy-saving opportunities, and leave the customer with recommendations on what steps they can take to save energy and save money. This mimicked the standard in-person HEA in almost all areas except for the free direct installation of energy efficient products. To address this, Minnesota Power provided kits to customers that included general energy conservation products that they could install themselves with virtual assistance from an energy auditor, if needed. Minnesota Power further developed this offering to include customized kits with products hand-picked by the auditor based on the virtual walk-through analysis.

Minnesota Power continued using a targeted community approach in 2020, performing Community Blitzes in Pine River/Backus and Park Rapids. Postcards were sent to residential customers, door hangers were left at homes and phone calls were made to residents in each of these locations to promote the HEA program and to encourage interested customers to sign up. Other promotional efforts such as referral drawings, radio and newspaper advertisements and social media posts were utilized to help market this program, focusing on the new virtual delivery strategy. A

partnership with the gas utility Minnesota Energy Resources Corporation allowed the customer a comprehensive look at both their electric and gas energy usage. These targeted initiatives to promote the HEA program in 2020 increased awareness of the virtual offering to customers.

Home Performance – This category includes those services which take into account system performance along with building science best practices. It includes offerings such as HEA with Building Diagnostics ("HEA w/BD"), Triple E New Construction and Central Air Conditioner ("CAC") and Air Source Heat Pump ("ASHP") Design Assistance.

An HEA w/BD takes a traditional HEA to the next level and includes blower door testing and infrared thermal scanning. This is beneficial for homes that experience cold drafts or sweaty windows in the winter, uneven temperatures between rooms, heating or cooling systems that do not keep the home comfortable, or ice dams. Participation through March of 2020 was tracking steady with historical trends at around 30. Due to the COVID-19 pandemic, HEA w/BD has been suspended since mid-March 2020.

The Triple E program maintained the higher "Level 2" standards from 2012, which included increased values for both prescriptive (i.e., thermal efficiency, moisture control, air quality, heating and domestic hot water) and performance (i.e., heating and air tightness) measures.

CAC and ASHP Design Assistance is a service provided to customers through participating trained HVAC contractors. The contractor focuses on ensuring proper sizing, air flow and refrigerant charge of installed cooling equipment. Minnesota Power continued to promote the importance of these services to its customers.

Low Income Energy Analysis – The Low Income Energy Analysis program consists of single family and multifamily (renters) HEA. This program is delivered through partnerships with local Community Action agencies and various delivery vendors. Active agencies in 2020 included the Arrowhead Economic Opportunity Agency ("AEOA"), Mahube-Otwa Community Action Partnership, Lakes and Pines Community Action Council, KOOTASCA Community Action and Tri-County Community Action Partnership. Minnesota Power also partnered with local energy auditors to supplement the work of the Community Action agencies for both single family and multifamily Energy Analysis in 2020. Minnesota Power was not able to achieve its aggressive goals for single family Energy Analysis in 2020 due to unforeseen challenges of the pandemic. The Company was able to perform Energy Analysis on 390 single family homes as compared to its 2020 goal of 900. While energy analysis in single family homes was heavily impacted by the COVID-19 pandemic and related health concerns, Minnesota Power was able to reach hundreds of residents in multifamily buildings by partnering with property managers to install energy-saving products and limit the risk of exposure. In 2020, 15 low income multifamily properties were analyzed and 490 units were impacted through direct installation of energy efficiency products.

Business Energy Analysis – The Business Energy Analysis program continues to utilize analysis as a tool for educating and encouraging customers to make informed energy decisions. Business Energy Analysis involves preliminary energy use analysis and benchmarking. It includes a high-level business and facility interview, billing analysis, ENERGY STAR® Portfolio Manager analysis and/or Energy Use Index ("EUI"). The levels used are Level I (high-level site visit and walk-through analysis); Level II (energy survey and engineering analysis plus end-use analysis); and Level III (detailed analysis of capital-intensive modifications). For 2020, MP also tracked customer contacts. These were customer interactions that didn't reach Level I Analysis but

involved developing potential energy conservation projects. In 2020, there were 2,250 customer contacts.

In 2020, Minnesota Power collaborated with local gas utilities where shared program delivery resulted in implementing energy conservation into a successful project design. Since a majority of energy savings in new construction and commissioning/recommissioning are thermal, this joint cooperation with the natural gas utility fosters a more uniform approach to delivering energy-saving measures in collaboration.

Business Facility Performance

Design Assistance – Minnesota Power provides customers the tools needed to evaluate their facilities in order to make informed choices with their energy-savings options. By providing plan reviews for remodel or new construction projects, or a lighting design study when moving to new LED technology, Minnesota Power is able to provide the resources needed for customers to make informed choices. In 2020, Minnesota Power performed 170 design assistance projects.

Certification Evaluations – In 2020, Minnesota Power was involved with 22 benchmarking efforts, providing customers with assistance in developing B3, ENERGY STAR® and EUI scores. Through the use of benchmarking scores, customers with multiple facilities are able to target candidates to best utilize limited energy funding in order to make the greatest impact.

SUMMARY

Energy Analysis is often the first step in connecting with a customer. The wide range of Energy Analysis activities enables Minnesota Power and its third-party contractors to deliver accurate and timely information for the customer's decision-making process, from awareness to interest and from action to follow-up. It helps Minnesota Power introduce new technologies, increase the saturation of existing energy-efficient products, and build relationships that enhance ongoing dialogue with customers and their provider networks.

While the Energy Analysis program continues to be an important component of Minnesota Power's conservation programs, participation levels have fluctuated over the years for a variety of reasons, with the main driver being resource availability. Minnesota Power continuously explores opportunities to improve program offerings to ensure customers find value in the information being provided. Energy Analysis is one of the most direct ways to encourage customers to take the next step toward energy efficiency, empowering them to make effective energy choices.

MULTIFAMILY SUMMARY

While Minnesota Power did not have a separately filed program for multifamily initiatives in 2020, the Company incorporated a variety of multifamily specific activities within the other existing programs. The following information is not provided for the purposes of regulatory compliance, but rather the Company wishes to provide a unified and clearer view of these efforts for stakeholders focused on multifamily. Savings, spending and participation related to these activities are officially accounted for in the One Home, Energy Partners, One Business and Energy Analysis program reporting numbers. This section serves to informally summarize and report on all the 2020 multifamily efforts. The activities mentioned here include efforts that Minnesota Power has offered for many years through the custom commercial program, and new offerings that have been developed and piloted over the last several years.

The table below summarizes the multifamily kWh savings that were achieved as part of the One Home, Energy Partners and One Business programs. The Column titled "Program" indicates which program the measures are officially included in for reporting purposes.

2020 Multi-family Savings		
	kWh – Meter	**Program**
Non Low Income Multifamily	**14,640**	**One Home**
Refrigerator Turn-in(1)	14,640	
Low Income Multifamily	**196,956**	**Energy Partners**
LED Bulb	96,302	
Refrigerator Replacement	3,298	
Refrigerator Turn-in	8,235	
Refrigerator Thermometer	40,945	
Power Strip - Tier 1	2,120	
Showerhead	14,144	
Aerator - Bathroom	10,208	
Aerator - Kitchen	4,400	
Pipe Insulation	3,956	
Shower Timer	13,348	
Common Area Direct Install	**69,471**	**One Business**
LED Bulb	69,471	
MF Commercial Custom Project	**1,808,513**	**One Business**
HVAC	373,974	
Lighting	1,151,399	
Miscellaneous	151,734	
Motors and Drives	131,406	
Grand Total	**2,089,580**	

(1) While there were no direct installation projects in market rate multifamily buildings, a property manager requested to participate in refrigerator recycling for multiple units.

The table below summarizes the participation in the various offerings. The "Standard Residential" and "Low Income" sections of the table reflect the number of facilities and individual units that received energy analysis and direct installation measures. The number of units reflects the number of unique customer participants. Additionally, the "Commercial Custom" portion of the table reflects the number of completed One Business projects that were associated with a multifamily facility in 2020.

Non Low Income Multifamily	
# Facilities Received Analysis*	2
# Facilities Received DI	0
Number of Units Received DI	0
Low Income Multifamily	
# Facilities Received Analysis*	15
# Facilities Received DI	13
Number of Units Received DI	490
MF Commercial Custom Project	
# of Facilities with Completed Projects	32

***Facilities Received Analysis includes facilities that received full building audits and comprehensive recommendation reports but either did not have enough opportunity for direct installation measures or had to postpone multiple times due to the COVID-19 pandemic.*

Developing Relationships – As an additional step towards exploring options in the multifamily sector, Minnesota Power continues to work with Minnesota Multifamily Affordable Housing Energy Network ("MMAHEN") to partner with organizations whose goal is to increase energy efficiency and conservation in multifamily buildings. Minnesota Power has attended in-person meetings and conference calls with like-minded organizations through this network, resulting in creative collaboration opportunities and gaining a wealth of resources for further exploration in this sector.

Joint Multifamily Direct Installation Program – In 2020, Minnesota Power continued to focus on a program that would provide an all-encompassing residential/commercial hybrid approach to multifamily facilities. Minnesota Power collaborated with gas utilities when possible, using a joint implementation contractor to provide full on-site inspections, install energy conservation measures in units, provide educational events for tenants and deliver comprehensive reports inclusive of recommendations for both electric and gas measures to building owners. This gave customers an all-inclusive overview of their building's energy use. Minnesota Power worked with Minnesota Energy Resources Corporation to visit five multifamily customers throughout shared service territories, including income-qualified multifamily buildings. For facilities where gas partnerships were not possible, Minnesota Power provided the same deliverables except for the inclusion of the gas measures. In all, almost 500 apartment units benefited from direct installation of over 3,805 energy conservation measures. Having an approach that addresses the needs of both the facility operators as well as the tenants is critical to the Company's efforts in the multifamily sector. Utility collaboration will continue into 2021 and beyond to provide more all-inclusive multifamily energy audits.

Multifamily Tenant Events – In 2020, Minnesota Power offered educational events as part its multifamily program, providing tenants an opportunity to learn about energy efficiency. One event took place before COVID-19 restrictions were put into place with over 20 tenants attending the event. Tenants were provided information about the direct installation measures included in the program and were given an opportunity to ask questions about the technology, program and energy conservation in general.

Custom Multifamily Projects – Minnesota Power encouraged property owners and managers who were building new multifamily facilities or performing complete remodels in 2020 to make energy-efficient choices in their lighting, appliances and HVAC systems. These projects were followed throughout the planning and design phases, and rebates were processed through Minnesota Power's One Business energy conservation program. Minnesota Power processed over $165,000 in rebates to multifamily facilities and captured over 1.8 million kWh savings (at the meter).

APPENDIX B: DEMAND SIDE MANAGEMENT

This Appendix of the 2021 Integrated Resource Plan ("2021 IRP") contains information regarding Minnesota Power's planning and strategies for demand side management ("DSM"), Energy Efficiency ("EE") and Conservation Improvement Programs ("CIP"). Minnesota Power's performance and planning outlooks for DSM, EE and CIP are broken into two parts in this Appendix:

1. Minnesota Power's Energy Efficiency Resource Alternatives and Conservation Program Strategy; and
2. Order Point 14 Considerations, Potential energy-efficiency competitive-bidding process.

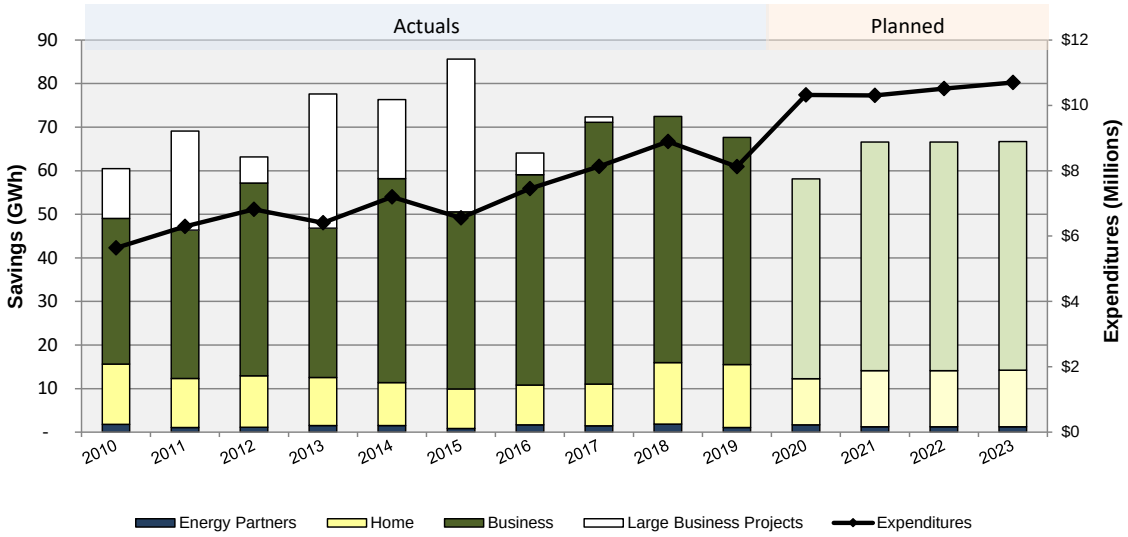
Part 1: Minnesota Power's Energy Efficiency Resource Alternatives and Conservation Program Strategy

Minnesota Power (or the "Company") is committed to providing sustainable energy-efficiency programs, as demonstrated by its strong historical CIP achievements. Since the Minnesota Next Generation Energy Act of 2007 ("NGEA"), Minnesota Power has been refining and expanding upon its proven conservation program platform to deliver cost-effective savings and customer value. The Company remains dedicated to continuous program improvement and views ongoing CIP initiatives as part of its broader *Energy**Forward*** resource strategy; a strategy designed to provide a safe, reliable and affordable power supply while identifying sustainable solutions for reducing carbon emissions further. Part 1 discusses the development of the Company's energy conservation targets included in the 2021-2023 CIP Triennial Plan filing[1] and the 2021 IRP baseline assumptions, as well as two increased EE alternative resource scenarios.

Figure 1 below reflects historical (first year) savings achievements and the proposed savings goals for 2021-2023, as filed in the 2021-2023 CIP Triennial Plan. Minnesota Power, together with its customers, community stakeholders and trade allies, has achieved success through its energy conservation programs, delivering energy savings at or above the state's 1.5 percent energy-savings goal since 2010 when the goal went into effect, all while maintaining focus on targeted program objectives – quality installations, informed decisions, EE and safety. The proposed goal for 2021-2023 and the assumed EE in the baseline forecast reflect the Company's intent to continue achieving savings of 2.5 percent which is well above the state's 1.5 percent goal.

[1] Docket No. E015/CIP-20-476.

Figure 1: Minnesota Power Historical CIP Achievements and 2021-2023 Goal



2021 IRP Baseline Assumptions and the 2021-2023 CIP Triennial

For purposes of both CIP Triennial planning and 2021 IRP modeling, Minnesota Power started with the 2020-2029 Minnesota State Demand Side Management Potential Study ("Potential Study") funded by the Department of Commerce and led by the Center for Energy and Environment ("CEE")[2]. The energy savings goals filed in the 2021-2023 CIP Triennial Plan are largely aligned with the Potential Study "Program", which will be referred to as the Baseline scenario (adjustments were made and discussed below and in Appendix A). Additionally, to align resource planning EE assumptions and modeling with CIP planning, the Company used the adjusted Baseline scenario that informed the CIP Triennial goals as the baseline EE assumption built into the custom demand forecast. These savings targets are well above the State of Minnesota's 1.5 percent energy-savings goal for CIP,[3] which equates to roughly 40 GWh on Minnesota Power's system. The adjusted Baseline scenario assumes roughly 65 GWH in 2021-2023 and ranges from 73 GWh in 2024 to 80 GWh by 2029. The average annual savings in the period after the current CIP Triennial (2024-2029) is roughly 77 GWh. This is in line with the Minnesota Public Utilities Commission's Order Point 12 from the Company's integrated resource plan ("IRP") filed in 2015,[4] which directed the Company to assume a planning goal of 76.5 GWh of EE. The savings goals in the CIP Triennial Plan and the efficiency levels assumed in the baseline assumptions for the IRP are aggressive, but the Company believes these are achievable. However, it is important to note that the significant impact of the COVID-19 pandemic, including a disruption in program services in the EE industry and potential long-term impacts, was not known or accounted for in the Baseline or alternative energy savings

[2] https://mn.gov/commerce-stat/pdfs/mn-energy-efficiency-potential-study.pdf
[3] Minn. Stat. § 216B.241, subd. 1c(b) ("Each individual utility and association shall have an annual energy-savings goal equivalent to 1.5 percent of gross annual retail energy sales unless modified by the commissioner under paragraph (d). The savings goals must be calculated based on the most recent three-year weather-normalized average.").
[4] Order Approving Resource Plan with Modifications, Docket No. E015/RP-15-690 (July 18, 2016) ("Minnesota Power's average annual energy savings goal is set at 76.5 GWh.").

scenarios. Therefore, it is important to take a reasonable approach to long-term EE assumptions to minimize risk and uncertainty.

Summary of Alternative Energy Efficiency Scenarios

Based on the aforementioned Potential Study, current CIP strategy, and analysis of historic performance and future opportunities, Minnesota Power provided two alternative EE scenarios with additional energy and capacity savings above the Baseline scenario (built into the base/expected 2020 Annual Electric Utility Forecast Report ("AFR2020") forecast). The Company further developed cost projections consistent with each outlook. The two alternative energy efficiency scenarios evaluated in the IRP analysis are:

1. "High" Scenario: modeled to reflect the midpoint between "Very High" and "Baseline" scenario (Program scenario from the Potential Study) scenarios, and
2. "Very High" Scenario: modeled after the adjusted Potential Study "Max Achievable" scenario.

Minnesota Power worked closely with CEE to update the original assumptions used in the Potential Study for the Minnesota Power-specific projections, in order to accurately capture the Company's specific territory, customer base, system, and historical experience with CIP.

The process of updating the CEE potential projections and method used to incorporate them into the load forecast are documented in the Company's AFR2020, included as Appendix A. These scenarios were incorporated in the EnCompass modeling process as supply side alternatives in the capacity expansion plan analysis.

The alternative efficiency scenarios ("High" and "Very High") considered in the IRP analysis begin in year 2024. These alternatives were not modeled as an option for 2021-2023 in light of currently-approved levels and due to limited ability to significantly increase EE above the approved 2021-2023 CIP Triennial Plan in the short-term. The potential study projected energy savings for the years 2021-2029. All three EE scenarios therefore assume new program implementation (and new savings) each year through 2029, after which no new saving programs were assumed. For the purposes of modeling the alternative scenarios in the 2021 IRP, only the additional costs and additional first year GWh/GW savings above the baseline are included. A high-level summary of the baseline EE (assumed in the forecast) and the increased efficiency scenarios modeled in the resource plan are shown in Table 1 and includes the following:

- % of Sales: Represents the level of 2024 savings under each scenario as a percentage of average weather normalized 2017-2019, non-CIP exempt retail sales—the baseline for the 2021-2023 CIP Triennial Plan.[5]
- Energy: Total estimated first year energy savings associated with each scenario for the year 2024.
- Energy Above Base: The additional GWh associated with each scenario in terms of first year savings as compared to the baseline plan (EE assumed in forecast).
- Summer Peak: Estimated first year GW demand savings coincident with Midcontinent Independent System Operator ("MISO") summer peak for the year 2024.

[5] In accordance with Minnesota Rules part 7690.1200, 2017-2019 weather-normalized average retail energy sales were used to calculate the electric savings goal for Minnesota Power's 2021-2023 Triennial CIP. This equated to 2,646,854,358 kWh, net of CIP exempt customers at the time of the Triennial Filing. Savings as a percent of sales in Table 1 were calculated using this figure.

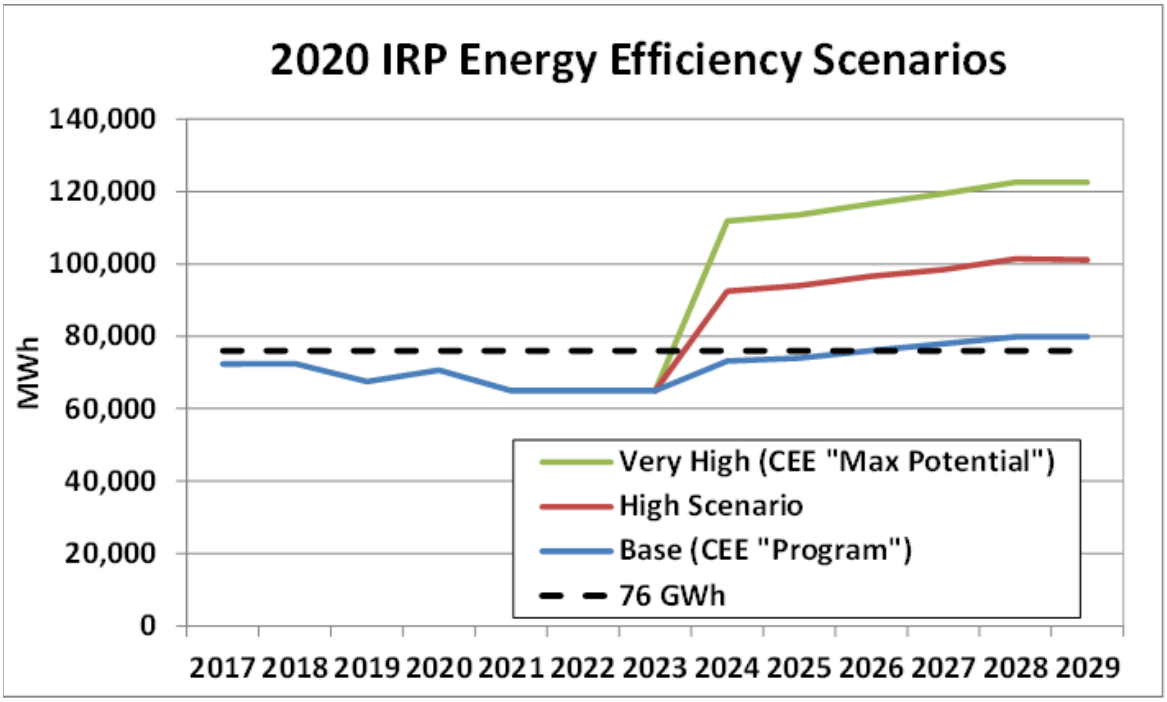
- Summer Peak Reduction Above Base: The additional first year GW demand savings associated with the scenario as compared to the baseline plan.
- Incentives: Rebates to incentivize customers to install/complete an efficiency measure.
- Non-Incentives: All other costs incurred by the Company to implement the 2024 EE plan.
- Total Cost: The estimated total program costs assumed to achieve the level of savings associated with each scenario in the year 2024.
- Total Cost Above Base: The estimated additional spending needed to achieve the incremental savings as compared with the existing plan for the year 2024.

Table 1: Summary of Energy Efficiency Scenarios

Scenarios		*First Year Annual Savings at the Generator (Energy: GWh/ Peak: MW)				First Year Program Costs (Million $)			
Plan	% of Sales** (Rounded)	Energy	Energy Above Base	MP Summer Peak	Summer Peak Reduction Above Base	Incentives	Non-Incentive	Total	Total Cost Above Base
Adjusted Base (CEE "Program")	2.76%	73.2	–	6.4	–	$10.42	$5.41	$15.81	$0
High	3.49%	92.5	19.3	8.1	1.7	$17.16	$6.86	$24.02	$8.19
Adjusted Very High (CEE "Max Achievable")	4.22%	111.8	38.7	9.7	3.3	$31.97	$8.31	$40.28	$24.45

Figure 2 below reflects the first year EE savings (measured at the generator) assumed in each year through 2029 for each of the three scenarios.

Figure 2: 2020 IRP Energy Efficiency Scenarios



Energy Efficiency Scenario Development and Assumptions

As previously noted, the Minnesota statewide Potential Study was the starting point for developing the baseline and alternative EE scenarios. As part of the Potential Study, CEE developed and defined two "achievable" potential scenarios. The following excerpt from the Final Report defines these two scenarios:

> *"In addition to total economic potential (i.e., the total potential if all possible measures were installed that meet cost-effectiveness criteria), two program scenarios were calculated:*
>
> - *Maximum achievable potential: This is the subset of economic potential that is achievable considering market barriers, given the most aggressive program scenario possible. This study assumed financial incentives would cover 100 percent of the incremental cost of each measure, along with very aggressive marketing and program designs to achieve maximum market penetration of the measures.*
> - *Program potential: The program potential is a subset of the maximum achievable, given constraints in implementation. This study assumed that financial incentive levels are dropped to 50 percent of the incremental cost of each measure, which is a typical scenario used for planning purposes in Minnesota, and a good benchmark for aggressive programs nationally. The project team still assumed aggressive marketing and program designs for this scenario."*

Savings Targets and Contributions

The goal of the Potential Study was to produce a statewide EE potential report, and while some regional and investor-owned utility ("IOU"-specific) inputs were used in the methodology, other major inputs were developed at the statewide level. CEE leveraged the load forecast file in

the Company's most recent prior IRP (2015), which was a 2014 vintage and fairly optimistic in its outlook for customer demand growth. The Company recognized this likely resulted in an inflated estimate of kWh savings potential relative to its current, more moderate outlook, and conferred with CEE on reasonable methods for updating the potential savings estimates. The Company worked with CEE to update its model with the most current customer outlook and CIP exemptions to produce a more accurate estimate of Minnesota Power's potential savings. Once the savings potential was updated for the Baseline and Very High (Max Potential) scenarios, a third scenario was created (High scenario) with a target savings level at the mid-point between the adjusted Baseline (Program) and Very High levels.

Additionally, the Minnesota Power-specific savings contributions by class and technology included in the original Potential Study were evaluated and ultimately modified to better reflect Minnesota Power's history and anticipated opportunities based on experience and internal analysis. As a result of this process, for 2021-2023, these contributions were modified to reflect historical patterns, accounting for changes that impact measure and savings opportunities, including market penetration and updates to approved measures and savings calculations as defined in the Technical Reference Manual ("TRM").[6] Updated avoided costs and net benefit estimates were also taken into account to evaluate changes in cost-effectiveness for various technologies compared to in the past. The most significant change to the assumed measure contributions for 2021-2023 was an increase in lighting measures. The Potential Study originally assumed changes to lighting standards would significantly impact savings opportunity from lighting in CIP portfolios as early as 2022. However, the TRM used for the 2021-2023 CIP Triennial Plan was not updated to reflect changes in the calculation of lighting savings, allowing for utilities to maintaining higher levels of planned savings through lighting measures.

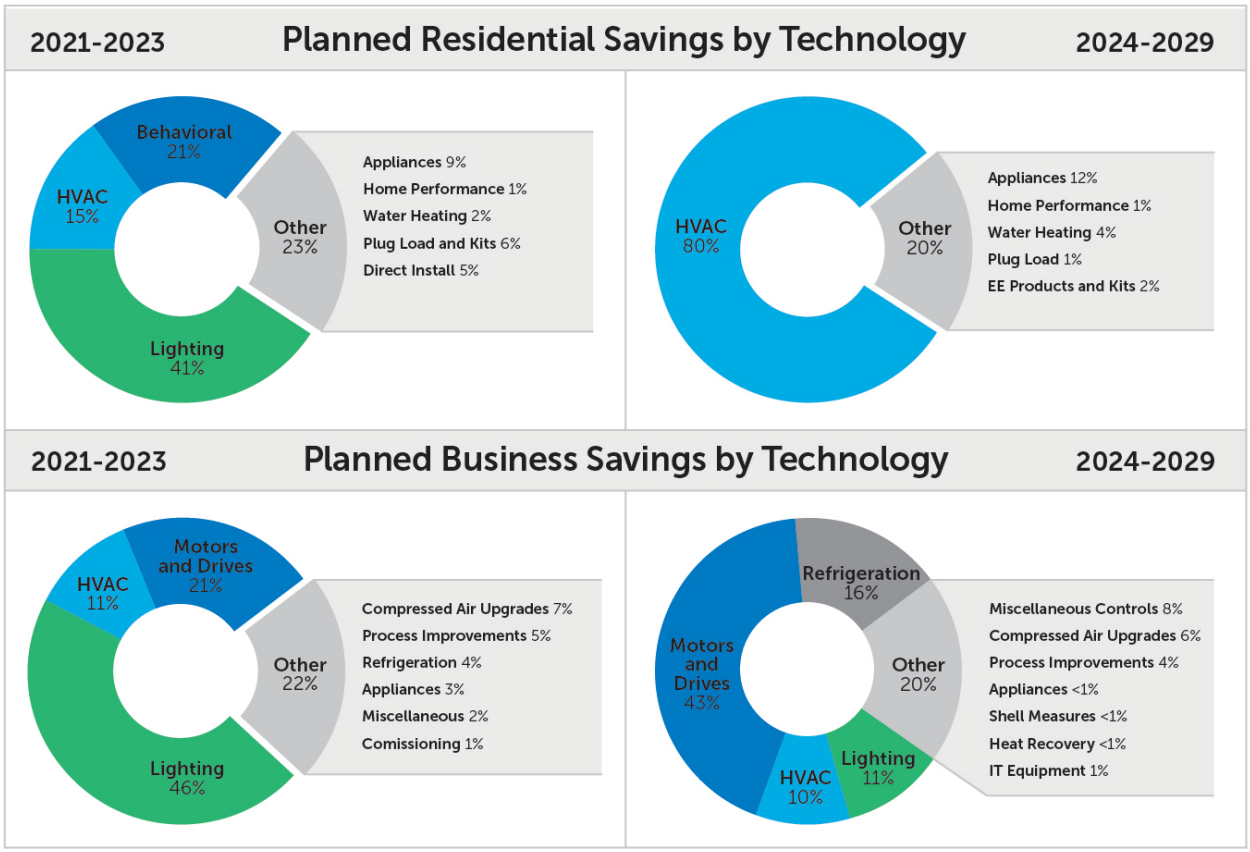
Beyond 2023, in the Baseline scenario, Minnesota Power updated the savings contributions by technology in each class to reflect anticipated reductions in lighting savings opportunity, which for both residential and commercial/industrial ("C/I") classes have historically accounted for the majority of the savings achievements. For residential, this resulted in a significant shift to Heating Ventilation & Air Conditioning ("HVAC") savings and for C/I this resulted in a noticeable shift away from lighting into other evolving technologies such as motors and Heating Ventilation Air Conditioning & Refrigeration ("HVACR").

For the alternative savings scenarios (High and Very High) – all measures in the Baseline scenario were scaled by the same percentage to achieve the targeted levels for each.

The graphs in Figure 3 below reflect Baseline savings contributions by technology for the 2021-2023 period and for 2024 and beyond:

[6] State of Minnesota Technical Reference Manual for Energy Conservation Improvement Programs (Jan. 20, 2020), https://www.edockets.state.mn.us/EFiling/edockets/searchDocuments.do?method=showPoup&documentId={D0CDC86F-0000-C832-A29A-F7752BF4A0D9}&documentTitle=20201-159365-02.

Figure 3: Planned Savings by Technology



Scenario Cost Development

Cost assumptions were developed for each scenario for 2024 through 2029. For use in the 2021 IRP analysis, the costs associated with the High and Very High scenarios are incremental to the Baseline scenario. All costs were estimated for the year 2024 and escalated each year proportional to the change in energy savings.

Baseline Scenario

2024 cost assumptions for the Baseline scenario were developed to serve as the baseline costs against which the costs for the two higher scenarios would be compared. These costs were developed using the assumptions defined in the potential study and therefore reflect:

- Customer incentives (rebates) equal to 50 percent of the measures incremental cost where incremental cost is the difference between the cost of the standard efficiency product or action, or sometimes purchasing nothing/taking no action, compared to the cost of the efficient product or action.
- Aggressive program design and marketing. Non-incentive costs increase linearly with savings.

High Scenario

There is no equivalent scenario from the statewide Potential Study for this scenario, as it represents the midpoint between the adjusted Baseline scenario and the adjusted Very High (max achievable) scenario. The Company assumed:

- Customer incentives (rebates) would be set at 65 percent of incremental measure costs. This is roughly halfway between recent historical rebate levels and the max scenario (100 percent).
- Aggressive program design and marketing. Non-incentive costs increase linearly with savings.

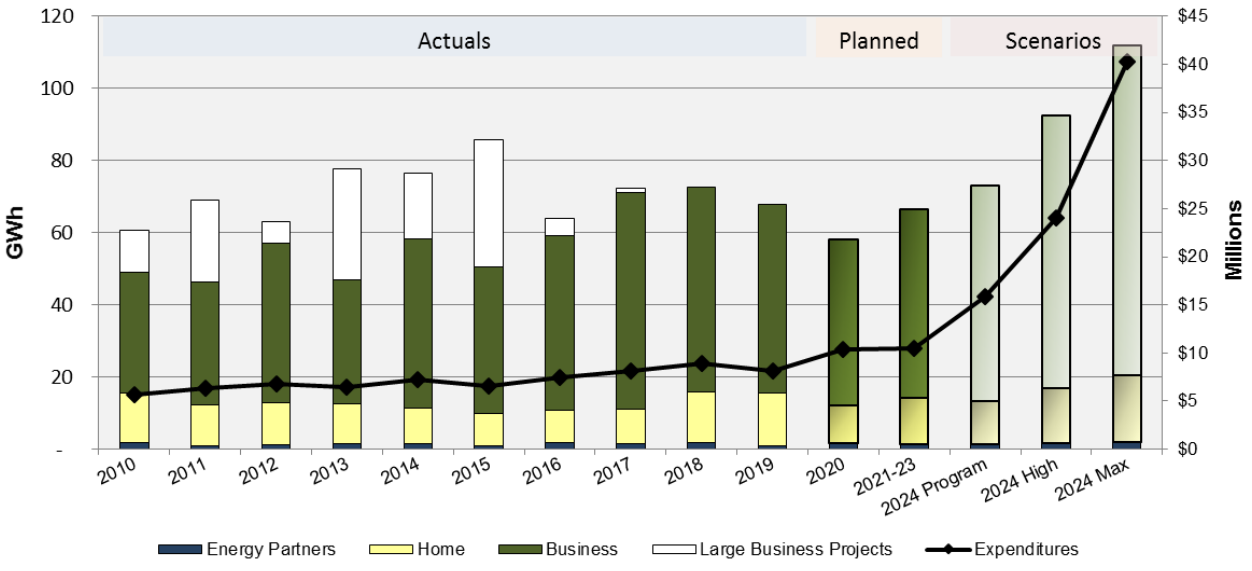
Very High (Max Achievable) Scenario

Like the Baseline scenario, Minnesota Power based incentive costs for the Very High scenario on the potential study scenario description:

- Customer incentives (rebates) are assumed at 100 percent of incremental measure costs.
- Aggressive program design and marketing. Non-incentive costs scale linearly with savings.

Figure 4 below expands on the Minnesota Power Historical CIP Performance graph (Figure 1) to include the planned costs and savings for 2020 and 2021-2023 (as filed in the respective triennial plans), and 2024 costs and savings as modeled for the Baseline and two alternative scenarios used in the 2021 IRP analysis:

Figure 4: Historical, Planned, and Modeled CIP Energy Savings (First Year) and Costs

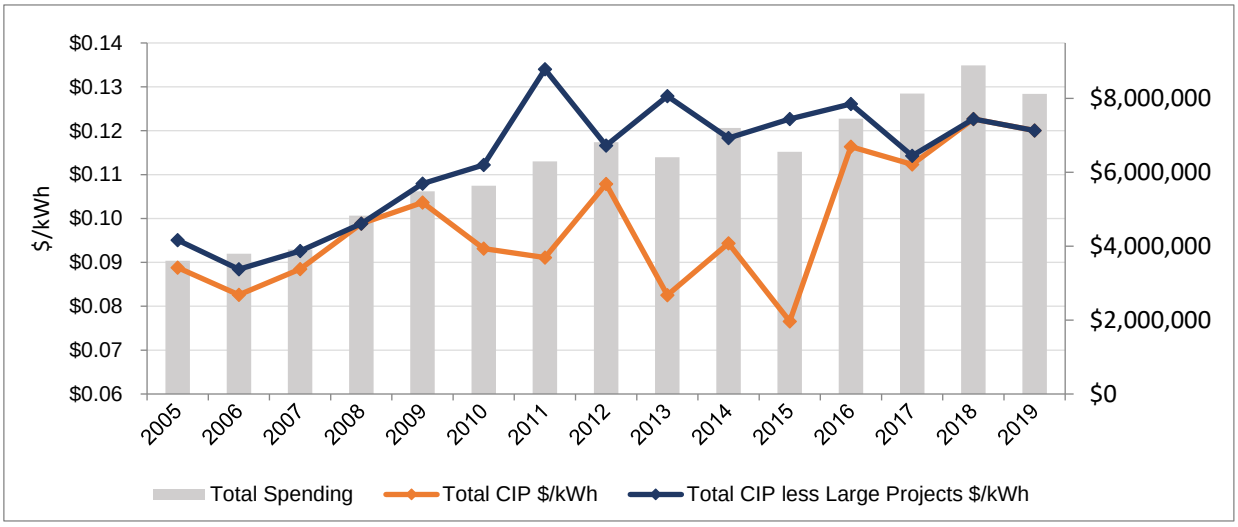


Discussion of Increasing Costs

Minnesota Power largely drew from the Potential Study assumptions to determine scenario costs for the 2021 IRP. The Company's own analysis of historical and anticipated cost trends indicates strong alignment with and support of the Potential Study assumptions. Specifically, stronger incentive levels and more aggressive program development and marketing will be critical to deliver at the levels discussed in the 2021 IRP.

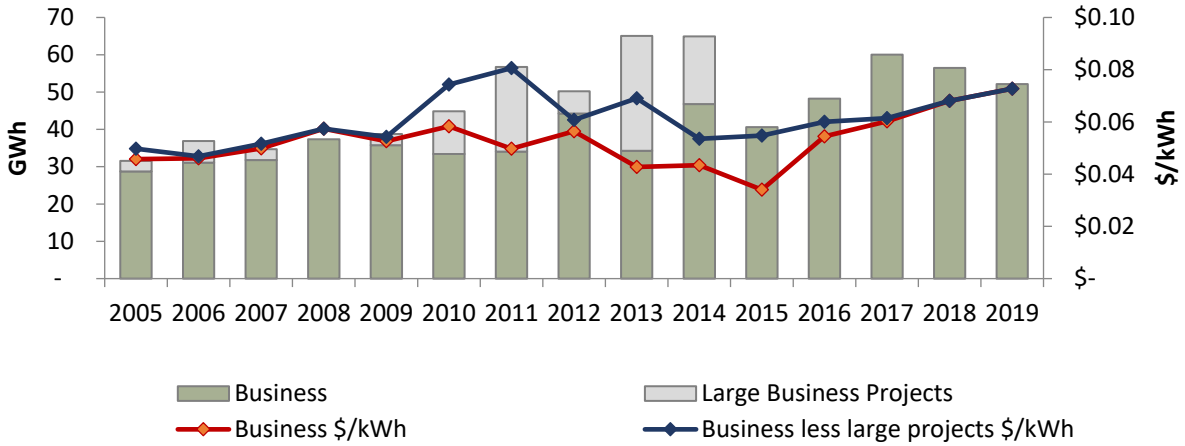
Further, costs have been increasing steadily over the past several years, in part due to the loss of large project opportunities. Between 2010 and 2015, such opportunities accounted for about 30 percent of total savings and only 4 percent of total spending. Figure 5 below reflects the (first year) cost per kWh saved trend between 2005 and 2019. Between 2010 and 2015, where significant large project savings were realized, the average cost per kWh saved was $0.09/kWh – compared to an average of $0.12/kWh between 2016 and 2019 when opportunities for these types of projects were no longer available.

Figure 5: Total Spending and Cost per kWh Trending



C/I savings have historically comprised the vast majority of the Company's savings achievements. Between 2005 and 2019, C/I savings accounted for approximately 80 percent of CIP savings – ranging from 73 percent to 88 percent in any given year. Similarly, C/I costs are a significant driver of overall costs. Figure 6 below shows how C/I costs per kWh have trended over time. Over the last three years, C/I costs per kWh saved have steadily increased even as savings have decreased. This suggests that in order to achieve higher savings goals, the cost per kWh saved will not only continue to trend up, it will increase more significantly with higher levels of EE. This increase will likely be further compounded as the opportunity for cost-effective lighting projects decreases.

Figure 6: Commercial and Industrial Cost per kWh (First-year Savings)



With the absence of large C/I projects, costs have increased over the last several years. However, cost-effective, efficient lighting products and projects across all customer sectors made their way to the forefront of Minnesota Power's CIP programs. Lighting measures became an obvious and easy energy saving option for customers to identify and adopt, especially as they also became increasingly cost-effective for consumers. Customer awareness and acceptance increased as LEDs became the primary option on the market. These factors, in combination with strategic program design, resulted in lighting making up the majority (over 50 percent) of savings over the last several years, helping to keep program costs lower despite the loss of large C/I projects.

However, with changing codes and standards impacting lighting measure baselines and significant market saturation of commercial efficient lighting, beginning in 2024 the majority of additional lighting opportunity is expected to go away. The Company will need to find ways to replace the most cost-effective and prevalent measure in its existing portfolio, which in 2019 accounted for nearly 37 GWh in savings (54 percent of total 2019 savings). The types of technologies that will need to replace those savings will be more costly measures that customers may not be as ready (or financially able) to adopt without significant education and incentives to do so. Increased education and outreach, along with higher rebate levels drive the increase in costs assumed in the 2024 Baseline scenario as compared to the 2021-2023 (filed) budgets.

Scenario Details

The following tables include the plan parameters for each scenario (savings, costs, participation for Baseline, High, and Very High scenarios).

Table 2: Year 2024 Energy and Demand Savings (MISO Summer Peak)

	Program	High	Very High	Program	High	Very High
	kWh - Generator	kWh - Generator	kWh - Generator	kW - Generator	kW - Generator	kW - Generator
Residential	12,019,394	15,202,866	18,423,077	1,377.1	1,742.9	2,111.2
HVAC	9,653,139	12,212,160	14,794,019	1,133.8	1,434.8	1,737.9
Home Performance	85,203	99,404	127,805	3.4	4.0	5.2
Energy Efficiency Products and Kits	272,032	344,568	417,620	23.8	30.1	36.5
Water Heating	449,076	569,730	690,423	37.2	47.2	57.2
Appliances	1,491,432	1,890,102	2,288,021	171.1	216.8	262.5
Plug Load	68,512	86,901	105,188	7.8	9.9	12.0
Admin Costs	0	0	0	0.0	0.0	0.0
Low Income	1,319,275	1,666,899	2,031,465	139.0	176.3	213.4
HVAC	50,927	58,157	83,974	13.4	16.9	20.4
Water Heating	535,470	678,921	822,080	44.4	56.3	68.2
Appliances	360,715	457,940	553,927	40.3	51.2	61.9
Energy Efficiency Products and Kits	372,162	471,881	571,483	40.9	51.9	62.9
Admin Costs	0	0	0	0.0	0.0	0.0
Business	59,826,687	75,624,419	91,373,241	4,866.8	6,143.8	7,395.2
Lighting	6,617,469	8,241,744	9,995,622	883.8	1,103.5	1,340.2
Refrigeration	9,621,879	12,232,833	14,838,140	655.2	829.3	1,002.9
Motors and Drives	25,946,629	32,872,342	39,949,432	946.9	1,195.5	1,443.4
HVAC	6,075,527	7,642,025	9,208,522	1,468.1	1,850.3	2,232.6
Compressed Air Upgrades	3,679,508	4,785,381	5,660,022	158.1	204.7	242.0
Process Improvements	2,253,887	2,575,871	3,219,838	163.2	186.6	233.2
Appliances	207,143	263,613	313,837	48.3	61.3	73.1
Shell Measures	269,540	394,856	402,419	1.7	2.0	2.4
Heat Recovery	170,483	230,992	250,778	86.8	130.3	130.3
Miscellaneous Controls	4,525,664	5,715,246	6,827,273	368.5	462.7	554.1
IT Equipment	458,959	669,518	707,358	86.2	117.6	140.9
Admin Costs	0	0	0	0.0	0.0	0.0
Indirect Impact	0	0	0	0.0	0.0	0.0
Grand Total	**73,165,356**	**92,494,183**	**111,827,783**	**6,383.0**	**8,062.9**	**9,719.8**

Table 3: Year 2024 Participation

	Program	High	Very High
	Participants	Participants	Participants
Residential (Measures)	9,439	11,962	14,489
HVAC	2,328	2,949	3,572
Home Performance	6	7	9
Energy Efficiency Products and Kits	698	884	1,071
Water Heating	3,006	3,812	4,617
Appliances	2,845	3,605	4,366
Plug Load	556	705	854
Admin Costs	0	0	0
Low Income (Measures)	6,409	8,125	9,840
HVAC	94	118	144
Water Heating	2,707	3,431	4,155
Appliances	622	790	956
Energy Efficiency Products and Kits	2,986	3,786	4,585
Admin Costs	0	0	0
Business (Projects)	968	1,226	1,482
Lighting	121	152	185
Refrigeration	78	100	121
Motors and Drives	366	465	564
HVAC	264	333	402
Compressed Air Upgrades	29	38	45
Process Improvements	7	8	10
Appliances	37	47	56
Shell Measures	9	11	13
Heat Recovery	9	11	13
Miscellaneous Controls	45	57	68
IT Equipment	3	4	5
Admin Costs	0	0	0
Indirect Impact	0	0	0
Grand Total	**16,816**	**21,313**	**25,811**

Table 4: Year 2024 Costs

	Program	High	Very High
Residential	$2,559,353.02	$3,883,875.36	$6,511,717.62
HVAC	$1,553,904.76	$2,560,462.35	$4,770,536.21
Home Performance	$25,410.89	$41,871.06	$78,012.24
Energy Efficiency Products and Kits	$5,865.83	$9,665.49	$18,008.30
Water Heating	$15,358.79	$25,307.62	$47,151.97
Appliances	$76,151.80	$125,479.92	$233,788.43
Plug Load	$6,072.98	$10,006.81	$18,644.23
Admin Costs	$876,587.97	$1,111,082.11	$1,345,576.24
Low Income	$291,046.68	$425,437.51	$674,977.75
HVAC	$17,026.96	$28,056.36	$52,273.33
Water Heating	$8,953.71	$14,753.57	$27,488.19
Appliances	$100,274.73	$165,228.71	$307,846.55
Energy Efficiency Products and Kits	$22,418.33	$36,940.04	$68,824.98
Admin Costs	$142,372.95	$180,458.83	$218,544.70
Business	$10,130,018.60	$16,103,811.76	$28,725,696.97
Lighting	$841,029.45	$1,385,814.80	$2,581,986.70
Refrigeration	$1,816,645.37	$2,993,395.86	$5,577,158.07
Motors and Drives	$2,523,251.68	$4,157,713.61	$7,746,461.57
HVAC	$1,405,354.45	$2,315,687.09	$4,314,482.13
Compressed Air Upgrades	$261,445.31	$430,799.16	$802,645.28
Process Improvements	$479,785.07	$790,570.73	$1,472,955.18
Appliances	$32,908.50	$54,225.33	$101,030.14
Shell Measures	$28,227.85	$46,512.74	$86,660.40
Heat Recovery	$152,354.21	$251,043.21	$467,732.22
Miscellaneous Controls	$959,192.95	$1,580,519.94	$2,944,752.36
IT Equipment	$83,405.00	$137,431.42	$256,055.94
Admin Costs	$1,546,418.76	$1,960,097.87	$2,373,776.98
Indirect Impact	$2,845,049.47	$3,606,122.45	$4,367,195.43
Grand Total	**$15,825,467.77**	**$24,019,247.08**	**$40,279,587.77**

Table 5: Baseline Scenario Cumulative Effects

year	Administration	Incentives	Total	kW	Summer Coin kW	Winter Coin kW	kWh	kW	Summer Coin kW	Winter Coin kW	kWh
2024	$5,410,429.15	$10,415,038.65	$15,825,467.80	12,939	6,383	6,180	73,165,356	12,939	6,383	6,180	73,165,356
2025	$5,512,787.14	$10,612,077.08	$16,124,864.22	13,083	6,433	6,238	73,992,182	26,021	12,816	12,418	147,157,537
2026	$5,643,574.95	$10,863,842.70	$16,507,417.65	13,432	6,607	6,391	76,103,887	39,450	19,422	18,806	223,248,792
2027	$5,776,670.66	$11,120,051.03	$16,896,721.69	13,783	6,772	6,556	77,977,293	53,141	26,145	25,284	300,733,290
2028	$5,944,155.48	$11,442,458.15	$17,386,613.64	14,143	6,953	6,720	79,906,922	67,190	33,048	31,924	380,137,737
2029	$5,941,977.80	$11,438,266.12	$17,380,243.91	14,142	6,953	6,720	79,905,018	81,235	39,950	38,562	459,528,328
2030	$0.00	$0.00	$0.00	0	0	0	0	81,137	39,898	38,478	459,001,824
2031	$0.00	$0.00	$0.00	0	0	0	0	80,995	39,826	38,360	458,245,514
2032	$0.00	$0.00	$0.00	0	0	0	0	80,529	39,550	37,949	455,706,460
2033	$0.00	$0.00	$0.00	0	0	0	0	80,152	39,321	37,615	453,650,748
2034	$0.00	$0.00	$0.00	0	0	0	0	79,301	38,782	36,921	448,165,605
2035	$0.00	$0.00	$0.00	0	0	0	0	78,435	38,234	36,213	442,598,403
2036	$0.00	$0.00	$0.00	0	0	0	0	76,566	36,685	34,622	430,246,558
2037	$0.00	$0.00	$0.00	0	0	0	0	74,684	35,126	33,024	417,837,180
2038	$0.00	$0.00	$0.00	0	0	0	0	73,092	33,733	31,689	406,972,381
2039	$0.00	$0.00	$0.00	0	0	0	0	63,276	28,593	28,172	345,400,838
2040	$0.00	$0.00	$0.00	0	0	0	0	53,836	23,720	24,993	286,577,308
2041	$0.00	$0.00	$0.00	0	0	0	0	44,160	18,746	21,759	226,194,881
2042	$0.00	$0.00	$0.00	0	0	0	0	33,069	13,997	17,361	163,447,735
2043	$0.00	$0.00	$0.00	0	0	0	0	21,746	9,142	12,899	99,380,815
2044	$0.00	$0.00	$0.00	0	0	0	0	9,908	3,991	8,127	33,904,849
2045	$0.00	$0.00	$0.00	0	0	0	0	7,014	2,898	5,669	23,777,119
2046	$0.00	$0.00	$0.00	0	0	0	0	4,047	1,779	3,150	13,393,670
2047	$0.00	$0.00	$0.00	0	0	0	0	1,063	650	619	2,958,141
2048	$0.00	$0.00	$0.00	0	0	0	0	531	325	309	1,478,688

Table 6: High Scenario Cumulative Effects

year	Administration	Incentives	Total	kW	Summer Coin kW	Winter Coin kW	kWh	kW	Summer Coin kW	Winter Coin kW	kWh
2024	$6,857,761.25	$17,161,485.81	$24,019,247.06	16,362	8,063	7,813	92,494,183	16,362	8,063	7,813	92,494,183
2025	$6,976,564.68	$17,458,790.31	$24,435,354.99	16,629	8,196	7,953	94,059,438	32,991	16,259	15,766	186,553,621
2026	$7,139,531.26	$17,866,612.72	$25,006,143.98	17,074	8,412	8,150	96,619,127	50,062	24,669	23,914	283,156,772
2027	$7,302,400.68	$18,274,191.98	$25,576,592.67	17,395	8,583	8,323	98,410,169	67,340	33,190	32,137	380,942,274
2028	$7,513,916.18	$18,803,507.62	$26,317,423.80	17,917	8,831	8,556	101,428,868	85,138	41,958	40,592	481,735,556
2029	$7,507,429.90	$18,787,275.74	$26,294,705.64	17,879	8,827	8,547	101,174,504	102,894	50,720	49,036	582,259,545
2030	$0.00	$0.00	$0.00	0	0	0	0	102,770	50,654	48,930	581,593,691
2031	$0.00	$0.00	$0.00	0	0	0	0	102,591	50,563	48,780	580,636,908
2032	$0.00	$0.00	$0.00	0	0	0	0	102,000	50,214	48,260	577,420,840
2033	$0.00	$0.00	$0.00	0	0	0	0	101,524	49,924	47,838	574,820,361
2034	$0.00	$0.00	$0.00	0	0	0	0	100,469	49,253	46,970	568,065,110
2035	$0.00	$0.00	$0.00	0	0	0	0	99,356	48,549	46,063	560,889,411
2036	$0.00	$0.00	$0.00	0	0	0	0	96,992	46,592	44,049	545,258,616
2037	$0.00	$0.00	$0.00	0	0	0	0	94,612	44,601	41,997	529,515,369
2038	$0.00	$0.00	$0.00	0	0	0	0	92,598	42,820	40,276	515,722,358
2039	$0.00	$0.00	$0.00	0	0	0	0	80,140	36,281	35,781	437,534,740
2040	$0.00	$0.00	$0.00	0	0	0	0	68,135	30,061	31,706	362,741,808
2041	$0.00	$0.00	$0.00	0	0	0	0	55,822	23,715	27,553	286,063,076
2042	$0.00	$0.00	$0.00	0	0	0	0	41,838	17,713	21,987	206,958,437
2043	$0.00	$0.00	$0.00	0	0	0	0	27,499	11,568	16,332	125,712,436
2044	$0.00	$0.00	$0.00	0	0	0	0	12,551	5,050	10,297	42,955,125
2045	$0.00	$0.00	$0.00	0	0	0	0	8,891	3,668	7,190	30,146,320
2046	$0.00	$0.00	$0.00	0	0	0	0	5,134	2,250	4,000	16,998,416
2047	$0.00	$0.00	$0.00	0	0	0	0	1,358	823	796	3,793,798
2048	$0.00	$0.00	$0.00	0	0	0	0	679	412	398	1,896,517

Table 7: Very High Scenario Cumulative Effects

year	Administration	Incentives	Total	kW	Summer Coin kW	Winter Coin kW	kWh	kW	Summer Coin kW	Winter Coin kW	kWh
2024	$8,305,093.35	$31,974,494.41	$40,279,587.76	19,758	9,720	9,439	111,827,783	19,758	9,720	9,439	111,827,783
2025	$8,440,342.21	$32,495,200.64	$40,935,542.86	20,088	9,899	9,595	113,621,147	39,846	19,619	19,034	225,448,930
2026	$8,635,487.58	$33,246,507.59	$41,881,995.17	20,618	10,176	9,882	116,648,550	60,460	29,793	28,913	342,077,974
2027	$8,828,130.71	$33,988,180.97	$42,816,311.68	21,099	10,422	10,099	119,397,418	81,417	40,140	38,891	460,718,885
2028	$9,083,676.88	$34,972,030.22	$44,055,707.10	21,675	10,682	10,356	122,595,685	102,948	50,746	49,124	582,545,801
2029	$9,072,882.00	$34,930,470.05	$44,003,352.05	21,668	10,680	10,350	122,571,522	124,468	61,347	59,349	704,330,413
2030	$0.00	$0.00	$0.00	0	0	0	0	124,317	61,267	59,221	703,526,200
2031	$0.00	$0.00	$0.00	0	0	0	0	124,101	61,157	59,040	702,368,931
2032	$0.00	$0.00	$0.00	0	0	0	0	123,386	60,735	58,411	698,477,555
2033	$0.00	$0.00	$0.00	0	0	0	0	122,809	60,384	57,900	695,330,534
2034	$0.00	$0.00	$0.00	0	0	0	0	121,535	59,566	56,844	687,158,206
2035	$0.00	$0.00	$0.00	0	0	0	0	120,238	58,736	55,769	678,866,523
2036	$0.00	$0.00	$0.00	0	0	0	0	117,359	56,331	53,286	659,790,040
2037	$0.00	$0.00	$0.00	0	0	0	0	114,449	53,887	50,774	640,488,029
2038	$0.00	$0.00	$0.00	0	0	0	0	112,014	51,738	48,690	623,796,477
2039	$0.00	$0.00	$0.00	0	0	0	0	96,964	43,854	43,268	529,097,753
2040	$0.00	$0.00	$0.00	0	0	0	0	82,443	36,361	38,371	438,583,478
2041	$0.00	$0.00	$0.00	0	0	0	0	67,604	28,713	33,365	346,171,372
2042	$0.00	$0.00	$0.00	0	0	0	0	50,640	21,432	26,612	250,315,647
2043	$0.00	$0.00	$0.00	0	0	0	0	33,293	13,993	19,761	152,169,633
2044	$0.00	$0.00	$0.00	0	0	0	0	15,163	6,103	12,439	51,891,028
2045	$0.00	$0.00	$0.00	0	0	0	0	10,739	4,434	8,683	36,410,539
2046	$0.00	$0.00	$0.00	0	0	0	0	6,190	2,718	4,820	20,490,213
2047	$0.00	$0.00	$0.00	0	0	0	0	1,636	996	957	4,563,879
2048	$0.00	$0.00	$0.00	0	0	0	0	818	498	478	2,281,557

Summary of Findings

Minnesota Power has a proven track record of successful CIP performance and anticipates continuing this trend into the future, as indicated by the aggressive goals set forth in the 2021-2023 Triennial Plan and assumed in the 2021 IRP baseline forecast. However, the Company acknowledges that the current EE environment is rapidly evolving in ways that will continue to present new challenges. Changing baselines, uncertain economic conditions (whether related to the current pandemic in the near term, or resulting from other, unknown events that may occur over the longer term), and decreased avoided costs will all contribute to Minnesota Power's ability to offer cost-effective, meaningful programs to customers. While Minnesota Power continues to build on the successes of its existing programs and adapting to challenges through unique and innovative program offerings and delivery strategies, achieving this higher level of savings through less cost-effective measures will be more resource intensive. Additionally, long-term EE savings require customers to take specific actions year after year, which introduces uncertainty regarding whether or not these savings will materialize. For these reasons, among others, it is important to take a reasonable approach to long-term EE assumptions to minimize risk and uncertainty. The Company has done so, while also testing what could be achieved by including alternative scenarios in its IRP analysis.

Part 2: Order Point 14, Potential Energy-Efficiency Competitive Bidding Process

In the Order approving Minnesota Power's 2015 Integrated Resource Plan ("2015 Plan"),[1] the Minnesota Public Utilities Commission (or "Commission") required that for its next resource plan, the Company must "investigate the potential for an energy-efficiency competitive-bidding process to supplement its existing conservation improvement program, open to both CIP-exempt and non-CIP-exempt customers, and shall summarize its investigation and findings in its next resource plan." This portion of Appendix B addresses this Commission requirement.

Specifically, Minnesota Power investigated the potential for an energy-efficiency competitive-bidding process to supplement its existing conservation-improvement program by researching best practices and examining how large customers who are exempt from CIP focus on conservation efforts within their operations. The Company's research and analysis, discussed below, indicated that many of the bidding programs available for review had the following characteristics that set the programs up for success: a dedicated funding source, bidding platform, and a process for customer communications. Conversely, the Company was not able to identify specific direction in either Minnesota policy or statutes that provided direction on how the Company might recover costs of a competitive-bidding process from either CIP-exempt or non-CIP exempt customers. The lack of explicit cost recovery authorization presents an important barrier to all potential stakeholders. Additionally, the Company has already demonstrated an outstanding CIP achievement record for non-exempt customers, along with aggressive future goals. For these reasons the Company does not feel that a competitive-bidding process would add value at this time. Nevertheless, the Company summarizes here its investigation and findings.

The first section below provides details on the Company's investigative research that has been completed with respect to energy-efficiency competitive-bidding processes. The second section focuses on energy-efficiency efforts of CIP-exempt customers, along with additional considerations.

Energy-Efficiency Competitive-Bidding Process Research

Minnesota Power identified the following competitive-bidding programs to assess best practices, potential outcomes, and possible barriers to success for any program Minnesota Power might initiate. Each program is discussed in turn, and includes a combination of deregulated, regulated and a statewide efficiency program not run by the individual utilities.

Energize Missouri Industries program, is an initiative of the Missouri Department of Natural Resources ("Missouri DNR"). Between 2010 and 2011, the Missouri DNR provided grants to energy efficiency ("EE") companies that competitively bid for EE incentives through a reverse auction. The overall goal of the online reverse auction was to provide industries and commercial entities with an opportunity to realize measurable energy savings that would result in reduced energy costs and increased market competitiveness. The online reverse auction allowed pre-qualified providers to bid on $3 million in incentives on a $/kWh saved basis for expected EE projects. Available incentive dollars were allocated based on a lowest-price obtained, thus increasing the cost-effectiveness of the program and allowing the Missouri DNR to spread the dollars further. The program was funded by a $3 million grant from the American Recovery and Reinvestment Act of 2009 ("ARRA").

[1] Order Approving Resource Plan with Modifications, Docket No. E015/RP-15-690 (July 18, 2016).

Focus on Energy is a company that partners with Wisconsin utilities on an efficiency bidding program. Bids are submitted through an online auction where business incentive program customers and/or trade allies bid for additional financial incentives above current prescriptive and custom levels. Customers who qualify for the business incentive program include commercial and industrial ("C/I") businesses who average less than 1,000 kW per month. Typical businesses include, but are not limited to, banks, hotels, grocery stores, breweries, food processing, and manufacturing. Customers and trade allies can submit bids, using an online auction platform, which identifies the unit price needed to deliver the estimated kWh or therms savings from the EE project.

The Focus on Energy efficiency auction is a type of reverse auction in which the role of the buyer and seller are reversed. The pre-qualified bidders compete by offering rates on a price per annual kWh or a price per therms reduced basis until no pre-qualified bidder is willing to make a lower bid. During the live auction, pre-qualified bidders will be logged into an online platform and will actively submit bids to compete for the EE incentives. The auctions will start at an established bid ceiling price and pre-qualified bidders will bid down on this price at predefined increments. Pre-qualified bidders will be able to see live results and their position for an auction. At the end of the auction, the bidders with the lowest price per annual kWh or therms reduced bids are considered the winners of the auction and are then tasked with implementing their energy-saving project(s). The winning bidder is provided a financial incentive, which is limited to $200,000 per project and $400,000 per customer per calendar year for all Focus on Energy Incentives. The funding comes from Focus on Energy partnership with 107 utilities throughout Wisconsin. Each participating utility pays in either a portion of their revenue or a set amount by meter. Focus on Energy then uses that funding to provide cost-effective programs that support EE projects.

Bid4Efficiency is a reverse auction program run by American Electric Power Ohio. In the reverse auction program, interested customers (nonresidential customers that use more than 200,000 kWh per year) respond to a request for qualifications ("RFQ"). As part of the pre-qualification process customers or service providers are required to attend training and mock auctions. After customers respond to the RFQ, these large C/I customers are eligible to become prequalified bidders. The bidders then send in bids to an online live auction platform in the form of price per annual kWh or watts reduced for energy-efficiency projects such as process-improvement initiatives or compressed-air systems costing more than $25,000. C/I customers as well as trade allies can bid for planned and unplanned projects. Starting at the bid ceiling price, prequalified bidders compete with one another to determine who can submit the lowest $/kWh saved for their specific project. The bidder with the lowest price per annual kWh (or price per watts reduced) is granted an award from $25,000 to $500,000 to complete their project. Additional details of the reverse auction include: bidders can only win one auction, non-winning bidders are offered a default incentive rate 10-20 percent lower than the lowest winning bid, and winners that achieve 80 percent or more of the total awarded auction incentive amount receive a $0.005 per kWh bonus.

Kansas City Power and Light (now Evergy) historically offered a block bidding program, which featured separate auctions for C/I customers and for trade allies. The auctions consisted of two blocks: one for projects in excess of $100,000 and one for those exceeding $400,000. To participate in the program, potential bidders responded to the request for quotation for the auction and attend a webinar to learn how the auction process would work. If the request for quotation was approved for the customer's project, that customer was then allowed to participate in the online auction. Projects that were eligible to receive the program incentives

were required to save more than 1 million kWh annually and have a minimum payback of at least two years.

Energy-Efficiency Competitive-Bidding for CIP-Exempt Customers

Minnesota Power's CIP-exempt group is comprised of large industrial customers that have identified through a state legislative designation to be considered "exempt" from the conservation program established in Minnesota. CIP exceptions are defined by Minnesota Statutes § 216B.241, subd. 1a(b), which states in part: "The owner of a large customer facility may petition the commissioner to exempt both electric and gas utilities serving the large customer facility from the investment and expenditure requirements [of CIP]" and "[t]he filing must include a discussion of the competitive or economic pressures facing the owner of the facility and the efforts taken by the owner to identify, evaluate, and implement energy conservation and efficiency improvements." Under this statute, customers seeking an exemption are required to file with the commissioner of the Minnesota Department of Commerce and must prove that they are implementing energy conservation and efficiency improvements. They also must show there is no need for additional incentives to manage, complete, and address EE measures. Exempt customers must provide a filing every five years to the commissioner explaining measures that they are already taking to be efficient. However, a large customer facility that is, under an order from the commissioner, exempt from the investment and expenditure requirements as of December 31, 2010, is not required to submit a report to retain its exempt status, except with respect to ownership changes.

There are approximately 14 Minnesota Power customers at the time of this filing that fall under the CIP-exempt classification, most of whom have submitted multiple reports to the Department of Commerce detailing efforts to implement EE and energy conservation strategies. These CIP-exempt customers compete in global markets and in industries that have an advantage because of other nations' favorable tax policies, trade laws, health care costs, environmental compliance or other subsidies. CIP-exempt customers are naturally incentivized to pursue all efficiency improvements to keep their product costs as low as possible, including any and all economically viable efficiency improvements related to energy.