NELHA 2015 Seawater Rate Analysis

Final Report

March 17, 2015



Background/Historical Perspective

- NELHA directed to become self-sufficient in 2003.
- Seawater rates were a highly contentious issue.
- Based on 2007 analysis rates were raised three fold.
- After careful review, users have been generally satisfied over the years with the methodology.
- More recently, users have requested that methodology and rates be reviewed to ensure that they are appropriate for all users.
- There have been major advancements in technology in past 10 years and a long-term replacement plan for aging equipment will ensure that improvements are made in a methodical manner.
- Accordingly this analysis is warranted at this time and presents an opportunity to re-evaluate the rate structure; increase transparency for the agency; and, stabilize/reduce seawater costs.

Seawater System Overview

- Two main systems: North and South.
- Systems operate at different pressure.
- North system serves low elevation and is low pressure in the 12-15 psi range.
- South system serves higher elevations and operates at 2.5 to 4 times higher pressure than the North system.
- System consists of approximately 30 pumps ranging from 30 to 200 hp.
- Two base seawater rates: 1) 20.62 cents per KGAL and 2) 80.0 cents per KGAL (higher elevations).
- Users also pay a surcharge indexed to the price of electricity in 2007.
- System operates on a break-even basis and generates approximately \$2.3M.



Service Areas

Seawater Pumped – Average GPM



- Volume of water pumped increased by 60 percent in past 5 years.
- Over 90 percent of seawater is via two main pump stations.
- 55" pump station provides 67% and Research Campus provides 26%.
- Average seawater pumped is currently very near 20,000 GPM.

Seawater System Revenue and Expenditure

NELHA SEAWATER SYSTEM	FY 2012	Percent	FY 2013	Percent	FY 2014	Percent
REVENUE						
DSW- Deep Seawater	915.101.84	42.11%	1.005.283.36	44.37%	1,130,223.03	48.10%
SSW- Surface Seawater	801,266.03	36.87%	874,711.95	38.61%	847,503.10	36.07%
SW Electric Surcharge	386,140.81	17.77%	338,782.32	14.95%	328,581.87	13.98%
SW Allocation	67,000.90	3.08%	42,047.80	1.86%	40,261.15	1.71%
Seawater Vendors	3,680.00	0.17%	4,772.50	0.21%	3,120.00	0.13%
TOTAL REVENUE	2,173,189.58	100.00%	2,265,597.93	100.00%	2,349,689.15	100.00%
EXPENDITURES						
Electricity	1,635,710.96	73.86%	1,658,395.87	72.05%	1,673,577.82	68.59%
Salaries	237,573.37	10.73%	347,272.85	15.09%	325,848.58	13.35%
CEMP/Water Qual. Lab	104,449.18	4.72%	108,358.78	4.71%	100,609.47	4.12%
SW Equipment	23,200.00	1.05%	92,599.63	4.02%	13,859.03	0.57%
Seawater System Supplies	26,437.92	1.19%	34,228.24	1.49%	120,725.58	4.95%
SW Outside Services	158,248.47	7.15%	28,839.95	1.25%	182,377.34	7.47%
Seawater/Freshwater Use	14,409.86	0.65%	10,495.05	0.46%	14,626.77	0.60%
SW Electric Supplies	2,789.79	0.13%	10,451.63	0.45%	0.00	0.00%
Motor Vehicle Oil & Gas	7,258.65	0.33%	4,878.15	0.21%	3,158.36	0.13%
Heavy Equipment R&M	1,522.56	0.07%	2,828.76	0.12%	4,574.70	0.19%
Safety Supplies/Training	288.09	0.01%	1,167.53	0.05%	0.00	0.00%
Vehicles R&M	1,243.89	0.06%	1,018.87	0.04%	470.45	0.02%
Dive Boat Operations	0.00	0.00%	526.61	0.02%	0.00	0.00%
SW Building Supplies	0.00	0.00%	455.22	0.02%	0.00	0.00%
Security	0.00	0.00%	120.68	0.01%	0.00	0.00%
SW Travel, Subs, Mileage	7.77	0.00%	111.31	0.00%	135.60	0.01%
SW Alarm & Control System	1,295.70	0.06%	0.00	0.00%	0.00	0.00%
Seawater System - Other	25.73	0.00%	0.00	0.00%	55.97	0.00%
TOTAL EXPENDITURES	2,214,461.94	100.00%	2,301,749.13	100.00%	2,440,019.67	100.00%
LOSS	(41,272.36)	- 1.86%	(36,151.20)	-1.57%	(90,330.52)	-3.70%

- Price of electricity has a <u>significant</u> impact on the price of seawater.
- Expenditures have increased at a slightly higher rate than revenue.
- Annual loss is approximately, \$100,000 per year and will continue to increase annually with need to replace aging equipment.
- Does not include CIP or Federal funds infusions. Represents Special Funds only.



- Prices have increased by 30-40 percent in past 10 years.
- Prices spiked in 2008 and in 2010.
- Prices are substantially the same for all 4 pump station meters.



- Relatively stable in past 3 years in the 37-38 cents per kWh range.
- Prices have dropped almost 20 percent in past 6 months.
- Prices will likely continue dropping to near 30 cents per kWh in Spring 2015 and then perhaps stabilize for some period of time.

New SCADA System

- System has greatly enhanced ability to obtain real-time information to the desktop on system performance.
- SCADA system developed to provide connectivity to over 30 sites throughout the park.
- Communication devices added HELCO meters to provide more detailed information.
- Purchased and installed 10 new more accurate flow meters at all pump stations and connected them to the SCADA system.
- Now have the ability to make further improvements for remote control and increased efficiency.

SCADA Data: Example 55 Inch Pump Station (Power only)

December 30, 2014

	NELHA FLC	OW DATA (GAL)		HELCO DATA		COST per KGAL
TIME	DSW	SSW	TOTAL	LOAD (KW)	COST (\$)	(\$)
AM 12:15	95,454.20	93,667.21	189,121.40	333.98	28.146	0.149
12:30	95,437.26	93,414.84	188,852.11	334.96	28.229	0.149
12:45	94,794.22	93,646.86	188,441.08	334.85	28.219	0.150
1:00	95,617.27	93,375.16	188,992.42	334.43	28.184	0.149
1:15	95,129.98	93,726.02	188,856.00	333.47	28.103	0.149

TOTAL	9,871,966.70	9,197,766.26	19,069,732.95	8,363.27	2,819.259	0.148
0:00	99,818.00	94,833.00	194,651.00	337.15	28.413	0.146
23:45	99,818.54	94,833.83	194,652.37	337.44	28.438	0.146
23:30	99,855.48	94,214.96	194,070.44	340.38	28.686	0.148
23:15	99,740.06	95 <i>,</i> 755.79	195,495.86	342.35	28.852	0.148
23:00	99,199.31	97,538.76	196,738.07	337.90	28.477	0.145
22:45	93,365.99	97,113.42	190,479.40	338.77	28.550	0.150
22:30	93,472.39	97,653.51	191,125.90	339.22	28.588	0.150

- Similar analysis completed at each of the five pump stations.
- Highly detailed 15 min or 60 min interval analysis. Straightforward methodology. Both equally valid
- Flow values can aggregated in 15 or 60 minute blocks and matched to power usage over the same time period. Power cost divided by flow.

Cost per KGAL

(Power Only) Tuesday December 30, 2014



- Main stations shows that pressure has direct impact on cost.
- Blended rate is near 55" cost due to sheer volume from 55" station.
- Blended rate in 14 cents per KGAL range for this day.
- Analysis can be easily replicated.
- All data is actual except power for RC which is estimated.



- Preliminary results from 5 randomly selected sample days show a range of approximately 1 cent for the blended cost.
- Range is in the 13 to 14 cents per KGAL or 13.5 cents per KGAL.











		January 1-31			February 1 - 25	
PumpStation	Flow	% TTL	Power Cost/Kgal	Flow	% TTL	Power Cost/Kgal
55"	506,254,149	66.0%	15.85	415,341,087	66.9%	14.42
RC	197,031,214	25.7%	9.19	160,089,101	25.8%	11.96
Kau	64,307,371	8.4%	10.14	45,416,389	7.3%	10.31
Total Flow	767,592,733	100.0%	13.66	620,846,576	100.0%	13.49
BPS	59,121,831	7.15%	16.10	44,184,103	6.64%	14.49

Seawater System Expenditures FY 2014



PLANNED SEAWATER SYSTEM MAINTENANCE COSTS (2016 - 2020)

				PUMP	INFORMATION			VFD INFORMAT	ION			FISCAL YEAR			
Line/Slot	Pump Manufactuer Model No.	Motor Rating (HP)	Year Purchased	Performance Rating (TDH / GPM)	Construction Material	Condition	Comments	Manufacturer Model No.	Year Purchased	FY16	FY17	FY18	FY19	FY20	TOTAL COST

							RESEARCH CAMPUS PUMP STATION								312,500
40" DSW Pipe	line														
11	Flygt 3300	77	1987	3,500@58 FT/1,150 RPM	Stainless Steel	Good	Overhaul every 2-3 yrs = \$5,500 for Flygt repair kits	DanFoss VLT 5000	2001	19,000		7,000		7,000	33,000
12	Flygt 3300	77	1987	3,500@58 FT/1,150 RPM	Stainless Steel	Good	Overhaul every 2-3 yrs = \$5,500	DanFoss VLT 5000	2001		19,000		7,000		26,000
13	Flygt 3300	77	1987	3,500@58 FT/1,150 RPM	Stainless Steel	Good	Overhaul every 2-3 yrs = \$5,500 - \$6,000	DanFoss VLT 8000 AQ	1998	7,000		19,000		7,000	33,000
22	Flygt 3201	35	2000	1,750@58 FT/1,170 RPM	Cast Iron	Poor	Overhaul every 2-3 yrs = \$5,300 - \$5,500	ABB	2015	\$4,500	40,000		4,500		49,000
24	Flygt 3201	35	2015	1,750@58 FT/1,170 RPM	Cast Iron	Excellent	Overhaul every 2-3 yrs = \$5,300	ABB	2015		4,500				4,500
Electrical Up	grades									5,000	5,000	5,000	5,000	5,000	25,000
28" SSW Pipel	ine														
1	Flygt 3300	77	1987	3,500@58 FT/1,150 RPM	Stainless Steel	Good	Overhaul every 2-3 yrs = \$5,500	DanFoss VLT 5000	2003	19,000		7,000		7,000	33,000
3	Flygt 3300	77	1987	3,500@58 FT/1,150 RPM	Stainless Steel	Good	Overhaul every 2-3 yrs = \$5,500	DanFoss	2001		19,000		7,000		26,000
4	Flygt 3201	35		1,750@58 FT/1,170 RPM	Cast Iron	Poor		DanFoss VLT 5000	2001	4,500	49,000		4,500		58,000
Electrical Up	grades									5,000	5000	5,000	5,000	5,000	25,000

							KAU PUMP STATION								137,000
18" DSW Pipel	ine														
1	Gould 14JCM-1	40	2000	1,800@78 FT/1,760 RPM	Stainless Steel	Pump Good	Replace motor only	DanFos Soft Start	NA	6,000					6,000
2	2 Gould 14JCM-1 40 2000 1,800@78 F7/1,760 RPM Stainless Steel Pump Good Replace motor only DanFos Soft Start NA 6,000													6,000	
Electrical Upg	grades									15,000					15,000
24" SSW Pipeline															
1	Gould 3409 (10X14-20S)	60	2000	2,800@66 FT/900 RPM	CI /Composite	Poor	Replace existing pump with same model/type - not SS	DanFoss VLT 5000	1994	50,000					50,000
2	Gould 3409 (10X14-20S)	60	2000	2.800@66 FT/900 RPM	Cast Iron	Poor	Replace existing pump with same model/type - not SS	DanFoss VLT 5000	1994			50.000			50.000

							55 INCH PUMP STATION								500,000
55" DSW Pipeline															
1	Gould 3409 (14X18X23)	200	2004	7,000@93 FT/900 RPM	Cast Iron	Poor	Replace existing DI pump only (no motor)	ABB ACH550-UH-246A-4	2011	90,000					90,000
2	Gould 3409 (14X18X23)	200	2004	7,000@93 FT/900 RPM	Cast Iron	Poor	Replace existing DI pump only (no motor)	ABB ACH550-UH-246A-4	2011			90,000			90,000
3	Gould 3409 (14X18X23)	200	2004	7,000@93 FT/900 RPM	Cast Iron	Poor	Replace existing DI pump only (no motor)	ABB ACH550-UH-246A-4	2012					90,000	90,000
55" SSW Pipeli	55" SSW Pipeline														
1	Gould 3409 (14X18X23)	200	2004	7,000@93 FT/900 RPM	Cast Iron	Poor	Replace existing DI pump only (no motor)	ABB ACH550-UH-246A-4	2012		90,000				90,000
2	Gould 3409 (14X18X23)	200	2004	7,000@93 FT/900 RPM	Cast Iron	Poor	Replace existing DI pump only (no motor)	ABB ACH550-UH-246A-4	2012			90,000			90,000
3	Gould 3410 (8X10-12M)	100	2004	3,250@93 FT/1800 RPM	Cast Iron	Poor	Replace existing DI pump only (no motor)	ABB	2015		50,000				50,000

							INTERIM SURFACE SEAWATER PUMP STATION						60,000
12" ISSW - Cur	rently SSW only												
A	Gould 3410 (6X8-14H)	60	2000	1,400@112 FT/1700 RPM	Cast Iron	Poor	Need to replace one pump a.s.a.p.	DanFoss VLT 5000	2004	30,000			30,000
В	Gould 3410 (6X8-14H)	60	2000	1,400@112 FT/1700 RPM	CI / Composite	Poor		DanFoss VLT 5000	2004		30,000		30,000

							BOOSTER PUMP STATION							124,000
24" DSW Pipeli	ine (BPS)													
2	Gould 3410 (8X10-12M)	100	2001	3,250@95 FT/1,800 RPM	Cast Iron	Poor		DanFoss VLT 8000 AQ	2001			62,000		62,000
3	3 Gould 3410 (8X10-12M) 100 2001 3,250@95 FT/1,800 RPM CI / Composite Poor DanFoss VLT 5000 1998 62,000 66											62,000		
1	Gould 3410 (6X8-11M)	40	2000	1,625@70 FT/1,800 RPM	Cast Iron	Poor	Leave ths slot open for the time being	ABB - ACH 500	1996					-
TOTAL PUMP /	L PUMP /VFD/ELECTRICAL/PLUMBING COSTS 271,000 273,000 95,000 121,000 1,133,5											1,133,500		

PLANNED SEAWATER SYSTEM MAINTENANCE COSTS (2016 - 2020)

				PUMP	NFORMATION			VFD INFORMAT	ON		-	FISCAL YEAR			
Line/Slot	Pump Manufactuer Model No.	Motor Rating (HP)	Year Purchased	Performance Rating (TDH / GPM)	Construction Material	Condition	Comments	Manufacturer Model No.	Year Purchased	FY16	FY17	FY18	FY19	FY20	TOTAL COST
							ł					ı	I	•	
							RESEARCH CAMPUS PUMP STATION								312 500
															512,500
11	Elvet 3300	77	1987	3 500@58 FT/1 150 RPM	Stainless Steel	Good	Overhaul every 2-3 yrs = \$5 500 for Elvet repair kits	DanFoss VI T 5000	2001	19.000		7 000		7 000	33.000
12	Flygt 3300	77	1987	3 500@58 FT/1 150 RPM	Stainless Steel	Good	Overhaul every 2-3 yrs = \$5,500 tot Hygt repair kits	DanFoss VLT 5000	2001	19,000	19.000	7,000	7 000	7,000	26.000
13	Flygt 3300	77	1987	3.500@58 FT/1.150 RPM	Stainless Steel	Good	Overhaul every 2-3 yrs = \$5,500 - \$6,000	DanFoss VLT 8000 AQ	1998	7.000	15,000	19.000	,,000	7.000	33,000
22	Flygt 3201	35	2000	1,750@58 FT/1,170 RPM	Cast Iron	Poor	Overhaul every 2-3 yrs = \$5,300 - \$5,500	ABB	2015	\$4,500	40,000		4,500		49,000
24	Flygt 3201	35	2015	1,750@58 FT/1,170 RPM	Cast Iron	Excellent	Overhaul every 2-3 yrs = \$5,300	ABB	2015		4,500				4,500
Electrical Upg	rades									5,000	5,000	5,000	5,000	5,000	25,000
28" SSW Pipelir	ne														
1	Flygt 3300	77	1987	3,500@58 FT/1,150 RPM	Stainless Steel	Good	Overhaul every 2-3 yrs = \$5,500	DanFoss VLT 5000	2003	19,000		7,000		7,000	33,000
3	Flygt 3300	77	1987	3,500@58 FT/1,150 RPM	Stainless Steel	Good	Overhaul every 2-3 yrs = \$5,500	DanFoss	2001		19,000		7,000	,	26,000
4	Flygt 3201	35		1,750@58 FT/1,170 RPM	Cast Iron	Poor		DanFoss VLT 5000	2001	4,500	49,000		4,500		58,000
Electrical Upg	rades									5,000	5000	5,000	5,000	5,000	25,000
							KAU PUMP STATION								137,000
19" DSW Dipoli	20														
18 DSW Pipeli	Gould 14ICM-1	40	2000	1 800@78 FT/1 760 RPM	Stainless Steel	Pump Good	Replace motor only	DanFos Soft Start	NA	6.000					6.000
2	Gould 14ICM-1	40	2000	1,800@78 FT/1,760 RPM	Stainless Steel	Pump Good	Replace motor only	DanFos Soft Start	NA	6,000					6,000
Electrical Upg	rades			-,						15,000					15,000
				I			I					1	1		
24" SSW Pipelin	Gould 3409 (10X14-205)	60	2000	2 800@66 ET/900 RPM	CL/Composite	Poor	Replace existing pump with same model/tupe - not SS	DapEoss VI T 5000	1994	50.000					50.008
2	Gould 3409 (10X14-205)	60	2000	2,800@66 FT/900 RPM	Cast Iron	Poor	Replace existing pump with same model/type - not SS	DanFoss VLT 5000	1994	50,000		50,000			50,000
	•						• • • • • • • • •								
							55 INCH PUMP STATION								500,000
EE" DEW Dineli															
1	Gould 3409 (14X18X23)	200	2004	7 000@93 FT/900 RPM	Cast Iron	Poor	Replace existing DI nump only (no motor)	ABB ACH550-UH-246A-4	2011	90,000					90.000
2	Gould 3409 (14X18X23)	200	2004	7.000@93.FT/900.RPM	Cast Iron	Poor	Replace existing DI pump only (no motor)	ABB ACH550-UH-246A-4	2011	50,000		90,000			90,000
3	Gould 3409 (14X18X23)	200	2004	7.000@93 FT/900 RPM	Cast Iron	Poor	Replace existing DI pump only (no motor)	ABB ACH550-UH-246A-4	2012			50,000		90.000	90,000
	00010 0 100 (1 1/120/120)	200	2001	1,000@3311/3001010	Custinon		replace casting of party only the metory		LUIL			1		50,000	50,000
55" SSW Pipelir		200	2004	7 000 000 FT/000 PDM	Castilara	Deser	Devices with a Discussion of the sector)		2012		00.000				
1	Gould 3409 (14X18X23)	200	2004	7,000@93 F1/900 RPM	Cast Iron	Poor	Replace existing DI pump only (no motor)	ABB ACH550-UH-246A-4	2012		90,000	90,000			90,000
2	Gould 3409 (14X16X23)	100	2004	2 250@93 FT/300 RFM	Cast Iron	Poor	Replace existing DI pump only (no motor)	ABB ACH550-0H-240A-4	2012		50,000	50,000			50,000
5	Godia 3410 (6×10-1214)	100	2004	5,250@5511/1800 KFM	Cast Iron	1001	Replace existing of pump only (no motor)	Abb	2015		50,000	I			50,000
							INTERIM SURFACE SEAWATER PUMP STATION								60.000
															60,000
12" ISSW - Curr	ently SSW only														
A	Gould 3410 (6X8-14H)	60	2000	1,400@112 FT/1700 RPM	Cast Iron	Poor	Need to replace one pump a.s.a.p.	DanFoss VLT 5000	2004	30,000					30,000
В	Gould 3410 (6X8-14H)	60	2000	1,400@112 FT/1700 RPM	CI / Composite	Poor		DanFoss VLT 5000	2004		30,000				30,000
							BOOSTER PUMP STATION								124,000
24" DSW Pipeli	ne (BPS)														
2	Gould 3410 (8X10-12M)	100	2001	3,250@95 FT/1,800 RPM	Cast Iron	Poor		DanFoss VLT 8000 AQ	2001				62,000		62,000
3	Gould 3410 (8X10-12M)	100	2001	3,250@95 FT/1,800 RPM	CI / Composite	Poor		DanFoss VLT 5000	1998		62,000				62,000
1	Gould 3410 (6X8-11M)	40	2000	1,625@70 FT/1,800 RPM	Cast Iron	Poor	Leave ths slot open for the time being	ABB - ACH 500	1996						
									_						
TOTAL PUMP /	VFD/ELECTRICAL/PLUMBIN	IG COSTS								271,000	373,500	273,000	95,000	121,000	1,133,500

	ACTUAL	ACTUAL	ACTUAL	BUDGET			PROJECTED		
NELHA SEAWATER SYSTEM	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
A. RECURRING EXPENDITURES									
Salaries	297,659	370,424	340,110	400,000	412,000	424,360	437,091	450,204	463,710
CEMP/Water Quality Laboratory	104,446	111,942	100,609	148,500	140,080	144,282	148,611	153,069	157,661
Freshwater (13%)	14,410	10,831	13,256	15,000	15,450	15,914	16,391	16,883	17,389
R&M supplies	36,582	48,612	122,801	60,000	61,800	63,654	65,564	67,531	69,556
Motor vehicle oil/gas	8,164	4,878	3,158	5,000	5,150	5,305	5,464	5,628	5,796
Other Supplies/ Heavy Equipment	-	-	2,827	5,000	5,150	5,305	5,464	5,628	5,796
Motor vehicle supply/parts	1,600	1,019	430	1,175	1,210	1,247	1,284	1,322	1,362
Car Mileage	-	-	136	200	206	212	219	225	232
R&M machinery and Equipment-Special	-	-	1,748	15,000	-	-	-	-	-
R&M motor vehicles	-	-	40	5,000	2,500	2,575	2,652	2,732	2,814
Safety Supplies	-	1,168	-	500	500	515	530	546	563
Training	-	-	-	7,500	500	515	530	546	563
Contracts and other gov. agencies	152,795	-	-	-	-	-	-	-	-
Machinery and other equipment	23,200	88,650	13,859	143,500	-	-	-	-	-
Services on a fee	-	78,820	187,082	107,000	-	-	-	-	-
Blue Printing Service	-	-	56	-	-	-	-	-	-
SUB-TOTAL	638,856	716,344	786,112	913,375	644,546	663,883	683,799	704,313	725,442
B. OTHER MAJOR PLANNED SEAWATER SYSTE	M PROJECTS								
Nearshore Undersea Pipeline Inspections					20,000	25,000	25,000	25,000	25,000
Repair of 18" DSW					35,000				
Research Campus SwitchGear Major Mainte	enance				30,000	30,000			
Deepsea Water Pipeline Inspections (HURL)					,	160,000			
Remove Nearshore 12" DSW pipeline							25,000		
Remove 12" DSW/SSW Nearshore								25,000	
Remove 12" Shore crossing									100,000
SCADA Upgrades							150,000	150,000	,
SUB-TOTAL					85,000.00	215,000.00	200,000.00	200,000.00	125,000.00
C. TOTAL PUMP /VFD/ELECTRICAL/PLUMBING	G COSTS				271.000.00	373.500.00	273.000.00	95.000.00	121.000.00
(See Appendix A for Details)						2.0,000,000			,
GRAND TOTAL SEAWATER SYSTEM OPERATIO	N AND MAINTENAN	ICE COSTS (Non-Elec	tric)		1,000,546.25	1,252,382.64	1,156,799.12	999,313.09	971,442.48
		-							

PumpStation	January 1- 31			February 1 - 25		
	Flow	% TTL	Power Cost/Kgal	Flow	% TTL	Power Cost/Kgal
55"	506,254,149	66.0%	15.85	415,341,087	66.9%	14.42
RC	197,031,214	25.7%	9.19	160,089,101	25.8%	11.96
Kau	64,307,371	8.4%	10.14	45,416,389	7.3%	10.31
Total Flow	767,592,733	100.0%	13.66	620,846,576	100.0%	13.49
Other Cost/Kgal			Other Cost/Kgal			
FY 2014 Expenditures	\$768,112		8.02			9.89
TOTAL COST PER KGAL			21.68			23.38

Note: February data through Feb 25 only due to HELCO data missing.

Total Cost- Final Results

- Power is 69% of total cost and equals approximately 13 to 14 cents per KGAL for the past two months.
- All other operating costs are 30% or approximately 8 cents per KGAL.
- Results in findings of approximately 22 cents per KGAL.
- Similar to existing rate of 20.62 cents and including surcharge of approximately 1 cent per KGAL.
- Water to upper elevations which is pumped twice and the cost is higher.

Summary- No Change in Rates

- Price per KGAL of seawater is significantly affected by pressure and elevation.
- Results using this methodology confirms and validates current seawater cost schedule. No change in seawater rates is recommended.
- NELHA will continue to make technology improvements to "fine tune" the seawater system and increase efficiencies.
- NELHA will continue to fund equipment upgrades to maintain near 100% uptime.
- NELHA will make best effort to find ways to stabilize or reduce the cost of electricity which will provide additional support for users.