

Purchasing Strategies for Energy & Water Savings

Alameda County
Green Purchasing Roundtable
May 16, 2017



Alameda County
SUSTAINABILITY
Local Action, Global Impact.

Agenda

- Introduction
- Case Study: A Comprehensive Upgrade
Rachel DiFranco & Dan Schoenholz, City of Fremont
- Elements of Success
Brendan Havenar-Daughton, PG&E
Sarah Church, Alameda County
Meredith Owens, AMP
- Case Study: Building-by-Building
Kerry Parker, City of Alameda
- **Workshop: Applying It**

Promoting Efficiency

A Win-Win-Win

- Save energy & water
 - Conservation
 - Reduces greenhouse gas emissions
 - Avoid mercury, etc.
- Save money
 - Utility costs
- Save staff time
 - Reduced maintenance needs



...that you can build on

- Demonstrate benefits of greening
- Build relationships
- Share the credit

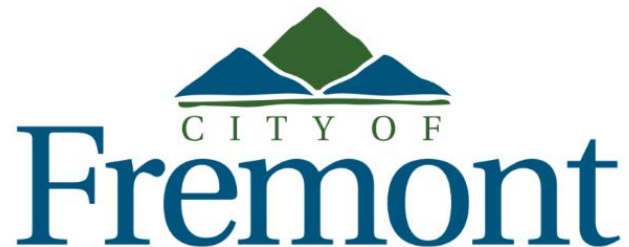


Case Study: A Comprehensive Upgrade

Rachel DiFranco & Dan Schoenholz,
City of Fremont

Implementing Comprehensive Energy & Water Savings Upgrades

Case Study





\$9.1M in Energy & Water Upgrades

- LED streetlights & park lights.
- LED facility lighting & occupancy controls.
- High-efficiency facility plumbing fixtures.
- Weather-based irrigation controls.
- Variable speed pool pumps at water park.

Key Project Details:

1. Energy Services “ESCO” Project

- Leverages savings of some measures to help pay for others



OPTERRA
ENERGY SERVICES


2. CA Government Code

- Section 4217.10 - 4217.18
- Allows public facilities to sole source for energy services contracts



3. OBF & Low Interest Finance

- Allows project to be paid over time through utility & maintenance savings

<p>ENERGY</p> 	<p>On-Bill Financing</p> <p>Energy efficiency is easier than ever, with a zero interest loan.</p> <p>Learn more</p>
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Streetlight & Park Lighting:



Facilities Lighting:



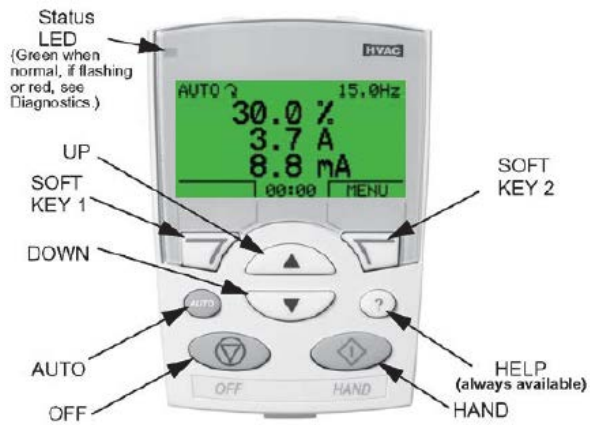
Facilities Plumbing:



Irrigation Controls:



Variable Speed Pumps:



Project Considerations:

1. May fall outside of comfort zone
2. Leverages department champions
3. Requires minimal extra budget
4. Requires minimal additional resources
5. Provides multiple added values
6. Requires patience & persistence

1. Falls Outside of Comfort Zone

OTHER DUTIES AS ASSIGNED...

“Public Works” type project

+ Managed by Community
Development Department

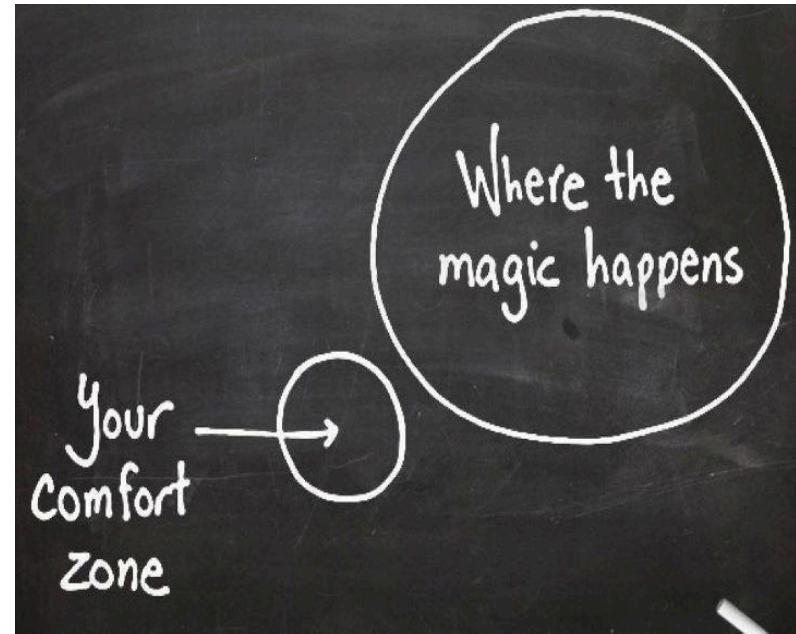
= Achieve sustainability goals:

976 MTCO₂

4.7M kWh

8.7M gal H₂O

12K therms



2. Leverages Champions

RECOGNIZING ALLIES AS ENABLERS

- City Attorney
- Finance Director
- Building Maintenance Manager
- Street Maintenance Manager
- Park Maintenance Supervisor
- Public Works Director
- Economic Development Director
- Community Services Director
- Police & Fire Chiefs



3. Requires Minimal Budget

JUST ADD SAVINGS!

- General Fund \$\$\$ untouched
- Utility bill & maintenance savings pay for upfront costs over time
- Financing arrangements:
 - Power Purchase Agreements
 - 0% On-Bill Financing
 - 2% Lease Financing
- Cash flow positive from Year 1



4. Requires Minimal Add'l Resources

WE DO THE HEAVY LIFTING

- Sustainability as project manager:
 - RFQ/RFP / Contract / SOW
 - Staff Report / Resolution
 - Day-to-day Coordination
 - Change Orders / Inspections
 - Invoicing / Tracking
- Utilize regional technical assistance
- Rely on best practices from previous projects and programs

**WELL ITS NOT
GOING TO LIFT
ITSELF**



5. Provides Multiple Added Values

WIN-WIN-WIN-WIN-WIN

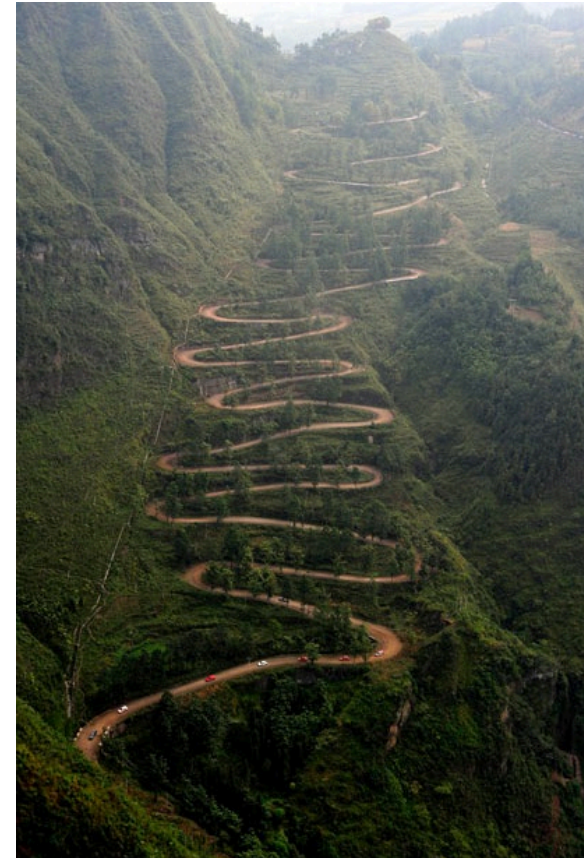
- Utility bill savings
- Longer equipment life
- Reduced maintenance
- Improved resilience of critical facilities
- Support of public-private partnerships



6. Requires Patience & Perseverance

IT'S A LONG AND WINDING ROAD...

- Projects can take LONG TIME
- At any time, you may experience:
 - City staff &/or contractor transitions
 - Increases or decreases in project costs
 - Technology advancements
 - Grant/financing availability
 - Challenges with designs & permits
 - Priority shifts from key departments
 - Council turnover
 - Budget constraints





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City of Fremont

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Questions?

Elements of Success

Stakeholders



Products

Financing

Implementation

Financing Opportunities

Brendan Havenar-Daughton,
Pacific Gas & Electric

On-Bill Financing

Energy Efficiency Financing from PG&E

Program Overview

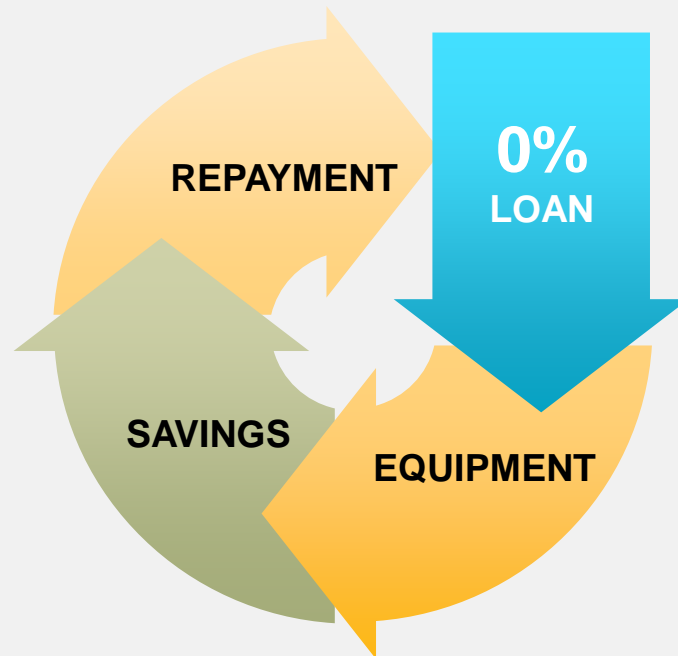


Agenda

- **What is On-Bill Financing (OBF)?**
- **How does it work?**
- **Who is Eligible?**
- **What is Eligible?**
- **Roles and Responsibilities**
- **Additional Resources**

What is On-Bill Financing?

- On-Bill Financing is a \$80M revolving loan fund (RLF), used to finance energy efficiency projects for PG&E non-residential customers.
 - The RLF uses ratepayer funds and is loaned at 0%
 - As customers repay their loans, those funds can be loaned out again
 - Loan payments are intended to be 'bill-neutral,' meaning they are based on the estimated energy cost savings from the EE project



What is On-Bill Financing?

Loan Terms	Business	Government Agency*
Interest	0%	0%
Minimum Loan Amount	\$5,000	\$5,000
Maximum Loan Amount	\$100,000 per premises	\$250,000 per premises ¹
Maximum Funding Available per Customer	\$4,000,000	\$4,000,000
Maximum Loan Term, not to exceed the Expected Useful Life (EUL) of the measures	60 months	120 months

** **Government Agency Customer** is defined as a tax-payer funded agency of federal, state, county, or local government that uses tax revenue to pay its PG&E energy bills. Such Customers may include, but are not limited to, public schools, state of California colleges and universities, public libraries, and government offices.*

¹ Government customers may combine premises in a single loan, so this may be considered a per project cap. Exceptions may be made where unique opportunities to capture large energy savings exist and all other OBF loan program terms will be met, up to a maximum of one million dollars (\$1,000,000).

What is On-Bill Financing?

OBF Loan Pool (as of 12/31/16)		
Status	#	\$
Requested	239	\$16,389,830
Reserved	295	\$21,687,785
Loaned	1,736	\$75,930,557
Loaned	1,736	\$75,930,557
(Repayments)		(\$39,282,859)
Net Loaned		\$36,647,698
Loan Pool		\$70,500,000
Subscribed (Reserved + Net Loaned)		(\$58,335,483)
Net Interest and Write-Offs		\$198,265
Remaining		\$12,362,781

Key Stats

- **\$76M** loaned to date!
- **17% increase in SMB customers served year over year (8% overall loan volume increase)**
- **52%** of loaned amounts have been repaid
- December monthly repayments: **\$1.2M**
- Average Loan: **\$44k**
(SMB \$28k, Gov't Agency \$133k)

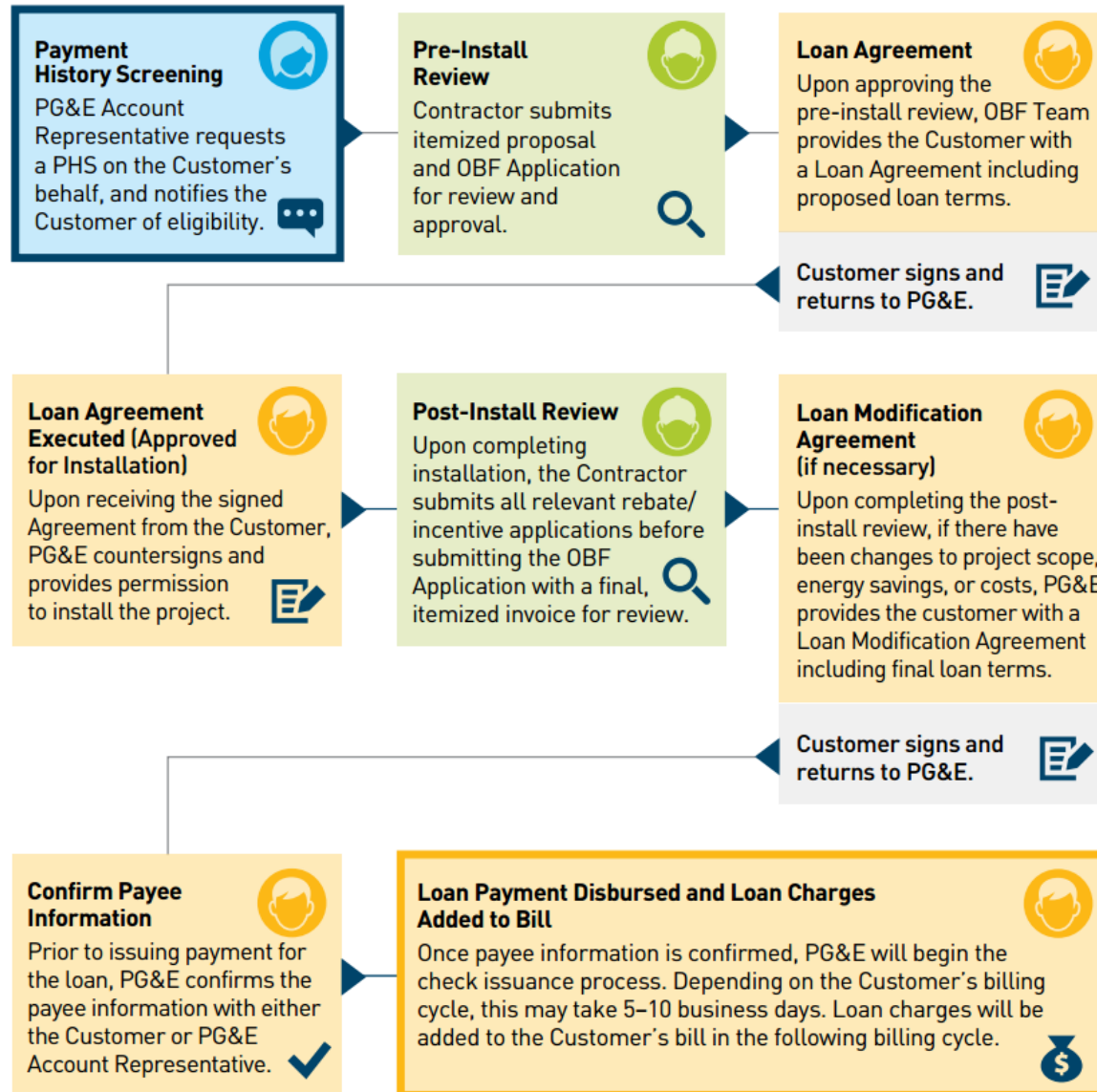
Loaned

Cust. Type	#	%	\$	%	Avg. \$	Final KWHs	Final THERMS
SMB	1,296	75%	\$36,035,946	47%	\$27,806	80,650,661	461,924
Gov't Agency	233	13%	\$31,078,710	41%	\$133,385	45,665,286	306,136
LCIA	207	12%	\$8,815,900	12%	\$42,589	31,554,637	105,573
Total	1,736	100%	\$75,930,557	100%	\$43,739	157,870,583	873,633


How does it work?

Project cost for measures	\$10,000
Rebates or incentives	\$1,000
Customer total loan amount	\$9,000
Customer average rate (per kWh)	\$ 0.180
Estimated annual energy savings (kWh)	12,000
Estimated annual energy cost savings	\$2,160
Simple payback in years (loan amount divided by estimated annual energy cost savings)	4.17
Payback in months based on expected energy savings	50
Loan term (months) (1 month added for bill neutrality)	51
Estimated monthly energy cost savings	\$180
Customer fixed monthly loan payment	\$176.47

How does it work?



How does it work?



ENERGY STATEMENT
www.pge.com/MyEnergy

Account No: [REDACTED]
Statement Date: 08/06/2013
Due Date: 08/23/2013

Service For: Please see details page.

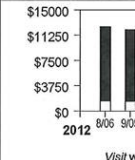
Questions about your bill?
24 hours, 7 days/wk 1-800-468-4743
Business Specialist available:
M-F 7am-7:30pm, Sat 7am-4:30pm
www.pge.com/MyEnergy

Your Enrolled Programs
On Bill Financing

Your Account Summary


Amount Due on Previous Statement	\$14,137.30
Payment(s) Received Since Last Statement	-14,137.30
Previous Unpaid Balance	\$0.00
Current Electric Charges	\$10,520.40
Current Gas Charges	1,207.49
Other Programs and Services	1,001.18
Total Amount Due by 08/23/2013	\$12,729.07

Monthly Billing



Important Messages

Summer Reminder Unusually high temperatures, like those experienced average summer bills. Our new energy statement provides helpful charts information, including how hot weather may have affected your usage, log



ENERGY STATEMENT
www.pge.com/MyEnergy

Account No: [REDACTED]
Statement Date: 08/06/2013
Due Date: 08/23/2013

Other Program and Service Charges

Energy Efficiency Retrofit Loan Program

Service Agreement ID: [REDACTED]
Service Dates: 07/10/2013 - 08/09/2013
Reference Number: [REDACTED]
Loan Installment Due \$1,001.18

Outstanding Balance: 16,018.82

Total Energy Efficiency Retrofit Loan Program Charges \$1,001.18

Total Other Program and Service Charges \$1001.18

Who is eligible?

OBF is available to non-residential PG&E customers that meet the following conditions throughout the duration of the EE retrofit project:

- Customer currently receives service at the retrofit location and pays PPP charges;
- Active PG&E account for the previous **24 months**;
- Good credit standing for the past **12 months** (no 24-hour disconnection notices).

What is eligible?

OBF is available for energy efficiency retrofit projects.

Eligible costs include:

- EE Measures (net of rebates)
- Labor, taxes, and other directly related costs
- O&M, M&V

OBF may not be used to finance:

- New construction/new load;
- Basic lighting (non-LED) exceeding 20% project costs
- In-house labor or project management
- Distributed generation

What is eligible?

- Only rebated/incentivized measures
- Loan only funded after all rebates/incentives approved
- Can combine deemed, customer, up/midstream
- Can accept claimable or site-specific savings calculations

Roles and Responsibilities



Trade Professional/Contractor

OBF Role: Installer

- Submits pre- and post-installation applications for review
- Completes retrofit project to Customer satisfaction



PG&E Account Representative

OBF Role: Customer Liaison

- Educate the Customer on OBF and respond to Customer inquiries
- Request Payment History Screening and submit PHS appeals on the Customer's behalf



OBF Team

OBF Role: Review and Approval

- Communicate PHS results to PG&E Account Representative
- Create and distribute loan agreements
- Disburse loan payments and set up billing on Customer's account

Additional Resources

www.pge.com/OBF

- [Customer and Contractor Handbook](#)
- [Fact Sheet](#)
- [Energy Insight On-Bill Finance Chatter Group](#)
- [Frequently Asked Questions](#)

THANK YOU





Questions?

Water Conservation Product Spotlight

Sarah Church,
Alameda County

Standards and Eco-Labels



CALGreen

- EPA Program: WaterSense
- LEED for Existing Buildings, v4
- CALGreen: Green Building Standard Code

Faucets

Standard:
2.2gpm

Low-flow:
1.5gpm at 60psi



- Flow limiters: aerator or laminar
- Flow control: permanent under-sink valves
- Time control: electronic sensors



Toilets

Standard:
1.6 gpf

High-efficiency:
1.28 gpf



- HE saves 20%
- Performance testing:
 - WaterSense aligned with Uniform North American Requirements (UNAR)
 - Maximum Performance (MaP) lists for tankless



Toilets



Flush-valve retrofit for dual flush

Urinals



- Waterless
 - No valves to install or maintain (cartridges require initial training)
- High-efficiency

Standard:
1.0 gpf

High-efficiency:
.5 gpf



Microfiber mops

- 10-20 times less liquid than cotton mops
- Reduces the amount of water and chemicals used to clean
- Lightweight design – reduces risk of worker injury



Foaming Hand Soap

- Spreads more easily, so less soap and water used
- Look for Green Seal products

CASE STUDY: Commonwealth of Massachusetts

“Over \$300,000 in water conservation-related savings from the use of microfiber mops and foaming hand soap (replacing cotton mops and lotion hand soaps).”

Results from FAC85 contract, since award in 2015
www.responsiblepurchasing.org



Questions?

Energy Conservation Products Spotlight

Meredith Owens,
Alameda Municipal Power

Alameda Municipal Power Green Purchasing Roundtable

Sponsored by Alameda County GSA

May 16, 2017

Alameda Municipal Power Background

- Community-owned electric utility serving the City of Alameda since 1887
- Governed by the City of Alameda Public Utilities Board
- AMP rates average 16 percent lower than PG&E
- Certified Alameda County Green Business
- Installing smart meters through December 2017

Easy, Low Cost Efficiency for Cities

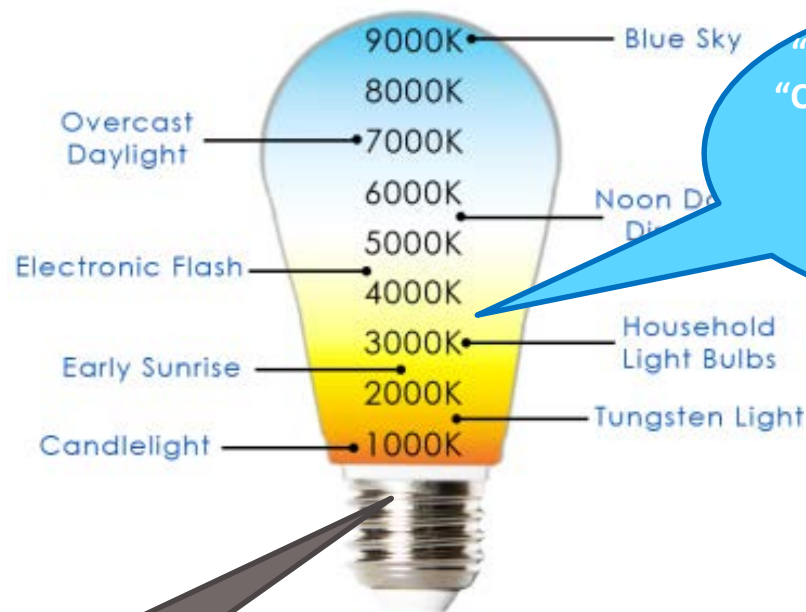
- Light Emitting Diode lighting, LED
- Lifetime of 12 to 35 years, significant maintenance savings
- Reduce energy use by 60 to 80 percent
- Exterior lights and some interior LEDs are very competitively priced
- Utility rebates – PG&E
- Improved lighting quality & low burnout rate

How Can I Purchase the Best?

- Energy Star – awarded to fixtures that meet strict efficiency, quality, lifetime criteria
www.energyStar.gov/products/lighting.....
commercial light fixtures
- Design Lights Consortium – largest database of LED lighting products
www.designlights.org
- DOE Municipal Solid-State Street Lighting Consortium

Some Considerations - LED Color

- Color is measured on the CCT scale **(Correlated Color Temperature)** in degrees Kelvin

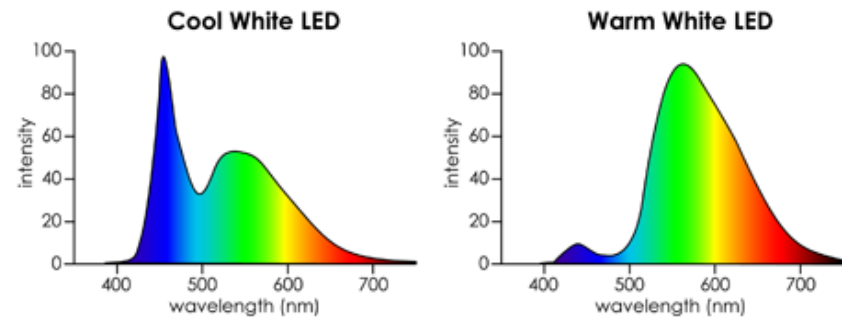


“Daylight” bulbs ≈ 6500K
“Cool White” bulbs ≈ 4500-5000K
“Moonlight” bulbs ≈ 4000K

“Warm White” bulbs ≈ 2700-3000K

Light Color & Health

- You can buy and turn on different lights for different times of day
 - Cool white or “daylight” for mid-day rooms
 - Warm white for evening rooms
- Use controls
 - Tunable LEDs
 - Computer app “f.lux”



LED Controls

- Dimmers (read the fine print) – LEDs are great at dimming, lots of energy savings
- Photocells – interior and exterior
- Occupancy sensors



High Tech Lighting Controls

- Prism LED Desk Lamp
- ZigBee with remote or computer control
- Philips Hue uses phone or tablet App
- Amazon Echo is voice controlled

ZigBee Light Link 



City of Alameda Parking Garage

LEDs and Controls

- Cost - \$80,978
- Energy Cost savings - \$38,172, 75% reduction
- AMP rebate - \$50,879
- Net cost - \$30,099
- Payback – 9 months
- Lifetime 15 + years



City of Alameda Parking Garage

- Daylight sensor with dusk/dawn dimming for areas with daylight
- Occupancy sensors - off if no motion > 2.5 minutes
- Controlled remotely at Public Works office



Alameda Point Piers

Consider Operations & Maintenance

- Poles 63' high, 67 lights
- Cost - \$204,527
- Energy Cost savings - \$37,011/year
- AMP rebate - \$49,319
- Net cost - \$155,208
- Payback – 4.2 years
- Lifetime 35 years



What are your resources?

- PG&E Account Representative
- City Public Works Department
- Department of Energy municipal solid state lighting website,
<https://energy.gov/eere/ssl/solid-state-lighting>
- Energy Star website
- Design Lights Consortium

Contact Information

Meredith Owens, AMP

Energy Efficiency

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Questions?

Case Study: Building-by-Building

Kerry Parker, City of Alameda

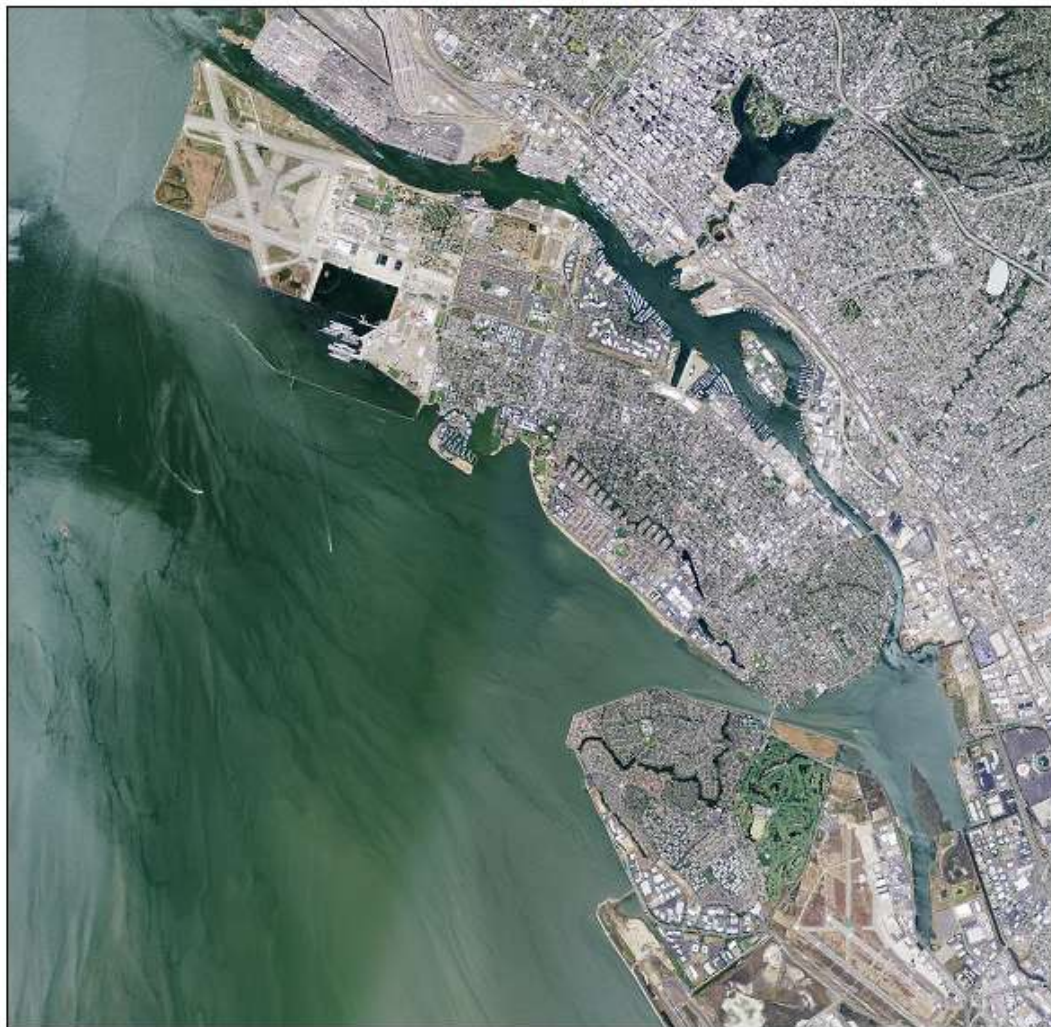
City of Alameda's Green Business Operations

Green Purchasing Roundtable
May 16, 2017





Alameda, CA



City of Alameda
**Public Works
Department**
Public Works Works for You!



Why the Green Business Program?

- GB Inspector for Solid Waste since 2011
- Tough Question in 2013
- Public Works' Response



City of Alameda
**Public Works
Department**
Public Works Works for You!



Assumptions

- This will be more work ☹️
- Green products cost more ☹️
- Recycled paper towels are scratchy ☹️
- Composting food scraps draws flies ☹️
- Only greenie tree huggers and hippies do this, Kerry!



City of Alameda Public Works Department



City of Alameda
Public Works Department
Public Works Works for You!



City of Alameda Public Works Department



City of Alameda
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What is a Green Business?

Reduce your use!

- Water
- Electricity
- Landfill
- Purchase thoughtfully
- Use less toxic alternatives



City of Alameda
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Public Works Works for You!



Green Business Vision

Certify Public
Works

Certify all city
departments



City of Alameda
**Public Works
Department**
Public Works Works for You!



California Green Business Program

Welcome | Registration | **My Application** | My Status | My Company Profile | My Report Card | Contact

Getting Started

GENERAL 100%

General Certification Measures

WASTE 100%

ENERGY 100%

WATER 100%

POLLUTION 100%

WASTEWATER 100%

SAVE

Last saved
10-08-2014 at 07:16PM

REVIEW & SUBMIT

General Certification Measures 3 / 3 Measures Completed

REQUIRED MEASURES - PLEASE COMPLETE ALL MEASURES

Measure description

1. Inform your customers about your business environmental efforts and what you are doing to meet the green business standards. For example: Post the Green Business logo, certification and pledge in a visible location; Post reminders listing steps you are taking to be a Green Business; Offer tours that highlight your Green Business successes; Offer customers green service or amenities options; Highlight your Green Business efforts and/or certification on your website, and link it to the GBP home page.
2. Adopt a written environmentally preferable (or green) purchasing policy. Ask your Green Business Coordinator for templates.
3. Establish a 'green team' that can help guide efforts to green your business.

YES NO N/A



YES NO N/A



YES NO N/A



Other Green Things Your Business is Doing

If you have another item that you believe your business should receive credit for, please let us know and staff will consider it. Please fill in information describing the measure:

EPP uploaded 3/4/14.

[Upload Documents](#)

Page 1 of 1

SAVE

PREVIOUS

CONTINUE



City of Alameda
Public Works Department
Public Works Works for You!



Time for an office remodel!



City of Alameda
**Public Works
Department**
Public Works Works for You!



Green remodel



City of Alameda
**Public Works
Department**
Public Works Works for You!



Refurbished cubicles



City of Alameda
**Public Works
Department**
Public Works Works for You!



The Green Certified Tail Wagging the Dog

- City Operations are not perfect!
- Green certified culture helps set expectations in all decisions
 - Purchasing
 - Materials use and recycling
 - Remodeling
 - Reuse/refurbish/repair



City of Alameda
**Public Works
Department**
Public Works Works for You!



Peer Recognition

2016 Sustainability Award

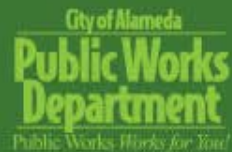
- American Public Works Association (APWA)
“Walking the Talk – Green Certifying
the City of Alameda”



THANKS to AMP...



Critical energy piece (Read: \$\$\$) ALREADY COMPLETE





Central Equipment Garage, Public Works GB Certified - December, 2013

- **First** GB Auto Repair Garage in Alameda
- **First** GB division of Alameda Public Works
- Reduced water consumption by **37%**
- Next: electric pool car fleet?

- **Bonus:** Awarded WaterSmart Certification by EBMUD (October, 2014)



City of Alameda
**Public Works
Department**
Public Works Works for You!



Water Conservation

- Toilets
 - 3.5+_{gpf} vs **1.6_{gpf}** vs 1.28_{gpf}
- Urinals
 - 2.0+_{gpf} vs. **1.0_{gpf}** vs. .5_{gpf}
 - Waterless?
- Faucet Aerators
 - Kitchen 2.2+_{gpm} vs 1.8_{gpm} vs 1.0_{gpm}
 - Lavatory 1.5_{gpm} vs .5_{gpm} (public)
 - Shower 2.5_{gpm}
- Irrigation



2006:



2015: Jerry Brown signs EO for strict water efficiency standards for CA



City of Alameda
Public Works Department
Public Works Works for You!



May 2017: 90% Complete

AMP

City Hall

Public Works (3 facilities)

Admin

Corp Yard

Fleet Garage

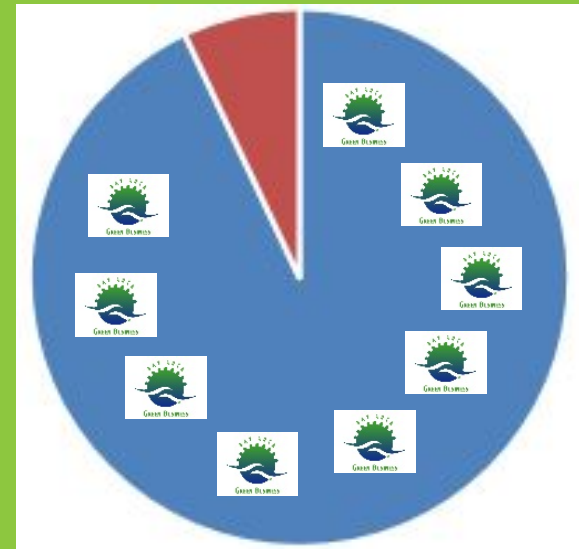
Main Library

Police

Senior Center

Rec and Park

Fire



City of Alameda
**Public Works
Department**
Public Works Works for You!



Questions?

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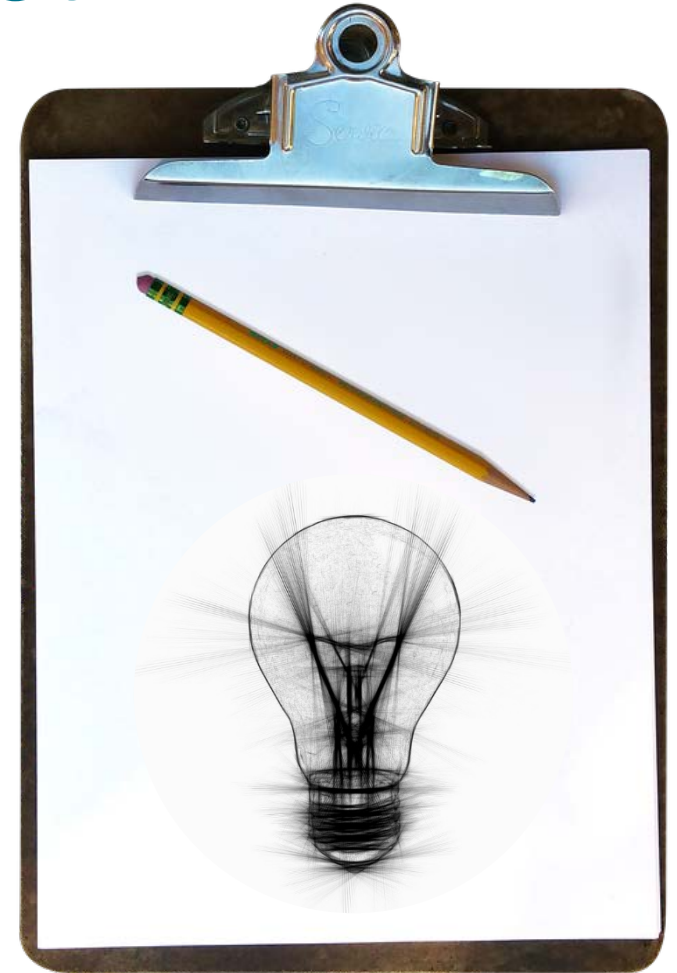


Workshop

Your next steps for conservation in your agency

Worksheet

- Sit on your own or with others from your agency/jurisdiction
- Fill out worksheet
- Worksheet will be scanned and emailed to you



Report-back

Your next steps for conservation in your agency

Thank You!

For more information:

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Karen.Cook@acgov.org

www.acsustain.org