FOOTHILL-DE ANZA
Community College District

Foothill–De Anza Community College District
Energy Master Plan Project
Energy and Sustainability Advisory Committee (ESAC)
Agenda
April 8, 2021
10:30 AM – 12:00 PM

Via Zoom:

1. Mission Statement Brainstorming

2. Campus Benchmarking
    - Overview of EPA Portfolio Manager presentation (attached)
    - Preliminary Benchmarking Results (to be provided 4/7/21)

3. Initiate Discussion on Goals, Criteria, Timelines
    - Energy theme for Measure G Projects
    - Board of Governors (BOG) Policy Goals (attached)

4. Action Items, Schedule Review, and Next Steps

Next Meetings: *April 22, May 6, May 20*

FOOTHILL-DE ANZA
Community College District

Foothill–De Anza Community College District
Energy Master Plan Project
Energy and Sustainability Advisory Committee (ESAC)
Kick-Off Meeting Notes
March 25, 2021
10:30 AM – 12:00 PM

Meeting notes complied by Matt Sullivan

1. Introductions
    - Team Question - What does Sustainability mean to you?

    Team Responses:
    - *We've known our environmental problems for a long time but haven't successfully effected change. What actions can we take now to truly effect change?*
    - *How can we be proactive instead of reactive?*
    - *Need to bring a student perspective to sustainability and provide learning opportunities.*
    - *Sustainability is meeting the collective needs now without jeopardizing future needs.*
    - *We need to focus on eliminating natural gas from the campuses and implement electrification strategies.*
    - *Sustainability is living with the natural world to meet our needs.*
    - *To have a cleaner environment use natural resources.*

2. Review of Project Scope

    Action Item: Matt will send a copy of the BOG policy and Sustainability Template Addendum to the team.

3. Review of CCC Sustainability Template and Planning Process

    Julie stressed the need to have a monitoring and reporting mechanism for progress in implementing the plan otherwise we will not be successful.

4. Review Work Plan, Schedule, and Meeting Frequency

5. Next Steps

- Finalize District Team Membership and Roles – Are all stakeholders represented? Chair, Vice Chair, Secretary, etc.,

Joel and Robert will be co-chairs. Julie will be PIO. Belen will take meeting notes. Matt will record Action Items.

Action Item: Julie will research the best place to put planning documents on the District website so all can have access.

- Brainstorm Vision Statement – see example

Action Item: Team will brainstorm and develop Mission Statement ideas as homework for the next meeting.

- Review Draft BOG Policy Board Resolution – see example

Action Item: Matt will send a copy of the sample BOG Policy resolution to the team.

Action Item: Matt will send a list of information needs to Joel needed to start the Energy Benchmarking process.

Next Meeting: *April 8, April 22, May 6, May 20*

Action Item: Joel will send out a Survey Monkey to confirm future meeting dates. However, pencil in April 8 at 10:30 am for the next meeting

FHDA Energy Master Plan Project
Action Item List
Updated: 3/25/2021

Action Item No.	Description	Responsibility	Due Date	Status	Notes
1	Matt will send a copy of the BOG Policy and Sustainability Template Addendum to the team.	Matt	25-Mar	Complete	
2	Julie will research the best place to put planning documents on the District website so all can have access.	Julie	8-Apr	In Progress	
3	Team will brainstorm and develop Mission Statement ideas as homework for the next meeting.	Team	8-Apr	In Progress	
4	Matt will send a copy of the sample BOG Policy Resolution to the team.	Matt	25-Mar	Complete	
5	Matt will send a list of information needs to Joel needed to start the Energy Benchmarking process.	Matt	25-Mar	Complete	
6	Joel will send out a Survey Monkey to confirm future meeting dates. However, pencil in April 8 at 10:30 am for the next meeting	Joel	25-Mar	In Progress	

ENERGY STAR®

PortfolioManager®

An Overview of Portfolio Manager for Commercial Building Benchmarking

2019

EPA United States Environmental Protection Agency

Benchmarking allows you to:

Compare your building to a **national sample** of similar buildings

Compare your buildings of a similar type to **each other**

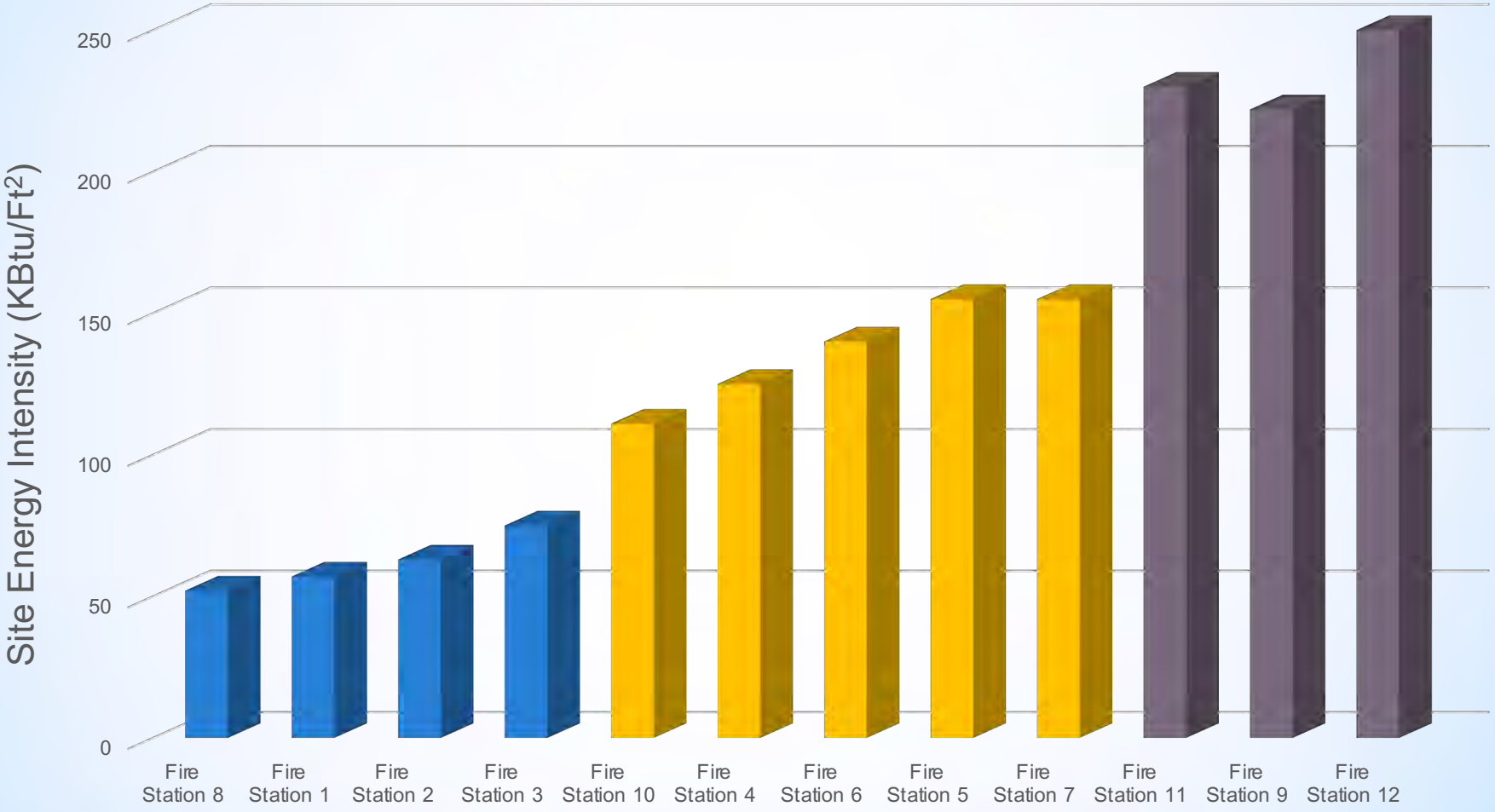
Identify underperformers in your portfolio and set priorities for the use of limited staff time and/or investment capital

ANY building can be benchmarked.

Benchmarking allows you to:

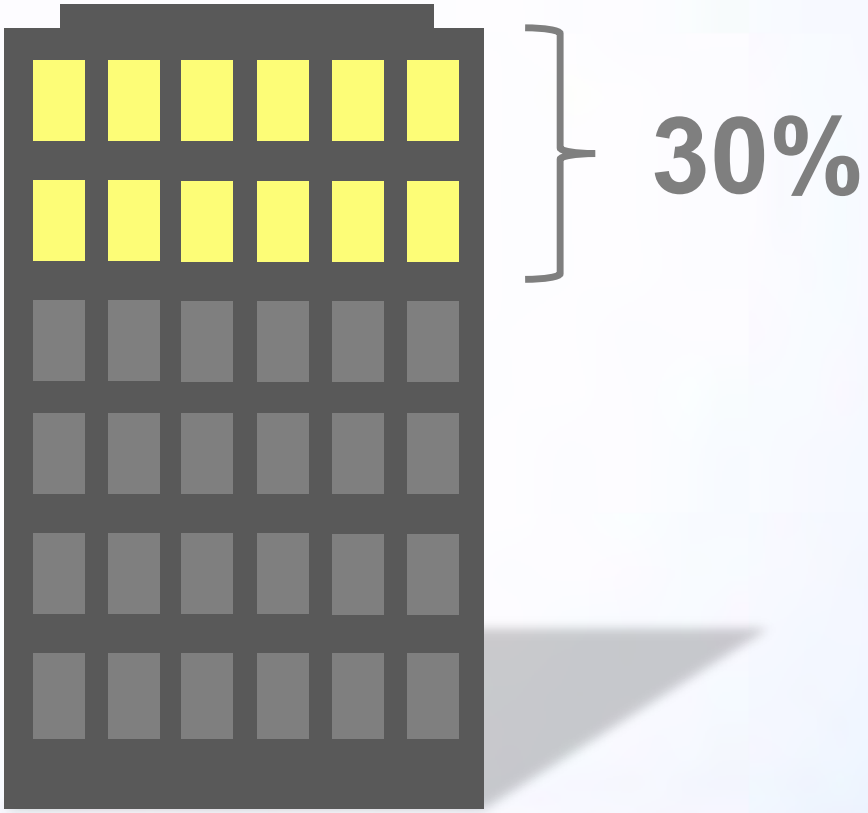
- Evaluate portfolio-wide performance
- Understand individual building performance
- Compare energy performance to national median
- Identify and address potential problems by looking at monthly trends
- Track the impact of energy, water, waste management strategies

Range in Energy Performance: A City's Fire Stations



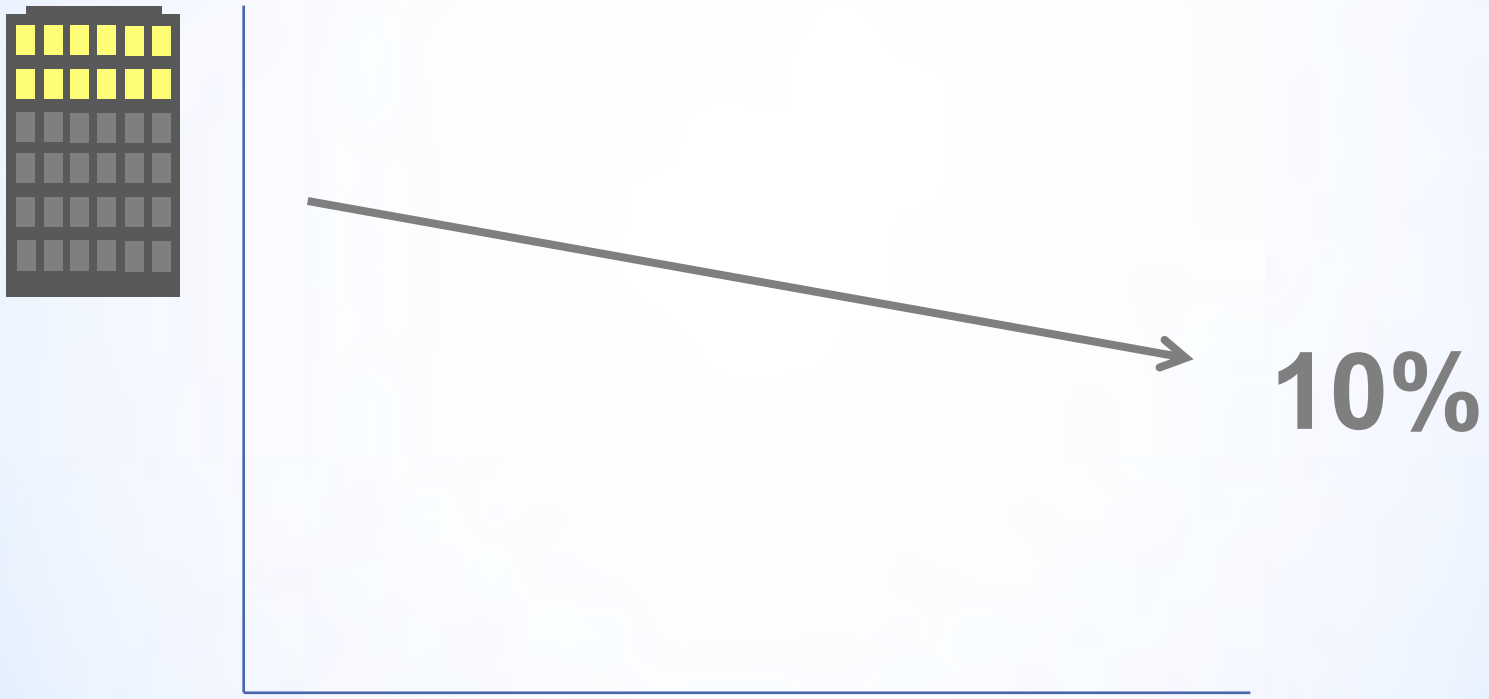
Why focus on buildings and plants?

Energy waste in commercial buildings



Why focus on buildings and plants?

Low- to no-cost reduction potential



ENERGY STAR® Portfolio Manager®

- Launched Portfolio Manager in 1999 to help organizations increase efficiency of energy use
- Built on the principle that the foundation of good management is good information
  - Energy tracking and management was not widely practiced; no standardization
  - Designed for the use of building owners and managers, not for reporting to EPA
- Added water tracking in 2006, in collaboration with EPA's WaterSense
- Added waste tracking in 2016, in collaboration with EPA's Office of Resource Conservation & Recovery

ENERGY STAR® Portfolio Manager®

Management Tool

- Assess whole building energy and water consumption
- Track green power purchase
- Share/report data with others
- Track changes in energy, water, greenhouse gas emissions, and cost over time
- Create custom reports
- Apply for ENERGY STAR certification

ENERGY STAR® Portfolio Manager®

Hundreds of metrics, including:

Energy use
Source, site, weather normalized, demand

Water use
Water use intensity, Water Score (for Multifamily)

Waste & Materials
Waste intensity, diversion rate

1-100 ENERGY STAR score

GHG emissions
Indirect, direct, total, avoided

Learn more about Portfolio Manager

- Visit www.energystar.gov/buildings/training
  - Step-by-Step guides for using Portfolio Manager
  - Access to live and recorded webinars
  - Webinar slides for Portfolio Manager 101, 201, and 301
  - Short videos to help you create a property, create meters, populate meters, create reports, and more!

Tap into ENERGY STAR Technical Assistance

- On-demand user support, and answers to frequently asked questions at www.energystar.gov/buildingshelp
- Attend a live "Ask the Expert" session scheduled via https://esbuildings.webex.com

ENERGY STAR® Portfolio Manager®

Free. Online. Secure.

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FOOTHILL-DE ANZA
Community College District

Foothill – De Anza Community College District
Energy Master Plan

Preliminary Benchmarking Results

April 8, 2021

SULLIVAN CONSULTING
ENERGY AND SUSTAINABILITY

Presentation Topics

FOOTHILL-DE ANZA
Community College District

- Overview of FHDA Energy Performance using EPA Portfolio Manager
- Benchmark campuses against National Median
- Energy Usage by Fuel Type for each campus
- GHG emissions and Intensity for each campus
- Conclusions and Next Steps

Preliminary Benchmarking Overall Results

Property Name	Site Energy Use (kBtu)	Source Energy Use (kBtu)	Site EUI (kBtu/ft²)	Source EUI (kBtu/ft²)	Total GHG Emissions (Metric Tons CO2e)	Total GHG Emissions Intensity (kgCO2e/ft²)
De Anza College	78,795,293	127,253,259	82.4	133.1	4,053	4.2
Foothill College	69,445,147	98,558,219	96.8	137.4	3,492	4.9
FHC Sunnyvale Center	1,537,328	4,194,968	32.7	89.3	101	2.2

Source Energy Use is the total amount of all the raw fuel required to operate facilities, including losses that take place during generation, transmission, and distribution measured in kBtu

Preliminary Benchmarking Results - De Anza

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Community College District

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ENERGY STAR® Statement of Energy Performance

Energy Consumption and Energy Use Intensity (EUI)

Site EUI
82.4 kBtu/ft²

Source EUI
133.1 kBtu/ft²

Annual Energy by Fuel

Electric - Solar (kBtu)	8,859,495 (11%)
Natural Gas (kBtu)	44,243,697 (56%)
Electric - Grid (kBtu)	25,692,100 (33%)

National Median Comparison

National Median Site EUI (kBtu/ft²)	111.8
National Median Source EUI (kBtu/ft²)	180.6
% Diff from National Median Source EUI	-26%

Annual Emissions

Greenhouse Gas Emissions (Metric Tons CO2e/year)	4,053

Preliminary Benchmarking Results – De Anza

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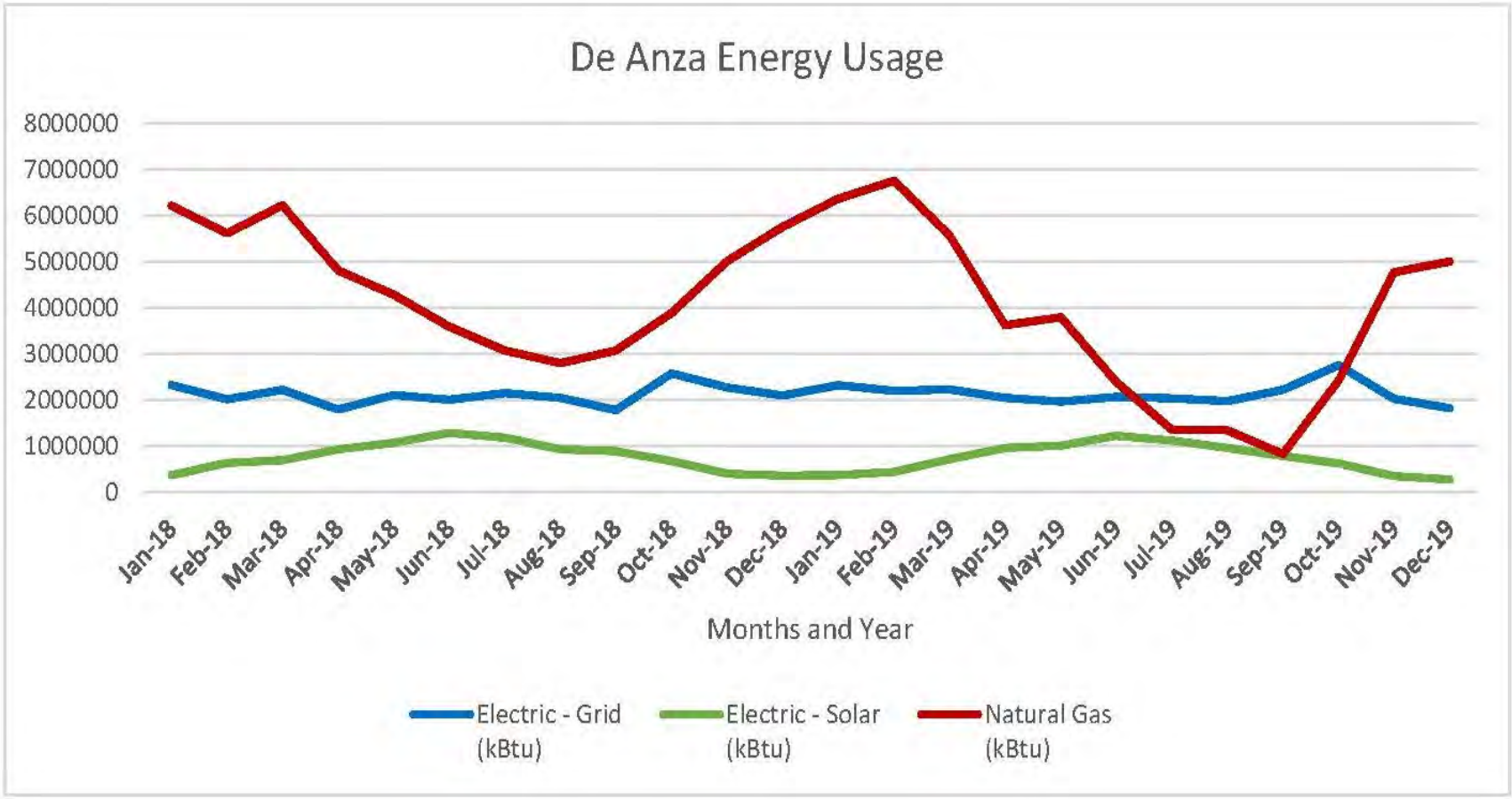
Community College District



Preliminary Benchmarking Results - Foothill

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ENERGY STAR® Statement of Energy Performance

Energy Consumption and Energy Use Intensity (EUI)

Site EUI
96.8 kBtu/ft²

Source EUI
137.4 kBtu/ft²

Annual Energy by Fuel

Natural Gas (kBtu)	47,191,002 (68%)
Electric - Solar (kBtu)	7,391,078 (11%)
Electric - Grid (kBtu)	14,863,068 (21%)

National Median Comparison

National Median Site EUI (kBtu/ft²)	127.3
National Median Source EUI (kBtu/ft²)	180.6
% Diff from National Median Source EUI	-24%

Annual Emissions

Greenhouse Gas Emissions (Metric Tons CO2e/year)	3,492

Preliminary Benchmarking Results – Foothill

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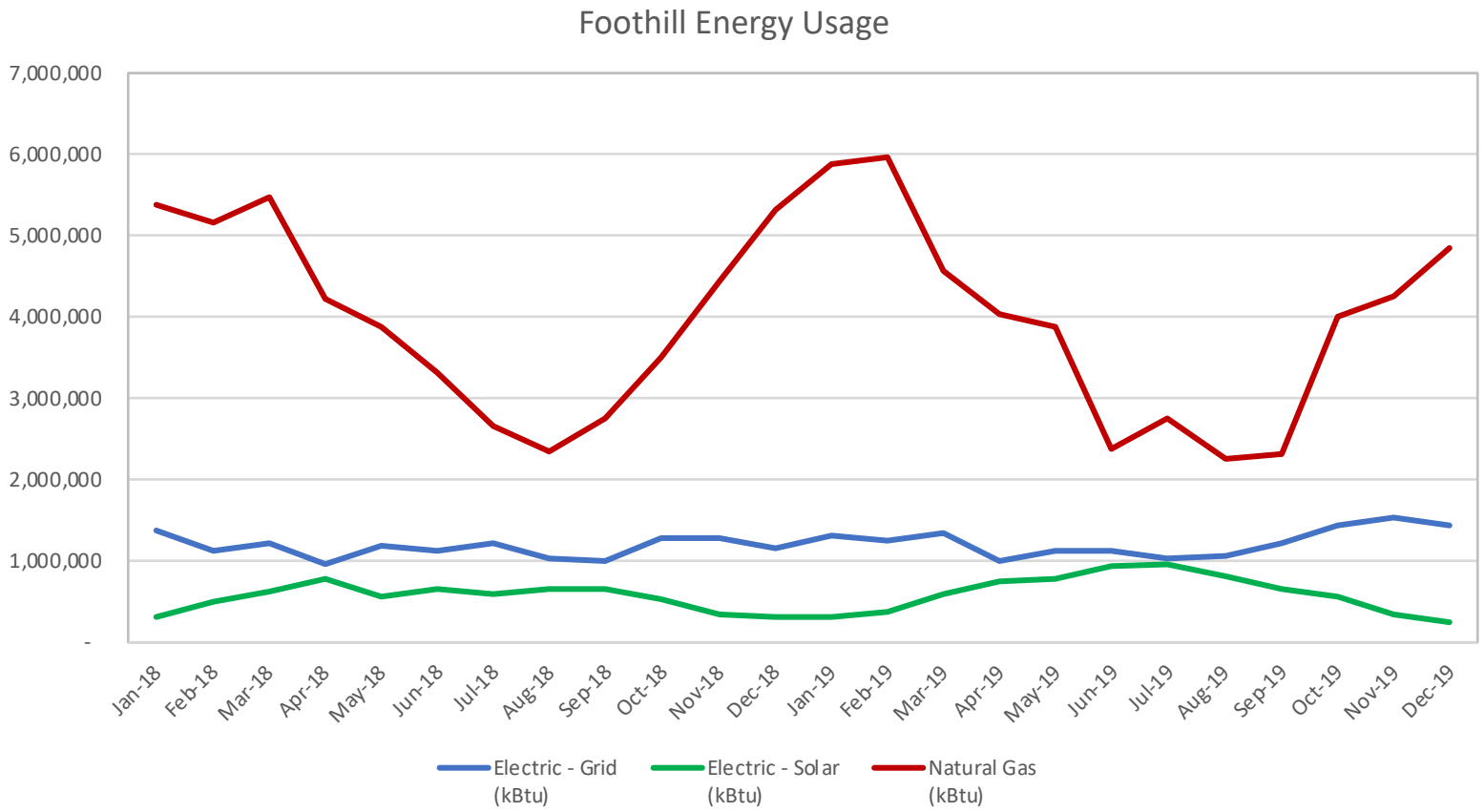

Preliminary Benchmarking Results – FHC Sunnyvale Center

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ENERGY STAR® Statement of Energy Performance

Energy Consumption and Energy Use Intensity (EUI)

Site EUI
32.7 kBtu/ft²

Source EUI
89.3 kBtu/ft²

Annual Energy by Fuel

Electric - Grid (kBtu)	1,474,728 (96%)
Natural Gas (kBtu)	62,600 (4%)

National Median Comparison

National Median Site EUI (kBtu/ft²)	66.2
National Median Source EUI (kBtu/ft²)	180.6
% Diff from National Median Source EUI	-51%

Annual Emissions

Greenhouse Gas Emissions (Metric Tons CO2e/year)	101

Preliminary Benchmarking Results – FHC Sunnyvale Center

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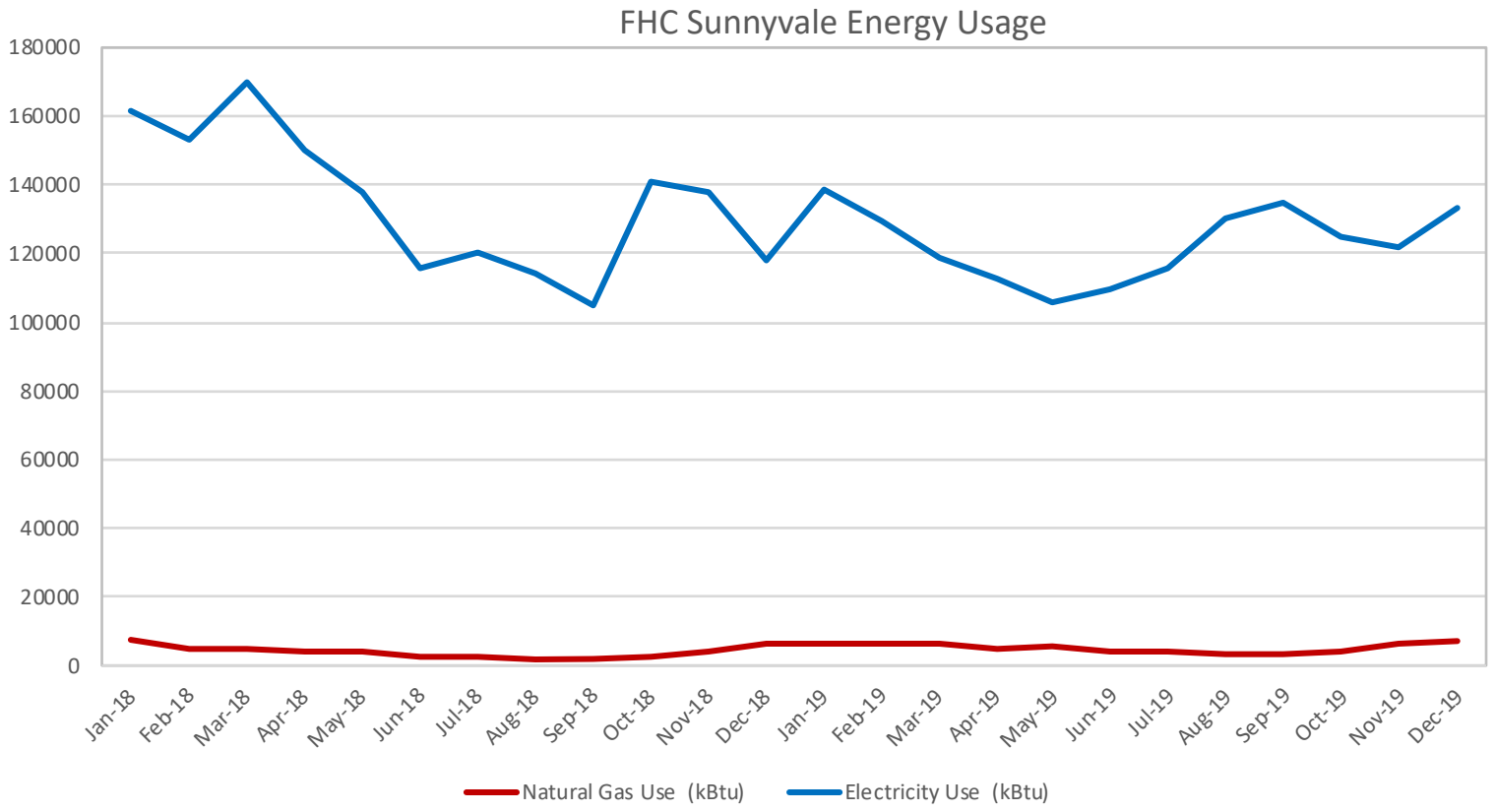
Community College District



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Preliminary Benchmarking
Campus EUI Comparisons

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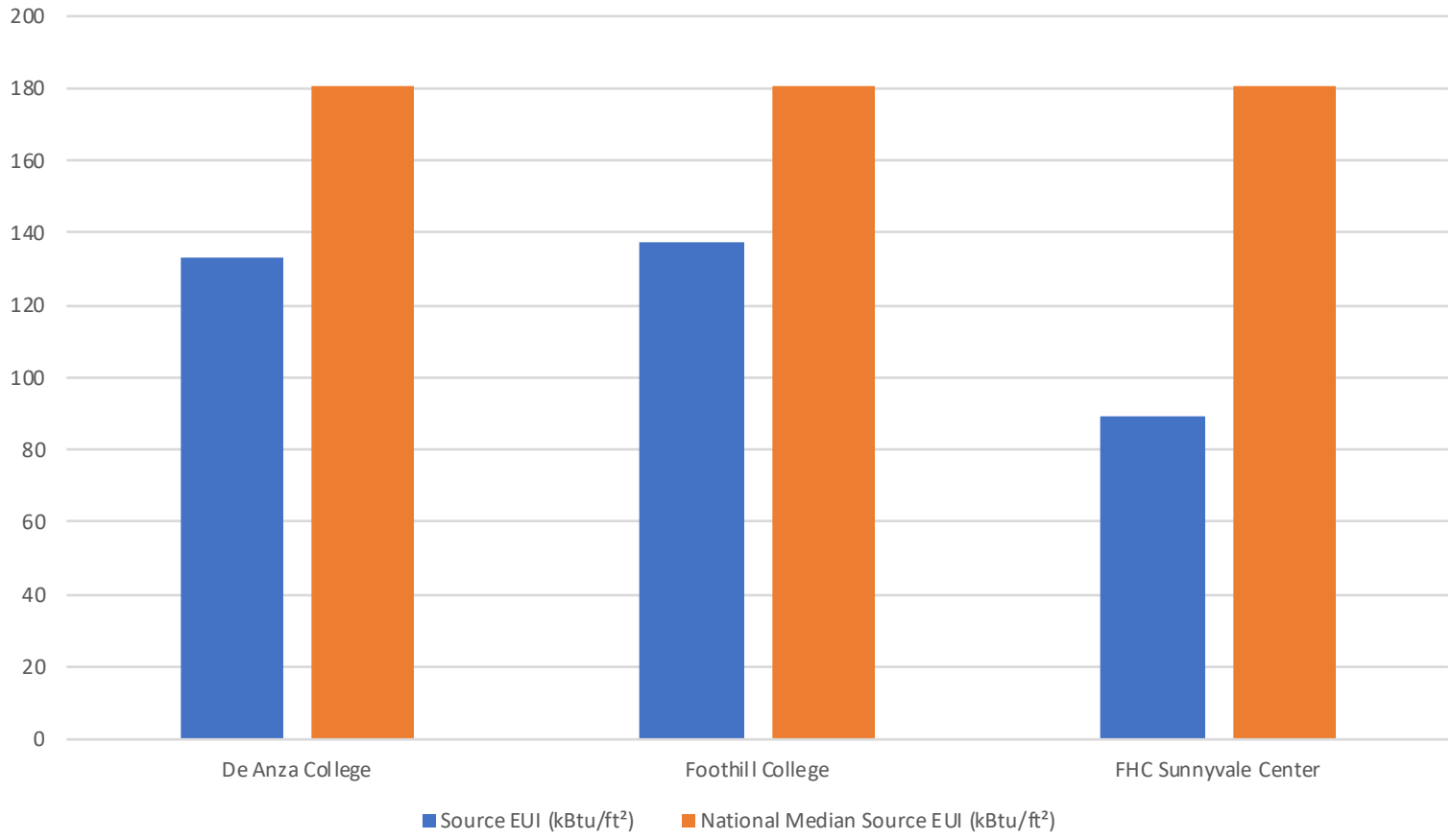

Preliminary Benchmarking
DGS Target Source EUI for ZNE

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State of California Energy Efficiency Targets for Existing State Buildings Pursuing Zero Net Energy (ZNE)
The flollowing energy efficiency targets for existing state buildings represent the top quartile (75%) of energy efficiency*
Metric for energy efficiency used is Source Energy Use Intensity (Source EUI)**

State Building Type	Source EUI Targets for State Climate Zones***												
	CA Ave	1	2	3	4	5	6	7	8	9	10	11	12
Conversion Factors for Zones	1.00	0.99	1.01	0.92	0.97	0.95	0.94	0.90	0.95	0.97	0.99	1.06	1.02
Adult Education - CA Conservation Corps	54	53	55	50	52	51	51	49	51	52	53	57	55
CA Community College Campuses (CCCC's)	98.4	97	99	91	95	93	92	89	93	95	97	104	100
CCCC's Science/Tech/Eng./Math (STEMs)	130.5	129	132	120	127	124	123	117	124	127	129	138	133
College/University	142	141	143	131	138	135	133	128	135	138	141	151	145
Data Center	100	99	101	92	97	95	94	90	95	97	99	106	102
Fire Station - CALFIRE	65	64	66	60	63	62	61	59	62	63	64	69	66
K-12 School	85	84	86	78	82	81	80	77	81	82	84	90	87
Laboratory	261	259	264	240	254	248	246	235	248	254	259	277	267
Library/Museum	114	113	115	105	111	108	107	103	108	111	113	121	116
Mixed Use Property (CALFIRE)	49	48	49	45	47	46	46	44	46	47	48	52	50
Multi-family Housing													

Preliminary Benchmarking
Campus GHG Comparisons

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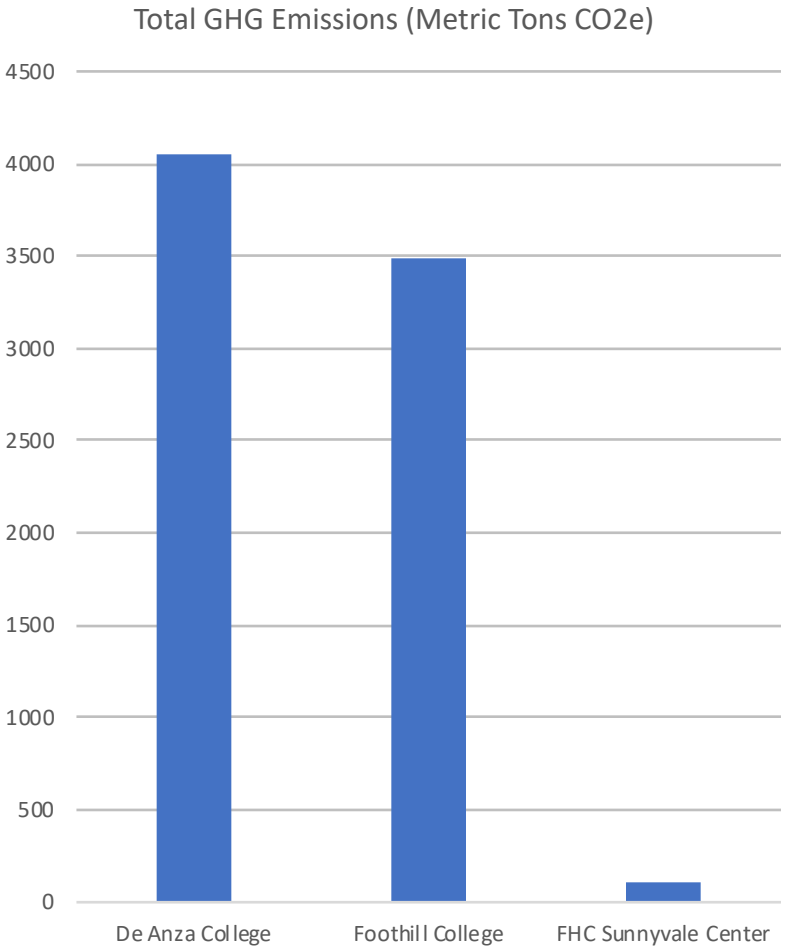
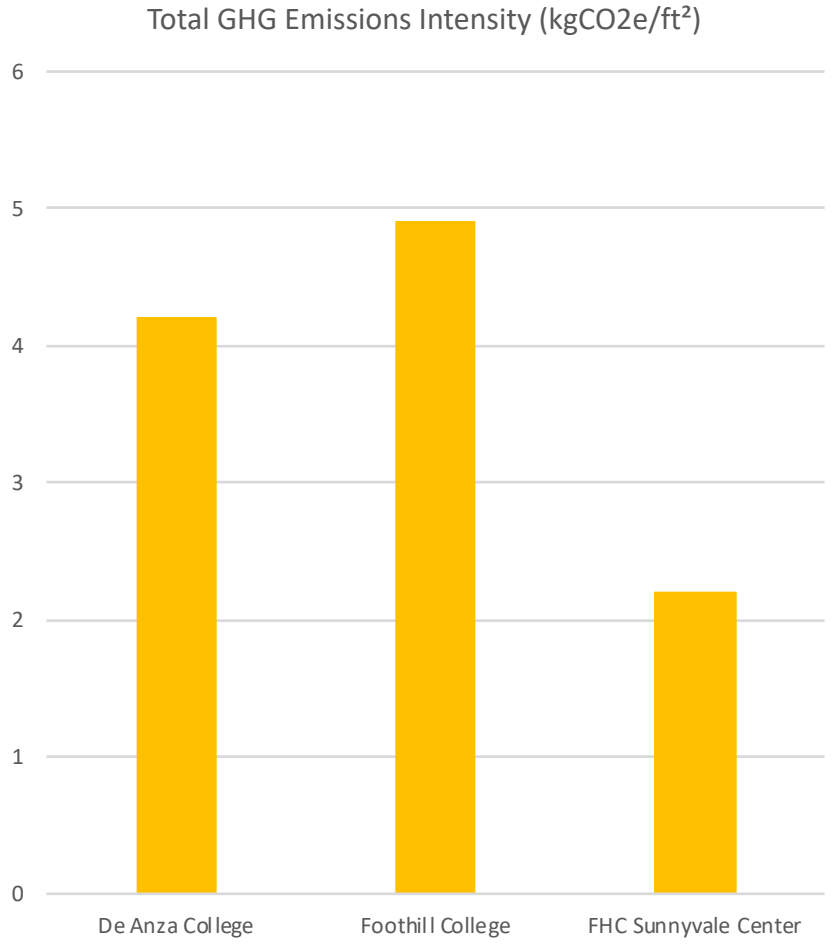
Community College District





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Preliminary Benchmarking

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Conclusions

- FHDA Energy Performance is significantly better than National Median for same building/campus type
- Improvement needed to achieve DGS ZNE target EUI
- Significant solar generation improves GHG performance at Foothill and De Anza

Preliminary Benchmarking

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Conclusions – cont.

- Significant challenge for electrification of natural gas usage at Foothill and De Anza
- Building-level Benchmarking would be valuable in developing improvement strategies and should be considered for recommendations in Energy Master Plan

Preliminary Benchmarking

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Next Steps

- Verify final GSF, parking, EV chargers, and building type for FHC Sunnyvale
- Generate additional Reports as requested by ESAC
- Issue Final Benchmarking Report (will be included in Energy Master Plan)
- Set Improvement Targets as part of Energy Master Plan preparation and monitor progress over time

FOOTHILL-DE ANZA
Community College District

Questions?

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Table 1. California Community Colleges Goals for Addressing Climate Change and Furthering Environmental Sustainability.

Goals by 2025	Goals by 2030
1. Reduce greenhouse gas emission to 30 percent below 1990 levels.	Reduce greenhouse gas emission to 40 percent below 1990 levels.
2. Increase renewable energy consumption to 25 percent.	Increase renewable energy consumption to 50 percent.
3. 25 percent of fleet vehicles are zero-emission vehicles.	50 percent of fleet vehicles are zero-emission vehicles.
4. 50 percent of all new buildings and major renovations will be constructed as Zero Net Energy.	100 percent of all new buildings and major renovations will be constructed as Zero Net Energy.
5. 50 percent of all new buildings and major renovations will achieve at least a Leadership in Energy and Environmental Design (LEED) "Silver" or equivalent rating.	100 percent of all new buildings and major renovations will achieve at least a Leadership in Energy and Environmental Design (LEED) "Silver" or equivalent rating.
6. Increase procurement of sustainable products and services by 20 percent compared to current levels.	Increase procurement of sustainable products and services by 25 percent compared to current levels.
7. Reduce municipal solid waste by 25 percent compared to current levels.	Reduce municipal solid waste by 50 percent compared to current levels.

ATTACHMENTS:

Attachment 1: Resolution of the Board of Governors California Community Colleges
Attachment 2: California Community Colleges Board of Governors Climate Change and Sustainability Policy