



Multi-city Working Group & Facilities Working Group August 22, 2023

RICAPS technical assistance is available through the San Mateo County Energy Watch program, which is funded by California utility customers, administered by Pacific Gas and Electric Company (PG&E) under the auspices of the California Public Utilities Commission and with matching funds provided by C/CAG and additional funding provided by Peninsula Clean Energy.

Agenda:Leading by Example: Municipal Electrification

12:30-1:30 - Lunch

1:30 - 1:35: Announcements, introducing the venue (Thanks, Millbrae!)

1:35-1:50: Peer to Peer Share out: What have you been working on?

1:50-2:00: CIP Leadership Highlight. Chris Bandy, East Palo Alto

2:00-3:00: SMC City Case studies:

- CIP as a tool for electrification introduction (Ryan)
- What's the process (Rincon)

City Case Studies:

- Half Moon Bay
- Foster City
- Redwood City
- Burlingame

CIP x Electrification Case Studies

Peer-to-Peer Share Out (20 min)

- What have you been working on lately to achieve your climate goals
- Hurdles, successes, key takeaways
- Useful resources
- Asks for the group



East Palo Alto City Hall Improvements and Electrification

Chris Bandy Capital Project Manager County of San Mateo DPW

East Palo Alto City Hall Improvements

- Building History
- CIP Progress
- Initial Design and Electrification Decision
- Challenges
- Final Design
- Lessons Learned

Building History

- 3 story, 50,000sqft building built in 1975
- Current Tenants
 - City of East Palo Alto
 - San Mateo County Libraries
 - Human Services Agency
 - Behavioral Health and Recovery Services
 - Health Department
 - Probation
- Existing Mechanical System
 - Built Up Air Handler in the penthouse
 - Chiller and cooling tower
 - CAV/VAV boxes
 - Boiler and hot water fan coil units that heat the perimeter of the building



Capital Improvement Plan

Project Development Timeline

- 2015 HVAC design intent and initial HVAC upgrade design
- 2017 Feasibility study of the whole building
- 2019 Public bid for design services
- 2021 Decision to go with all electric HVAC system
- 2022 Permitting and Contracting
- 2023 Construction

Project Scope

- HVAC central plant and zone upgrades
- LED lighting fixtures
- Roof replacement
- Fire alarm system
- Tenant finishes (ceiling grids and tile, new carpet/flooring, and new paint) in certain departments
- \$15,000,000 Budget

Initial Design and Electrification Decision

First Design

 Original design was a like for like replacement of the central plant equipment. New units would be more efficient but still reliant upon a gas fired boiler for heating.

Decision to go all electric

- 2019 BayREN Zero Net Energy Portfolio Assessment
 - County of San Mateo sites were reviewed and some missed opportunities were called out during some recent projects
 - We didn't want that to happen again after we completed this project
- 2020 Government Operations Climate Action Plan
 - Suna and I were invited to work alongside Office of Sustainability on this document and got to see the County's goals of decarbonization

Challenges

Cost

- Mechanical design already completed
- Architectural contract limits
- Set CIP Budget

Executive Approval

- Mid design change would cause delays
- Paying a premium for this new system
- Our deputy director was receptive to the idea
- Test facility for future projects

Facilities Buy In

• Our facilities team's input on what they wanted and didn't want installed in their building

Feasibility

• Would there even be a design that could work in the existing building?

Final Design Decision

- Our design team first proposed a Dual Duct VRF system
- Cost estimate was \$1,000,000 over original design plan
- Facilities didn't want refrigerant lines running throughout the building

Final Selection

Air to water heat pumps to produce our chilled and hot water. Larger heating coils on the VAV boxes and refurbish the built up air handler. Estimated \$600,000 additional cost



Lessons Learned

Electrification design from the beginning

- Change orders could have been avoided
- Contracts were set up in a way that allowed us the flexibility to make a change midway through

Adequate CIP Budget

- Overall project budget was large enough to cover the design changes and premium for the all electric system
- Gave us the ability to pursue this upgrade and consider the long-term goals of the County

Decision makers were involved early

- Understood the opportunity we could take advantage of
- Knowledgeable of the upcoming policies that affects the CIP

Existing infrastructure

- Building could support this new system
- Trade offs throughout the design (electrical, structural, HVAC)

Questions?

Thanks!

Introduction 1: How many potential all-electric CIP Projects are in San Mateo County?

Rockaway Pump Station R&	R Project	(For	merly		Dep	oartm	ent(s):	Was	tewater				
PS Upgrade)						Mana	ger(s):	Patte	en				
Replace a wastewater centrifug Rockaway Pump Station. Ther pumps and motors that will eac over the next 15 years. Replace	al pump and e are three e: h reach their the aging ge	moto xisting servi enerat	r at the g ce life or.	I	Proje	ct Nu Cat Start Du	mber: Fund: egory: Date: ration: Status:	C000 34 - Utili 2020 5 Ye Acti	6 Sewer 1 ties) ears ve	Facili	ty Cor	istruct	ion
		-	Ficaal	Voor	Fun	ding S	status:	Fund	ied			n i	
Phase	To Date	23	3 - 24	24 -	25	25	- 26	26	- 27	27	- 28	т	otal
Construction & Management												\$	-
34-Sewer Facility Construction								\$	325			\$	325
Equipment Purchase												\$	-
34-Sewer Facility Construction						\$	375					\$	375
Planning & Design												\$	-
34-Sewer Facility Construction		\$	100									\$	100
												\$	-
												\$	-
Total	s -	\$	100	\$	-	S	375	S	325	\$	-	\$	800

Project Status: On-hold/unfunded

					D	partn	nent(s):	Engi	ineering	ç.			
Fire Station 71 & 72 Modernization								Fire					
					Project	Mana	ger(s):	Yip					
Modernize Station 72's bathroo	ms and sl	leep	ing					John	ison				
facilities to accommodate fema	le firefigh	ters	. Proj	ect	Proj	ect Nu	mber:	TBE)				
would be updating the bathroon	ns and sle	epir	ng are	as,			Fund:	22 -	Genera	I Capital Im	proven	ment	
kitchen area, and making facilit	ies touch	less	(bath	rooms,		Ca	tegory:	Faci	lities				
lights, ect.)						Star	t Date:	2016	5				
						Du	ration:	2					
					Р	roject	Status:	On-l	blot				
					Fu	nding	Status:	Unfi	inded		-		
	-			Fiscal	Year (In 1	housa	nds of	Dolla	rs)		-		
Phase	To Da	te	23	- 24	24 - 25	2	5 - 26	26	- 27	27 - 28	1	Fotal	
Planning & Design											\$	-	
Unfunded						S	400				\$	400	
Construction & Management											5	-	
Unfunded								\$	550		\$	550	
											\$	-	
											\$	-	
											5	-	
		_	_			-		_			5	-	
Total	5 .		\$	-	S -	S	400	S	550	S -	5	950	

Upgrades to air handlers – not sure if this is electrification?

					1	Depart	ment(s)	DPW			
Community Center H	VAC	Upgr	ade								
							ager(s)	Donguines	6		
The community center's HVAC	air ha	andlers	have					Assereto			
reached their useful life and are	conti	nuing to	o fail		Pr	oject N	umber:	0294			
Upgrades are needed on all air l	handle	rs in or	der to	D			Fund	: 22 - Gener	al Capital I	mprove	ement
continue operation. Moved from	m Fu	nd 1.				С	ategory	Facilities			
						Sta	rt Date	: 2021			
						D	uration	: 1 Year			
						Project	t Status	Active			
					F	unding	status	Funded			
				Fiscal '	Year (In	Thous	ands of	Dollars)			
Phase	To	Date	23	3 - 24	24 - 2	5 3	25 - 26	26 - 27	27 - 28		Total
Planning & Design										\$	-
		_								\$	-
Construction & Management										\$	-
01-General Fund	\$	195	S	155						\$	350
Miscellaneous					1					\$	-
										\$	-
										\$	-
										\$	-
Total	5	195	S	155	S -	. S	-	S -	S -	5	350

Upcoming Project Highlight: All-City CIP Electrification Scan:

- TRC/ Redwood Energy have gone through every City's CIP and highlighted opportunities to electrify
- Upcoming: finished list of CIP scan for each City, and recommendations;
- Example: Pacifica

How to Electrify a CIP: an Overview

Ryan Gardner, Rincon Consultants

Part 1: CIP Scan for Projects with Potential Gas End-Uses

- 1. Find your CIP (or your TRC provided list), OR if your CIP is in progress currently and where the draft is;
- 2. Ctrl + F to find end uses that could be gas or all-electric
 - a. New buildings
 - b. Space heating and cooling HVAC; rooftop units; AC
 - c. Water heating water heaters; pool heaters
 - d. Cooking/ Kitchens
 - e. Total remodels/renovations
 - f. Electrification-related infrastructure upgrades- roofs, electric panels, ductwork



Part 2: Connect to Point People; Get Project Details

We asked Cities to connect with their public works/ facilities staff to ask the following questions:

- Will the project include gas infrastructure and if so, for what appliances/end uses ?
- Were electric appliances considered, if so, what was the reason for not including them?
- Who is the point person for the project (aka, who should we be in contact with)?
- What is the funding source for project?
- Implementation phase of project- is there an opportunity to go all-electric, if gas has been planned?



Part 3: If the project is gas, how do we make it electric?

We are piloting this approach today!

What are the missing pieces to go all-electric?

- Information (ex. existing electrical capacity; price of electric vs. gas)
- Operational impacts (cost or technology)
- Technology & logistical constraints (ex. roof readiness for an RTU)
- Available Funding (achieving cost parity for gas vs. electric); timeline of allocated funding
- Staff people/ champions (ex. no existing project manager;



CIP Electrification Pilot Group

- 1: Half Moon Bay
- 2: Foster City
- 3: Redwood City
- 4: Burlingame

1: Half Moon Bay





Source: Half Moon Bay Review

CIP Project Highlight: All-electric Ted Adcock Center and Kitchen (TACC) induction stove project

Policy Context: City council push to electrify municipal facilities by 2025

CIP Project List: 5 Planned Projects to Electrify Facilities (FY 23/24-27/28)



- TACC Upgrades: stove, water heater, two HVAC
- Corp Yard HVAC and stove
- Train Depot: HVAC
- Mac Dutra: Outdoor Heaters
- City Hall: 2nd HVAC unit

Selected Project: TACC Induction Stovetop Replacement



Project Electrification Opportunity	Project potential hurdles
 TACC kitchen upgrade replacement with induction stovetop. Kitchen is certified commercial that people rent out of- potential demonstration project for community, County? 	 No existing scope of work or potential cost for induction range identified Unsure of commercial kitchen incentives that are applicable Future initiative would be to have this be a blueprint for other commercial kitchens

Existing conditions: capacity for 220v circuit in TACC kitchen already in place

Kitchen Equipment to Electrify

• Existing gas range

Southbend 4481EE 48" 8 burner, 2 oven natural gas range



Project Questions? (City Q&A)

Brainstorm: how can we plan ahead to pave the way for an induction stovetop demonstration site at HMB TACC?

- a. Are there any commercial kitchen incentives for municipalities?
 - i. Are there any existing gaps in knowledge for costs to go all-electric to address first?
- b. Timeline for upgrade
- c. Internal prioritization of this project vs. others (ongoing requests for funding)
- d. Other hurdles to overcome?



Half Moon Bay Next Steps:

Fill out with workshop takeaways







CIP Project Highlight: Replace City Hall and Fire Station Roof (enabling future electrification)

Source: Redwood City CIP Map: Redwood City Fiscal Year 2023 to 24 CIP Explorer with EPC (arcgis.com)

CIP Project List: 3 Identified Potentially Electrificable Projects (FY 23-24)



Source: Foster City

- Replace City Hall and Fire Station Roof (2027-2028)
- Sea Cloud Maintenance Shed: full-building replacement
- Police Station Kitchen Remodel: includes appliances (stove)

²/₃ Projects Already Planned as All-Electric

Project	Why project is all-electric
Sea Cloud Maintenance Shed: Full-building replacement	Cost effective, ease of installation Shed was located in a park location with no existing natural gas service - as a result, replacing with all-electric was the easiest, cheapest option
Police Station Kitchen Remodel: Includes appliances (stove)	Cost effective, ease of installation Police station kitchen was already all-electric, would have been more difficult and costly to install gas



Selected Project: Replace City Hall and Fire Station Roof



Project Electrification Opportunity	Project potential hurdles/ ways forward
Roof replacement could be a good opportunity to make upgrades to allow for future HVAC electrification (packaged rooftop unit, RTU)	 No immediate plan/ funding to upgrade (project slated for 2027-2028) - future planning efforts needed Appears to support several rooftop package units Past difficulties in grant writing if no project in place (chicken or egg question) Potential to apply as a group for similar future large HVAC upgrades?

Project Questions? (City Q&A)

Brainstorm: how can we make the City Hall and Fire Station Roof ready for a potential RTU HVAC upgrade?

- a. Are there upgrades needed for later HVAC replacement that are easier to do during a roof replacement?
 - i. Structural upgrades
 - ii. Conduit
 - iii. Space constraints
- b. How can we make going all electric **cost-comparable** with gas?
 - i. Are there any existing gaps in knowledge for costs to go all-electric to address first?
- c. Timeline for upgrade
- d. Internal prioritization of this project vs. others (ongoing requests for funding)
- e. Facilities comfort with engineering & new systems
- f. Other hurdles to overcome?



Foster City Next Steps:

Fill out with workshop takeaways

3: Redwood City





CIP Project Highlight: HVAC + *Roof Replacement at Municipal Services Center (MSC)*

Source: Redwood City CIP Map: Redwood City Fiscal Year 2023 to 24 CIP Explorer with EPC (arcgis.com)

CIP Project List: 4 Identified Potentially Electrificable Projects (5-year CIP; FY 23-24-27-28)

Project #73593 HVAC

Replacement Program (Municipal Services Center): reached end of useful life, many system parts have been discontinued. Also entails roof replacement

- Fire station 9 Expansion: complete replacement project
- Fire Station 12 Replacement (includes HVAC)
- National Guard Armory Project (HVAC & Kitchen)



Source: Roof & HVAC replacement program

Selected Project: HVAC Replacement Program

(Total Project)

			Project # <mark>7359</mark> 3
Redwood City California	placement	t Program Functional	Area - Facilities
New FY 23-24 funding recommended:	\$450,000	Project status:	Ongoing & Routine
Previously approved project funding:	Ongoing	Estimated completion date:	Ongoing
Remainder to be funded:	Ongoing	Estimated useful project life:	N/A
Estimated total cost:	Ongoing	Department	Public Works



HVAC Replacement Program Budget

Project Budget									
Fund - True	Previously Approved	Estimated Expenditures thru 6-30-23	FY 2022-23 Carryover	Recom'd FY 23-24	Estimated FY 24-25	Estimated FY 25-26	Estimated FY 26-27	Estimated FY 27-28	Estimated 5-Yr Cost
357 Capital Outlay Fund	Ongoing	Ongoing	Ongoing	450,000	850,000	700,000	700,000	750,000	3,450,000
Total	Ongoing	Ongoing	Ongoing	450,000	850,000	700,000	700,000	750,000	3,450,000

HVAC Timeline : As funding is unavailable in FY 2023-24, a funding request has been deferred to the next fiscal year.

Project Background & Key Context (HVAC Project)

"Summary: Replacement of heating, ventilation, and air conditioning (HVAC) systems at various City facilities.

HVAC systems typically have a useful life of 15 years and receive preventative maintenance on a regular basis. The HVAC system at the Municipal Services Center (MSC) has reached the end of its useful life and many of the system's replacement parts have been discontinued. Without the necessary replacement parts, the system cannot be maintained at its most optimal functionality and will eventually result in the inability to communicate with rooftop units and thus the absence of heating or cooling when required. Additionally, as the HVAC is upgraded, where possible, the controls shall be converted to more efficient web-based systems.

Existing Conditions: Equipment Location for all: MSC Rooftop; Condition for all: Fair

Individual Units: Gas-powered split system heat pumps

- Individual units: split-system heat pumps; 306 BTUH (80% AFUE Gas Furnace); 3 units ranging from 85k BTUH to 135k BTUH
- Age Ranges: 1984-2010

Central Heating System: Gas-Powered Hot Water Boilers

- Location: Rooftop
- 1 boiler at 550 MBH; 550 MBH heating capacity
- Age : ~1995
- Condition: Fair

Central Cooling

- Location: Rooftop
- 1 chiller at 20 tons
- R-22 refrigerant
- Age: ~1995

Anticipated Lifecycle Replacements:

- Boilers
- Air handling units
- VAV boxes
- Split systems heat pumps
- Suspended unit heaters
- Through-wall air conditioners
- Rooftop exhaust fans

"HVAC systems are maintained by an outside contractor, HVAC equipment varies in age and is replaced on an "as-needed" basis"

Reference: Aug. 11 Redwood City Email; for distribution system description, refer to Appendix Slide A

Existing MSC Conditions: Cost Assessment (Detailed) 2017- 'Replacement Reserves'; 'Deficiency Repair Estimate'; 2018-2037 (Project 7.1)

- Domestic Boiler, Gas, 501 to 800 MBH: \$38,015 (2021)*
- Condensing Unit/ Heat Pump, Split System, 2.5 ton replace:
 \$6,733 (2020; 2035)
- Condenser, Air-Cooled, 20 Ton: \$14,423 (2022; 2037) \$26,223
- Air Handler, Interior, 401 to 800 CFM, Replace, (2022) \$3,687
- Variable Air Volume (VAV) Unit, 100 to 400 CFM, Replace (2022; 2037) \$22,781
- Air Handler, Exterior, 6,001 to 8,0000 CFM, Replace, (2021;2036) \$41, 583
- Building Automation System (HVAC Controls) Upgrade (2018)
 \$32,148

*Note that this is the predicted schedule, not actual for all projects; costs combine all year replacement subtotal

Total cost for HVAC system equipment (not including electric panel, distribution system, automation) predicted to replace gas with gas (2018-2035):

\$70,981

Total 7.1 Total Project Cost: \$171,180

Project Questions? (City Q&A)

Brainstorm: how can we make Redwood City's MSC HVAC System and Roof Replacement all-electric ready?

- a. How can we make going all electric cost-comparable with gas?
 - i. Are there any existing gaps in knowledge for costs to go all-electric to address first?
- b. Timeline for upgrade
- c. Internal prioritization of this project vs. others (ongoing requests for funding)
- d. Facilities comfort with engineering & new systems
- e. Other hurdles to overcome?



Redwood City Next Steps:

Fill out with workshop takeaways

Redwood City Appendix Slides B: Facility Existing Conditions

INDIVIDUAL UNITS						
Primary Components	Split system heat pumps					
Cooling (if separate from above)	performed via components above					
Quantity and Capacity Ranges	(3) units ranging from 85k BTUH to 135k BTUH					
Total Heating or Cooling Capacity	306 BTUH (80% AFUE Gas Furnace)					
Heating Fuel	Gas					
Location of Equipment	Rooftop					
Space Served by System	All buildings					
Age Ranges	Vary from 1984 to 2010					
Primary Component Condition	Fair					

BUILDING CENTR	AL COOLING SYSTEM
Primary Cooling System Type	Condensing unit
Quantity and Capacity of Major Components	(1) chillers at 20 tons
Total Cooling Capacity	20 tons
Refrigerant	R-22
Cooling Towers	None
Location of Major Equipment	Rooftop
Space Served by System	Administration building
Age Ranges	1995
Condition	Fair
Cooling Tower Condition	-

DISTRIBUTION SYSTEM						
Pump Condition	Fair					
Air Distribution System	Variable volume					
Quantity and Capacity of Air Handlers	(1) air handlers at 8000 CFM					
Location of Air Handlers	Rooftop, exterior					
Large Spaces the Larger Dedicated AHU's Serve	Administration building					
Age of Air Handlers	1995					
Air Handler Condition	Fair					
Terminal Units	VAV boxes					
Quantity and Capacity of Terminal Units	approximately 5 VAV boxes					
Location of Terminal Units	Along ceilings					
Spaces Served by Terminal Units	Administration building					
Terminal Unit Condition	Fair					

SUPPLEMENTAL COMPONENTS						
Supplemental Component #1	Split system heat pumps					
Location / Space Served	Warehouse offices					
Condition	Fair					
Supplemental Component #2	Through-wall air conditioners					
Location / Space Served	General Services and Repair Shop Buildings Offices					
Condition	Fair					
Supplemental Component #3	Suspended Unit Heaters					
Location / Space Served	General Services and Repair Shop Buildings misc. spaces					
Condition	Fair					

CONTROLS AND VENTILATION					
HVAC Control System	BAS, direct digital controls (DDC)				
HVAC Control System Condition	Poor				
Building Ventilation	Rooftop exhaust fans				
Ventilation System Condition	Fair				

BUILDING CENTRAL HEATING SYSTEM

Primary Heating System Type	Hot water boilers
Quantity and Capacity of Major Components	(1) boiler at 550 MBH
Total Heating Capacity	550 MBH
Heating Fuel	Natural gas
Location of Major Equipment	Rooftop
Space Served by System	Administration building
Age Ranges	Estimated 1995
Boiler Condition	Fair
Heat Exchanger Condition	Fair

DISTRIBUTION SYSTEM						
HVAC Water Distribution System Two-pipe						
Heating Water Circulation Pump Size & Quantity	(1) pump					
Chilled Water Circulation Pump Size & Quantity	NA					
Condenser Water Circulation Pump Size & Quantity	Condenser Water Circulation Pump Size & Quantity NA					

Facility Condition Assessment and Energy Audit: 2017; Redwood City pg. 28

Redwood City Appendix Slides C: Costs (detailed)

Public Works / Public Works Corp Yard, Building 1	7.1	574503	Domestic Boller, Gas, 501 to 800 MBH, Replace	22	19	3	1	EA	\$34,559.38	\$38,015.32	\$38,015		\$34,	4,559
Public Works / Public Works Corp Yard, Building 1	7.1	574552	Condensing Unit/Heat Pump, Split System, 2.5 Ton, Replace	15	13	2	1	EA	\$3,366.36	\$3,702.99	\$3,703	\$3,3	366	
Public Works / Public Works Corp Yard, Building 1	7.1	574540	Condenser, Air-Cooled, 20 Ton, Replace	15	11	4	1	EA	\$13,111.70	\$14,422.87	\$14,423			\$13,112
Public Works / Public Works Corp Yard, Building 1	7.1	574562	Air Handler, Interior, 401 to 800 CFM, Replace	20	16	4	1	EA	\$3,351.83	\$3,687.01	\$3,687			\$3,352
Public Works / Public Works Corp Yard, Building 1	7.1	574550	Variable Air Volume (VAV) Unit, 100 to 400 CFM, Replace	15	11	4	5	EA	\$4,141.92	\$4,556.11	\$22,781			\$20,710
Public Works / Public Works Corp Yard, Building 1	7.1	574544	Air Handler, Exterior, 6,001 to 8,000 CFM, Replace	15	12	3	1	EA	\$37,802.95	\$41,583.24	\$41,583		\$37,	7,803
Public Works / Public Works Corp Yard, Building 1	7.1	574549	Building Automation System (HVAC Controls), Upgrade	20	20	0	5450	SF	\$5.36	\$5.90	\$32,148	\$29,226		

Facility Condition Assessment and Energy Audit: 2017; Redwood City pg. 3



4: Burlingame



CIP Project Highlight: Boiler at Library; Corp Yard

Policy Context: City has RFP out to replace City Hall Completely

Source: Wikimedia commons

CIP Project List: 4 Potentially Electrifiable Projects (FY 23-24)



 HVAC for Fire Stations 34;Village Park, Easton Library; Depot*

- City-wide boiler replacement projects (corporation yard, library, police station)
- Aquatic boiler replacement *
- Fire Station 35 Rehabilitation and HVAC
 System Upgrades (completed)

Selected Project: HVAC Replacement for Fire Station 34



Project Electrification Opportunity	Project potential hurdles
Project selected due to internal public works preference	 Cost (gas vs. electric) Uncertain timeline for replacement (appears to be prioritized by public works, but
Fire Station 34: 6 gas/elect units installed in 1992	 not budgeted in CIP) Existing electrical capacity (also included under costs)

BTU Description HVAC Replacement for Fire Station 34

Fire Station 34	BTU
MECH. UH	30k
AC-1	90k
AC-2	50k
AC-3	90k
AC-4	90k
AC-5	50k
AC-6	50k

Ref. Appendix slide for BTU of each unit

Burlingame Appendix Slide A: Gas Equipment Specs

FIRE STATION 34	BTU'S	YEAR	FUEL TYPE	MODEL#
MECH. UH	30k	1992	GAS/ELEC.	GHND003ADC1000
AC 1	90k	1992	GAS/ELEC.	YCD060C3L0AA
AC 2	50k	1992	GAS/ELEC.	YCC024FK0BA
AC 3	90k	1992	GAS/ELEC.	YCD048C3L0AA
AC 4	90k	1992	GAS/ELEC.	YCD048C3L0AA
AC 5	50k	1992	GAS/ELEC.	YCC024F1L0BA
AC 6	50k	1992	GAS/ELEC.	YCC030F1L0BA

INFO.		-			
BUILDING	GALLONS	YEAR	CIRC. PUMP?	FUEL TYPE	NEAREST PANEL
CITY HALL	30	2021	YES	GAS	CHILLER ROOM
LIBRARY	50	2022	YES	Electric	ELEC. RM. 314
EASTON front	2.5	2003	NO	Electric	Main electric
EASTON rear	2.5	2016	NO	Electric	
PARKS YARD #1	50	2022	NO	Electric	2A IN GARAGE
PARKS YARD # 2	15	UNKOWN	NO	Electric	PNL A
POLICE STATION	98	2022	YES	Electric	PNL M2
DEPOT	40	2004	NO	GAS	
PW Corp Yard#1				Electric	
PW Corp Yard#2		1.		Electric	
FIRE STATIONS	GALLONS	YEAR	CIRC. PUMP?	FUEL TYPE	NEAREST PANEL
FS 34	90	2008	NO	GAS	By stove shutoff valve
FS 35	Tankless	2020	No	GAS	
FS 36	80	2001	NO	GAS	2

WATER HEATER

FIRE STATION 36	BTU'S	YEAR	FUEL TYPE	MODEL
FAU1	80k	1995	GAS	58WAV091-13114
FAU2	80k	1995	GAS	58WAV091-13114
FAU3	100k	1995	GAS	58WAV111-12120
FAU4	100k	1995	GAS	58WAV111-13120
AC5		1995	ELEC. 208-230/1/60	

BOILER INFO.	YEAR	SIZE/BTU
CITY HALL	1969	2,700,000
PD	2016	399K
LIBRARY	1996	1,450,000
CORP YARD	2002	1,500,000

FURNACES	BTU'S	YEAR	FUEL TYPE	MODEL #
DEPOT	40k	2004	GAS	ADX040C924D3
EASTON	150k	2004	GAS	HCRGB175
VILLAGE PARK	70k	1999	GAS	58RAV07010114
PARKS YARD	60k	1998	GAS	58DLX09010114

Project Questions? (City Q&A)

Brainstorm: how can we plan ahead for all-electric HVAC replacements at Fire Station 34?

- a. Funding to close the gap (successful heat pump HVAC installation in Fire Station 35 in 2020) ?
 - i. Are there any existing gaps in knowledge for costs to go all-electric to address first? Lack of existing CIP budget?
- b. Timeline for upgrade note that these projects were identified by public works staff after an internal accounting of methane gas equipment but not by the CIP
- c. Internal prioritization of this project vs. others (ongoing requests for funding)
- d. Other hurdles to overcome?
- e. Johnson- discussion of boilers (ex. Boilers); CEC did a previous audit of NG equipment, water heaters were replaced with all electric



Burlingame Next Steps:

Fill out with workshop takeaways

Survey and Closing