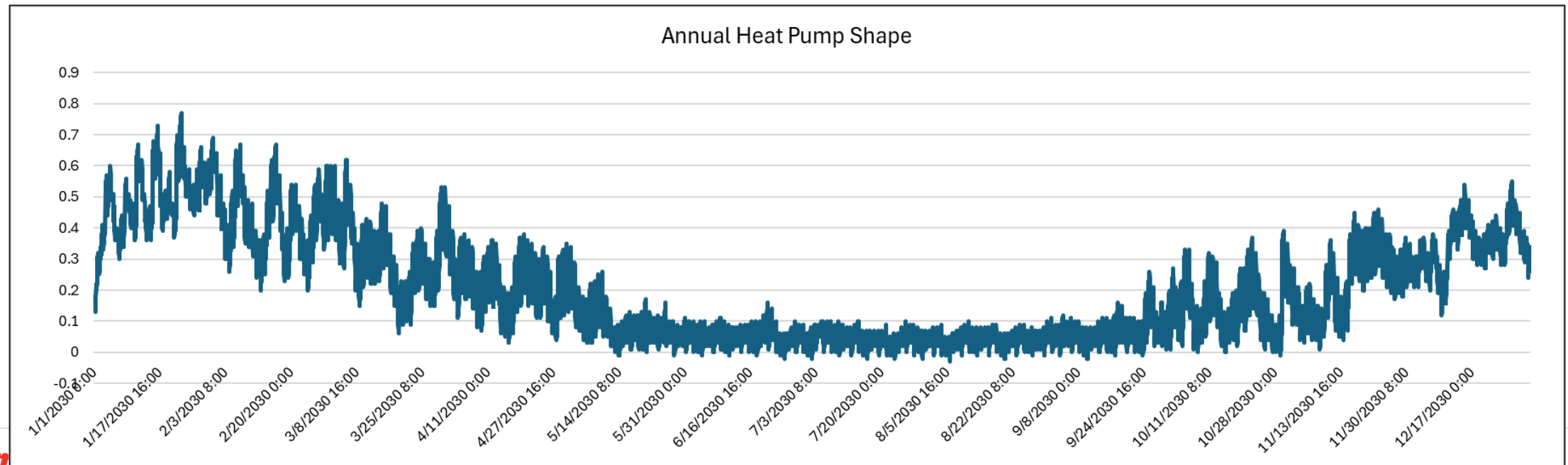


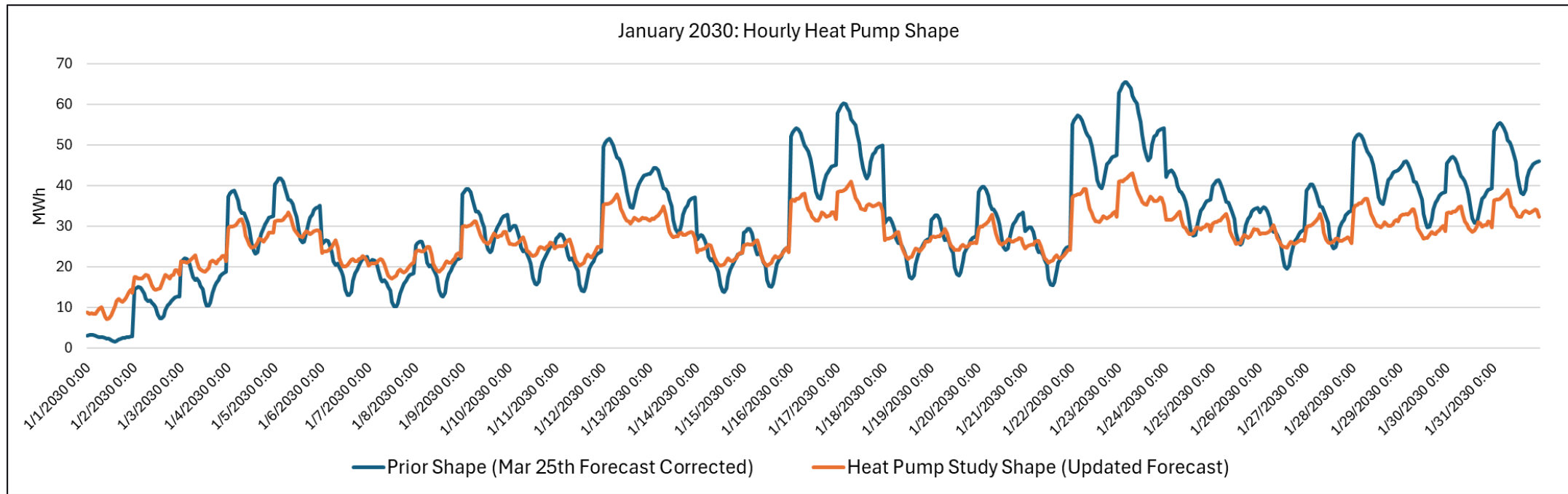
Heat Pump Hourly Data from Ridgeline Study

- » Itron was provided a year of hourly data, simulated to represent the actual weather year of 2024 for the Burlington weather station.
- » The data represents the average hourly impact of installing a heat pump, positive values imply the heat pump added to load, negative values imply load reductions.
- » Itron modeled this data to generate a forecasted heat pump shape which is consistent with the typical weather pattern used to generate the VELCO hourly system and zonal shapes.



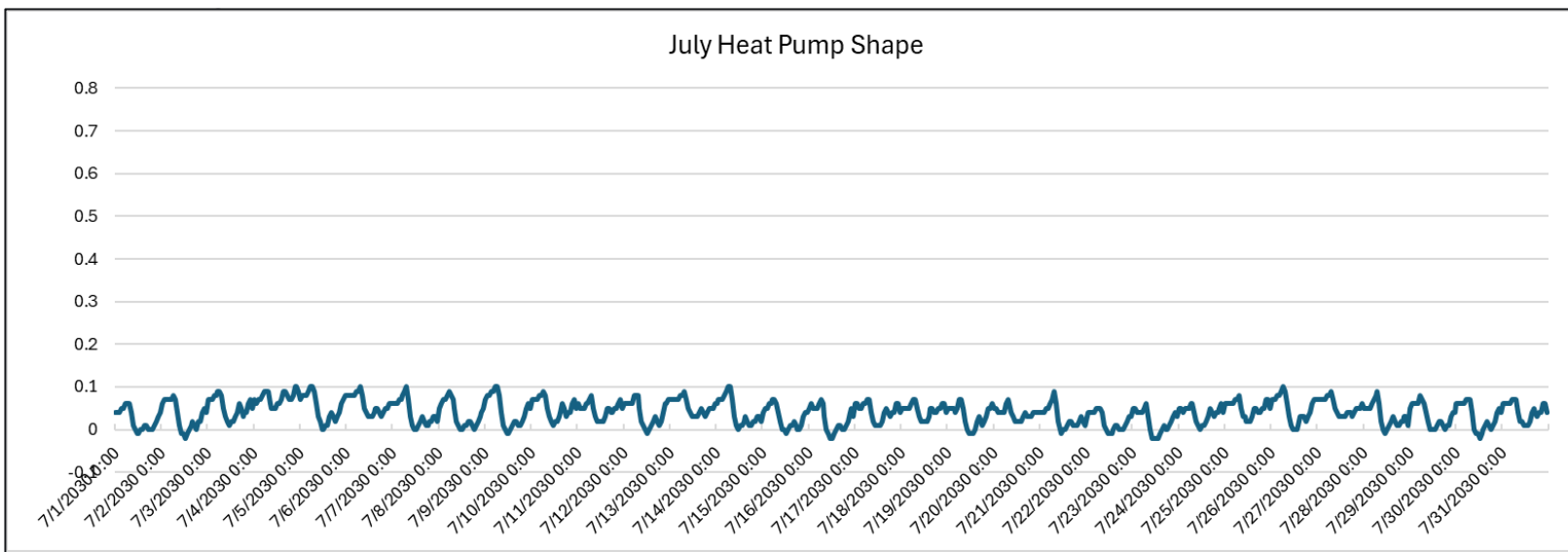
Heat Pump Hourly Winter Shape

- » This updated heat pump shape does not exhibit the same variation and usage patterns as the prior heating shape. There is less variation on the coldest days, either implying people are not running their heat pump on extremely cold days or the heat pump is capacity constrained and is running at maximum capacity on cold and extremely cold days alike.
- » The updated heat pump shape results in a smaller heat pump demand impact.



Heat Pump Hourly Summer Shape

- » The updated heat pump shape shows positive values in the summer months, implying heat pumps added to summer loads. But the shape does not vary across the summer day, meaning it does not appear to be related to hotter or milder days.
- » It's possible the heat pumps are being used for ventilation, not cooling. Or the positive values are some other measured load difference between the study period before and after installing a heat pump.
- » The heat pump study report claimed a negative impact on cooling load (table below).
- » We are assuming no impact to summer peak. The summer hourly heat pump shape is set to zero in the



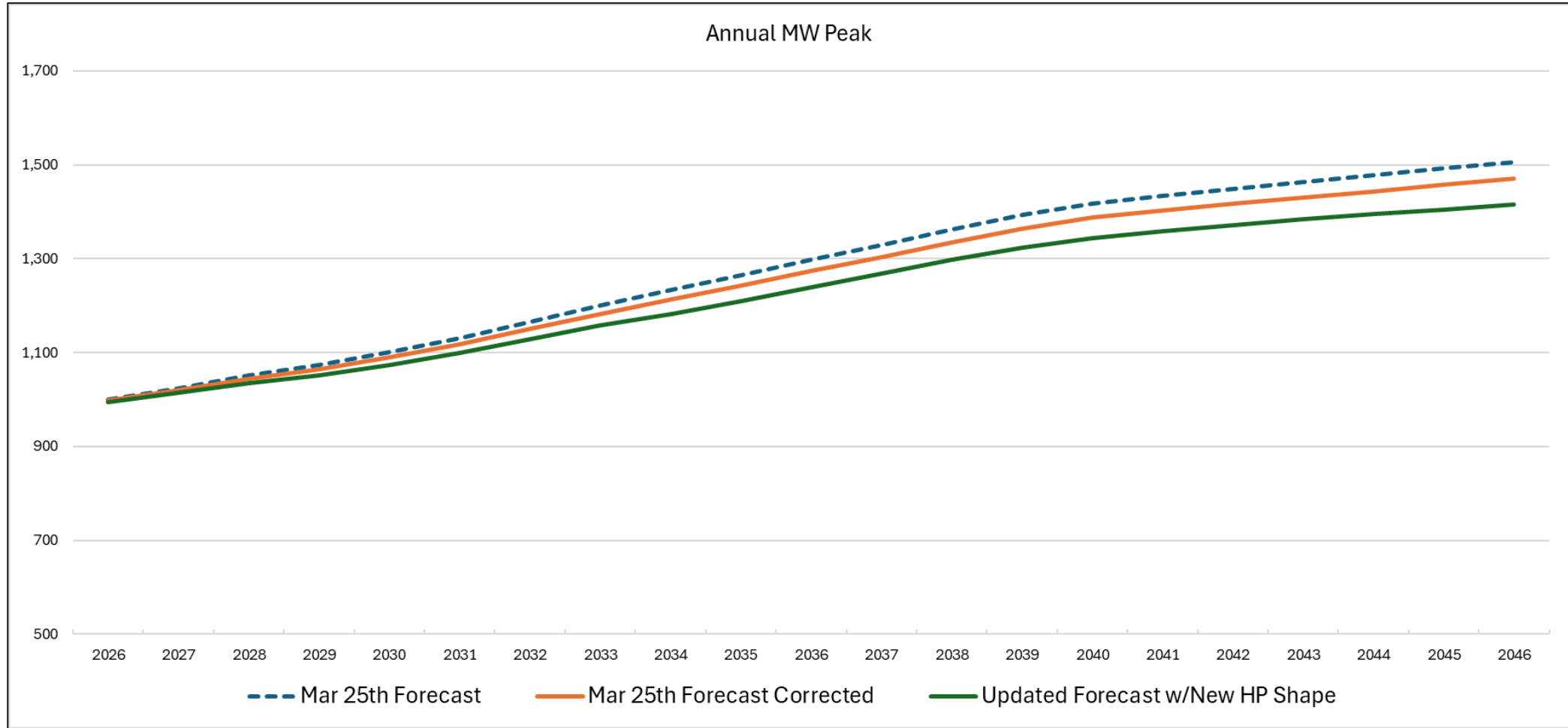
Variable	Impact (kWh)	
	Point Estimate	90% CI
Annual Heating Impact	1,471	(1,418, 1,525)
Annual Cooling Impact	-4	(-12, 5)
Annual Base Impact	439	(391, 486)
Annual Impact	1,885	(1,817, 1,953)

Updated Forecast

- » A correction was made to the peak (MW) forecast shared on March 25th, this reduced the forecast by approximately 1%-2%.
- » The impact of incorporating the updated heat pump forecast further reduces the forecast by 1%, growing to 4%.

Annual VELCO Peak Forecast (MW)										
Year	Mar 25th Forecast	Mar 25th Forecast Corrected	Correction Delta	Correction %	Updated Forecast w/New HP Shape	Shape Delta	Shape %	Total Delta	Total %	
2026	1,000	998	-2	-0.2%	995	-3	-0.3%	-5	-0.5%	
2027	1,024	1,020	-4	-0.4%	1,014	-6	-0.6%	-10	-1.0%	
2028	1,051	1,044	-6	-0.6%	1,035	-9	-0.9%	-16	-1.5%	
2029	1,073	1,064	-9	-0.8%	1,052	-13	-1.2%	-22	-2.0%	
2030	1,101	1,090	-11	-1.0%	1,074	-16	-1.5%	-27	-2.4%	
2031	1,131	1,118	-13	-1.2%	1,099	-19	-1.7%	-32	-2.8%	
2032	1,166	1,150	-15	-1.3%	1,128	-22	-1.9%	-37	-3.2%	
2033	1,200	1,183	-18	-1.5%	1,157	-25	-2.1%	-43	-3.6%	
2034	1,233	1,213	-20	-1.6%	1,182	-30	-2.5%	-51	-4.1%	
2035	1,265	1,243	-22	-1.8%	1,210	-33	-2.7%	-55	-4.4%	
2036	1,298	1,274	-24	-1.8%	1,239	-35	-2.8%	-59	-4.5%	
2037	1,330	1,304	-26	-1.9%	1,267	-37	-2.8%	-62	-4.7%	
2038	1,363	1,335	-27	-2.0%	1,297	-39	-2.9%	-66	-4.8%	
2039	1,393	1,365	-28	-2.0%	1,324	-40	-3.0%	-69	-4.9%	
2040	1,418	1,388	-29	-2.1%	1,344	-44	-3.2%	-74	-5.2%	
2041	1,434	1,403	-30	-2.1%	1,358	-45	-3.2%	-75	-5.2%	
2042	1,449	1,417	-32	-2.2%	1,372	-45	-3.2%	-77	-5.3%	
2043	1,463	1,430	-33	-2.2%	1,383	-47	-3.3%	-79	-5.4%	
2044	1,478	1,444	-34	-2.3%	1,396	-48	-3.3%	-82	-5.6%	
2045	1,492	1,457	-35	-2.4%	1,404	-53	-3.7%	-89	-5.9%	
2046	1,506	1,470	-36	-2.4%	1,416	-54	-3.7%	-90	-6.0%	

Updated Forecast



Heat Pump Impact

- » The heat pump's contribution to the peak is reduced by approximately 30% using the new heat pump shape.

Heat Pump Contribution to Annual MW Peak					
Mar 25th Forecast	Mar 25th Forecast Corrected	Updated Forecast w/New HP Shape	Shape Delta	Shape %	
12	10	7	-3	-29.7%	
24	20	14	-6	-29.7%	
37	31	21	-9	-30.0%	
50	41	28	-13	-31.2%	
63	52	36	-16	-30.5%	
76	63	44	-19	-30.0%	
89	73	52	-22	-29.8%	
102	85	59	-25	-29.9%	
116	96	66	-30	-31.7%	
129	106	73	-33	-31.2%	
139	115	80	-35	-30.5%	
148	123	86	-37	-29.8%	
157	130	91	-39	-29.7%	
163	135	95	-40	-29.9%	
170	140	96	-44	-31.7%	
177	146	102	-45	-30.5%	
183	151	106	-45	-30.0%	
189	157	110	-47	-29.8%	
196	162	114	-48	-29.8%	
204	169	115	-53	-31.7%	
210	174	120	-54	-31.2%	