City of Sunnyvale

Notice and Agenda - Final

Planning Commission

Monday, September 14, 2020 | **7:00 PM** | **Telepresence Meeting: City Web Stream | Comcast Channel 15**

Study Session Canceled | Special Meeting - Public Hearing - 7:00 PM

TELECONFERENCE NOTICE

Because of the COVID-19 emergency and the "shelter in place" orders issued by Santa Clara County and the State of California, the meeting of the Sunnyvale Planning Commission on September 14, 2020, will take place by teleconference, as allowed by Governor Gavin Newsom's Executive Order N-29-20.

• Watch the Planning Commission meeting on television over Comcast Channel 15, at https://Sunnyvale.ca.gov/YouTubeMeetings or https://Sunnyvaleca.Legistar.com/Calendar.aspx

• Submit written comments to the Planning Commission up to 4 hours prior to the meeting to planningcommission@sunnyvale.ca.gov or by mail to Sunnyvale Planning Division, 456 W. Olive Avenue, Sunnyvale, CA 94086-3707.

*• Teleconference participation: You may provide audio public comment by connecting to the teleconference meeting online or by telephone. Use the Raise Hand feature to request to speak (*9 on a telephone):*

Meeting Online Link: https://sunnyvale-ca-gov.zoom.us/j/91827390357
Meeting call-in telephone number: 833-548-0276 | Meeting ID: 918 2739 0357

Pursuant to the Americans with Disabilities Act (ADA) and Executive Order N-29-20, if you need special assistance to provide public comment, contact the City at least 2 hours prior to the meeting in order for the City to make reasonable alternative arrangements for you to communicate your comments. For other special assistance, please contact the City at least 48 hours prior to the meeting to enable the City to make reasonable arrangements to ensure accessibility to this meeting. The Planning Division may be reached at 408-730-7440 or at planning@sunnyvale.ca.gov (28 CFR 35.160 (b) (1)).

STUDY SESSION CANCELED

7:00 PM PLANNING COMMISSION MEETING

CALL TO ORDER

Call to Order via teleconference.

ROLL CALL

ORAL COMMUNICATIONS

This category provides an opportunity for members of the public to address the commission on items not listed on the agenda and is limited to 15 minutes (may be extended or continued after the public hearings/general business section of the agenda at the discretion of the Chair) with a maximum of up to three minutes per speaker. Please note the Brown Act (Open Meeting Law) does not allow the Planning Commission to take action on an item not listed on the agenda. If you wish to address the Planning Commission, please refer to the notice at the beginning of this agenda. Individuals are limited to one appearance during this section.

CONSENT CALENDAR

All matters listed on the consent calendar are considered to be routine and will be acted upon by one motion. There will be no separate discussion of these items. If a member of the public would like a consent calendar item pulled and discussed separately, please refer to the notice at the beginning of this agenda.

1.A 20-0817 Approve Planning Commission Meeting Minutes of August 24, 2020

Recommendation: Approve Planning Commission Meeting Minutes of August 24, 2020 as submitted.

1.B 20-0813 **Proposed Project:** **DESIGN REVIEW** to allow a 70 square foot shed at 8 feet in height, resulting in 4,836 square feet gross floor area (4,360 square feet living area, 406 square feet garage and 70 square feet shed) and 44% Floor Area Ratio (FAR).
Location: 1630 Manitoba Dr. (APN: 323-22-044)
File #: 2020-7435
Zoning: R-1
Applicant / Owner: Kenneth and Donna Okumura
Environmental Review: A Class 3 Categorical Exemption relieves this project from California Environmental Quality Act (CEQA) provisions.

Project Planner: Aastha Vashist, (408) 730-7458, avashist@sunnyvale.ca.gov

Recommendation: Alternative : Approve the Design Review with the Conditions of Approval in Attachment 4.

PUBLIC HEARINGS/GENERAL BUSINESS

If you wish to speak to a public hearing/general business item, please refer to the notice at the beginning of this agenda. Each speaker is limited to a maximum of three minutes.

2. 20-0783 Forward a Recommendation to the City Council to approve a Phased Reach Codes program and implement Phase 1 for new Residential and Non-Residential Construction Projects: Introduce an Ordinance to Amend Chapter 16.42 (Energy Code) of Title 16 (Buildings and Construction) and Find that the Action is Exempt from CEQA

Recommendation: Alternative 1: Forward a recommendation to the City Council to approve a Phased Reach Codes program and implement Phase 1 for new Residential and Non-Residential Construction Projects: Introduce an Ordinance to Amend Chapter 16.42, Energy Code, of Title 16 (Buildings and Construction) and Find that the Action is Exempt from the California Environmental Quality Act (CEQA) pursuant to CEQA Guidelines Sections 15308, 15305 and 15061.

STANDING ITEM: CONSIDERATION OF POTENTIAL STUDY ISSUES

NON-AGENDA ITEMS AND COMMENTS

-Commissioner Comments

-Staff Comments

ADJOURNMENT

Notice to the Public:

Any agenda related writings or documents on this agenda distributed to members of the Planning Commission are available by contacting the Planning Division at planning@sunnyvale.ca.gov. Agendas and associated reports are also available at sunnyvaleca.legistar.com/calendar.aspx 72 hours before the meeting.

Planning a presentation for a Planning Commission meeting? To help you prepare and deliver your public comments, please review the "Making Public Comments During City Council or Planning Commission Meetings" document available on the City website.

PLEASE TAKE NOTICE that if you file a lawsuit challenging any final decision on any public hearing item listed in this agenda, the issues in the lawsuit may be limited to the issues which were raised at the public hearing or presented in writing to the City at or before the public hearing.

PLEASE TAKE FURTHER NOTICE that Code of Civil Procedure section 1094.6 imposes a 90-day deadline for the filing of any lawsuit challenging final action on an agenda item which is subject to Code of Civil Procedure section 1094.5. Pursuant to the Americans with Disabilities Act (ADA), if you need special assistance in this meeting, please see the notice at the beginning of this agenda.

City of Sunnyvale

Agenda Item 1.A

20-0817 **Agenda Date:** 9/14/2020

SUBJECT
Approve Planning Commission Meeting Minutes of August 24, 2020

RECOMMENDATION
Approve Planning Commission Meeting Minutes of August 24, 2020 as submitted.

City of Sunnyvale

Meeting Minutes - Draft
Planning Commission

Monday, August 24, 2020 | **6:00 PM** | **Telepresence Meeting: City Web Stream | Comcast Channel 15**

Special Meeting - Study Session - 6:00 PM | Special Meeting - Public Hearing - 7:30 PM

TELECONFERENCE NOTICE

6:00 PM STUDY SESSION

Call to Order

Roll Call

Study Session

A. 20-0293 General Plan Update - Air Quality, Noise, and Environmental Justice
Project Planner: Mary Jeyaprakash, (408) 730-7449, mjeyaprakash@sunnyvale.ca.gov

B. 20-0769 **Proposed Project:**
SPECIAL DEVELOPMENT PERMIT: for an 85-feet tall six-story building with 8,732 square feet retail, 155,469 square feet office and three levels of parking (including two above ground and one underground).
Location: 300 South Mathilda Avenue (APN: 209-34-019)
File #: 2019-7923
Zoning: DSP-18
Applicant / Owner: STC Venture LLC (applicant/owner)
Environmental Review: The proposed project is exempt pursuant to CEQA Guidelines Section 15183-Project Consistent with a Community Plan and was previously evaluated in the Downtown Specific Plan EIR (SCH # 2018052020) which was Certified by the City Council on August 11, 2020.
Project Planner: Aastha Vashist, (408) 730-7458, avashist@sunnyvale.ca.gov

Public Comment on Study Session Agenda Items

Adjourn Study Session

7:30 PM PLANNING COMMISSION MEETING

CALL TO ORDER

Chair Howard called the meeting to order at 7:45 PM via teleconference.

ROLL CALL

Present: 6 - Chair Daniel Howard
Commissioner Sue Harrison
Commissioner John Howe
Commissioner Ken Olevson
Commissioner Ken Rheaume
Commissioner Carol Weiss

Absent: 1 - Vice Chair David Simons

Vice Chair Simons's absence is excused.

ORAL COMMUNICATIONS

CONSENT CALENDAR

MOTION: Commissioner Howe moved and Commissioner Harrison seconded the motion to approve the Consent Calendar.

The motion carried by the following vote:

Yes: 6 - Chair Howard
Commissioner Harrison
Commissioner Howe
Commissioner Olevson
Commissioner Rheaume
Commissioner Weiss

No: 0

Absent: 1 - Vice Chair Simons

1.A 20-0784 Approve Planning Commission Meeting Minutes of August 10, 2020

1.B 20-0785 APPLICATION WITHDRAWN
Proposed Project: General Plan Amendment Initiation request to study amending the General Plan designation from Low Density Residential to Low-Medium Density Residential on a 0.94 acre site
Location: 640 Lakehaven Drive (APN: 110-16-040)

File #: 2020-7030
Zoning: R-0/PD (Low Density Residential/Planned Development)
General Plan: Low Density Residential
Applicant / Owner: GSJ & 2 LLC
Environmental Review: The project is exempt from the California Environmental Quality Act (CEQA) pursuant to CEQA Guidelines Section 15378(a).
Project Planner: Aastha Vashist, (408) 730-7458, avashist@sunnyvale.ca.gov

PUBLIC HEARINGS/GENERAL BUSINESS

STANDING ITEM: CONSIDERATION OF POTENTIAL STUDY ISSUES

NON-AGENDA ITEMS AND COMMENTS

-Commissioner Comments

-Staff Comments

Assistant Director Andrew Miner stated that on August 11, 2020 the City Council approved the Downtown Specific Plan Amendment, Parking Study and Development Agreements and the related ordinances are scheduled for City Council consideration at the August 25, 2020 meeting. He added that on August 25, 2020 the City Council will also consider an appeal for the proposed hotel at 1296 Lawrence Station Road that the Planning Commission heard on June 16, 2020.

ADJOURNMENT

Chair Howard adjourned the meeting at 7:48 PM.

City of Sunnyvale

Agenda Item 1.B

20-0813 **Agenda Date:** 9/14/2020

REPORT TO PLANNING COMMISSION

SUBJECT

Proposed Project: DESIGN REVIEW to allow a 70 square foot shed at 8 feet in height, resulting in 4,836 square feet gross floor area (4,360 square feet living area, 406 square feet garage and 70 square feet shed) and 44% Floor Area Ratio (FAR).
Location: 1630 Manitoba Dr. (APN: 323-22-044)
File #: 2020-7435
Zoning: R-1
Applicant / Owner: Kenneth and Donna Okumura
Environmental Review: A Class 3 Categorical Exemption relieves this project from California Environmental Quality Act (CEQA) provisions.
Project Planner: Aastha Vashist, (408) 730-7458, avashist@sunnyvale.ca.gov

REPORT IN BRIEF

General Plan: Low Density Residential
Existing Site Conditions: One-story single-family residence
Surrounding Land Uses
- **North:** One-story single-family residence
- **South:** One-story single-family residence
- **East:** Two-story condominiums
- **West:** One-story single-family residence

Issues: Neighborhood compatibility
Staff Recommendation: Approve the Design Review with recommended conditions in Attachment 4.

BACKGROUND

Description of Proposed Project

The applicant proposes an 8-foot-tall, 70-square foot accessory structure on a 10,980 square foot irregular-shaped lot with an existing one-story single-family residence resulting in 4,836 square feet gross floor area with 44% FAR.

In most cases, accessory structures in the rear yard that are up to 8 feet in height do not require a planning permit. However, a Design Review permit with Planning Commission approval is required in this situation because the accessory structure increases the building floor area on a lot that already exceeds 3,600 square feet. The permit evaluates compliance with the development standards and the City's Single-Family Home Design Techniques.

See Attachment 1 for a map of the vicinity and mailing area for notices and Attachment 2 for the Data Table of the project.

Previous Actions on the Site
A Design Review permit (2018-8016) was approved by Planning Commission in 2019 to allow a solid roof over a 407 square foot attached patio resulting in 4,766 square feet gross floor area. A front porch and two rear patios with trellis roofing were previously approved through a staff-level design review permit (2018-7792). There are no other Planning applications or active Neighborhood Preservation complaints on this property.

ENVIRONMENTAL REVIEW
A Class 3 Categorical Exemption relieves this project from California Environmental Quality Act (CEQA) provisions. Class 3(e) Categorical Exemption includes construction of accessory structures and installation of small new equipment and facilities in small structures.

DISCUSSION

Present Site Conditions
The project site is located within a residential neighborhood bordered by The Dalles Avenue in the north, South Mary Avenue in the west, Hollenbeck Avenue towards east and Homestead Road on the south. The immediate neighborhood is comprised of predominantly one-story single-family home residences that were mostly built in 1960s with Ranch-style architecture. The subject property is pie-shaped with a narrow street frontage that gradually widens along the north side (rear) of the property. The site is developed with an existing one-story house with Ranch-style characteristics, including hip roofs, exterior stucco and stone skirting finish. No modifications are proposed to the existing house.

Site Layout and Architecture
The applicant proposes to construct an 8-foot tall detached storage shed (utility building) that is 70 square feet in size for the purpose of storing common household items. The proposed shed will be located in the rear yard, with zero setback along the left side property line and a 5-foot setback along the rear property line. The proposed shed maintains clearance requirements for existing easements that run along the rear property line. The shed is designed to be architecturally compatible with the existing house by using composition shingle roofing material, lap siding for wall finish and 4:12 roof pitch.

Sunnyvale Municipal Code (SMC) Section 19.94.040 generally allows detached utility buildings up to 8 feet in height with no setback requirements or a Planning permit. However, the floor area of a utility building is counted towards the building floor area on a lot. The existing house is 4,766 square feet in size with a floor area ratio (FAR) of 43.4%. The proposed 70 square foot shed will result a gross floor area of 4,836 and 44% FAR. Planning Commission review is required to exceed 3,600 square feet or 45% FAR.

Development Standards
The proposed project complies with all the applicable development standards including lot coverage and distance between main and accessory structure requirements. As previously noted, the shed is not subject to setback requirements. The Project Data Table for the proposed project can be found in Attachment 2.

Neighborhood Impacts
Gross floor area and FAR are a measurement of bulk and mass. The proposed shed is small in size,

is tucked towards the back of the property and is not visible from the street frontages. The proposed 8-foot shed height is approximately the same height as that of the adjoining fence which will further minimize any visual impact to the surrounding neighbors. Therefore, staff does not expect visual, privacy or noise impacts to result with approval of the project.

Applicable Design Guidelines: The proposed project is consistent with the adopted Single-Family Home Design Techniques. The recommended Findings can be found in Attachment 3.

FISCAL IMPACT

No fiscal impacts other than normal fees and taxes are expected.

PUBLIC CONTACT

Notice of Public Hearing

- Published in the *Sun* newspaper
- Posted on the site
- 138 notices mailed to property owners and residents within 300 feet of the project site

Staff Report

- Posted on the City of Sunnyvale's website

Agenda

- Posted on the City's official notice bulletin board
- Posted on the City's website

Public Contact: Staff has not received any correspondence or phone calls from neighbors at the time of writing of this report.

ALTERNATIVES

1. Approve the Design Review with the Conditions of Approval in Attachment 4.
2. Approve the Design Review with modified conditions.
3. Deny the Design Review and provide direction to staff and the applicant where changes should be made.

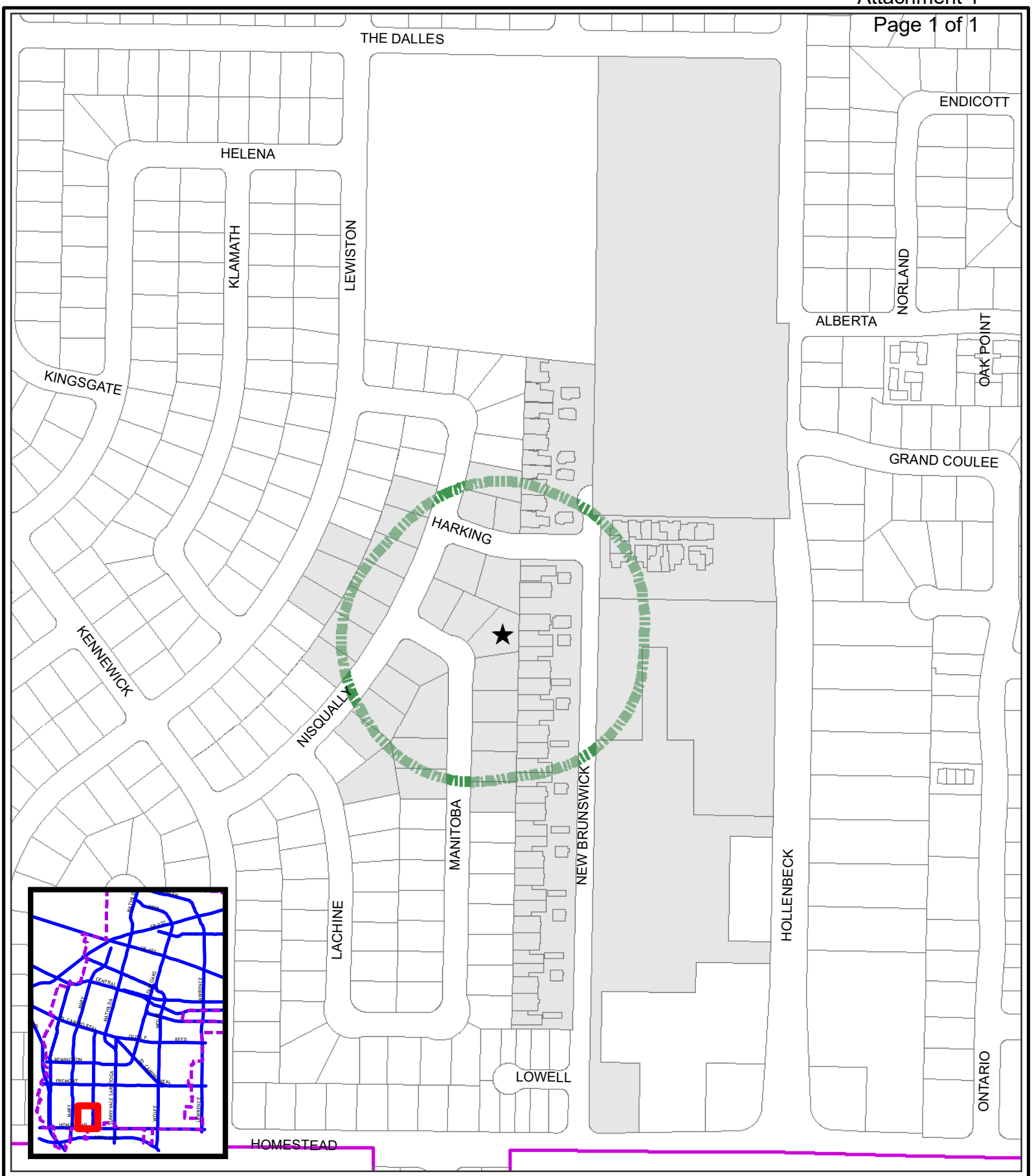
STAFF RECOMMENDATION

Alternative : Approve the Design Review with the Conditions of Approval in Attachment 4.

Prepared by: Aastha Vashist, Associate Planner
Approved by: Noren Caliva-Lepe, Principal Planner

ATTACHMENTS

1. Site, Vicinity and Public Notice Mailing Map
2. Project Data Table
3. Recommended Findings
4. Recommended Conditions of Approval
5. Site and Architectural Plans
6. Neighborhood Comparison Table



2020-7435
1630 Manitoba Dr. (APN: 323-22-044)
DESIGN REVIEW
300-ft. Area

0 95 190 380 Feet

N
W E
S

PROJECT DATA TABLE

	EXISTING	PROPOSED	REQUIRED/ PERMITTED
General Plan	Low Density Residential	Same	--
Zoning District	R-1	Same	--
Lot Size (s.f.)	10,980 s.f.	Same	
Gross Floor Area (s.f.)	4,766 s.f.	4,836 s.f.	Over 3,600 s.f. with PC Review
Lot Coverage	4,799 s.f. (43.7%)	4,869 s.f. (44.3%)	4,941 s.f. (45% max.)
Floor Area Ratio (FAR%)	43.4%	44%	Over 45% with PC review
No. of Buildings On-Site	1	2	NA
Distance Between Buildings	-	5’	5’ min.
Building Height	-	8’	8’ max. without Planning Permit

★ Starred items indicate deviations from Sunnyvale Municipal Code requirement

Design Review

The proposed project is desirable in that the project's design and architecture conforms with the policies and principles of the Single-Family Home Design Techniques.

Basic Design Principle	Comments
2.2.1 Reinforce prevailing neighborhood home orientation and entry patterns	No changes are proposed to the existing home orientation and entry.
2.2.2 Respect the scale, bulk and character of homes in the adjacent neighborhood.	The design and character of the shed is compatible with the main house and the surrounding neighborhood.
2.2.3 Design homes to respect their immediate neighbors	The proposed 8-foot-tall shed will not be visible from the street façade and is nearly the same height as the adjoining fence. There are no anticipated privacy or visual impacts to the surrounding neighborhood.
2.2.4 Minimize the visual impacts of parking.	No changes are proposed to the parking.
2.2.5 Respect the predominant materials and character of front yard landscaping.	No changes are proposed to the front yard landscaping.
2.2.6 Use high quality materials and craftsmanship	The applicant proposes to utilize high quality material including siding for walls and asphalt composition shingles for roof finish, which is compatible with the main house.
2.2.7 Preserve mature landscaping	No trees are proposed to be removed.

RECOMMENDED
CONDITIONS OF APPROVAL AND
STANDARD DEVELOPMENT REQUIREMENTS
PLANNING COMMISSION HEARING ON SEPTEMBER 14, 2020

Planning Application 2020-7435
1630 Manitoba Drive

DESIGN REVIEW to allow a 70 square foot shed at 8 feet in height, resulting in 4,836 square feet gross floor area (4,360 square feet living area, 406 square feet garage and 70 square feet shed) and 44% Floor Area Ratio (FAR).

The following Conditions of Approval [COA] and Standard Development Requirements [SDR] apply to the project referenced above. The COAs are specific conditions applicable to the proposed project. The SDRs are items which are codified or adopted by resolution and have been included for ease of reference, they may not be appealed or changed. The COAs and SDRs are grouped under specific headings that relate to the timing of required compliance. Additional language within a condition may further define the timing of required compliance. Applicable mitigation measures are noted with "Mitigation Measure" and placed in the applicable phase of the project.

In addition to complying with all applicable City, County, State and Federal Statutes, Codes, Ordinances, Resolutions and Regulations, Permittee expressly accepts and agrees to comply with the following Conditions of Approval and Standard Development Requirements of this Permit:

GC: THE FOLLOWING GENERAL CONDITIONS AND STANDARD DEVELOPMENT REQUIREMENTS SHALL APPLY TO THE APPROVED PROJECT.

GC-1. CONFORMANCE WITH APPROVED PLANNING APPLICATION:

All building permit drawings and subsequent construction and operation shall substantially conform with the approved planning application, including: drawings/plans, materials samples, building colors, and other items submitted as part of the approved application. Any proposed amendments to the approved plans or Conditions of Approval are subject to review and approval by the City. The Director of Community Development shall determine whether revisions are considered major or minor. Minor changes are subject to review and approval by the Director of Community Development. Major changes are subject to review at a public hearing. [COA] [PLANNING]

GC-2. ENTITLEMENTS—EXERCISE AND EXPIRATION:

The approved entitlements shall be null and void two years from the date of approval by the final review authority if the approval is not exercised, unless a written request for an extension is received prior to

the expiration date and is approved by the Director of Community Development. [SDR] (PLANNING)

GC-3. ENTITLEMENTS—DISCONTINUANCE AND EXPIRATION:
The entitlements shall expire if discontinued for a period of one year or more. [SDR] (PLANNING)

GC-4. INDEMNITY:
The applicant/developer shall defend, indemnify, and hold harmless the City, or any of its boards, commissions, agents, officers, and employees (collectively, "City") from any claim, action, or proceeding against the City to attack, set aside, void, or annul, the approval of the project when such claim, action, or proceeding is brought within the time period provided for in applicable state and/or local statutes. The City shall promptly notify the developer of any such claim, action or proceeding. The City shall have the option of coordinating the defense. Nothing contained in this condition shall prohibit the City from participating in a defense of any claim, action, or proceeding if the City bears its own attorney's fees and costs, and the City defends the action in good faith. [COA] [OFFICE OF THE CITY ATTORNEY]

GC-5. NOTICE OF FEES PROTEST:
As required by California Government Code Section 66020, the project applicant is hereby notified that the 90-day period has begun as of the date of the approval of this application, in which the applicant may protest any fees, dedications, reservations, or other exactions imposed by the city as part of the approval or as a condition of approval of this development. The fees, dedications, reservations, or other exactions are described in the approved plans, conditions of approval, and/or adopted city impact fee schedule. [SDR] [PLANNING / OCA]

BP: THE FOLLOWING CONDITIONS SHALL BE ADDRESSED ON THE CONSTRUCTION PLANS SUBMITTED FOR ANY DEMOLITION PERMIT, BUILDING PERMIT, GRADING PERMIT, AND/OR ENCROACHMENT PERMIT AND SHALL BE MET PRIOR TO THE ISSUANCE OF SAID PERMIT(S).

BP-1. CONDITIONS OF APPROVAL:
Final plans shall include all Conditions of Approval included as part of the approved application starting on sheet 2 of the plans. [COA] [PLANNING]

BP-2. RESPONSE TO CONDITIONS OF APPROVAL:

A written response indicating how each condition has or will be addressed shall accompany the building permit set of plans. [COA] [PLANNING]

BP-3. BLUEPRINT FOR A CLEAN BAY:

The building permit plans shall include a "Blueprint for a Clean Bay" on one full sized sheet of the plans. [SDR] [PLANNING]

BP-4. BEST MANAGEMENT PRACTICES - STORMWATER:

The project shall comply with the following source control measures as outlined in the BMP Guidance Manual and SMC 12.60.220. Best management practices shall be identified on the building permit set of plans and shall be subject to review and approval by the Director of Public Works:

a) Storm drain stenciling. The stencil is available from the City's Environmental Division Public Outreach Program, which may be reached by calling (408) 730-7738.

b) Landscaping that minimizes irrigation and runoff, promotes surface infiltration where possible, minimizes the use of pesticides and fertilizers, and incorporates appropriate sustainable landscaping practices and programs such as Bay-Friendly Landscaping.

c) Appropriate covers, drains, and storage precautions for outdoor material storage areas, loading docks, repair/maintenance bays, and fueling areas.

d) Covered trash, food waste, and compactor enclosures.

e) Plumbing of the following discharges to the sanitary sewer, subject to the local sanitary sewer agency's authority and standards:

i) Discharges from indoor floor mat/equipment/hood filter wash racks or covered outdoor wash racks for restaurants.

ii) Dumpster drips from covered trash and food compactor enclosures.

iii) Discharges from outdoor covered wash areas for vehicles, equipment, and accessories.

iv) Swimming pool water, spa/hot tub, water feature and fountain discharges if discharge to onsite vegetated areas is not a feasible option.

v) Fire sprinkler test water, if discharge to onsite vegetated areas

BP-5. DEMOLITION/CONSTRUCTION/RECYCLING WASTE REPORT FORM: to mitigate the impacts of large projects on local waste disposal and recycling levels, demolition waste weights/volumes, construction weights/volumes, and recycling weights/volumes are to be reported to the city using

sunnyvale.wastetracking.com hosted by green halo. As part of the project's construction specifications, the developer shall track the type, quantity, and disposition of materials generated, and submit these records through the website both periodically and at project completion [COA][ENVIRONMENTAL SERVICES]

BP-6. CONSTRUCTION MATERIAL AND STAGING:

All construction related materials, equipment, and construction workers parking need to be managed on-site and not located in any public right-of-ways or public easements. [COA] [PUBLIC WORKS]

DC: THE FOLLOWING CONDITIONS SHALL BE COMPLIED WITH AT ALL TIMES DURING THE CONSTRUCTION PHASE OF THE PROJECT.

DC-1. BLUEPRINT FOR A CLEAN BAY:

The project shall be in compliance with stormwater best management practices for general construction activity until the project is completed and either final occupancy has been granted. [SDR] [PLANNING]

DC-2. TREE PROTECTION:

All tree protection shall be maintained, as indicated in the tree protection plan, until construction has been completed and the installation of landscaping has begun. [COA] [PLANNING]

DC-3. CLIMATE ACTION PLAN – OFF ROAD EQUIPMENT REQUIREMENT:

OR 2.1: Idling times will be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]), or less. Clear signage will be provided at all access points to remind construction workers of idling restrictions.

OR 2.2: Construction equipment must be maintained per manufacturer's specifications.

OR 2.3: Planning and Building staff will work with project applicants to limit GHG emissions from construction equipment by selecting one of the following measures, at a minimum, as appropriate to the construction project:

a) Substitute electrified or hybrid equipment for diesel- and gasoline-powered equipment where practical.

b) Use alternatively fueled construction equipment on-site, where feasible, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane, or biodiesel.

c) Avoid the use of on-site generators by connecting to grid electricity or utilizing solar-powered equipment.

d) Limit heavy-duty equipment idling time to a period of 3 minutes or less, exceeding CARB regulation minimum requirements of 5 minutes. [COA] [PLANNING]

DC-4. DUST CONTROL:

At all times, the Bay Area Air Quality Management District's CEQA Guidelines and "Basic Construction Mitigation Measures Recommended for All Proposed Projects", shall be implemented. [COA] [PLANNING]

STREETSCAPE ELEVATION

Project : 2020-7435

Address : 1630 MANITOBA DR

SCALE: 1/8" = 1'-0"

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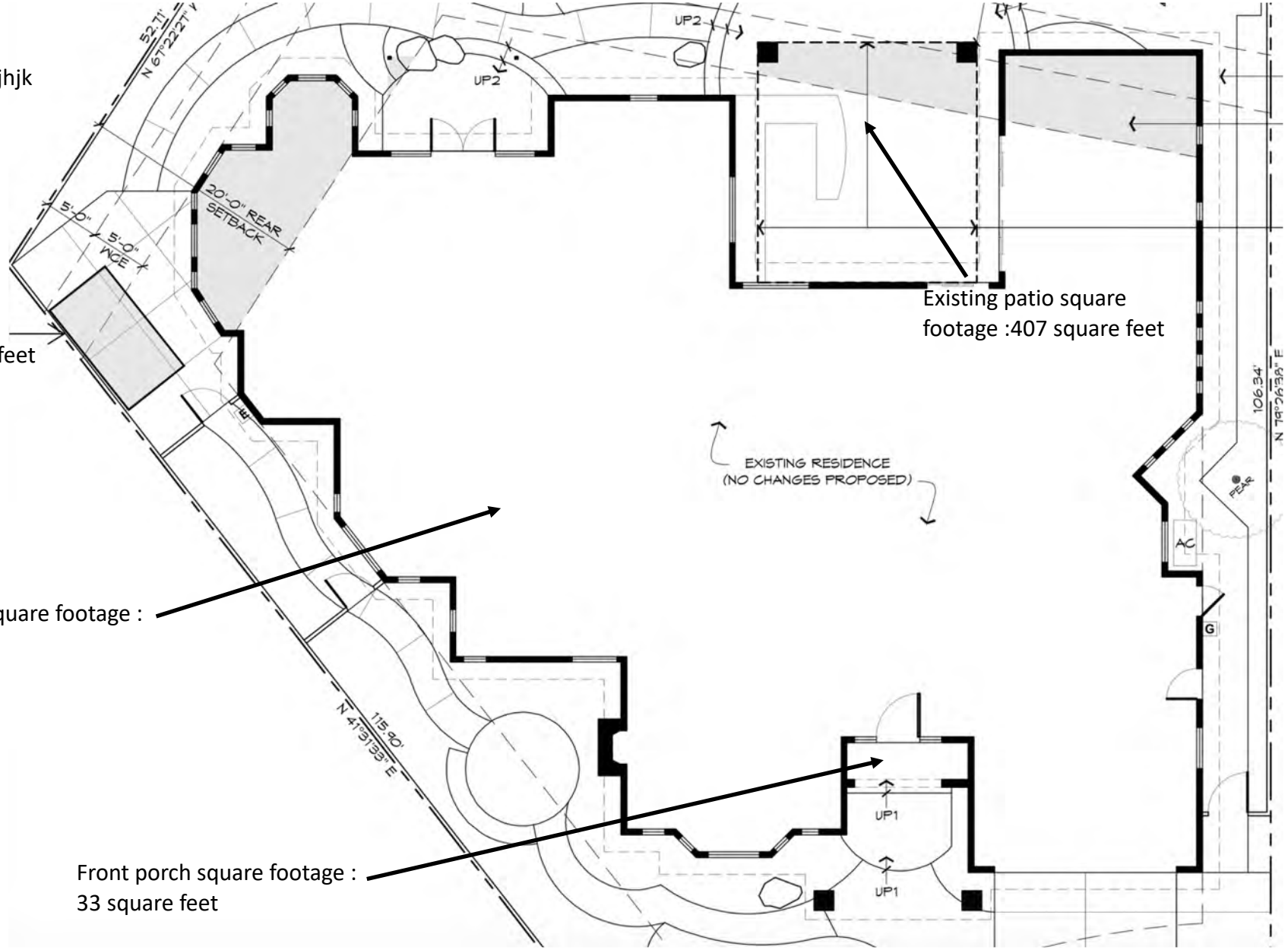


Proposed accessory structure square footage : 70 square feet

Existing patio square footage :407 square feet

Existing residence square footage : 4359 square feet

Front porch square footage : 33 square feet

FLOOR AREA DIAGRAM

SCALE : ¼" = 1'-0"

Project:
2020-7435

Address:
1630 MANITOBA DR

FLOOR AREA RATIO AND LOT COVERAGE

Floor area ratio calculation = (Existing residence square footage + Existing patio square Footage + Proposed accessory structure square footage) / Lot size

Floor area ratio = (4359 + 407 + 70)/10980 = 4836/10980 = 44.04 %

Lot coverage calculation = (Existing residence square footage + Front porch square footage + Existing patio square footage + Proposed accessory structure square footage) / Lot size

Lot coverage = (4359 + 33 + 407 + 70)/10980 = 4869/10980 = 44.34 %

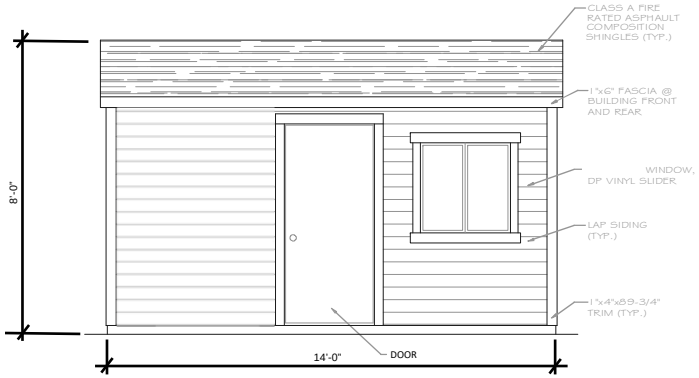
COLOR AND MATERIAL BOARD
Project : 2020-7435
Address: 1630 MANITOBA DR

Decay and termite-resistant siding detail and color (Benjamin Moore Valley Forge Tan)

50 yr. roofing detail and color (final roofing may vary depending on availability)

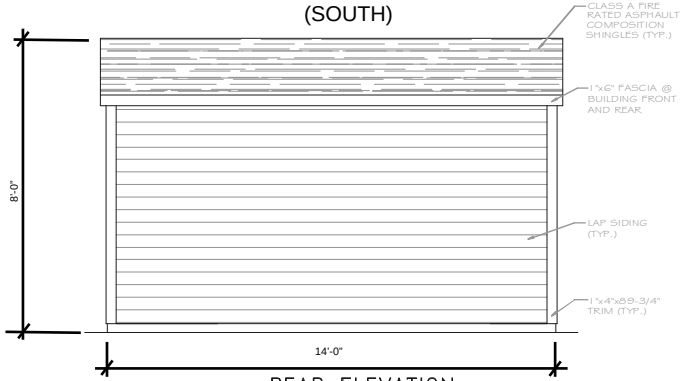
Jeld-Wen vinyl window sample, trim sample and color (Benjamin Moore Edgecomb Grey) and fascia sample and color (Benjamin Moore Edgecomb Grey)

Door sample and door trim color (Benjamin Moore Edgecomb Grey)



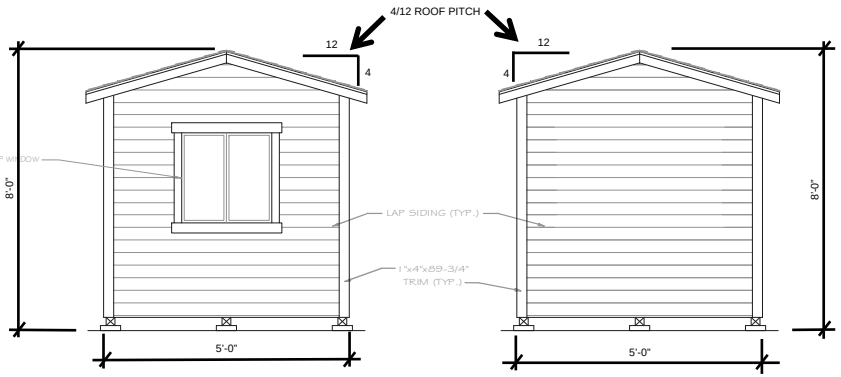
FRONT ELEVATION

(SOUTH)



REAR ELEVATION

(NORTH)

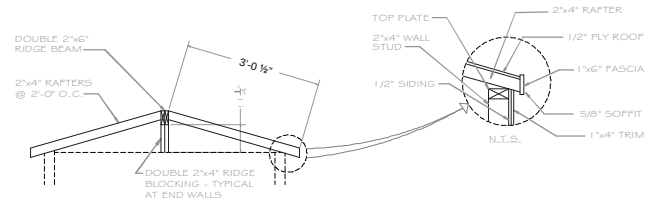


LEFT SIDE ELEVATION

(WEST)

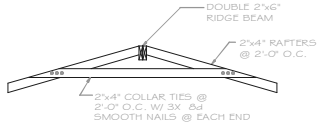
RIGHT SIDE ELEVATION

(EAST)



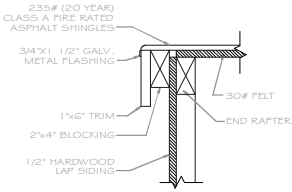
1 TYPICAL END RAFTER

SCALE: 1/2"=1'-0"



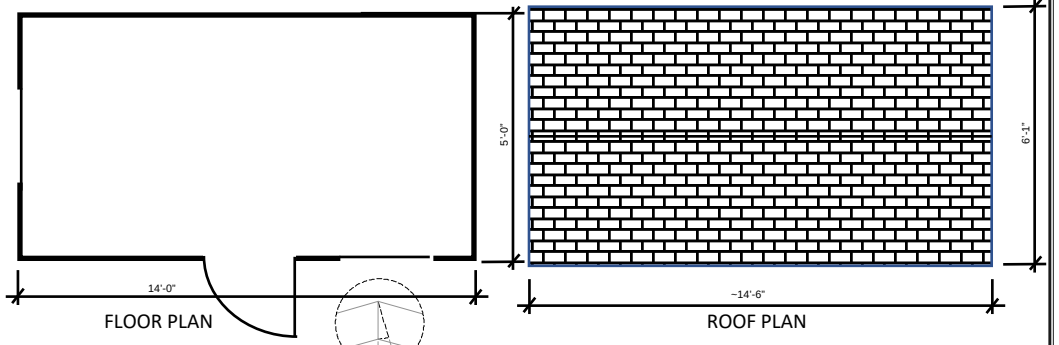
2 TYPICAL INTERIOR RAFTER

SCALE: 1/2"=1'-0"



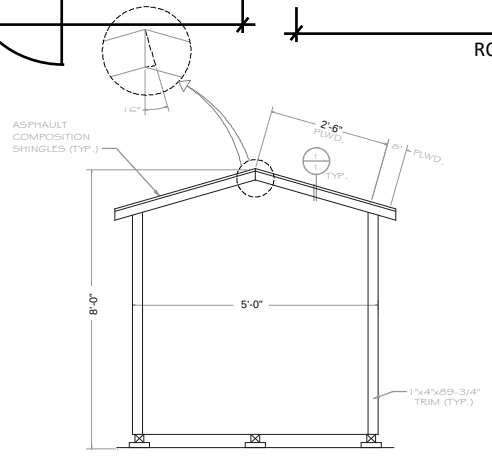
1/1 SECTION AT GABLE

SCALE: 3"=1'-0"



FLOOR PLAN

ROOF PLAN



SIDE ELEVATION TYP.

Utility Building for storage of household items

Project: 2020-7435
Address: 1630 MANITOBA DR

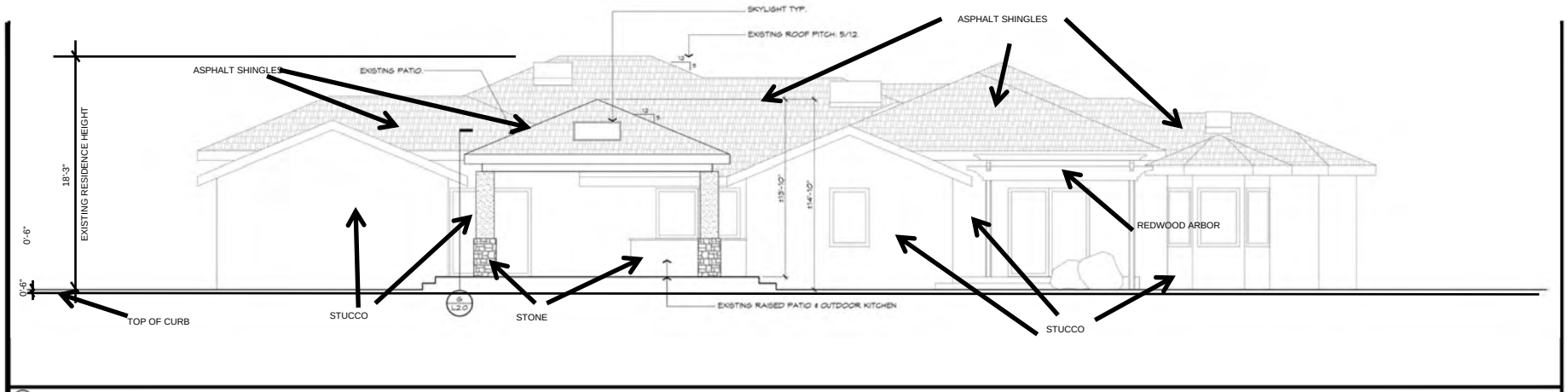
PLANS AND ELEVATIONS

SCALE: 1/2"=1'-0" U.O.N.

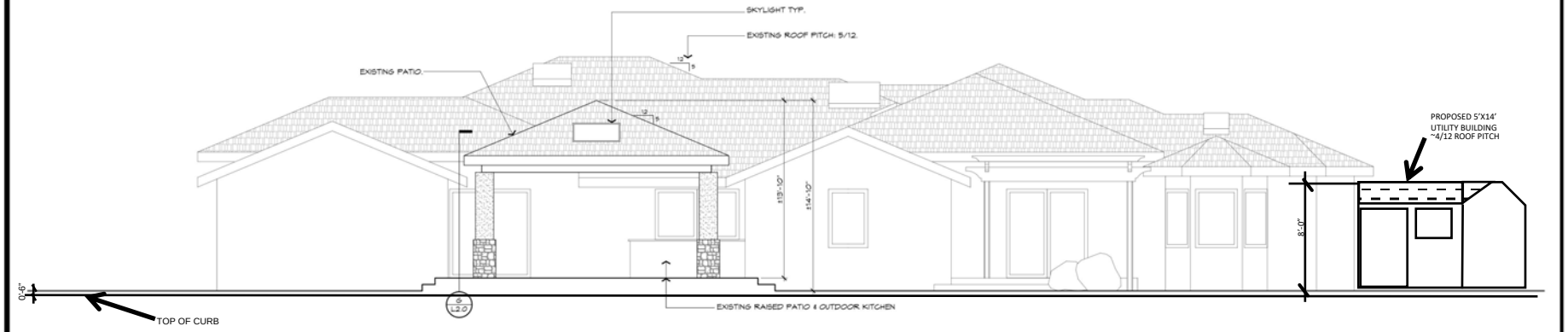
PROJECT NO.

PAGE NO.

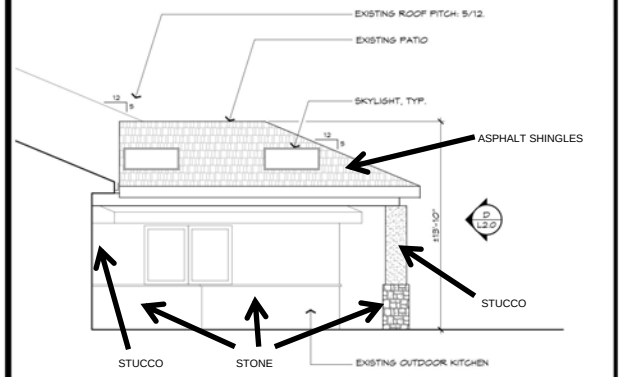
DATE: 8/9/20



A EXISTING EAST ELEVATION SCALE: 1/4" = 1'-0"



D PROPOSED EAST ELEVATION SCALE: 1/4" = 1'-0"



G REAR YARD COVER STRUCTURE SIDE ELEVATION SCALE: 1/4" = 1'-0"

UTILITY BUILDING

OKUMURA RESIDENCE

1630 MANITOBA DRIVE
SUNNYVALE, CA

APN: 323-22-044

NOT FOR CONSTRUCTION

Revisions:

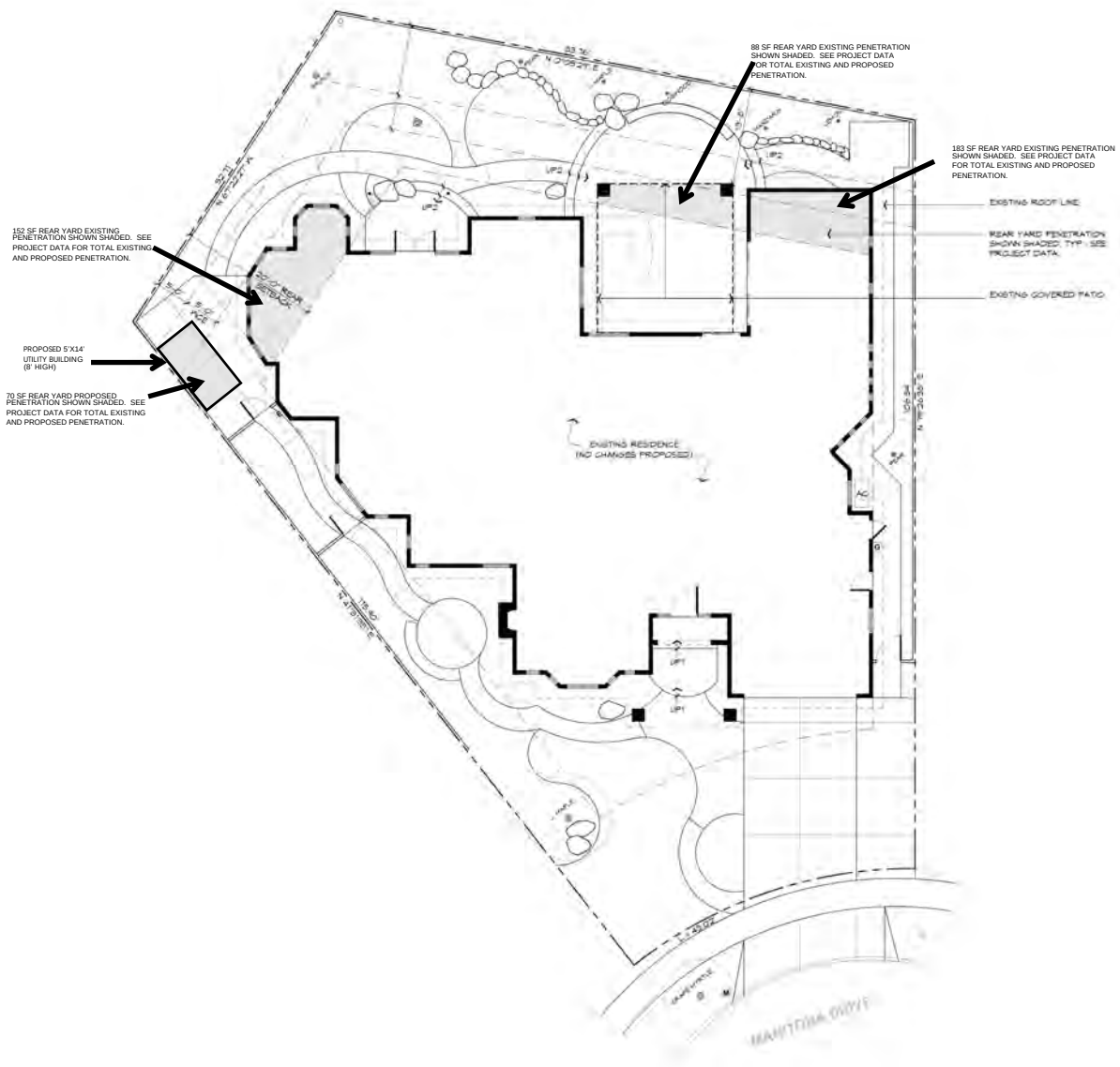
Date: 07/11/2020 PLANNING REVIEW

Scale: AS NOTED

Drawn By: KO

REAR YARD ELEVATIONS

Sheet No.
L2.0
Of



VICINITY MAP

PROJECT DIRECTORY

Owners:
KEN & DONNA OKUMURA
1630 MANITOBA DRIVE
SUNNYVALE, CA 94087
EMAIL: kkokumura@aol.com

SCOPE OF WORK

ADD A 5'X14' UTILITY BUILDING IN THE REAR YARD

PROJECT DATA

ZONING DISTRICT	R1
FLOOR AREA:	
TOTAL LOT AREA:	10,450 SF
EXISTING FLOOR AREA:	4,769 SF
FLOOR AREA TO BE ADDED:	70 SF (UTILITY BUILDING)
PROPOSED TOTAL FLOOR AREA:	4,839 SF
PROPOSED TOTAL FLOOR AREA RATIO:	44.04%
MAXIMUM ALLOWED FLOOR AREA RATIO:	45%
LOT COVERAGE	
TOTAL LOT AREA:	10,450 SF
EXISTING LOT COVERAGE:	4,769 SF = 43.7%
LOT COVERAGE TO BE ADDED:	70 SF (UTILITY BUILDING)
PROPOSED TOTAL LOT COVERAGE:	4,839 SF = 44.54%
MAXIMUM ALLOWED LOT COVERAGE:	4,441 SF = 45%
REAR YARD PENETRATION	
TOTAL REAR YARD:	2,568 SF (100%)
EXISTING PENETRATION:	423 SF (16.2%) : 183 SF + 88 SF + 152 SF = 423 SF
PROPOSED PENETRATION:	493 SF (19.2%) : 183 SF + 88 SF + 152 SF + 70 SF = 493 SF
MAXIMUM ALLOWED PENETRATION:	642 SF (25%)

SHEET INDEX

L1.0 - SITE PLAN & PROJECT DATA

UTILITY BUILDING

OKUMURA RESIDENCE

1630 MANITOBA DRIVE
SUNNYVALE, CA

APN: 323-22-044

NOT FOR CONSTRUCTION

Revisions:

Date: 07/11/2020 PLANNING REVIEW

Scale: 1/8" = 1'-0"

Drawn By: KO

SITE PLAN & PROJECT DATA

Sheet No.

L1.0

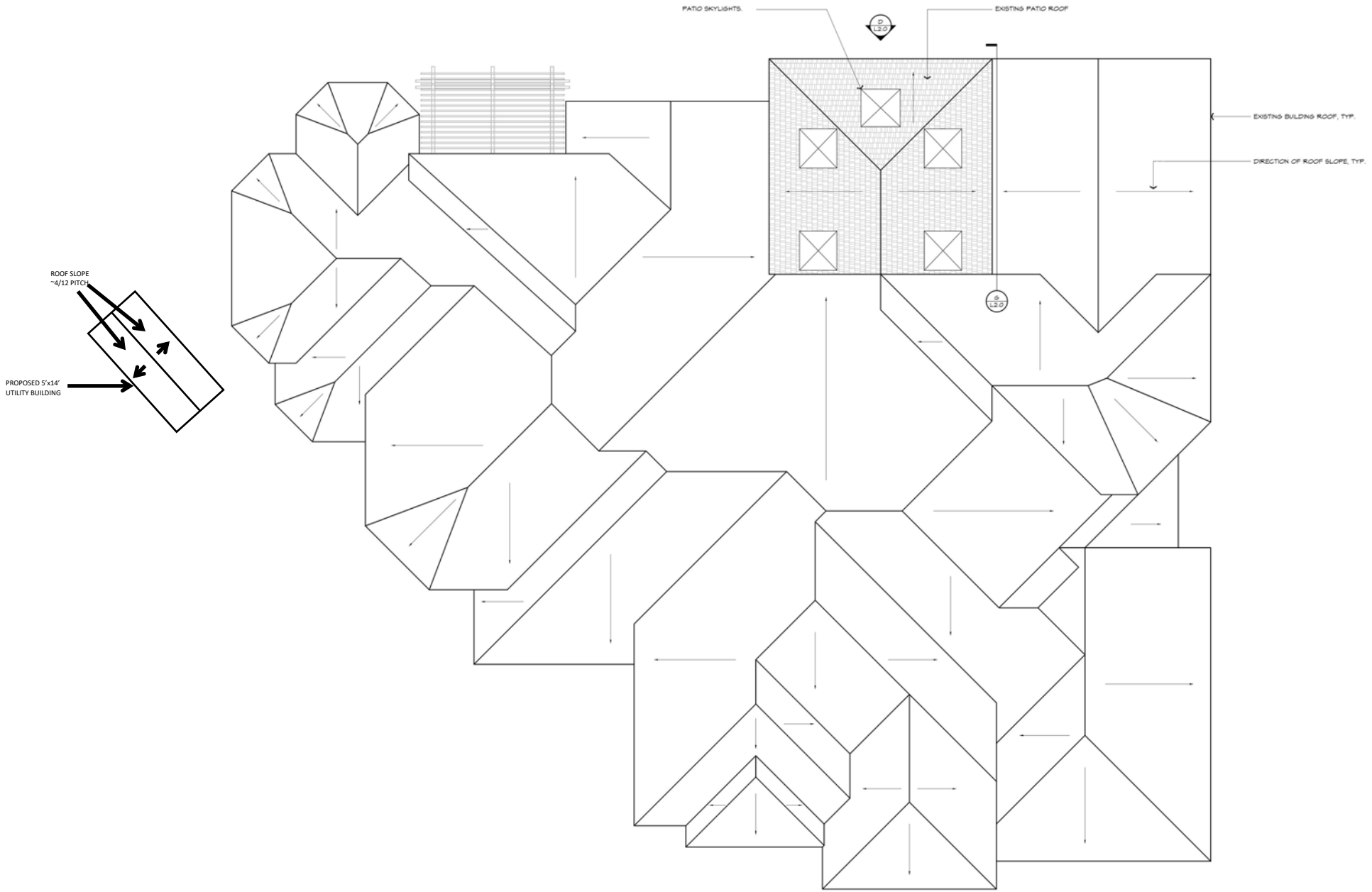
01

Sunnyvale

RESIDENTIAL PROJECT DATA

Applicant should refer to the Sunnyvale Municipal Code for current requirements.

	EXISTING CONDITIONS	PROPOSED PROJECT	REQUIRED/ PERMITTED
☐ General Plan Category			
☐ Zoning District	R-1	R-1	R-1
☐ Use (If vacant, how long has it been vacant?)			N/A
☐ Lot Size (sq. ft.)	10,980	10,980	min.
☐ Gross Floor Area (sq. ft.)	4,766	4,836	3,600 max.
☐ Floor Area Ratio (%)	43.4%	44.04%	45% max.
☐ Lot Coverage (%)	43.7%	44.34%	45% max.
☐ Number of Units	0	1	max.
☐ Density (units/acre)	0	3.97	max.
☐ Meets 75% min?	N/A	N/A	max.
☐ Bedrooms / Unit	0	0	max.
☐ Unit Sizes (sq. ft.)	0	70	
☐ Lockable Storage / Unit (cu. ft.)	N/A	N/A	max.
☐ Number of Buildings On-Site	0	1	
☐ Distance Between Buildings	N/A	N/A	min.
☐ Building Height (ft.)	N/A	8 ft.	max.
☐ No. of Stories	N/A	1	max.
☐ Front Setbacks (1st Story/2nd Story)	N/A	100 ft. but N/A as structure is in rear yard	Prohibited min.
☐ Left Side Setbacks(1st Story/2nd Story facing property)	N/A	9-1/2"	0 ft. min.
☐ Right Side Setbacks(1st Story/2nd Story facing property)	N/A	N/A	0 ft. min.
☐ Rear Setback	N/A	5 ft.	0 ft. min.
☐ Landscaping (total sq. ft.)	N/A	N/A	min.
☐ Landscaping (sq. ft./unit)	N/A	N/A	
☐ Useable Open Space (sq. ft./unit)	N/A	N/A	15 ft. min.
☐ Parking Lot Area Shading (%)	N/A	N/A	50% min. in 15 yrs.
☐ Water Conserving Plants (%)	N/A	N/A	70% min.
☐ Total No. of Parking Spaces	N/A	N/A	min.
☐ Standards	N/A	N/A	min.
☐ Compacts / % of total	N/A	N/A	max.
☐ Accessible Spaces	N/A	N/A	min.
☐ Covered Spaces	N/A	N/A	min.
☐ Aisle Width (ft.)	N/A	N/A	
☐ Bicycle Parking	N/A	N/A	
☐ Impervious Surface Area (sq. ft.)	N/A	No change - placing structure on existing slab	
☐ Impervious Surface (%)	N/A	No change - placing structure on existing slab	



UTILITY BUILDING

OKUMURA RESIDENCE

1630 MANITOBA DRIVE
SUNNYVALE, CA

APN: 323-22-044

NOT FOR CONSTRUCTION

Revisions:

Date: 07/11/2020 PLANNING REVIEW

Scale: 1/4" = 1'-0"

Drawn By: KO

ROOF PLAN

Sheet No.
L1.1
Of

Project: 2020-7435

Address: 1630 MANITOBA DR

Purpose: The purpose of the proposed accessory structure is to provide storage of household goods such as off-season accessories (Christmas, Halloween), outdoor furniture accessories (pillows, covers, etc.), yard tools, bicycles and other miscellaneous household items. This will allow space in the garage to be freed up and allow an additional car to be parked.

Neighborhood Comparison Table

Address	Year Built	Lot Size (s. f.)	Stories	Gross Floor Area (s. f.)	Floor Area Ratio (FAR)	Notes
1654 Manitoba Dr	1960	7957	1	2600	33%	
1650 Manitoba Dr	1960	7957	1	2126	27%	
1646 Manitoba Dr	1960	7957	1	2204	28%	
1642 Manitoba Dr	1960	8030	1	2024	25%	
1638 Manitoba Dr	1960	8030	1	2430	30%	
1634 Manitoba Dr	1960	9396	1	3130	33%	
1630 Manitoba Dr	**1960**	**10980**	**1**	**4836**	**44%**	Project Site
1626 Manitoba Dr	1960	8720	1	2024	23%	
1622 Manitoba Dr	1960	8346	1	2535	30%	
789 Harking Dr	1960	9991	1	2587	26%	
785 Harking Dr	1960	12740	1	3106	24%	
828 Nisqually Dr	1960	9600	1	2384	25%	
1631 Manitoba Dr	1960	12922	1	2861	22%	
1635 Manitoba Dr	2008	9198	1	3065	33%	
1643 Manitoba Dr	1960	8541	1	2623	31%	
1647 Manitoba Dr	1960	8030	1	2213	28%	
1655 Manitoba Dr	1960	8030	1	2280	28%	
1659 Manitoba Dr	1960	8030	1	2535	32%	
1663 Manitoba Dr	1960	8030	1	2318	29%	
1667 Manitoba Dr	1960	8030	1	2456	31%	
838 Nisqually Dr	1960	7320	1	2200	30%	
832 Nisqually Dr	1960	7770	2	3236	42%	
803 Nisqually Dr	1960	7776	1	2458	32%	
807 Nisqually Dr	1960	8066	1	2684	33%	
811 Nisqually Dr	1960	8066	1	2537	31%	
815 Nisqually Dr	1960	8066	1	2922	36%	
819 Nisqually Dr	1960	8066	1	2280	28%	
823 Nisqually Dr	1960	8066	1	2588	32%	
827 Nisqually Dr	1960	8066	1	2424	30%	
831 Nisqually Dr	1960	8436	1	1842	22%	
835 Nisqually Dr	1960	8218	1	2380	29%	
839 Nisqually Dr	1960	8066	1	2280	28%	
Average (Existing)		**8452**		**2533**	**30%**	
Average (Proposed)		**8463**		**2541**	**30%**	

Note:

1. The row with grey highlight indicates the proposed project.

20-0783 **Agenda Date:** 9/14/2020

REPORT TO SUSTAINABILITY COMMISSION and PLANNING COMMISSION

SUBJECT

Forward a Recommendation to the City Council to approve a Phased Reach Codes program and implement Phase 1 for new Residential and Non-Residential Construction Projects: Introduce an Ordinance to Amend Chapter 16.42 (Energy Code) of Title 16 (Buildings and Construction) and Find that the Action is Exempt from CEQA

REPORT IN BRIEF

Sunnyvale's Climate Action Playbook, adopted in 2019 includes six key strategies to reduce greenhouse gas (GHG) emissions. Strategy 2 is Decarbonizing Buildings, which aims to reduce natural gas use and shift to all-electric buildings. To help achieve environmental goals, many communities have adopted "reach codes." These are local energy codes for building design and construction that go beyond minimum state requirements. The codes help reduce greenhouse gas emissions by promoting electric versus natural gas energy use. Staff is recommending a phased Reach Codes program that would start with all electric construction for new buildings. Remodels, improvements and chargers for electric vehicles would come later. Reach codes apply to both residential and nonresidential buildings. Staff recommends implementation of Phase 1 through introduction and adoption of an amendment to the Sunnyvale Municipal Code Chapter 16 (Building and Construction).

BACKGROUND

Sunnyvale adopted its first Climate Action Plan in 2016 to assist the City in achieving the 2020 State of California climate targets. In 2019, the City adopted an updated plan, called the Climate Action Playbook (Playbook, and sometimes referred to as CAP 2.0) to identify a pathway to meet and exceed to State's longer-term climate targets for 2030 and 2050. The Playbook includes six key strategies to reduce GHG emissions. Strategy 2 is Decarbonizing Buildings, which aims to reduce natural gas use and shift to all-electric buildings. As of 2018, nearly 38 percent of community-wide GHG emissions in Sunnyvale come from energy use in buildings for space heating, water heating, clothes drying, and cooking.

Within Strategy 2, the Playbook includes:

Move 2.E - Evaluate code and permitting processes to streamline building electrification.

Reach codes are the policy tool for implementing the Playbook's Move 2.E and are designed to reduce the City's carbon emissions from building energy usage. Reach codes revise the California Title 24 energy code requirements (CALEnergy), and exceed the codified requirements of the CALEnergy codes.

The Playbook includes a target to achieve 100 percent all-electric new buildings by 2030. The proposed Reach Codes are consistent with this target. The City can implement Reach Code

requirements if they are demonstrated to be cost-effective compared to implementing the minimum CALEnergy provisions. Further, proposed reach codes that are shown to be cost-effective and consistent with our Playbook strategies must be approved by the California Energy Commission (CEC). The proposed ordinance cannot take effect until at least 30 days following CEC approval.

The City Council is scheduled to consider this item at their meeting of October 27, 2020.

EXISTING POLICY

GENERAL PLAN

Chapter 2 - Community Vision

VISION STATEMENT

Sunnyvale is an attractive, safe, environmentally-sensitive community which takes pride in the diversity of its people, the innovation of its business and the responsiveness of its government.

Vision: It is the aspiration of the people of Sunnyvale to build upon the attributes which the City currently enjoys, so that Sunnyvale of the future will become …

- **A regional leader in environmental sustainability** … advocating to reduce dependence on non-renewable resources by providing greater transportation options, reducing waste, protecting our natural resources, and promoting alternative energy usage and research. We take environmental preservation and protection seriously and consider how each action will affect Sunnyvale for future generations.
- **A city managed by a responsible and responsive government** … that delivers quality services in a comprehensive, cost-effective manner. The City evolves gracefully with the changing needs of the community and regularly communicates with residents and businesses to engage them in decision-making processes.

COMMUNITY VISION GOALS**:**

III. ENVIRONMENTAL SUSTAINABILITY - To promote environmental sustainability and remediation in the planning and development of the City, in the design and operation of public and private buildings, in the transportation system, in the use of potable water and in the recycling of waste.

Chapter 3 - Land Use and Transportation

GOAL LT-1: COORDINATED REGIONAL AND LOCAL PLANNING - Protect the quality of life, the natural environment, and property investment, preserve home rule, secure fair share of funding, and provide leadership in the region.

Environmental Protection and Adaptation

Policy LT-1.10 Participate in federal, state, and regional programs and processes in order to protect the natural and human environment in Sunnyvale and the region.

Policy LT-1.11 Prepare for risks and hazards related to climate change prior to their occurrence.

GOAL LT-2: ENVIRONMENTALLY SUSTAINABLE LAND USE AND TRANSPORTATION PLANNING AND DEVELOPMENT - Support the sustainable vision by incorporating sustainable features into land use and transportation decisions and practices.

Green Development

Policy LT-2.1 Enhance the public's health and welfare by promoting the city's environmental and economic health through sustainable practices for the design, construction, maintenance, operation, and deconstruction of buildings, including measures in the Climate Action Plan.

Greenhouse Gas Reduction

Policy LT-2.2 Reduce greenhouse gas emissions that affect climate and the environment though land use and transportation planning and development.

Alternate/Renewable Energy Systems

Policy LT-2.7 Provide Sunnyvale residents and businesses with opportunities to develop private, renewable energy facilities.

Chapter 7 - Environmental Management (EM)

AIR QUALITY

GOAL EM-11 IMPROVED AIR QUALITY - Improve Sunnyvale's air quality and reduce the exposure of its citizens to air pollutants.

Policy EM-11.2 Utilize land use strategies to reduce air quality impact.

SUNNYVALE MUNICIPAL CODE

Chapter 19.39 (Green Building Regulations)

The purpose of this Chapter is to implement sustainable development with development and construction practices designed to use natural resources in a manner that does not eliminate, degrade or diminish their usefulness for future generations, to enhance the public health and welfare by promoting the environmental and economic health of the city through the design, construction, maintenance, operation and deconstruction of buildings and other site development, and to incorporate green building practices into all development projects. The green building provisions referred to in this Chapter are designed to achieve the following goals:

a) Increase energy efficiency in buildings;
b) Encourage water and resource conservation;
c) Minimize waste generated by construction projects;
d) Provide durable buildings that are efficient and economical to own and operate;
e) Promote the health and productivity of residents, workers, and visitors to the city; and
f) Recognize and conserve the energy embodied in existing buildings.

These zoning regulations have performance requirements adopted by Resolution that are periodically updated to strengthen green buiding standards. The most recent update took effect on July 1, 2019. Attachment 9 is a summary of the Green Building Program.

CLIMATE ACTION PLAYBOOK

The Playbook, adopted in 2019, identifies strategies for reducing community-wide greenhouse gas (GHG) emissions and a work plan for creating a more sustainable, healthy, and livable Sunnyvale. This document includes actions that the City and community can take to reduce community-wide GHG emissions and exceed the State's target of achieving an 80 percent reduction below 1990

emission levels by 2050. The Playbook identifies strategies, policies, and a work plan to reduce GHG emissions to achieve the following targets:

The Playbook's adopted targets for Sunnyvale are to reduce emissions to:

- 56 percent below 1990 levels by 2030 (exceeds State SB 32, 2016, a target of 40 percent below 1990 levels)
- 80 percent below 1990 levels by 2050 (meets Executive Order S-3-05, 2005)

Related to buildings, the Playbook includes specific targets to:

- Load from local solar: 3 percent by 2030; 5 percent by 2050
- Homes and businesses completely electrified: 20 percent by 2030; 50 percent by 2050
- 100-percent all-electric new buildings by 2030

ENVIRONMENTAL REVIEW

The action being considered is exempt from review under the California Environmental Quality Act ("CEQA") pursuant to Title 14 of the California Code of Regulations, Section 15308 (Class 8 - Actions by Regulatory Agencies for Protection of the Environment) and Section 15305 (Class 5 - Minor alterations in Land Use Limitations) and Section 15061 of the CEQA Guidelines, that the proposed Ordinance is exempt from the requirements of the California Environmental Quality Act (CEQA) because it can be seen with certainty that there is no possibility that the changes adopted will have a significant effect on the environment.

DISCUSSION

To help achieve environmental goals, many communities have adopted "reach codes." These are local energy codes for building design and construction that go beyond minimum state requirements. The codes help reduce greenhouse gas emissions by promoting electric versus natural gas energy use.

The proposed Reach Codes are designed to exceed the California Energy Codes, which are the State's minimum energy conservation standards. The Reach Codes are a pathway toward meeting the State and City GHG emission targets.

A proposed Reach Code must be fiscally responsible pursuant to the State of California, which requires proof of its cost-effectiveness, before implementation. Funded by the California investor-owned utilities (IOUs), the California Statewide Codes and Standards Program (Statewide Program) led the development of a cost-effectiveness study for Energy Reach Codes that examined different performance-based approaches for new construction of specific building types. Refer to Attachment 5 for cost-effectiveness studies.

There are two kinds of Reach Code approaches: performance-based ordinances and prescriptive ordinances. Performance-based ordinances mandate an increase in the overall energy efficiency required but allow flexibility for the developer regarding how to achieve this goal. In contrast, prescriptive ordinances mandate the implementation of a specific measure (such as solar panels or cool roofs). The Statewide Program's analysis focused on performance-based ordinances; some conclusions about prescriptive measures can also be made from the results.

A four-phased implementation of Reach Codes is summarized in the table below. Phase 1, covered

by the proposed ordinance, covers new construction to meet all-electric standards with few exemptions. Phase 2 is projected to follow in Summer 2021; the subsequent phases would follow when the Statewide Program determines cost-effectiveness.

	Residential	Non-Residential	Schedule
Phase 1 – All-Electric New Construction	X	X	January 2021
Phase 2 – Commercial Kitchens (Stage 1) & Residential Pre-wiring for Vehicle Charging	X	X	Summer 2021
Phase 3 – Commercial Kitchens (Stage 2), and Additions and Alterations to Existing Buildings	X*	X*	Undetermined
Phase 4 – Large Hotel Laundry Facilities		X*	Undetermined

** Not shown to be cost-effective as of August 2020.*

Phase 1
Phase 1 would meet two Climate Action Playbook elements:

- **Strategy 1** - Promoting Clean Energy, Play 1.2 -Increase local solar photovoltaics
- **Strategy 2 -** Decarbonizing Buildings, Play 2.3 - Achieve all-electric new construction.

The proposed Phase 1 Reach Codes include residential and non-residential projects. The proposed ordinance will require new residential and non-residential construction to be all-electric. This phase addresses the largest GHG source from buildings, space and water heating, using natural gas.

Photovoltaic systems would be required for residential and non-residential new construction projects. For non-residential construction, solar water heating is offered as an option for photovoltaic energy generation.

There are five proposed exceptions to the requirements to have all-electric new construction:

1. Buildings with industrial and process loads (such as manufacturing and refrigeration buildings).
    - These uses cannot be demonstrated to meet energy efficiency requirements.

2. In-house commercial laundries in large hotels (more than 80 guestrooms).
    - These uses cannot be demonstrated to meet energy efficiency requirements.

3. Public agency owned and operated emergency centers. To take advantage of this exception applicant shall provide third party verification that All-Electric space heating requirement is not

cost effective and feasible.

4. Non-residential (commercial) kitchens in new buildings, which will be implemented in Phase 2 and Phase 3.
    - Small scale (typically home) kitchens have several electric cooking options (e.g., induction, radiant, microwave); however, commercially viable alernatives have not been identified for non-residential kitchens. The use of induction stovetops requires specific cookware and may be a major investment. Attachment 6 is a copy of a study on Energy Reduction in Non-residential Kitchens that discusses many factors associated with operating Non-residential kitchens.

5. Buildings which the applicant establishes that it cannot achieve the performance compliance standard applicable to the building under the Energy Code using commercially available technology may approved by the Building Official, who shall require the applicant shall comply with the pre-wiring provisions.

In keeping with current practices and state building codes, attached accessory dwelling units (ADU), which are treated as an addition to an existing home. Detached ADUs are considered new construction and must comply with all-electric requirements).
Staff recommends that Phase 1 becomess effective on January 1, 2021. This date should provide sufficient time for the CEC to an adopted local ordinance. Further, staff recommends that the new code not apply to projects with a complete Planning application (including approved applications) and complete building permit applications submitted as of the effective date of the program.These developments are typically well into the design phase of their projects and would likely be negatively impacted by the late change in City policy. This exception is consistent with the practice of updating the City's Green Building requirements.

Phase 2
Phase 2 would address the following Playbook elements:

- **Strategy 2** - Decarbonizing buildings, Play 2.3 - Achieve all-electric new construction and Play 2.2 - Support electrification of existing buildings; and,
- **Strategy 3** - Decarbonizing transportation and sustainable land use, Play 3.3 - Increase zero-emission vehicles.

Phase 2 Reach Codes would require new residential additions and alterations to prewire buildings for electric vehicle charging.

Staff recommends that new construction of non-residential kitchens are addressed in a two-stage approach. The first stage would require the installation of highly efficient kitchen equipment with EnergyStar ratings and educating employees on energy-saving protocols. The second stage would require new kitchens to be all-electric. The timeline for the first stage implementation is Summer of 2021. The second stage would be considered for implementation in January 2023.

Phase 3
Phase 3 would address the following Playbook elements:

- **Strategy 2** - Decarbonizing buildings, Play 2.1 - Reduce energy consumption in existing buildings, and Play 2.2 support the electrification of existing buildings.

Phase 3 of the Reach Code implementation would address both residential and non-residential additions and alterations. It could require residential alterations to trigger upgrades to electric appliances (kitchen remodels). Residential additions would be required to meet the requirements of new construction, such as electric appliances and photovoltaic systems.

Non-residential new tenant improvements would be all-electric and shall meet the minimum California Energy Code standards. Non-residential additions must meet the standards of new construction and all-electric requirements. Phase 3's implementation timeline is unknown since it is currently not shown to be cost-effective.

Phase 4
Similar to Phase 1, this phase would align with Plays 1.2 and 2.3 of the Playbook.

This phase targets commercial laundry facilities in large hotels of 80 rooms or more. Phase 4 would require large hotels to provide electric clothes drying facilities. Under Phase 1, laundry facilities in Large Hotels are exempt from all-electric requirement because it has not been proven to be cost-effective.

Phase 4 requirements are proposed for deferral due to an ongoing study by the Statewide Program on the cost-effectiveness of electric laundry dryers versus gas dryers. Phase 4 could launch upon completion of the cost-effectiveness study if the findings support Reach Codes for this building type and size.

Benchmarking with Other Agency Reach Codes
Reach Code progress for the local jurisdictions within Santa Clara County are provided in Attachment 3. Nine of the 14 agencies included on the table have adopted reach codes. Four of the adopted codes ban use of natural gas in new buildings (and at least one has a ban on new connections to gas). All of the cities with a gas "ban" have exceptions for various situations such as non-residential kitchens (see Attachment 4).

Current Feedback
Althought outreach is still active, a trend in feedback has been revealed. Many believe Reach Codes will reduce greenhouse gases and support a healthier and safer living environment. Some support the City's Climate Action Playbook and the effort to support electrification. However, although Reach Codes are cost-effective over the life of the building, it is strongly felt by some that the initial cost is too high. Many believe electrification should be a personal choice and Reach Codes should be implemented through encouragement by way of city-backed monetary incentives.

FISCAL IMPACT
The implementation of Reach Codes would not have a direct fiscal impact to the City. Review of projects with Reach Code requirements would be covered through permit fees.

PUBLIC CONTACT
The City of Sunnyvale provided outreach through presentations posted on the City's YouTube channel. Feedback was collected through surveys available on Open City Hall. Survey results are

included in Attachments 7 and 8. Other public contact is found in Attachment 10.

Email messages were sent to announce the information presentation and surveys to neighborhood assocations, community organizations, building industry representatives, architects, developers, contractors and other persons and organizations expressing interest in Reach Codes or general Community Development Related activity. An article was placed in Update Sunnyvale.

Notice of Public Hearing, Staff Report and Agenda:

- Sustainability Commission and Planning Commission Agendas were posted on the City's official notice bulletin board.

ALTERNATIVES

1. Forward a Recommendation to the City Council to approve a Phased Reach Codes program and implement Phase 1 for new Residential and Non-Residential Construction Projects and Introduce an Ordinance to Amend Chapter 16.42 (Energy Code) of Title 16 (Buildings and Construction) and Find that the Action is Exempt from CEQA pursuant to CEQA Guidelines Sections 15308, 15305 and 15061.
2. Alternative 1 with Modifications.
3. Take no action and give staff direction on what should be included in the Reach Codes.

STAFF RECOMMENDATION

Alternative 1: Forward a recommendation to the City Council to approve a Phased Reach Codes program and implement Phase 1 for new Residential and Non-Residential Construction Projects: Introduce an Ordinance to Amend Chapter 16.42, Energy Code, of Title 16 (Buildings and Construction) and Find that the Action is Exempt from the California Environmental Quality Act (CEQA) pursuant to CEQA Guidelines Sections 15308, 15305 and 15061.
Through a phased approach to implement Reach Codes, the City of Sunnyvale would make a positive difference in reducing GHG and would be an aspirational example of a City’s ability to go above and beyond to reduce its climate impact through aggressive prioritization and careful cost-benefit analysis. Phase 1 implementation is projected to commence January 1, 2021, and Phase 2 is planned for Summer 2021.

Prepared by: Suzanne Park, Chief Building Official
Reviewed by: Andrew Miner, Assistant Director of Community Development
Reviewed by: Nupur Hiremath, Environmental Programs Manager
Reviewed by: Trudi Ryan, Director of Community Development
Reviewed by: Rebecca Moon, Senior Assistant City Attorney
Reviewed by: John Nagel, City Attorney
Reviewed by: Teri Silva, Assistant City Manager
Approved by: Kent Steffens, City Manager

ATTACHMENTS

1. Reserved for Report to Council
2. Draft Ordinance
3. Benchmarking with other Reach Codes
4. Wood-burning/Gas Appliances and Commercial Kitchens
5. Cost-Effectiveness Studies

6. Commercial Kitchens Study
7. Survey Results: Non-residential Reach Codes
8. Survey Results: Residential Reach Codes
9. Green Building Program
10. Public Contact

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DRAFT 8/14/2020 *RLM*

ORDINANCE NO. _____

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF SUNNYVALE TO AMEND CHAPTER 16.42 (ENERGY CODE) OF TITLE 16 (BUILDINGS AND CONSTRUCTION) OF THE SUNNYVALE MUNICIPAL CODE

WHEREAS, Sunnyvale's Climate Action Playbook, adopted in 2019 includes six key strategies to reduce greenhouse gas (GHG) emissions. Strategy 2 is Decarbonizing Buildings, which aims to reduce natural gas use and shift to all-electric buildings, including a target to achieve 100 percent all-electric new buildings by 2030; and

WHEREAS, pursuant to Sections 17922, 17958, 17958.5 and 17958. 7 of the California Health and Safety Code, the City may adopt the provisions of the California Building Standards Code amendments to those provisions which are reasonably necessary to protect the health, welfare and safety of the residents of Sunnyvale because of local climatic, geological and topographical conditions; and

WHEREAS, on November 25, 2019, the City Council adopted Ordinance No. 3149-19 adopting by reference the 2019 California Energy Code as Chapter 16.42 of the Sunnyvale Municipal Code; and

WHEREAS, the City Council hereby makes the following findings with respect to local geological, topographical and climatic conditions relating to the amendments to the California Energy Code for which such findings are required:

A. Sunnyvale is located in the Santa Clara Valley which is densely populated and located in an area of high seismic activities. Sunnyvale is situated on alluvial soils between San Francisco Bay and the San Andreas Fault zone. The City's location makes it particularly vulnerable to damage by seismic events. The relatively young geological processes that have created the San Francisco Bay Area are still active today. Seismically, the City sits between two active earthquake faults (San Andreas and the Hayward/Calaveras) and numerous potentially active faults;

B. Concern for fire-life safety associated with gas appliances and associated piping located in the ground and in the buildings increases with the risk of explosion or fire if there is a structural failure due to a seismic event considering the increasing number of buildings in the region;

C. Severe seismic events could disrupt communications, damage gas mains, and place extreme demands on the limited and widely dispersed resources of the Public Safety Department necessary for the life safety needs of the community;

D. The local geographic, topographic, and climatic conditions pose an increased hazard in acceleration, spread, magnitude, and severity of potential fires in the

City, and may cause a delayed response from emergency responders, allowing further growth of the fire;

E. Over the next century, increasing levels of atmospheric greenhouse gas concentrates are expected to result in global temperature increases, causing a variety of local changes, including extreme weather conditions, sea level rise, more frequent heat waves and extended period of drought. Sea level rise as a result of climate change will have a dramatic local impact on the City. The City's northern area borders the southern end of the San Francisco Bay and is particularly vulnerable to sea level rise and is at an increased risk of flooding. Increased heat as a result of climate change can have a local impact on the health, safety, and welfare of the City's population, especially those without resources to purchase air conditioning, the elderly, disabled, or those with children. Failure to address and substantially reduce Greenhouse Gas creates an increased risk to the health, safety and welfare of the City residents;

F. Amendments to the California Codes have been adopted in the past by the City Council based on specific findings of local geographic, topographic and climatic conditions; and the City Council hereby reaffirms such findings and confirms that the facts on which such findings were based continue to exist;

G. The provisions of this Ordinance establishing certain more restrictive standards than the California Codes will better serve to prevent or minimize structural and environmental damage resulting from local conditions; and

WHEREAS, the City Council hereby makes the following additional findings with respect to cost effectiveness of any amendments to the California Codes for which such findings are required:

A. An August 1, 2019 Low Rise Residential Reach Code Cost Effectiveness Study prepared by Frontier Energy, Inc. and Misti Bruceri & Associates, LLC, funded by California utility ratepayers and submitted to the California Energy Commission supports and documents the cost-effectiveness of the Ordinance; and

B. A July 25, 2019 Non-residential New Construction Reach Code Cost Effectiveness Study prepared by TRC Advanced Energy and Energy Soft, funded by California utility ratepayers and submitted to the California Energy Commission further supports and documents the cost-effectiveness of the Ordinance; and

C. This Ordinance is in alignment with the cost effectiveness studies and therefore the City Council finds them to be cost-effective; and

D. None of the provisions of this Ordinance change minimum efficiency standards, and therefore this Ordinance is not preempted by federal appliance regulations;

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF SUNNYVALE DOES ORDAIN AS FOLLOWS:

SECTION 1. Section 16.08.020 REPEALED AND RE-ADOPTED. Chapter 16.42 (Energy Code) of Title 16 (Buildings and Construction) of the Sunnyvale Municipal Code is hereby repealed and re-adopted to read as stated in Exhibit "A" attached hereto and incorporated by reference.

SECTION 2. STATUTORY REFERENCES, INCLUSIONS OF AMENDMENTS AND ADDITIONS. Whenever reference is made to any portion of this ordinance, or of any other chapter or section of the Sunnyvale Municipal Code, or of any other ordinance of the city of Sunnyvale, or of any law of the State of California, the reference applies to all amendments and additions now or thereafter made.

SECTION 3. INTERPRETATIONS. In interpreting and applying the provisions of this ordinance, the requirements contained herein are declared to be minimum requirements for the purposes set forth. The provisions of this ordinance, insofar as they are substantially the same as existing statutory provisions relating to the same subject matter, shall be construed as restatements and continuations and not as new enactments. This ordinance shall not nullify the more restrictive provisions of covenants, agreements or other ordinances or laws, but shall prevail as to such provisions which are less restrictive.

SECTION 4. FINDINGS. To the extent the changes and modifications set forth in this ordinance to the 2019 California Code are deemed more restrictive than the standards contained in the 2019 California Building Standards Codes, thus requiring findings describing local conditions that justify such modifications, the Council finds and determines that the changes are reasonably necessary because of local climatic, geologic, or topographic conditions and adopts the findings for local amendments to the California Energy Code, 2019 Edition, attached as Exhibit "B" and incorporated herein by reference.

SECTION 5. CEQA - EXEMPTION. The City Council finds, pursuant to Title 14 of the California Code of Regulations, Section 15308 (Class 8) Actions by Regulatory Agencies for Protection of the Environment and Section 15305 (Class 5) Minor alterations in Land Use Limitations and Section 15061 of the CEQA Guidelines, that this ordinance is exempt from the requirements of the California Environmental Quality Act (CEQA) because it can be seen with certainty that there is no possibility that the changes adopted will have a significant effect on the environment.

SECTION 6. CONSTITUTIONALITY; SEVERABILITY. If any section, subsection, sentence, clause or phrase of this ordinance is for any reason held to be invalid, such decision or decisions shall not affect the validity of the remaining portions of this ordinance. The City Council hereby declares that it would have passed this ordinance, and each section, subsection, sentence, clause and phrase thereof irrespective of the fact that any one or more sections, subsections, sentences, clauses or phrases be declared invalid.

SECTION 7. EFFECTIVE DATE. This ordinance shall be in full force and effect on January 1, 2021.

SECTION 8. POSTING AND PUBLICATION. The City Clerk is directed to cause copies of this ordinance to be posted in three (3) prominent places in the City of Sunnyvale and to cause publication once in The Sun, the official publication of legal notices of the City of Sunnyvale, of a notice setting forth the date of adoption, the title of this ordinance, and a list of places where copies of this ordinance are posted, within fifteen (15) days after adoption of this ordinance.

Introduced at a regular meeting of the City Council held on _____, and adopted as an ordinance of the City of Sunnyvale at a regular meeting of the City Council held on _____, by the following vote:

AYES:
NOES:
ABSTAIN:
ABSENT:
RECUSAL:

ATTEST: APPROVED:

_____ _____
City Clerk Mayor
Date of Attestation: _____

(SEAL)

APPROVED AS TO FORM:

_____
City Attorney

EXHIBIT A

CHAPTER 16.42 —ENERGY CODE

16.42.010. Title.
This chapter shall be known and may be cited and referred to as the "Energy Code for the City of Sunnyvale."

Section 16.42.020. Adoption by reference.
The "2019 California Energy Code" adopted by the State Building Standards Commission in California Code of Regulations (CCR) Title 24, Part 6 is hereby adopted by reference, with changes and modifications as hereinafter set forth, as the energy code of the city of Sunnyvale.

Section 16.42.030. Scope.
(a) Any project that has submitted a complete application for a planning or building entitlement prior to January 1, 2021, is not required to comply with the All-Electric Building requirements.

(b) 2019 California Energy Code Section 100.0(e)2A (Newly constructed buildings – All newly constructed buildings) is hereby amended to read as follows:

> **100.0(e)2A. All newly constructed buildings.** Sections 110.0 through 110.12 apply to all newly constructed buildings within the scope of Section 100.0(a). In addition, newly constructed buildings shall meet the requirements of Subsections B, C, D or E, as applicable; and shall be an All-Electric Building as defined in Section 100.1(b).
>
> For the purposes of All-Electric Building requirements, "newly constructed buildings" shall include the buildings defined in Section 100.1 as well as newly constructed additions and improvements in existing buildings where more than 50 percent of the exterior walls are removed or 50 percent of the wall plate height is raised. The Chief Building Official shall make the final determination regarding the application of this section.
>
> For the purposes of All-Electric Building requirements, "newly constructed buildings" shall not include newly constructed additions and tenant improvements in existing buildings except as defined above.

Exception 1: F, H, L Occupancies may utilize natural gas and shall provide installed prewiring for future use of electric appliances.

Exception 2: Exemption for public agency owned and operated emergency centers. To take advantage of this exception applicant shall provide third party verification that All-Electric space heating requirement is not cost effective and feasible.

Exception 3: Hotels with eighty or more guestrooms may utilize natural gas in on-site commercial laundry facilities only.

Exception 4: Non-residential kitchens may utilize natural gas for cooking appliances.

Exception 5: If the applicant establishes that there is not an all-electric prescriptive compliance pathway for the building under the Energy Code, and that the building is not able to achieve the performance compliance standard applicable to the building under the Energy Code using commercially available technology and an approved calculation method, then the Building Official may grant a modification. If the Building Official grants a modification pursuant to this Exception, the applicant shall comply with the pre-wiring provision of Note 1 below.

Note 1: If natural gas appliances are used in any of the above exceptions 1-4, natural gas appliance locations must also be electrically pre-wired for future electric appliance installation. They shall include the following:

1. A dedicated circuit, phased appropriately, for each appliance, with a minimum amperage requirement for a comparable electric appliance (see manufacturer's recommendations) with an electrical receptacle or junction box that is connected to the electric panel with conductors of adequate capacity, extending to within 3 feet of the appliance and accessible with no obstructions. Appropriately sized conduit may be installed in lieu of conductors;

2. Both ends of the conductor or conduit shall be labeled with the words "For Future Electric appliance" and be electrically isolated;

3. A circuit breaker shall be installed in the electrical panel for the branch circuit and labeled for each circuit, an example is as follows (i.e "For Future Electric Range;") and

4. All electrical components, including conductors, receptacles, junction boxes, or blank covers, related to this section shall be installed in accordance with the California Electrical Code.

Note 2: If any of the exceptions 1-4 are granted, the Building Official shall have the authority to approve alternative materials, design and methods of construction or equipment per CBC 104.

Section 16.42.040. Definitions.
2019 California Energy Code Section 100.1(b) (Definitions) is hereby amended by adding the following definition:

> **ALL ELECTRIC BUILDING:** is a building that has no natural gas or propane plumbing installed within the building, and that uses electricity as the source of energy for its space heating, water heating (including pools and spas), cooking appliances, and clothes drying appliances. All Electric Buildings may include solar thermal pool heating.

Section 16.42.050. Space-conditioning equipment.
2019 California Energy Code Section 110.2 (Mandatory Requirements for Space-Conditioning Equipment), first paragraph, is hereby amended to read as follows:

> **110.2. Certification by Manufacturers.** Any space-conditioning equipment listed in this section may be installed only if the manufacturer has certified to the Commission that the equipment complies with all the applicable requirements of this section and section 100.0(e)2A.

Section 16.42.060. Service water-heating systems and equipment.
2019 California Energy Code Section 110.3 (Mandatory Requirements for Service Water-Heating Systems and Equipment), subsection (a), first paragraph, is hereby amended to read as follows:

> **110.3(a). Certification by manufacturers.** Any service water-heating system or equipment may be installed only if the manufacturer has certified that the system or equipment complies with all of the requirements of this subsection and section 100.0(e)2A for that system or equipment.

Section 16.42.070. Pool and spa systems and equipment.
2019 California Energy Code Section 110.4 (Mandatory Requirements for Pool and Spa Systems and Equipment), subsection (a), first paragraph, is hereby amended to read as follows:

> **110.4(a). Certification by manufacturers.** Any pool or spa heating system or equipment may be installed only if the system or equipment meets the requirements of section 100.0(e)2A and the manufacturer has certified that the system or equipment has all of the following:

Section 16.42.080. Natural gas pilot lights.
2019 California Energy Code Section 110.5 (Natural Gas Central Furnaces, Cooking Equipment, Pool and Spa Heaters, and Fireplaces: Pilot Lights Prohibited), first paragraph, is amended as follows:

> **110.5.** Any natural gas system or equipment listed below may be installed only if it meets the requirements of Section 100.0(e) 2A and does not have a continuously burning pilot light:

Section 16.42.090. Solar requirements.

(a) **Title.** 2019 California Energy Code Section 110.10 (Mandatory Requirements for Solar-Ready Buildings), title, is hereby amended to read as follows:

> **SECTION 110.10 – MANDATORY REQUIREMENTS FOR SOLAR READY BUILDINGS AND SOLAR PANEL SYSTEM REQUIREMENTS FOR NON-RESIDENTIAL NEW BUILDINGS**

(b) **Hotel/Motel Occupancies and High-rise Multifamily Buildings.** 2019 California Energy Code Section 110.10(a)3 (Covered Occupancies – Hotel/Motel Occupancies and High-rise Multifamily Buildings) is hereby amended to read as follows:

> **110.10(b)3. Hotel/Motel Occupancies and High-rise Multifamily Buildings.** Hotel/motel occupancies and high-rise multifamily buildings with ten habitable stories or fewer shall comply with the requirements of Section 110.10(b) through 110.10(d) and Table 110.10-A.

(c) **Nonresidential Buildings.** 2019 California Energy Code Section 110.10(a)4 (Covered Occupancies – Nonresidential Buildings) is hereby amended to read as follows:

> **110.10(a)4. Nonresidential Buildings.** Nonresidential buildings with three habitable stories or fewer, other than healthcare facilities, shall comply with the requirements of Section 110.10(b) through 110.10(d) and Table 110.10-A.

(d) **Solar panel requirements for all new nonresidential and high rise residential buildings.** 2019 California Energy Code Section 110.10(a) (Covered Occupancies) is hereby amended by adding the following table:

Table 110.10-A: Solar panel requirements for all new nonresidential and high rise residential buildings

Square footage of building	**Size of panel**
Less than 10,000 sq. ft.	Minimum of 3-kilowatt PV systems
Greater than or equal to 10,000 sq. ft.	Minimum of 5-kilowatt PV systems

EXCEPTION: As an alternative to a solar PV system, the building type may provide a solar hot water system (solar thermal) with a minimum collector area of 40 square feet, additional to any other solar thermal equipment otherwise required for compliance with Part 6.

(e) **Minimum solar area - exceptions.** 2019 California Energy Code Section 110.10(b)1B (Minimum Solar Area – Low-rise and High-rise Multifamily Buildings, Hotel/Motel

Occupancies, and Nonresidential Buildings), Exception 2, is hereby amended to read as follows:

> **EXCEPTION 2 to Section 110.10(b)1B:** High-rise multifamily buildings, hotel/motel occupancies with a permanently installed domestic solar water-heating system complying with Section 150.1(c)8Biii and an additional collector area of 40 square feet.

(f) **Minimum solar area – performance equivalency.** 2019 California Energy Code Section 110.10(b)1B (Minimum Solar Area – Low-rise and High-rise Multifamily Buildings, Hotel/Motel Occupancies, and Nonresidential Buildings) is hereby amended by adding the following:

> **EXCEPTION 6 to Section 110.10(b)1B**: Performance equivalency approved by the building official.

(g) **Minimum solar area – shading.** 2019 California Energy Code Section 110.10(b)3 (Minimum Solar Area – Shading) is hereby amended by adding the following:

> **110.10(b)3C.** The solar zone needs to account for shading from obstructions that may impact the area required in 110.10(b)1B. When determined by the Building Official that conditions exist where excessive shading occurs and solar zones cannot be met, a performance equivalency approved by the Building Official may be used as an alternative.

BENCHMARKING WITH OTHER CITY REACH CODES

Member Agencies	Status	Next Meeting	Date of Next Meeting	Building Reach Code	Ban Natural Gas	EV Reach Code
Mountain View	Complete	Approved		Yes	Yes	Yes
Morgan Hill	Complete	Approved		Yes	Yes	
Milpitas	Complete	Approved		Yes		Yes
Monte Sereno	Complete	Approved		Yes		Yes
Saratoga	Complete	Approved		Yes		Yes
Los Gatos	Complete	Approved		Yes	Yes	Yes
Cupertino	Complete	Approved		Yes	Yes	Yes
Los Altos Hills	Complete	Approved		Yes		Yes
Campbell	Complete	Approved		Yes		
Los Altos	1st Reading	City Council	Pending	Yes	Yes	
Santa Clara County	Staff Proposal	Pending	Pending	Yes		
Sunnyvale	Staff Proposal	Sustainability Commission	8/17/2020	Yes		Phase 2
Santa Clara	Staff Proposal	Pending	Pending	Yes		
Gilroy	Declined	Declined				

COMPARISON OF RESIDENTIAL WOOD-BURNING OR GAS APPLIANCES

	Proposed Sunnyvale	Pending Mountain View	Proposed Santa Clara	Adopted Cupertino	Adopted Menlo Park
New Gas Ranges	Not permitted	Not permitted	Yes, as an exemption to all-electric	Not permitted	Yes, as an exemption to all-electric
New Wood-burning Fireplaces	Not permitted	Not permitted	Not permitted	Not permitted	Not permitted
New Gas Fireplaces	Not permitted	Not permitted	Not permitted	Not permitted	Not permitted

COMPARISON OF COMMERCIAL KITCHENS

	Proposed Sunnyvale	Adopted Mountain View	Pending Santa Clara	Adopted Cupertino	Adopted Menlo Park
Commercial Kitchens	Permitted	Not permitted	Not permitted	Not permitted	Not permitted
Business related reason to cook with flame. (Pizza Oven, Barbeque-themed restaurants)	n/a	Permitted	Permitted	Permitted	Permitted
The need cannot be achieved by with electric fuel source	n/a	Permitted	Permitted	Permitted	Permitted
The applicant has employed reasonable methods to mitigate the greenhouse gas impacts of the gas-fueled appliance	n/a	Permitted	Permitted	Permitted	Permitted
Applicant must pre-wire for electric appliances.	n/a	Required	Required	Required	Required

Cost-effectiveness studies have been developed and published by a consortium of California Investor-Owned Utilities and the California Statewide Codes and Standards Program. Since a summary of the cost-effectiveness studies do not exist, below are the links to the studies.

2019 Residential New Construction:
https://localenergycodes.com/download/73/file_path/fieldList/2019%20Res%20NC%20Cost-eff%20Report

2019 Nonresidential New Construction:
https://localenergycodes.com/download/74/file_path/fieldList/2019%20NR%20NC%20Cost%20Effectiveness%20Report

2019 Mid-rise Residential New Construction:
https://localenergycodes.com/download/492/file_path/fieldList/2019%20Mid-rise%20NC%20Cost-Eff%20Report.pdf

Energy Reduction in Commercial Kitchens

San Francisco Institute of Architecture (SFIA)

Master of Science in Green Building (MSGB)

Master's Thesis

Denis Livchak

MSGB316 – Green Building Consulting & Design Practice

Prepared for Fred A. Stitt and Phil Hawes, San Francisco Institute of Architecture

February 2017

Contents

Introduction

America has the highest carbon footprints in the world, consuming 20 metric tons per person compared to an average of 4 tons worldwide[1]. An average American eats out more than 180 times a year[2], and over a quarter of the US population is indirectly involved in the foodservice industry[3] which consumes millions of therms of gas and megawatts of electricity emitting greenhouse gases.

Cooking initially started out with placing food next to the fire and has evolved into a more controlled process. Some food even until this day gets cooked on underfired broilers by a direct flame underneath, while other cooking is done by injecting precise amounts of steam. A single commercial fryer in a restaurant often consumes more energy than an entire residential household and a quick service restaurant monthly energy bill can easily reach five figures.

The state of California cannot build more power plants and renewable energy cannot keep up with the state's population growth. Energy reduction should precede new energy generation and foodservice facilities consume over 250 kBtu/h per square foot compared to an office building which consumes less than 100 kBtu/h/ft2[4]. Foodservice is a difficult industry that adapts slowly to the new technologies. The biggest expense for the restaurant operator is labor then cost of food followed by rent. Energy bills are very high for the operator, however are cheaper than the other expenses. Lowering the energy bill can be a simple task requiring changing light bulbs, or can be much more difficult requiring ventilation system and cook line retrofits.

The challenges to energy reduction in the foodservice industry include the following:

- High stress environment where speed of service is key
- Equipment operators get paid low wages and do not have incentives to reduce energy
- Some inefficient equipment is easier to operate than energy efficient equipment
- Energy efficient equipment is more expensive and often requires more maintenance

This study will examine these challenges in different foodservice scenarios and identify the highest energy use appliances. The appliance energy use profiles will be characterized and related to operator behavior. Inefficient appliances will be replaced with efficient alternatives and submetered in order to document the energy savings. The findings from this study will be utilized in order to financially incentivize energy efficient equipment for restaurant operators by the gas and electric utilities. This research was commissioned by the California Public Utility Commission with a focus on Natural Gas Savings. The research was conducted by Fisher Nickel who runs the Foodservice Technology Center for the Pacific Gas and Electric Company.

[1] Timothy Gutowski, MIT
[2] Annual restaurant visits per capita in 2010 by country, Statista
[3] Richard Young, Foodservice Technology Center
[4] Sustainable Foodservice Consulting

Foodservice Appliance Types

A typical foodservice facility will have a range, an oven, a griddle or a broiler and a fryer. Quick service restaurants often use griddles and fryers to cook the most popular items. Cook to order restaurants use ovens and ranges to cook their most popular items, but the appliance lines vary from restaurant to restaurant. The appliances have to be placed under a ventilation hood; larger institutional facilities have several ventilation hoods and quick service facilities may have individually designed hoods paired with each appliance type.

Range

Ranges are some of the most popular appliance types, heating a pot or a pan by direct flame. Fine dining and cook to order restaurants have several ranges mostly using smaller pans where food is heated for a short period of time 3-10 minutes. Stocks and soups are also prepared on ranges in larger pots and are simmered for hours.

Figure 1 six burner range at Werewolf

Figure 2 back range at Doubletree

Restaurant range design has not changed much over the years. A typical range will have six burners. Gas is supplied to the front of the appliance through a manifold and then supplied to each burner through a cast iron tube and a nozzle. The burners are usually circular in shape, however star shaped burners also are available. Each of the burners has a pilot next to it which remains lit 24/7 and consumes close to 0.5 kBtu/h per burner when properly adjusted. Fine dining restaurants with several ranges can have up to a therm per day per range attributed to the pilot.

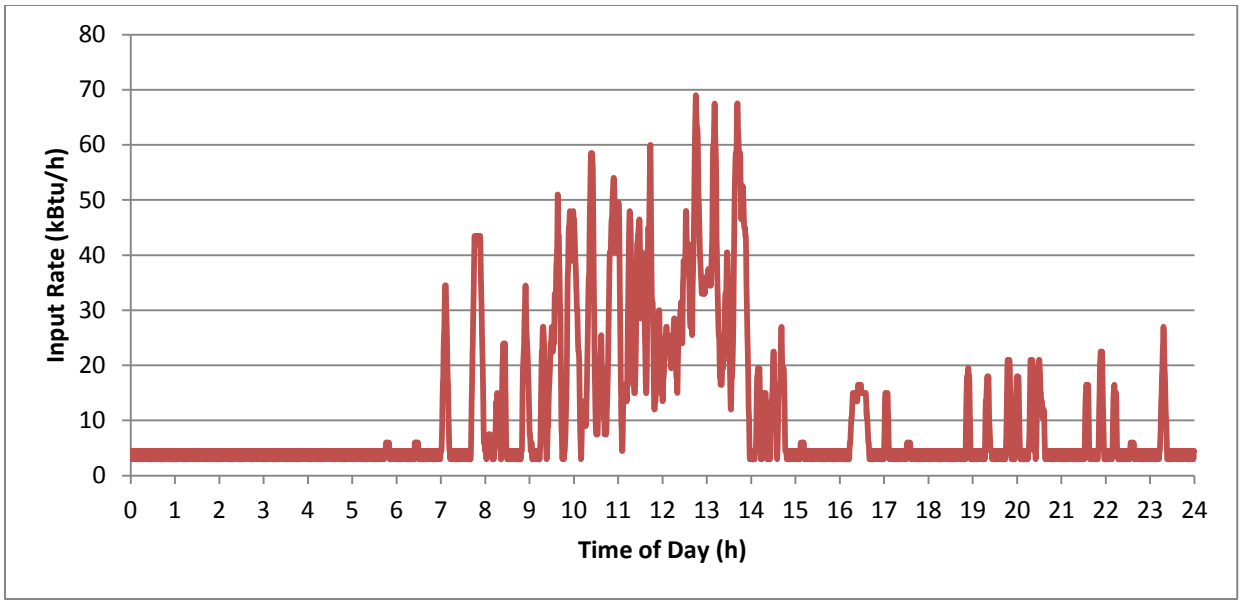

Figure 3 Typical Range Energy Use Profile

Spark ignition systems have been widely used in the residential sector; however have not been adapted by the commercial foodservice industry due to reliability issues. For automatic ignition, there needs to be a wire running to each burner in order to create a spark. When staff cleans the equipment, wires are often disturbed and the top of the spark contact often gets fouled with spilled food or bent by cleaning practices.

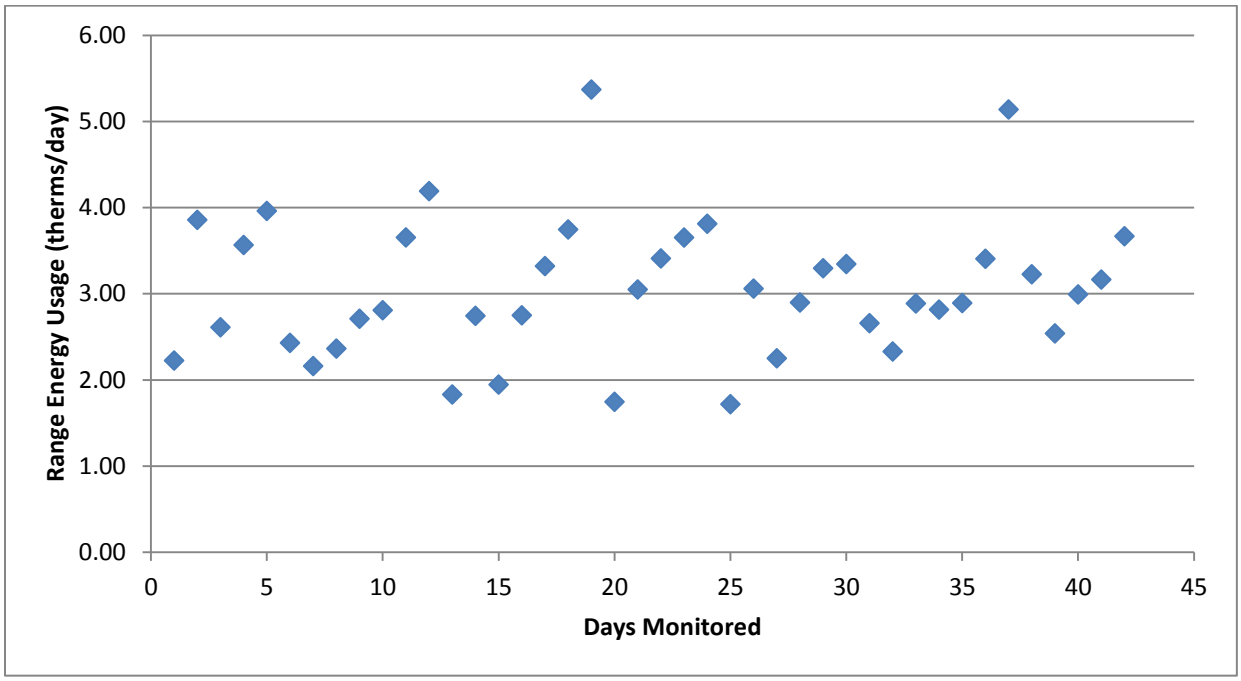

Figure 4 Range Energy Usage Consistency

Comparison of different burner designs on the market has not shown energy savings of one design over another. The only energy savings opportunity besides pilot energy reduction is the cooking vessel itself. Pots and pans with a heatsink on the bottom have been proven to save energy and reduce cooking times. Energy usage of ranges is relatively low compared to other appliances, because the operator can see the cooking flame and knows that if the flame is on and nothing is being cooked the kitchen is heated up. Other appliances do not have an exposed flame and the operator does not always know when they are wasting energy.

Table 1 Range Energy Use and Time of Operation

	Energy Use	Operation Time
Werewolf	3.1 therms/day	7.2 hours/day
Airline Catering (with salamander)	4.7 therms/day	12.8 hours/day
Doubletree 1 (with salamander)	5.0 therms/day	19 hours/day
Doubletree 2	2.8 therms/day	16 hours/day
Doubletree 3	1.9 therms/day	11 hours/day
Average	**3.5 therms/day**	**13.2 hours/day**

No ranges were replaced; this study was able to characterize range energy usage at three sites. Two of the ranges had a built in salamander that was used for melting cheese for nachos. The ranges with salamanders used almost twice the energy, but the salamander was not submetered. Compared to other ranges with no salamander, it is estimated that salamanders account for 2 therms per day energy consumption. Ranges without the salamander used an average of 2.6 therms per day. Energy efficient cookware with integrated heatsinks is estimated to reduce that energy by 30-40% as documented in this report: http://www.fishnick.com/publications/appliancereports/rangetops/Eneron_Pot_Testing.pdf

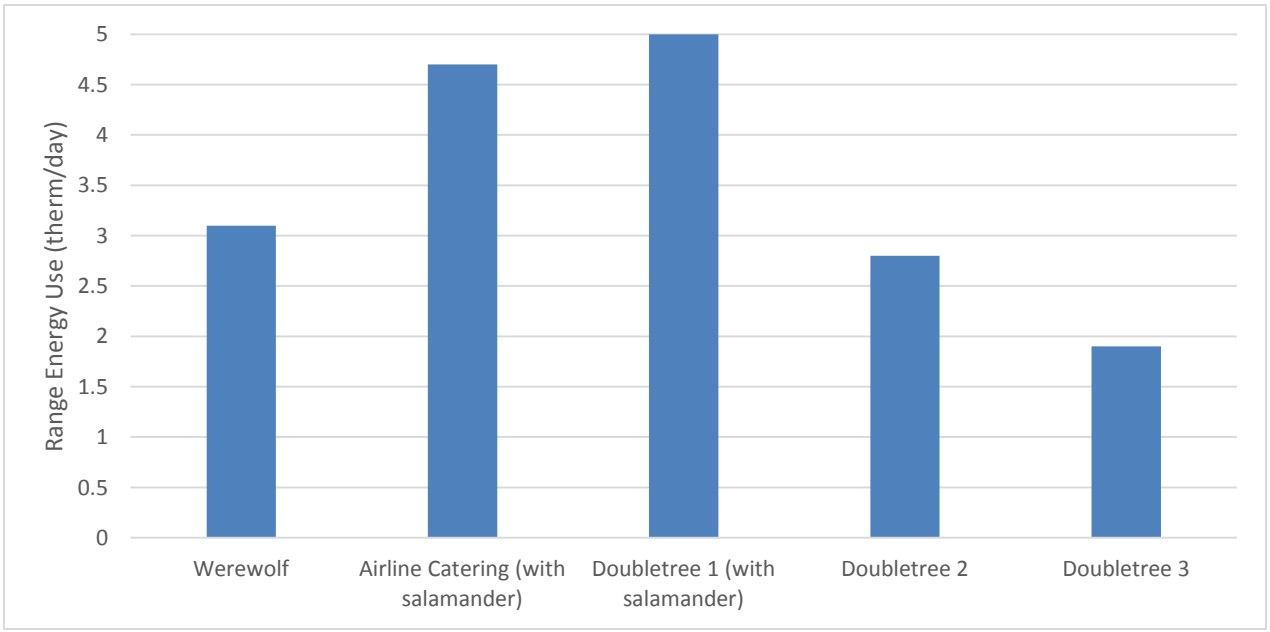

Figure 5 Standard Range Energy Use per Site

Ovens and Steamers

There are several different types of ovens on the market including convection ovens, pizza ovens, combi ovens, steamers and rack ovens. Convection ovens are one of the most popular appliance types with the ability to cook a plethora of different foods. Foodservice manufacturers have been improving oven designs for decades producing different oven types which vary in price and energy efficiency.

Figure 6 Baseline Convection Oven

Figure 7 Replacement Combi Oven

Most advanced ovens are combi ovens which combine convection and moisture cooking. Combi ovens can replace a convection oven and a steamer. Combis inject steam in the cooking cavity either by using an internal pressurized boiler or by spraying a controlled amount of water on a hot fan wheel which vaporizes the water. Power burners, better door seals and fan modulation make combi ovens more efficient and more expensive than convection ovens. Combi ovens allow the operator to maximize the use of space in the kitchen while expanding their menu. Aside from convection ovens, combis can replace steamers and rotisserie ovens. Rotisserie ovens are some of the most inefficient appliances in the kitchen that do not have a sealed cavity causing a lot of the heat to escape which makes them a great potential combi oven replacement.

Figure 8 Oliver's Market Combi Replacement

Figure 9 Oliver's Market Baseline Rotisserie

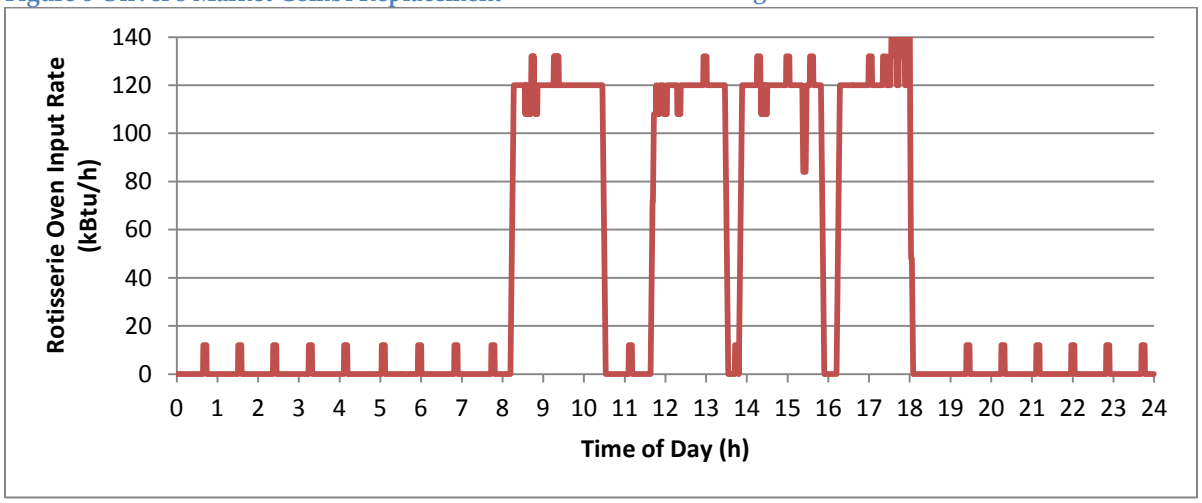

Figure 10 Rotisserie Oven Energy Profile Oliver's Market Cotati

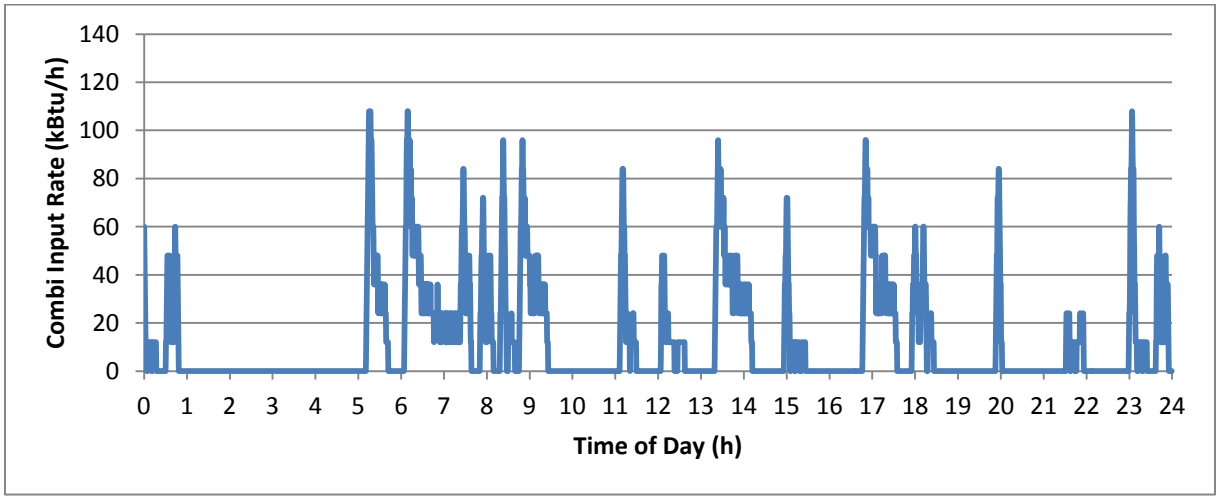

Figure 11 Combi Oven Energy Profile Oliver's Market Windsor

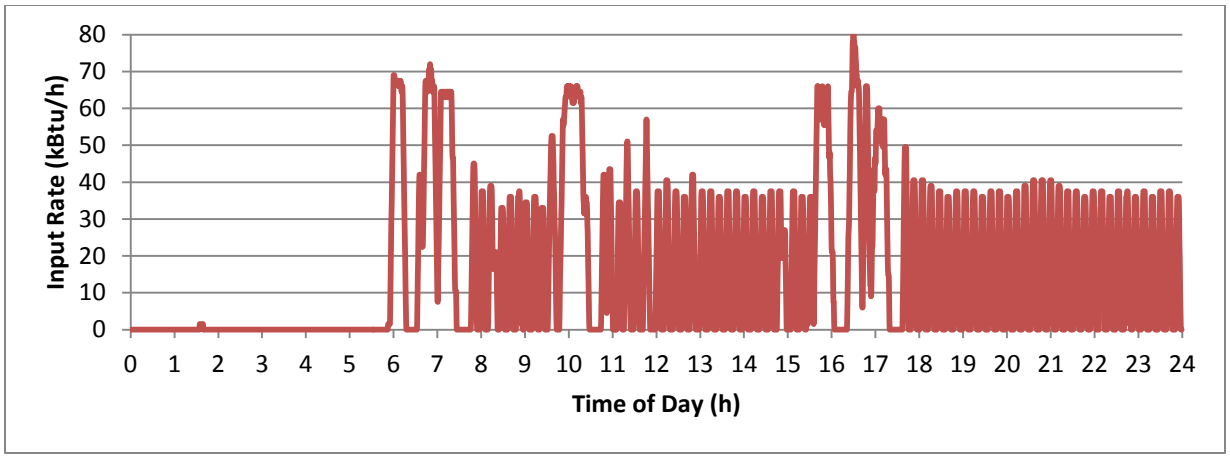

Figure 12 Convection Oven Average Hourly Input Rate

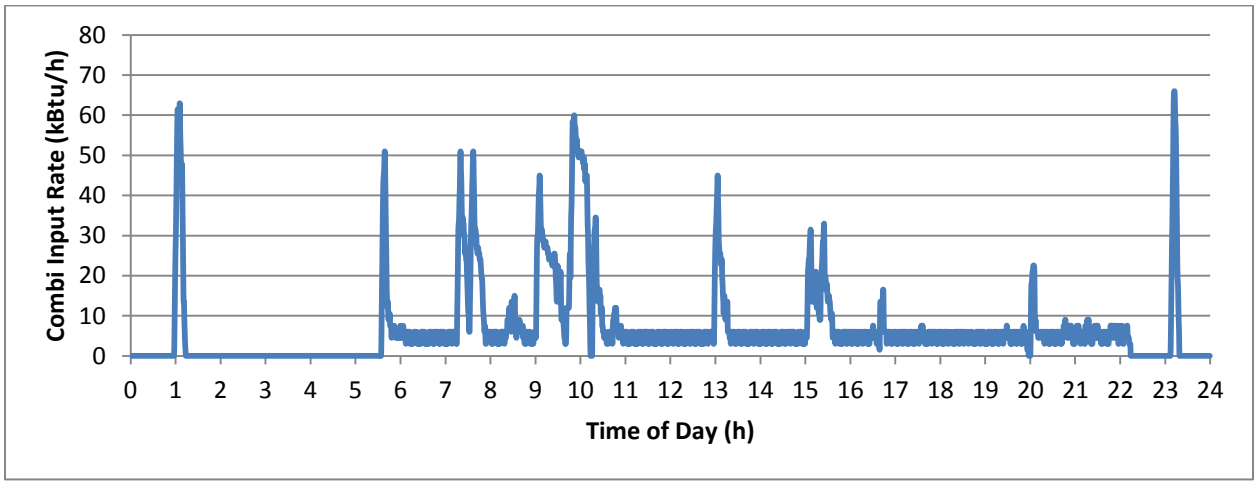

Figure 13 Combi Oven Replacement Average Hourly Input Rate

Standard convection ovens come in single and double stack configurations, based on gas monitoring, a single cavity consumes between 3 to 6 therms of gas per day, a doublestack cavity uses between 5 and 9 therms per day. Energy efficient convection ovens are characterized by utilizing insulation, thermostatic control optimization and efficient gas flue design. Doublestack convection ovens that were replaced at UCSF reduced energy consumption from 15.5 to 7.2 which is over 3000 therms saved per year.

Table 2 Oven Energy Use and Operation Time

	Convection Oven Energy Use (therms/day)	Replacement (therms/day)	Operation Time
Doubletree 1 (dual)	4.2	1.4	19.2
Doubletree 2 (dual)	5.6	N/A	19.1
UCSF 1 (dual)	7.0	3.8	14.0
UCSF 2 (dual)	8.5	3.4	16.2
Airline Catering	5.9	N/A	17.6
Werewolf (single cavity)	3.5	1.7 (combi)	19

The convection oven is the most commonly replaced appliance by a combi oven. The single convection oven at the Airline Catering Company and the Restaurant Bar used 4.2 and 3.5 therms per day. The replacement combi oven at the Restaurant / Bar reduced the energy consumption by more than half and expanded their menu through moisture cooking. The biggest energy savings were achieved by replacing a rotisserie oven with a large combi oven resulting in 68% savings. The Doubletree hotel had three steamers with one of them replaced by a combi oven and the other two were replaced with an energy efficient steamer which reduced idle energy and consumed significantly less water.

Table 3 Combi Oven Replacement Results

Site	Baseline Appliance	Baseline Energy	Replacement Appliance	Replacement Energy	Energy Savings (therms/day)
Doubletree Hotel	Doublestack Steamer	80 kWh/day	10 half Pan Combi	0.4 Therms/day	80 kWh/day
Airline Catering	Convection Oven	4.2 therms/day	Doublestack 6 full Pan Combi	2 therms/day (est)	2 therms/day (est)
Restaurant / Bar (Werewolf)	Convection Oven	3.5 therms/day	10 half Pan Combi	1.7 therms/day	1.8 therms/day
Grocery Store	Rotisserie	7.8 therms/day	10 full Pan Combi	2.5 therms/day	5.3 therms/day

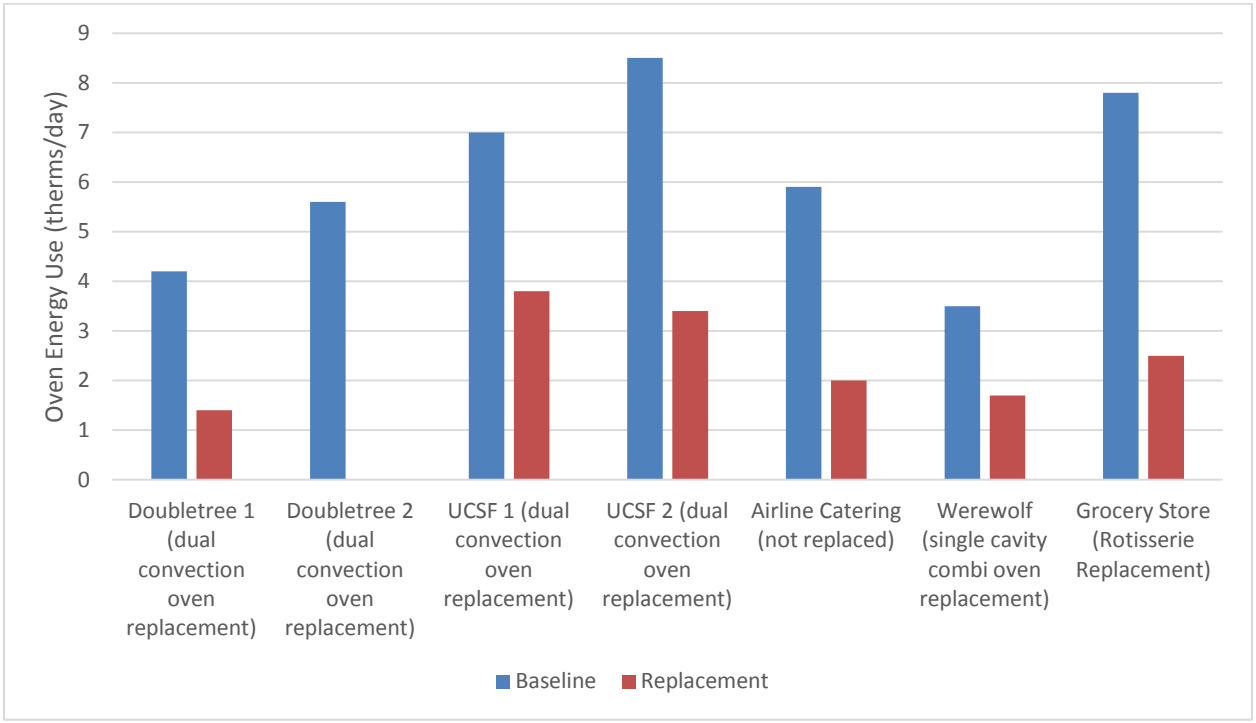

Figure 14 Oven Energy Savings per Site

Fryers

Fried food has been America's favorite food for centuries and fryers have become the centerpiece of quick service restaurants. They are able to produce delicious inexpensive food which often results in the highest profits for the restauranteur.

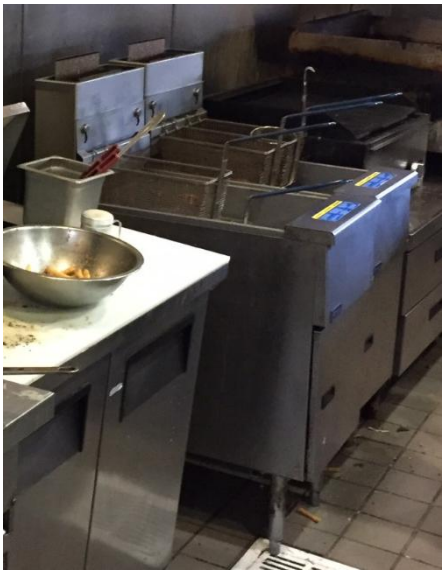

Figure 15 Low Cost Energy Efficient Fryer at Werewolf

Figure 16 High End Energy Efficient Fryer at Werewolf

A fryer is essentially a pot of oil that is heated. 14" wide fryers are the most popular and range in cost from $1 to 5k depending on their design. Inexpensive baseline fryers have tube burners underneath the square frypot for heating, the exhaust gases are then routed the back of the fryer. More advanced designs utilize a power burner that feeds a controlled mixture of gas and air into the burner. The burners can utilize either jet nozzles or be infrared burners which are generally more efficient. Flue gases can also be routed through a heat exchanger which maximizes heat transfer to the cooking oil.

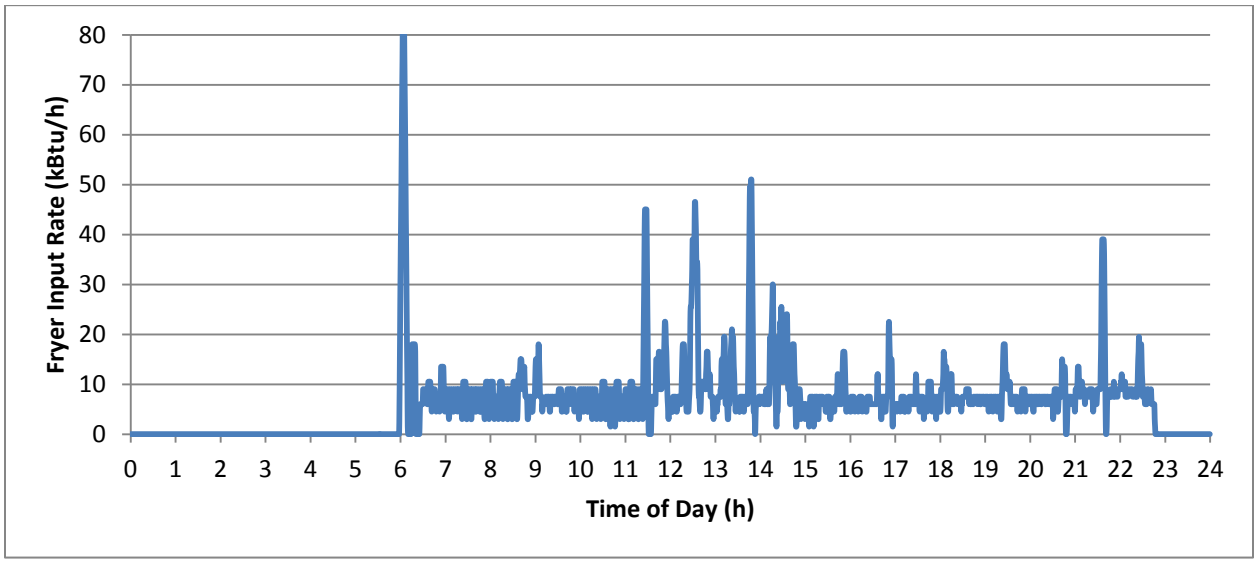

Figure 17 Typical Fryer Daily Energy Profile

14” fryers range between 30 and 60% in efficiency when cooking French fries with more efficient models having higher production capacity. Fryers were submetered at four sites and three standard fryers were replaced with energy efficient fryers. Replacement fryers resulted in 40-50% energy savings while increasing the restaurant’s production capacity. Fryer replacement yielded in at least one therm per day per vat savings.

Table 4 Fryer Energy Savings

	Baseline (therms/day)	Replacement (therms/day)	Operation Time (h)
Doubletree (dual)	3.7	1.3+1.0	15
UCSF (18” wide)	3.3	N/A	16.5
Airline Catering	3.4	2.4	16.7
Werewolf 1	2.7	1.8	11.0
Werewolf 2	2.5	N/A	18.6
Average	**3.1**	**1.6**	**16**

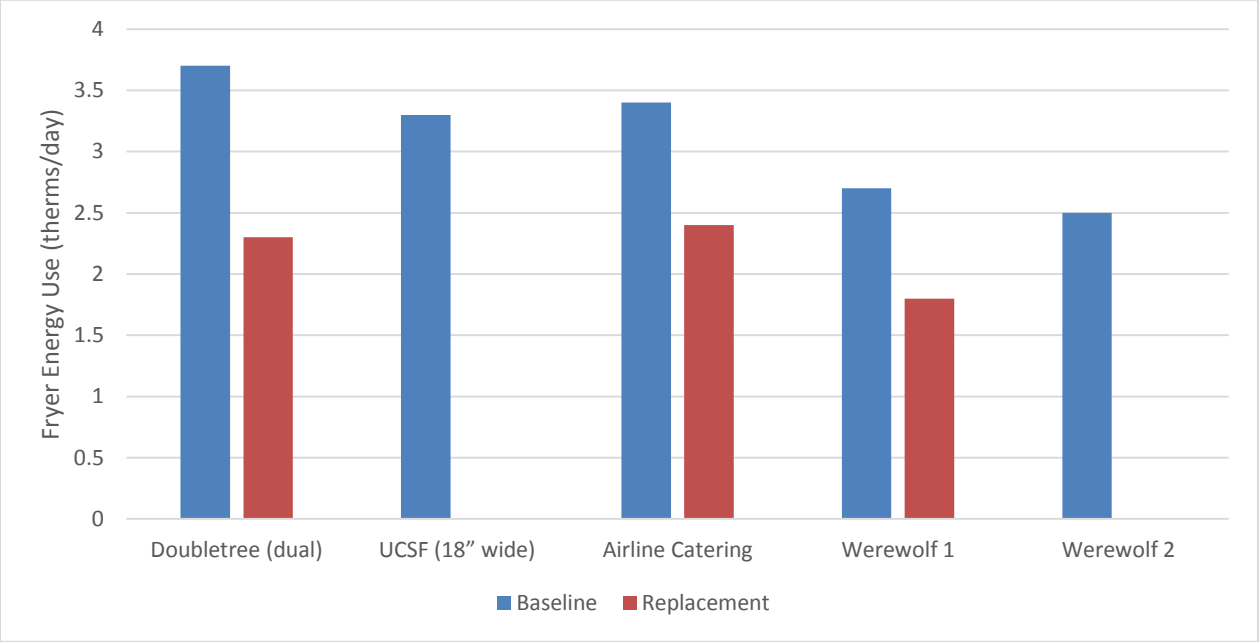

Figure 18 Fryer Replacement Energy Reduction

Griddle

Griddles or Flattops are used in a variety of restaurants to cook proteins by searing the outer surface. Burgers are one of the most common items cooked on the griddle, other items include eggs and vegetables that are not cooked in a pan.

Figure 19 Doubletree Non-thermostatic Griddle

Figure 20 Doubletree Replacement Thermostatic Griddle

Griddles are essentially a flat sheet of metal that is heated underneath. Conventional griddles use a ¼" stainless steel plate with tube burners underneath. 3ft wide griddles are most popular and each linear foot has its own controls. There are two types of controls: manual where the knob position is directly proportional to the flame underneath the griddle plate, and thermostatic where the flame turns on and off automatically based on the temperature setting. Most food is cooked between 325 and 375F on the griddle surface. Non-thermostatic griddle efficiency depends heavily on the operator who can waste a lot of energy by forgetting to turn down the burners after an item has been cooked. Thermostatic controls eliminate this problem and often have an indicator showing that the griddle is up to temperature.

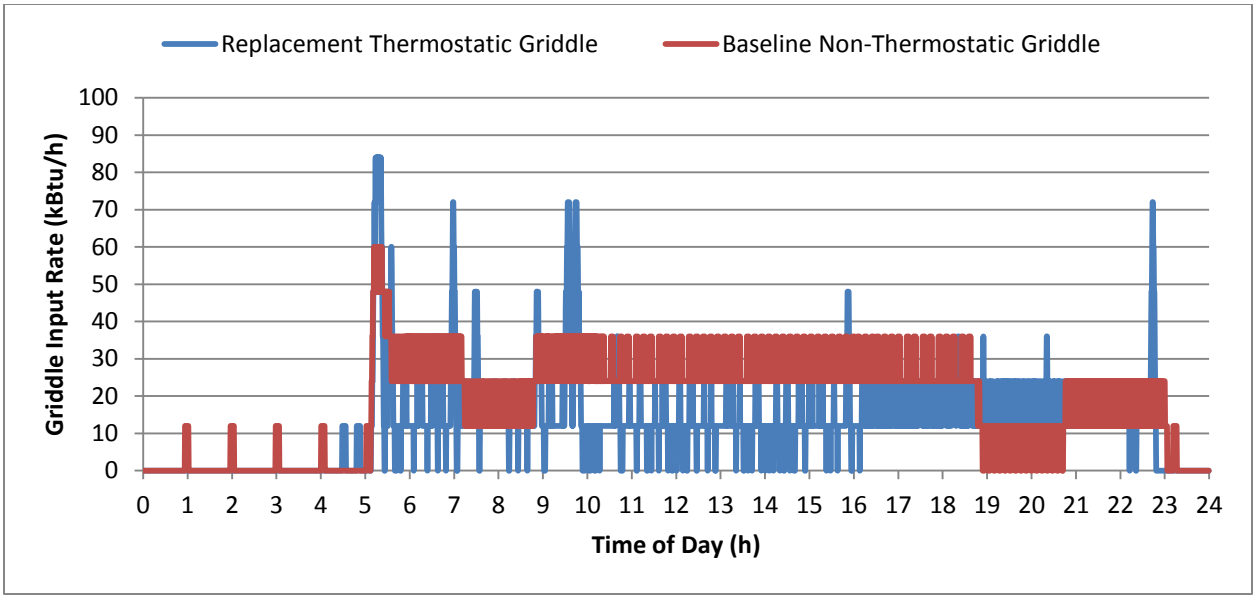

Figure 21 Thermostatic Griddle Replacement Energy Profiles

Energy efficient griddles use thermostatic controls and infrared burners. The griddle top thickness and surface material also makes a difference in energy consumption. Two griddles were monitored consuming an average of 4.5 therms per day. Baseline griddle replacement resulted in 1 therm per day energy savings with energy efficient thermostatic griddles.

Table 5 Griddle Replacement Results

	Baseline Energy Use (therms/day)	Replacement (therms/day)	Operation Time (h)
Doubletree	4.1	3.1	11.9
Werewolf 1	4.9	3.7	17.5
Average	4.5	3.4	14.7

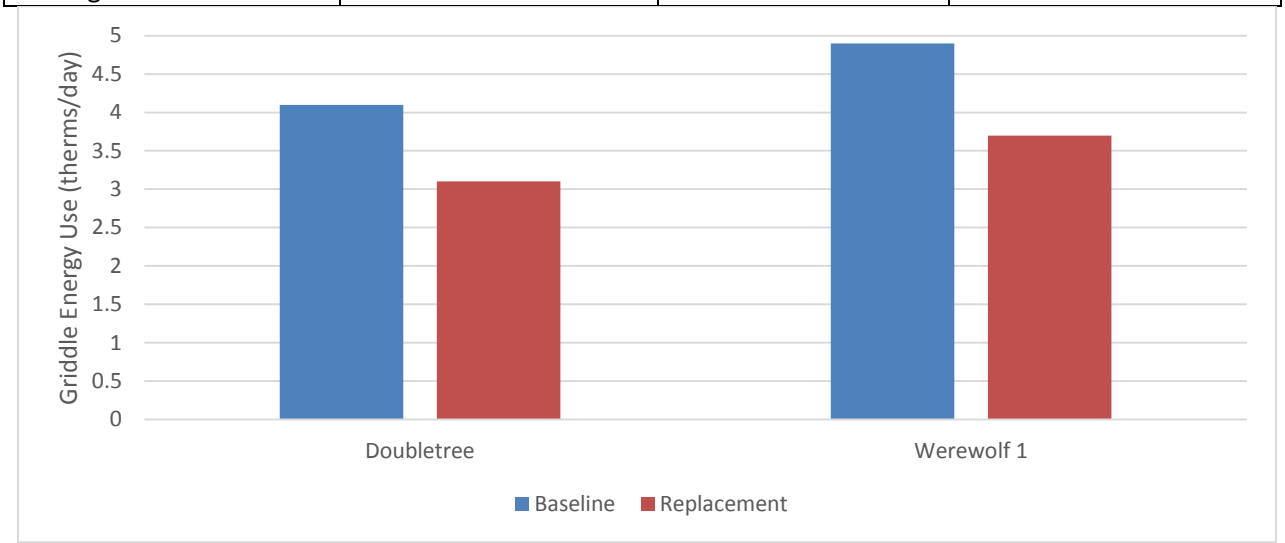

Figure 22 Griddle Replacement Results

Broiler

Broilers are some of the most energy intensive appliances in foodservice. Most establishments that serve alcohol have a broiler which is used to cook burgers and chicken producing the signature sear marks on the surface. Broilers operate between 500 to 600F requiring large amounts of heat which often escapes into the kitchen and requires high ventilation rates. Broilers use more than twice the energy of griddles and are non-thermostatic with each half linear foot having a gas input rate knob.

Figure 23 IR Plate Charbroiler

Figure 24 Baseline Underfired Charbroiler

Based on the broiler energy profiles below, these appliances are turned off in the morning and not adjusted much throughout the day. Energy efficient broilers utilize infrared burners that are more expensive than the standard cast iron tube burners. The infrared heat is spread more evenly across the broiler surface resulting in lower overall input rate compared to the standard broilers.

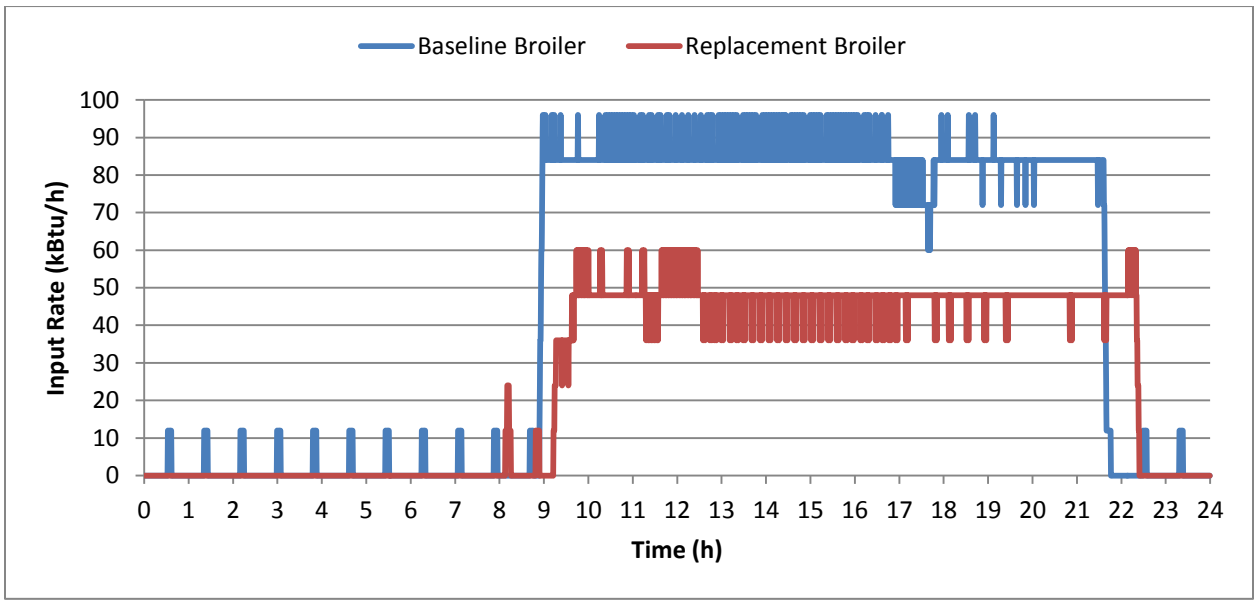

Figure 25 Broiler Replacement Typical Daily Energy Profile

Table 6 Broiler Replacement Results

Site	Broiler Width	Broiler Hours Operation	Baseline Broiler Energy Usage	Replacement Broiler Energy Usage	Replacement Broiler Type
Norm's	4	12.0	12.5	12.8	No Pilot
Firehouse 37	4	12.9	12.0	11.6	No Pilot
Yalla Mediterranean	conveyor	14.9	38.4	5.9	Conveyor Broiler
Sideboard Lafayette	3	12.0	7.5	NA	Not replaced
Hometown Buffet	3	5.2	3.4	NA	Not replaced
Doubletree	3	15.4	11.6	7.9	IR Burner
Werewolf	2	18.9	5.3	4.9	IR Plate
Airline Catering	4	20.4	18.0	15.7	Conveyor Broiler
Bridges	4	11.3	10.4	6.8	IR Plate
Esin	3	12.9	11.0	6.3	IR Plate
Revel	3	8.8	7.0	4.0	IR Plate
Average		**13.2**	**9.7**	**8.4**	

Baseline undefired broilers were replaced at multiple sites with the IR plate and IR burner broilers resulting in the highest energy savings of 30%. Conveyor broilers at Yalla and Airline Catering used the most energy and their energy efficient replacements resulted in the highest savings. Radiant reflector broilers with electronic ignition were analyzed, due to their energy savings claims, however they did not yield any actual energy savings at Norms and Firehouse. IR plate broilers had some problems with the plates warping after heat-stress caused by wet product.

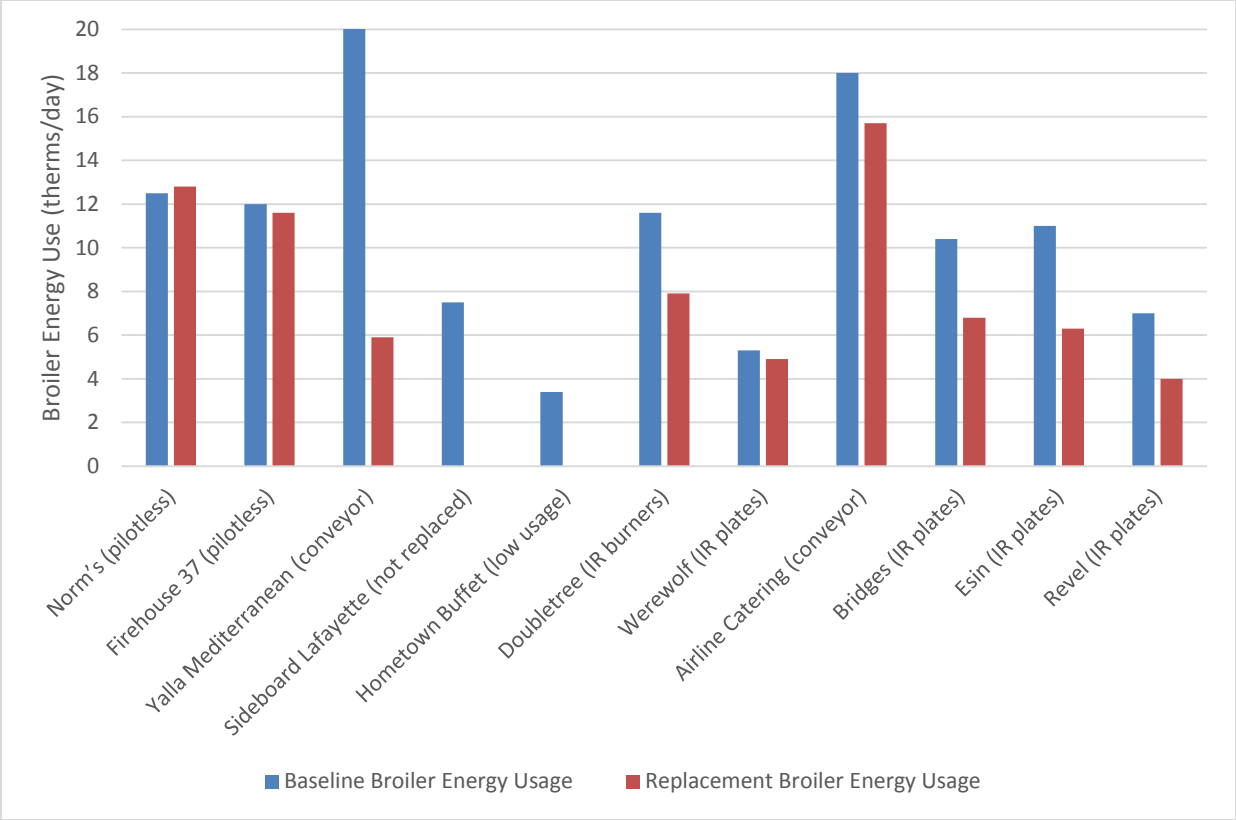

Figure 26 Broiler Replacement Energy

For the typical 3ft standard radiant broiler, the average energy use was about 72 kBtu/h. Given a restaurant that operates daily for an average of 10 hours a day, this would be equivalent to 262.8 MBtu annually. For a restaurant operating in California, where the average utility cost is $0.88 per therm for natural gas, that would equate to approximately $2313 in gas costs from the broiler alone. Assuming the average 25% energy savings from broiler replacement resulting in about $578 in energy savings every year. Separate estimates for each category can be found listed in the table below, with the plate warping issues previously mentioned about the IR Plate broilers.

Table 7 Average Field Broiler Energy Use and Savings

Site	IR Plate	IR Burner	Radiant Reflector Pilotless	Lidded Thermostatic
Baseline (kBtu/h/ft)	22.992	22.355	24.568	25.143
Replacement (kBtu/h/ft)	14.859	16.990	24.916	18.427
Percent Savings	35%	24%	N/A	27%
Estimated Annual Energy Cost Savings	$818.22	$554.88	N/A	$634.17

Ventilation

The 1500 square foot Werewolf restaurant with its 50 seat capacity and mixed-duty appliance line was a very good candidate for a Demand-Controlled Kitchen Ventilation (DCKV) system as an addition to the restaurant's HVAC system. A DCKV system refers to any engineered, automated method of modulating (i.e., variable reduction) the amount of air exhausted for a specific cooking operation in response to a full-load, part-load or no-load cooking condition (i.e., such as by duct temperature, effluent opacity or appliance surface temperatures). In conjunction with this, the amount of makeup air is also modulated to maintain the same relative air ratios, airflow patterns, and pressurizations. Complete capture and containment of all smoke and greasy vapor must be maintained when an exhaust system equipped with DCKV is operated at less than 100% of design airflow. Selection of all components, and design of the DCKV system, must be such that stable operation can be maintained at all modulated and full-flow conditions.

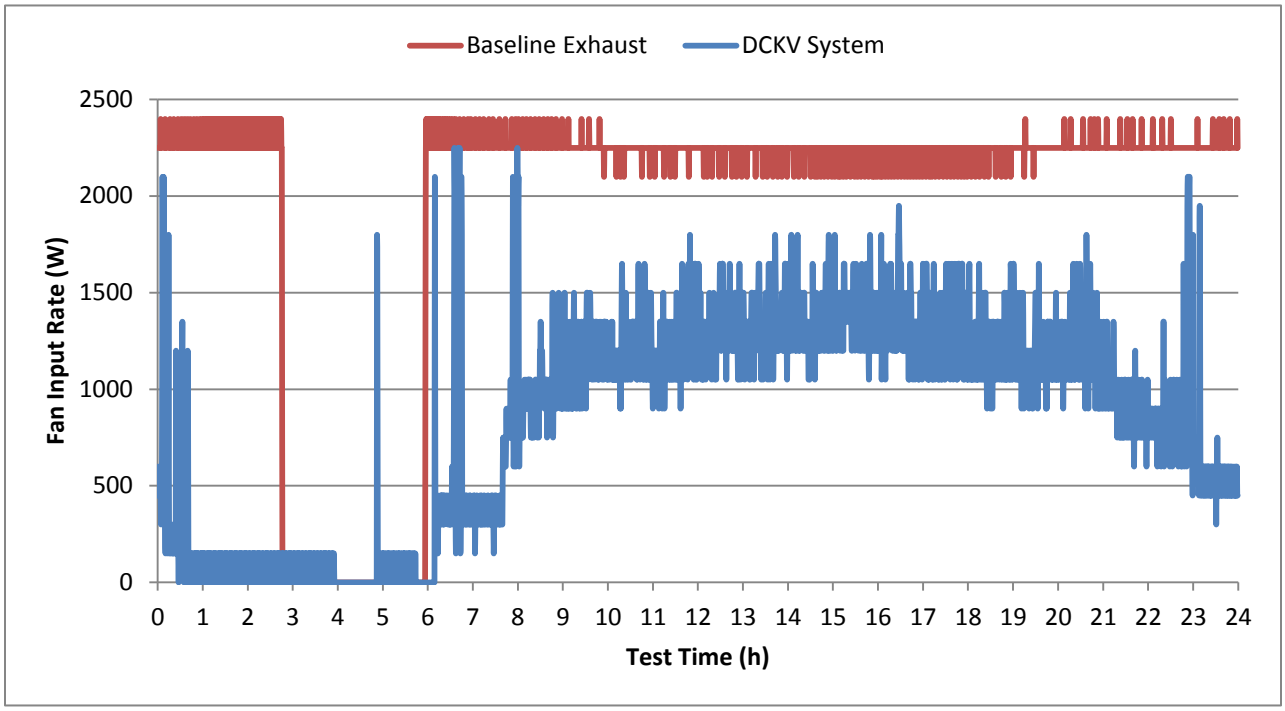

Figure 27 Commercial Kitchen Ventilation System Daily Energy Profile

The energy and utility savings are based on a reduction of fan energy due to reductions in air flows on both the exhaust and makeup air sides. There are additional savings based on reductions of cooling and heating energy due to a reduction in supply air flow rates. The type of system, appliance line, amount of exhaust air flow, weather conditions, and other factor affect the amount of savings.

The DCKV system chosen for the Werewolf restaurant was the Melink system. This system modulates both exhaust and supply fans based on duct temperature along with an opacity sensor that detects

smoke rising from the appliance. The opacity sensor allows for a quick fan speed increase response that maintains capture and containment during heavy effluent cooking which does not rapidly increase duct temperature. Because of this rapid optical response, the minimum airflow threshold can be lowered during times of light cooking or appliance idling. Maximizing the airflow range based on cooking conditions reduces the average fan speed which reduces energy use both from the supply and exhaust fans as well as makeup-air conditioning costs.

The Werewolf restaurant kitchen used a mixed duty appliance line including a range, combi, two fryers, small broiler and two griddles. It was a good candidate for the DCKV system. A Melink Intelli-Hood® 3 DCKV system was chosen and retrofitted to a dual section 18 ft hood with optical and temperature sensors over the main appliance line. The DCKV modulated the exhaust and supply fan between 20 and 80% power for three quarters of the time depending on exhaust temperature and effluent generated by the cooking process. The baseline energy consumption of the exhaust and makeup air fans was 72.1 kWh. After the retrofit, the energy consumption was reduced to 39.0 kWh. This represents a 33.1 kWh savings or a 46% reduction in fan energy. The temperate San Diego climate resulted in no cooling savings and the gas heating savings of 1,200 therms per year were calculated for makeup-air conditioning.

Table 8 Commercial Kitchen Ventilation System Energy Savings

	Pre-DCKV	Post-DCKV Retrofit	Savings
Exhaust Fan	48.6 kWh/day	26.0 kWh/day	22.6 kWh/day
Supply Fan	23.5 kWh/day	13.0 kWh/day	10.5 kWh/day
Heating	N/A	N/A	1,200 therms/yr
Cooling	No Cooling	No Cooling	0
Total Savings			**12,081 kWh/yr** **1,200 therms/yr**

Appliance energy reduction opportunities

Gas and electric usage for the monitored foodservice facilities is shown in the table below. Daily gas consumption ranged between 22 and 115 therms per day which is between $8k and $42k in gas bills annually. Commercial kitchen ventilation systems were analyzed at all four sites; however, only two of them could potentially be optimized due to the facilities regulations. An energy consumption feedback system could be implemented at all but one site, informing the operators of their energy use so that they can make behavioral changes to reduce their consumption.

Table 9 Energy Usage at Different Sites

Site	Appliances Monitored	Optimized Ventilation Potential	Energy Information System Potential	Daily Energy Usage (therms/day)	Daily Energy Usage (kWh/day)
Hotel	12	Yes	Yes	39	293
University Hospital	4	No	Yes	32	N/A
Airline Catering	12	No	No	115	N/A
Restaurant / Bar	8	Yes	Yes	22	64

The Airline Catering Company had the highest total energy usage out of all sites because of its long operating hours and several cook lines. The Restaurant/Bar had the least energy usage because of its small appliance line, however, it has the greatest energy reduction potential because of the outdated appliances. The Hotel had the greatest electric load because of the three electric steamers, large ventilation system, and a comparatively low gas load. The annual electric cost to run the steamers and the ventilation system was over $16k. The University Hospital cookline had only two ovens that were candidates for replacement, these appliances used the most energy providing a great opportunity for targeted selective replacement.

Table 10 Average Operating Hours for Different Appliances (hours/day)

Site / Appliance	Fryer	Broiler	Griddle	Oven	Range
Hotel	15	17	12	19	15
University Hospital	17	N/A	N/A	15	N/A
Airline Catering	17	18	N/A	18	N/A
Restaurant / Bar	15	19	18	19	7
Average – All Sites	16	18	15	18	11

The monitored foodservice facilities had long operating hours with the most common appliances being on between 15 and 19 hours per day. Fryers, broilers, griddles, and ovens were usually turned on when the staff arrived in the morning and turned off after the dining room closed. The range was the only

appliance that was turned on and off during service because range burners are manually adjusted when necessary by the operator resulting in shorter operating hours. Ranges were also the only appliances where the cooking flame was visible to the operator, while other appliances such as ovens and broilers were left on longer and not turned down between lunch and dinner services.

Table 11 Average Energy Usage for Different Appliances (therms/day)

Site / Appliance	Fryer	Broiler	Griddle	Oven	Range
Hotel	3.7	11.9	4.1	5.1	3.2
University Hospital	3.3	N/A	N/A	7.8	N/A
Airline Catering	3.4	18.0	N/A	4.8	5.6
Restaurant / Bar	2.6	5.3	4.9	3.5	3.1
Average – All Sites	3.2	11.7	4.5	5.3	4.0

Broilers used the most energy followed by ovens and griddles. Griddles used half the energy of broilers. A fractional reduction in broiler energy could overshadow higher percentage reductions in other appliances. Ovens had the most energy variation, making the higher consumers great potential replacement candidates. Range energy usage depended greatly on restaurant menu items and availability of breakfast service. Fryers had the most consistent energy usage due to standard oil vat size and temperature set points. The next phase of the project will analyze energy reduction of each appliance type at the different foodservice facilities.

Realized appliance energy reduction

Gas energy was measured for entire cooklines at four sites and for a single rotisserie at a grocery store with a deli. After energy efficient appliance replacement, the entire cookline gas energy reduction ranged between 19 and 27%. The airline catering company had the highest energy usage with most of the savings coming from the steam kettle replacement with energy efficient dual compartment steamers. The University Hospital benefited from oven replacement which resulted in 55% oven energy savings, however the rest of the cookline was not eligible for replacement resulting in 27% overall savings. The restaurant / bar benefited from the whole cookline replacement which resulted in 19% savings. The hotel appliance replacement resulted in 20% savings mostly due to broiler replacement.

Table 12 Cookline Gas Energy Reduction (therms/day)

Site	Pre Gas Consumption	Post Gas Consumption	Gas Savings	Gas Savings
Hotel	39.2	31.2	8.0	20%
University Hospital	31.8	23.3	8.5	27%
Airline Catering	115.3	88.2	27.1	23%
Restaurant / Bar	21.9	17.6	4.3	19%
Grocery Store	7.8	2.5	5.3	68%
Total – All Sites	215.9	162.8	53.1	25%

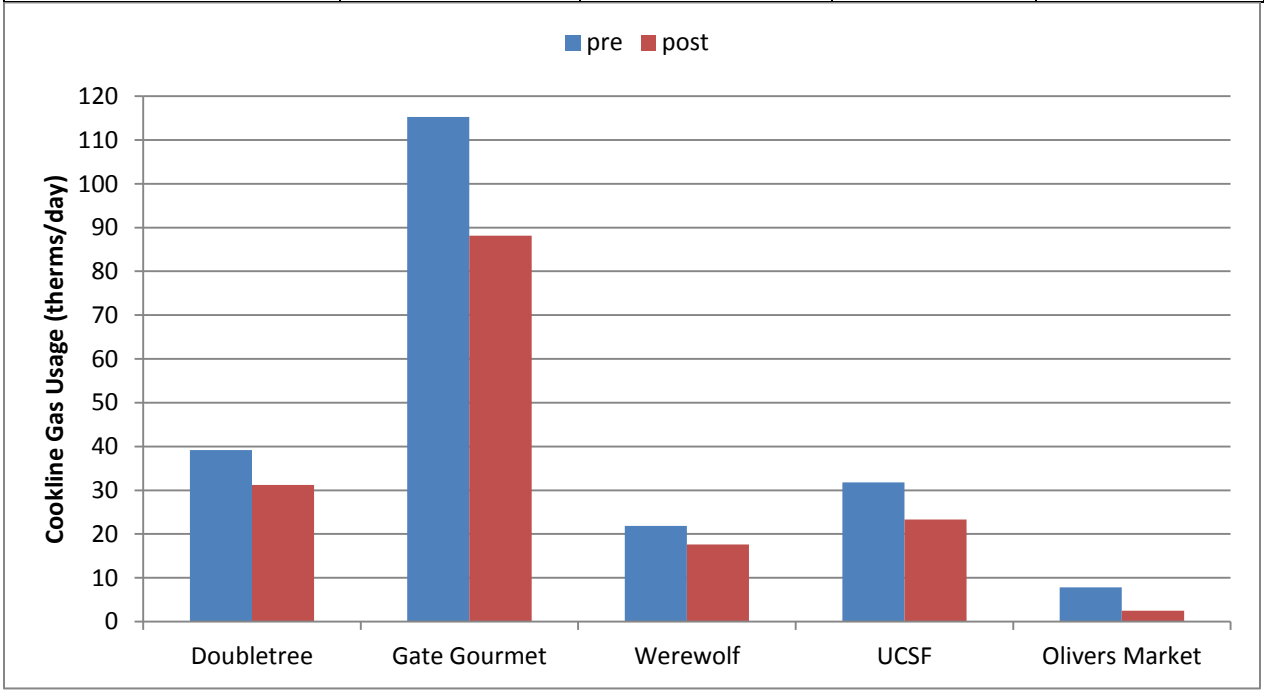

Figure 28 Cookline Gas Energy Reduction

The grocery store only had one appliance replaced. The rotisserie oven was replaced by a combi oven resulting in 68% savings. Based on the large savings and easier cleaning, the grocery store is planning to replace their rotisserie ovens with combi ovens at their other locations.

Electrical energy was monitored at two sites. The hotel had three electric dual compartment steamers which got replaced by a gas steamer, gas combi and an electric steamer. The steamer replacement resulted in over 200 kWh reduction and the two gas appliances only added two therms per day to the gas load. The restaurant / bar had two kitchen ventilation hoods which got consolidated into one by moving the oven from the prep line to the main cook line. The main line hood had a demand control ventilation system installed which resulted in additional 30% savings.

Table 13 Cookline Electric Energy Reduction (kWh/day)

Site	pre electric	post electric	electric savings	electric savings
Hotel	293.0	85.0	208.0	71%
Restaurant / Bar	64.0	32.3	31.7	49%
Total – All Sites	357.0	117.3	239.7	67%

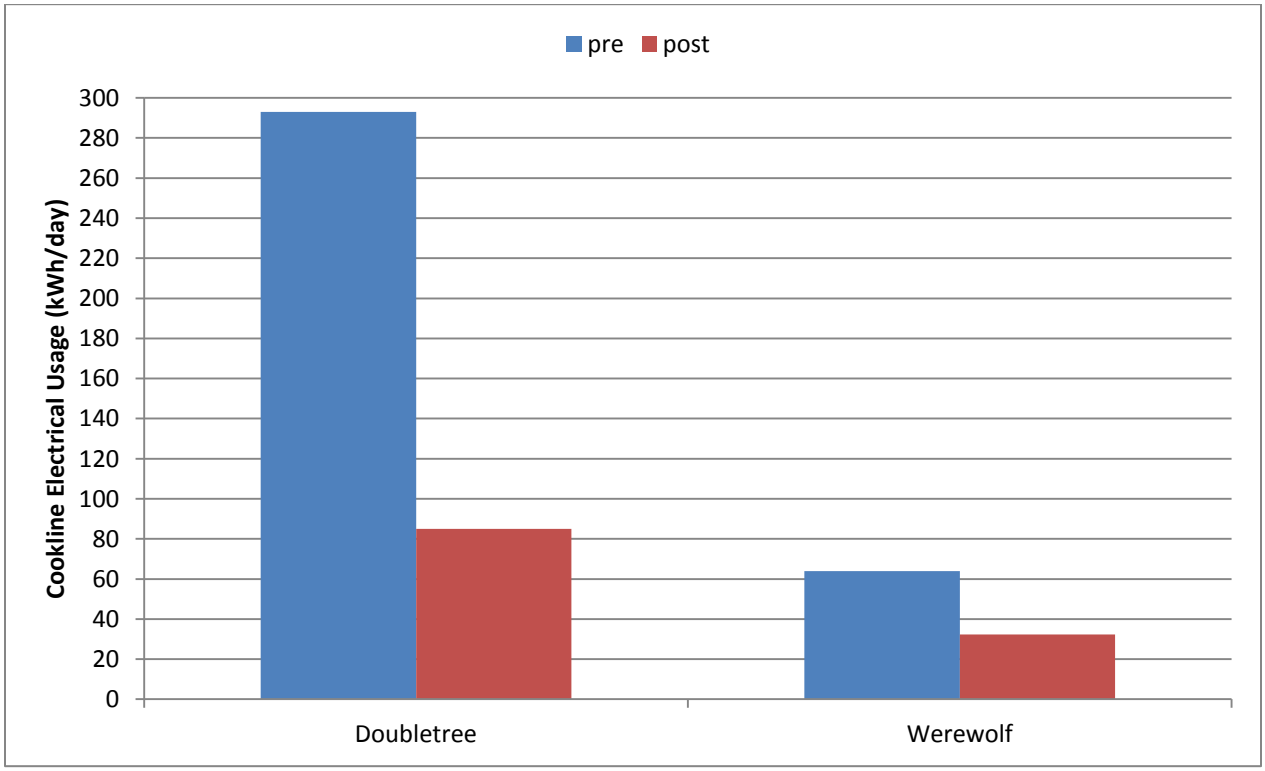

Figure 29 Cookline Electric Energy Reduction

Impact on the industry

As energy becomes costlier and more people are becoming aware of their carbon footprint, it is more important to identify energy reduction opportunities in different commercial sectors. Historically, foodservice has been a slow to adapt industry where speed is valued more than efficiency. In order to reduce the carbon footprint of restaurants and institutional kitchens, change can come either from the cooking equipment providers, the restaurant operators or the consumers themselves.

Appliance Energy and Carbon Footprint

As the consumers become more aware of the sustainable practices of the restaurant from the food sourcing perspective, they should start scrutinizing the amount of energy it takes to prepare the food. A sustainably sourced chicken that has been roasted in an open rotisserie that consumes 10 therms per day is no longer a sustainable product once it ends up on the plate. Authentic Italian pizza with ingredients flown in from Italy and cooked in a 1000F oven that is on 24/7 has some of the highest carbon footprints per pound of food served.

Sustainable material evaluation involves cradle to grave analysis starting from material sourcing and ending with the material recycling at its end of life. The cradle to grave analysis of our food is incomplete, because the overall energy impact of food is not complete once the animal is killed, it is complete once it is consumed by people. There is abundant data of the greenhouse gases emitted during production and transportation of different foods as shown in the figure below, but the cooking energy impact is often overlooked.

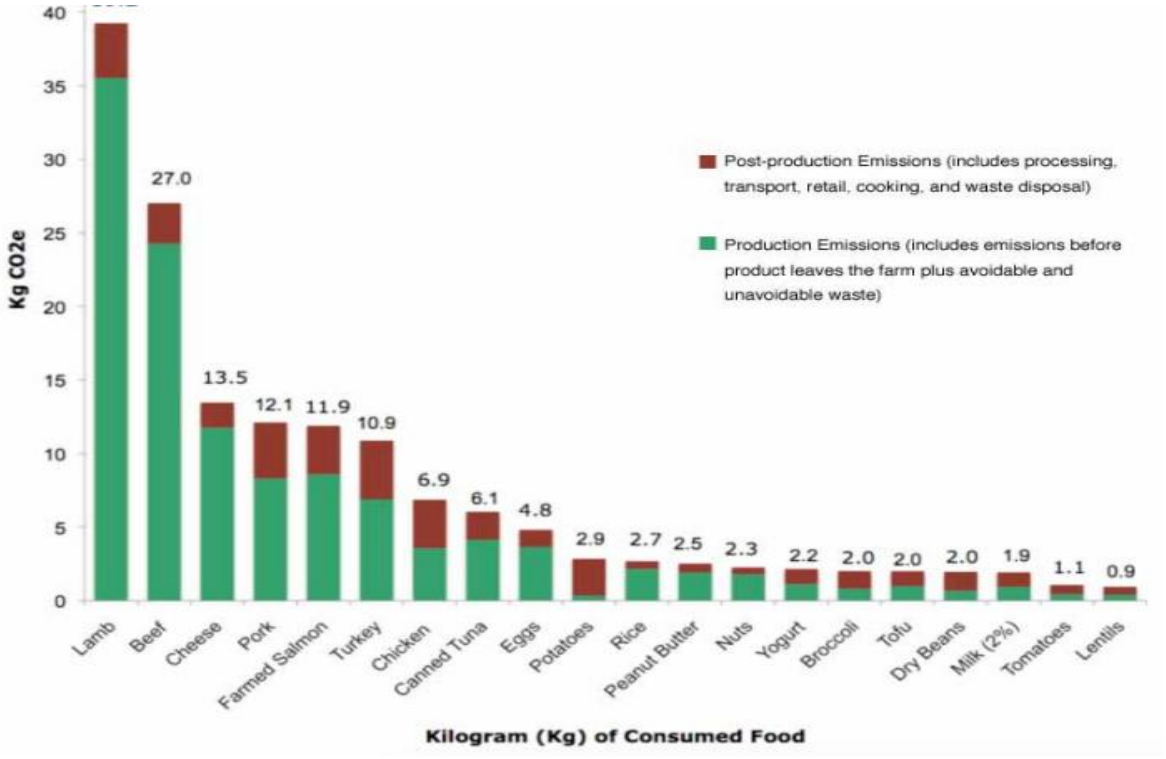

Figure 30 Food Product Greenhouse Gas Emissions (Environmental Working Group Meat Eaters Guide: Methodology 2011)

Even when craving for a hamburger, a consumer can have a decision of their carbon foot print impact: to go to a restaurant that uses a flat top griddle or a flamed char broiler that uses three times the energy. Quick Service Restaurants have been criticized for their use of food additives and unsustainably harvested products which may lead to higher production emissions, however most quick service restaurants utilize energy efficient appliances that result in lower post production emissions. Chain restaurants often have engineers that specify energy efficient equipment in order to streamline the cooking process and save costs on energy, therefore reducing their carbon emissions for the cooking process. High end cook to order restaurants may use very energy inefficient appliances to cook individual portions of food that have been sustainably sourced. This results in a lower food production emission and a higher post production emission. The chart below shows the energy consumption of each appliance which is used to cook food. The carbon emissions are proportionate to the energy consumption.

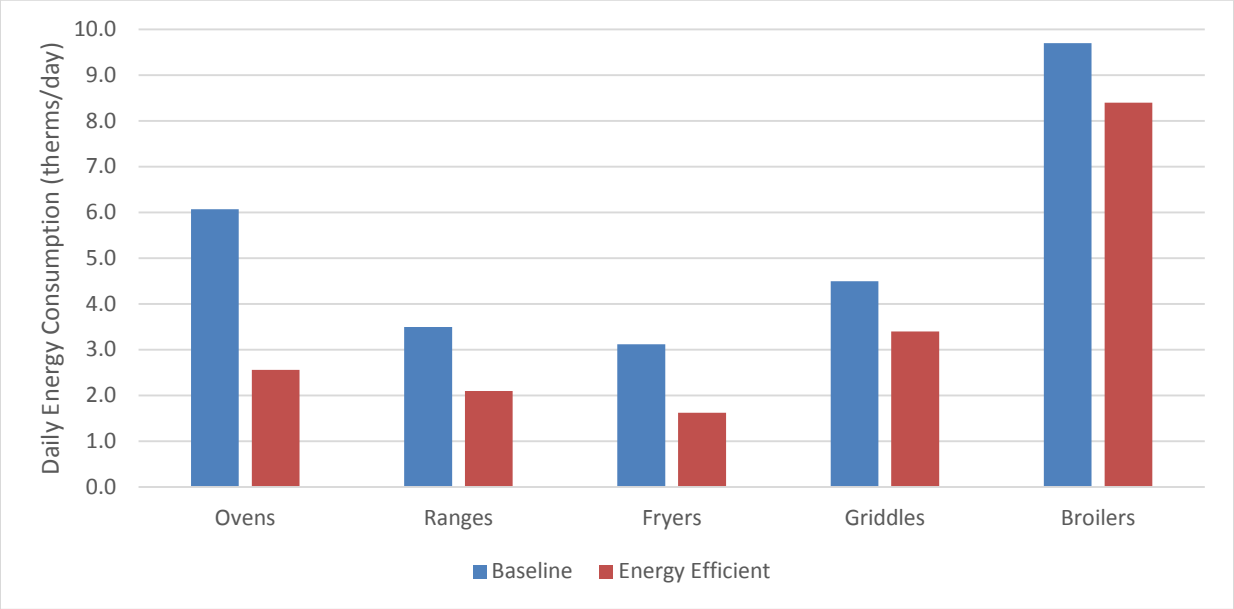

Figure 31 Energy Consumption Per Appliance Type

Energy consumption can initially be reduced by choosing less energy intensive appliance types, and then further reduced by specifying energy efficient appliances. Using the carbon footprint assumptions for PG&E territory, the annual carbon footprint of each appliance can be calculated.

Table 14 Carbon Emissions Per Energy Source in PG&E Territory (Pacific Gas and Electric Company Carbon Footprint Calculator Assumptions)

	Carbon Emissions (lbs)	Unit
Electric Appliance	0.524	Per kWh
Gas Appliance	13.446	Per therm

Table 15 Commercial Kitchen Appliance Carbon Footprint

Cooking Appliance	Baseline Emissions (tons CO2 per year)	Energy Efficient Emissions (tons CO2 per year)
Ovens (2 Cavity)	29.8	12.6
Ranges (6 Burner)	17.2	10.3
Fryers (one 14in vat)	15.3	8.0
Griddles (3ft wide)	22.1	16.7
Broilers (3ft wide)	47.6	41.2

Broilers have the highest CO2 emissions with the ovens having the second highest emissions. In order to reduce the broiler carbon emissions, the operator can either replace it with an energy efficient broiler or switch to a griddle which would result in even greater reduction. Ovens are quite versatile and can cook a variety of products which means their carbon emissions per item cooked can be much lower if the food is cooked in large batches. Energy efficient ovens are readily available and are relatively inexpensive way to reduce the carbon footprint. Fryers seem to have the lowest footprint, however the reported numbers are per fryer vat and larger restaurants have several vats. Besides switching to energy efficient fryers, the operator can use fresh product instead of frozen which will reduce the overall cooking energy. A restaurant with one of each appliance type can reduce their carbon footprint by 43 tons of CO2 per year if the operator was to replace their inefficient appliances, or efficient appliances were specified in the first place.

Appliance Costs and Utility Rebates

Commercial cooking appliances are much more expensive than their residential counterparts. These appliances are mostly made of stainless steel and use very few plastic pieces which results in higher cost. Furthermore, the appliance production numbers are lower for the commercial market than residential which drives the design and certification costs up compared to the units sold. The typical appliance costs for each type are shown in a table below. The most energy intensive appliances are some of the cheapest.

Table 16 Typical Appliance Costs

Cooking Appliance	Baseline Efficiency Appliance Retail Cost
Convection Oven (Per Cavity)	$4,000
Steamer (Per Cavity)	$5,000
Combi Oven (Per Cavity)	$10,000
Range (6 Burner)	$3,000

Fryers (one 14in vat)	$2,000
Griddles (3ft wide)	$3,000
Broilers (3ft wide)	$2,500

Appliances typically last anywhere from 6 to 20 years with an average effective useful life of 12 years. Ovens and steamers often require the most repairs with many components prone to failure such as thermostats, fans, igniters and door hinges. Broilers and ranges have less components that can fail, so the operators are less likely to replace those appliances. Once an appliance fails, and cannot be repaired, it is often hastily replaced by whatever appliance is available at the local foodservice retailer. Very little attention is paid to the appliance's energy efficiency.

Energy efficient appliances often cost 10-30% more than their baseline counterparts. Energy efficient appliances often have higher production capacities and additional features such as programmable timers. Energy efficient appliances also have low end and high end models, with the high end models often costing two to three times the baseline cost. Budget efficient appliances may cost almost the same as their inefficient counterparts. Higher initial appliance costs of energy efficient appliances can often be justified by energy savings and higher sales volumes for busy restaurants.

Energy efficient appliance cost premium is sometimes subsidized by the energy utility company in order to reduce the energy demand. California utilities estimate their rebates based on the first year energy savings of energy efficient appliances. Some competing utilities outside of California use rebates in order to convince the customer to switch fuel sources between gas an electric. Energy efficiency rebates often provide the appliance manufacturers competitive advantage, which persuades the manufacturers to reengineer their designs in order to make their product more energy efficient. Sometimes the rebates are given to the equipment sales people instead of the customers themselves in order to drive up the sales of energy efficient equipment. Overall, utility rebates justified by verified data are a great way to move the foodservice industry forward and reduce its carbon footprint.

Behavioral Changes

Restaurant designers have the biggest influence over the restaurant's future energy consumption. Restaurant designers use foodservice consultants to specify appliances. Foodservice consultants are sometimes loyal to a certain appliance brand and may specify inefficient appliances. Foodservice consultants should be educated about the benefits of energy efficiency and have an arsenal of energy efficient appliances that they can specify for new restaurant designs and remodels.

The restaurant operator has the second most influence over the restaurant's carbon footprint. They get to decide what appliance gets replaced with what model and how much to spend. Often during restaurant construction, an unexpected change causes the project to go over budget and leaves it up to the operator to decide where to save costs. Restaurants are more likely to cut costs in the kitchen rather than the dining room, during cost cutting, specified energy efficient appliances are in danger of

being replaced by cheaper inefficient appliances. It is important to teach the restaurant operators and managers how energy efficient equipment can save them operating costs in the long term despite their initial higher costs.

The appliance operators are the line cooks and sous-chefs which are the lowest paid employees in the restaurant. They often do not have any idea how much energy a restaurant uses and what the restaurant energy bills are. They also do not have any financial incentive to reduce energy, however they are ultimately the ones that have the most control over energy consumption once an appliance is installed. There is a tremendous amount of energy that is wasted due to carelessness and poor planning.

Restaurant staff comes in early in the morning before the restaurant opens in order to prep food for service. Appliances are often turned on during that time even if no cooking is taking place. A typical appliance takes 10 to 20 minutes to preheat, turning on appliances half an hour before service can save 1-4 hours of wasted energy. Restaurants that serve breakfast, lunch and dinner may use certain appliances only for one of the three services, appliances need to be turned on for that service period only. Restaurants serving lunch and dinner often have a quiet period between those two services, most appliances can be turned off or turned down in between. Restaurant managers should educate their cooks and provide financial incentives for behavioral energy reduction. Feedback on how much energy a restaurant uses can be obtained through smart meters used by many utilities around the country. Additional gas or electric sub metering services can be available through local consulting companies.

Information Dissemination

The foodservice industry is not fully aware of its overall impact on the global energy consumption and the greenhouse emissions associated with it. Operator training and information dissemination is crucial in order to achieve energy reduction goals in this commercial sector. This report will be posted on a publically accessible website and will be referenced for future energy studies. The information in this report will be used in presentations to foodservice operators, utility program managers, restaurant designers and restaurant equipment manufacturers.

The California utilities provide free training programs for their customers and employees that are involved in the commercial foodservice industry. Education and training will increase the awareness of energy waste and will trickle down to the operators and consumers that are ultimately responsible for it. Fortunately, energy use and energy cost are related to each other and most people are more likely to care about their carbon footprint if there are financial incentives to do so. Saving the operator money and saving energy go hand in hand. Utilities worldwide should continue providing financial incentives directly and indirectly to the operators to reduce their energy consumption and educate those who do not yet understand the value of it.

Sunnyvale

Non-residential Reach Codes: City of Sunnyvale

August 13, 2020, 3:19 PM

Contents

Non-residential Reach Codes: City of Sunnyvale

Sunnyvale Non-Residential Reach Codes: Please provide your feedback.

Summary Of Responses

As of August 13, 2020, 3:19 PM, this forum had:		**Topic Start**
Attendees:	97	July 22, 2020, 7:39 AM
Responses:	47	
Hours of Public Comment:	2.4	

QUESTION 1

Do you live in the City of Sunnyvale?

		%	Count
Yes		74.5%	35
No		25.5%	12

QUESTION 2

Do you own a business in Sunnyvale?

		%	Count
Yes		6.4%	3
No		93.6%	44

QUESTION 3

Are you considering a development project in Sunnyvale?

		%	Count
Yes		8.5%	4
No		91.5%	43

Non-residential Reach Codes: City of Sunnyvale

Sunnyvale Non-Residential Reach Codes: Please provide your feedback.

QUESTION 4

What type of business do you own?

	%	Count
Retail	16.7%	1
Office	66.7%	4
Mixed Use	16.7%	1
Restaurant	16.7%	1

QUESTION 5

How informative did you find the reach code video presentation?

	%	Count
Extremely	7.9%	3
Very	47.4%	18
Somewhat	34.2%	13
Not Very	7.9%	3
Not at all	2.6%	1

QUESTION 6

Which types of Reach Code would you support?

	%	Count
A total ban on natural gas (including outside use).	66.0%	31
All-electric new construction	78.7%	37
All-electric additions and alterations	68.1%	32

Non-residential Reach Codes: City of Sunnyvale

Sunnyvale Non-Residential Reach Codes: Please provide your feedback.

	%	Count
All-electric for new construction with exceptions for cooking	23.4%	11
Mixed fuel with additional efficiency measures for new construction	12.8%	6
No Reach Codes	10.6%	5
Other	12.8%	6

QUESTION 7

If you support Reach Codes, select your reasons why.

	%	Count
Reduce greenhouse gas emissions	100.0%	42
Support Sunnyvale's Climate Action Playbook	85.7%	36
Health and safety	83.3%	35
Cost savings	61.9%	26
Other	16.7%	7

QUESTION 8

If you don't support Reach Codes, select the reasons why.

	%	Count
I don't believe it will make a difference in greenhouse gas emissions	66.7%	4
Reach Codes would be too costly	33.3%	2
I don't believe electric appliances perform as well as gas appliances	100.0%	6

Non-residential Reach Codes: City of Sunnyvale

Sunnyvale Non-Residential Reach Codes: Please provide your feedback.

		%	Count
Reach Codes should be a personal choice		50.0%	3

QUESTION 9

Please express any additional thoughts, questions, or concerns you may have regarding Reach Codes.

Answered	18
Skipped	29

Non-residential Reach Codes: City of Sunnyvale

Sunnyvale Non-Residential Reach Codes: Please provide your feedback.

Survey Questions

QUESTION 1

Do you live in the City of Sunnyvale?

- Yes
- No

QUESTION 2

Do you own a business in Sunnyvale?

- Yes
- No

QUESTION 3

Are you considering a development project in Sunnyvale?

- Yes
- No

QUESTION 4

What type of business do you own?

- Retail
- Office
- Mixed Use
- Restaurant

QUESTION 5

How informative did you find the reach code video presentation?

- Extremely
- Very
- Somewhat
- Not Very
- Not at all

QUESTION 6

Which types of Reach Code would you support?

- A total ban on natural gas (including outside use).
- All-electric new construction
- All-electric additions and alterations
- All-electric for new construction with exceptions for cooking
- Mixed fuel with additional efficiency measures for new construction
- No Reach Codes
- Other

QUESTION 7

If you support Reach Codes, select your reasons why.

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook
- Health and safety
- Cost savings
- Other

QUESTION 8

If you don't support Reach Codes, select the reasons why.

- I don't believe it will make a difference in greenhouse gas emissions
- Reach Codes would be too costly
- I don't believe electric appliances perform as well as gas appliances
- Reach Codes should be a personal choice
- Other

QUESTION 9

Please express any additional thoughts, questions, or concerns you may have regarding Reach Codes.

Non-residential Reach Codes: City of Sunnyvale

Sunnyvale Non-Residential Reach Codes: Please provide your feedback.

Individual Responses

Name not shown
inside Sunnyvale
July 24, 2020, 7:41 PM

Question 1

- Yes

Question 2

- No

Question 3

- No

Question 4

No response

Question 5

- Somewhat

Question 6

- A total ban on natural gas (including outside use).
- All-electric new construction
- All-electric additions and alterations
- Other - Pre-wiring for electric vehicle charging above state mandates.

Question 7

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook
- Health and safety
- Cost savings
- Other - Cities and developers should share in the commitment to eliminate GHG emissions. Building standards should be changed now so new fossil fuel equipment does not get designed into buildings that will be operating long after our window to act is closed.

Question 8

No response

Question 9

It would be nice to see the actual proposed code language. I like that future phases will include requirements for tennant improvements to be all-electric. I was hoping there would be requirements in the first phase for pre-wiring for electric vehicles beyond what is currently required by the state. Business and commercial development are ideal for EV charging because they can utilize excess solar on the grid during the day. Wondering if the phases will be implemented over months or years and how it will be decided when to move to a next phase and how long it would take. Wondering how much annual greenhouse gas emissions will be 'locked in' by allowing an exemption from the requirements for developments that already have a planning entitlement.

Name not shown
inside Sunnyvale
July 24, 2020, 11:32 PM

Question 1

- Yes

Question 2

- No

Question 3

- No

Question 4

No response

Question 5

- Somewhat

Question 6

- A total ban on natural gas (including outside use).
- All-electric new construction
- All-electric additions and alterations

Question 7

- Reduce greenhouse gas emissions
- Health and safety

Question 8

Non-residential Reach Codes: City of Sunnyvale

Sunnyvale Non-Residential Reach Codes: Please provide your feedback.

No response

Question 9

With food service the most energy-intensive type of commercial building, it seems especially important that kitchens be electrified now rather than sometime in the indefinite future. https://drive.google.com/file/d/1jmy96bedzjOq9VQouNCeymSxO_aZnV0m/view——Why would responsible builders use inefficient kitchen appliances, and if they are, why is Sunnyvale allowing such at this point in history? I see no need for a phased approach. Builders were already given a heads up as to Sunnyvale's desires with the green building program that encouraged all-electric. We need to be pushing the envelope if we want to give our kids a fighting chance. We are out of time for dithering and half-measures. All electric is a superior product—healthier, safer, and the way of the present and future. There is no need to be tentative about requiring it. Please require all-electric kitchens now, with exception requests to go to Council. And as soon as we have an inkling that the exempted building types may be cost-effective, we need to include them in our ordinance.—- Also, strengthened EV charging requirements need to be part of this reach code, Phase 1, to make driving electric as easy as possible as soon as possible. Charging at office buildings is especially important since this is where cars are parked during the day when solar is plentiful. Cupertino is a good model. http://www.buildingdecarb.org/uploads/3/0/7/3/30734489/cupertino_staff_report_12-17.pdf —-It is important that the code include a requirement than any gas appliances be pre-wired for future conversion to electric, to reduce future costs.

Name not shown
inside Sunnyvale
July 25, 2020, 10:37 PM

Question 1

- Yes

Question 2

- No

Question 3

- No

Question 4

No response

Question 5

- Very

Question 6

- A total ban on natural gas (including outside use).
- All-electric new construction
- All-electric additions and alterations
- All-electric for new construction with exceptions for cooking

Question 7

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook
- Health and safety
- Cost savings

Question 8

No response

Question 9

No response

Sven Thesen
outside Sunnyvale
July 27, 2020, 8:40 AM

Question 1

- No

Question 2

- No

Question 3

- Yes

Question 4

- Office

Question 5

No response

Question 6

Non-residential Reach Codes: City of Sunnyvale

Sunnyvale Non-Residential Reach Codes: Please provide your feedback.

- A total ban on natural gas (including outside use).

Question 7

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook
- Health and safety
- Cost savings
- Other - Support technological advances in energy/ building sectors which will drive down costs and yield safer healthier low-carbon/energy buildings.

Question 8

No response

Question 9

Our family, living in an all electric, zero net energy, passive home for the past 9 years, are in strong support of all electric reach codes. We invite city council and staff to tour our home in Palo Alto (both virtually and social distancing). Because of the interest in all-electric low carbon buildings, over 4,000 people have toured the home. If you have never seen an induction stove in action, a heat pump, or an air admittance valve, please do visit us. ProjectGreenHome.org

Robert Whitehair

outside Sunnyvale
July 27, 2020, 12:38 PM

Question 1

- No

Question 2

- No

Question 3

- Yes

Question 4

- Mixed Use
- Restaurant

Question 5

- Not at all

Question 6

- A total ban on natural gas (including outside use).

Question 7

- Reduce greenhouse gas emissions

Question 8

No response

Question 9

No response

Bill Hilton

inside Sunnyvale
July 27, 2020, 5:00 PM

Question 1

- Yes

Question 2

- No

Question 3

- No

Question 4

No response

Question 5

- Very

Question 6

- All-electric new construction
- All-electric additions and alterations
- Other - All-electric new construction with no exceptions

Question 7

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook

Non-residential Reach Codes: City of Sunnyvale

Sunnyvale Non-Residential Reach Codes: Please provide your feedback.

- Health and safety

Question 8

No response

Question 9

No response

Ari Feinsmith
inside Sunnyvale
July 27, 2020, 8:39 PM

Question 1

- Yes

Question 2

- No

Question 3

- No

Question 4

No response

Question 5

- Very

Question 6

- A total ban on natural gas (including outside use).
- All-electric new construction
- All-electric additions and alterations
- All-electric for new construction with exceptions for cooking
- Mixed fuel with additional efficiency measures for new construction

Question 7

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook
- Health and safety
- Cost savings
- Other - Less likely for their to be a gas leek or gas accident.

Question 8

No response

Question 9

I like reach codes. Yeah!

Susan Butler-Graham
outside Sunnyvale
July 29, 2020, 2:31 PM

Question 1

- No

Question 2

- No

Question 3

- No

Question 4

No response

Question 5

- Very

Question 6

- A total ban on natural gas (including outside use).
- All-electric new construction

Question 7

- Reduce greenhouse gas emissions
- Health and safety

Question 8

No response

Question 9

No response

Non-residential Reach Codes: City of Sunnyvale

Sunnyvale Non-Residential Reach Codes: Please provide your feedback.

Name not available
July 30, 2020, 8:05 AM

Question 1

- Yes

Question 2

- No

Question 3

- No

Question 4

No response

Question 5

- Extremely

Question 6

- All-electric for new construction with exceptions for cooking
- Mixed fuel with additional efficiency measures for new construction

Question 7

- Reduce greenhouse gas emissions

Question 8

- I don't believe electric appliances perform as well as gas appliances

Question 9

No response

Name not available
July 30, 2020, 9:16 AM

Question 1

- Yes

Question 2

- No

Question 3

- No

Question 4

No response

Question 5

No response

Question 6

- No Reach Codes

Question 7

No response

Question 8

- I don't believe it will make a difference in greenhouse gas emissions
- I don't believe electric appliances perform as well as gas appliances

Question 9

No response

Name not available
July 30, 2020, 9:22 AM

Question 1

- No

Question 2

- No

Question 3

- No

Question 4

No response

Question 5

- Somewhat

Non-residential Reach Codes: City of Sunnyvale

Sunnyvale Non-Residential Reach Codes: Please provide your feedback.

Question 6

- A total ban on natural gas (including outside use).

Question 7

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook
- Health and safety
- Cost savings
- Other - Reduce dependence on fossil fuels and stop supporting fossil fuel companies

Question 8

No response

Question 9

I think there should be faster transition to all-electric commercial kitchens. Induction cooktops are excellent options. The City needs to be a leader in this area, and while listening to constituents is important, they will always want more time to change.

Name not shown
inside Sunnyvale
July 30, 2020, 9:47 AM

Question 1

- Yes

Question 2

- No

Question 3

- No

Question 4

No response

Question 5

- Very

Question 6

- A total ban on natural gas (including outside use).
- All-electric new construction
- All-electric additions and alterations

Question 7

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook
- Health and safety
- Cost savings

Question 8

No response

Question 9

No response

Name not available
July 30, 2020, 1:53 PM

Question 1

- Yes

Question 2

- No

Question 3

- No

Question 4

No response

Question 5

- Very

Question 6

- A total ban on natural gas (including outside use).
- All-electric new construction
- All-electric additions and alterations
- Mixed fuel with additional efficiency measures for new construction

Non-residential Reach Codes: City of Sunnyvale

Sunnyvale Non-Residential Reach Codes: Please provide your feedback.

Question 7

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook

Question 8

No response

Question 9

No response

Timothy Oey

inside Sunnyvale
July 30, 2020, 9:05 PM

Question 1

- Yes

Question 2

- No

Question 3

- No

Question 4

No response

Question 5

- Not Very

Question 6

- A total ban on natural gas (including outside use).
- All-electric new construction
- All-electric additions and alterations
- All-electric for new construction with exceptions for cooking
- Other - Incentives to go all electric on existing buildings

Question 7

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook
- Health and safety
- Cost savings

Question 8

No response

Question 9

The reach code presentation could have been documented on a web page or 1 pager instead of needing to listen through a longish presentation for the amount of information it contained.

Name not available

July 31, 2020, 8:51 AM

Question 1

- Yes

Question 2

- No

Question 3

- No

Question 4

No response

Question 5

No response

Question 6

- A total ban on natural gas (including outside use).
- All-electric new construction
- All-electric for new construction with exceptions for cooking

Question 7

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook

Question 8

No response

Non-residential Reach Codes: City of Sunnyvale

Sunnyvale Non-Residential Reach Codes: Please provide your feedback.

Question 9

No response

Name not available
July 31, 2020, 11:01 PM

Question 1

- Yes

Question 2

- No

Question 3

- No

Question 4

No response

Question 5

- Somewhat

Question 6

- No Reach Codes

Question 7

No response

Question 8

- I don't believe it will make a difference in greenhouse gas emissions
- I don't believe electric appliances perform as well as gas appliances
- Reach Codes should be a personal choice

Question 9

No response

Name not available
August 1, 2020, 10:32 AM

Question 1

- Yes

Question 2

- No

Question 3

- No

Question 4

No response

Question 5

- Very

Question 6

- All-electric new construction
- All-electric additions and alterations
- All-electric for new construction with exceptions for cooking
- Mixed fuel with additional efficiency measures for new construction

Question 7

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook
- Health and safety
- Cost savings

Question 8

No response

Question 9

No response

Name not shown
inside Sunnyvale
August 1, 2020, 5:21 PM

Question 1

- Yes

Question 2

Non-residential Reach Codes: City of Sunnyvale

Sunnyvale Non-Residential Reach Codes: Please provide your feedback.

- No

Question 3

- No

Question 4

No response

Question 5

No response

Question 6

- All-electric new construction
- All-electric additions and alterations

Question 7

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook
- Health and safety
- Cost savings

Question 8

No response

Question 9

No response

Name not available
August 1, 2020, 6:28 PM

Question 1

- Yes

Question 2

- No

Question 3

- No

Question 4

No response

Question 5

- Very

Question 6

- All-electric new construction

Question 7

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook
- Health and safety

Question 8

No response

Question 9

No response

Name not shown
inside Sunnyvale
August 1, 2020, 7:59 PM

Question 1

- Yes

Question 2

- No

Question 3

- No

Question 4

No response

Question 5

- Somewhat

Question 6

Non-residential Reach Codes: City of Sunnyvale

Sunnyvale Non-Residential Reach Codes: Please provide your feedback.

- A total ban on natural gas (including outside use).
- All-electric additions and alterations
- All-electric for new construction with exceptions for cooking

Question 7

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook
- Health and safety
- Cost savings

Question 8

No response

Question 9

Provide incentives for business to install EV chargers at their business. The cost should be the cost of electricity for the business

---

Name not shown
inside Sunnyvale
August 2, 2020, 7:33 AM

Question 1

- Yes

Question 2

- Yes

Question 3

- Yes

Question 4

- Office

Question 5

- Very

Question 6

- No Reach Codes

Question 7

No response

Question 8

- I don't believe it will make a difference in greenhouse gas emissions
- Reach Codes would be too costly
- I don't believe electric appliances perform as well as gas appliances
- Reach Codes should be a personal choice

Question 9

It's already very expensive to operate in the city of Sunnyvale.

Ariel Stein
inside Sunnyvale
August 3, 2020, 10:57 AM

Question 1

- Yes

Question 2

- No

Question 3

- No

Question 4

No response

Question 5

- Very

Question 6

- A total ban on natural gas (including outside use).
- All-electric new construction
- All-electric additions and alterations

Question 7

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook
- Health and safety
- Cost savings

Non-residential Reach Codes: City of Sunnyvale

Sunnyvale Non-Residential Reach Codes: Please provide your feedback.

Question 8

No response

Question 9

Thank you for your work toward implementing Reach Codes in Sunnyvale! I'm glad to see Sunnyvale start to catch up to the rest of the Bay Area.

Name not available

August 5, 2020, 9:19 PM

Question 1

- Yes

Question 2

- No

Question 3

- No

Question 4

No response

Question 5

- Not Very

Question 6

- A total ban on natural gas (including outside use).
- All-electric new construction
- All-electric additions and alterations
- All-electric for new construction with exceptions for cooking

Question 7

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook

Question 8

No response

Question 9

No response

Name not available

August 6, 2020, 11:33 AM

Question 1

- Yes

Question 2

- No

Question 3

- No

Question 4

No response

Question 5

- Somewhat

Question 6

- A total ban on natural gas (including outside use).
- All-electric new construction
- Other - Renewable Sources

Question 7

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook

Question 8

No response

Question 9

No response

Name not shown

outside Sunnyvale

August 7, 2020, 12:41 PM

Question 1

- No

Non-residential Reach Codes: City of Sunnyvale

Sunnyvale Non-Residential Reach Codes: Please provide your feedback.

Question 2

- No

Question 3

- No

Question 4

- Office

Question 5

- Very

Question 6

- A total ban on natural gas (including outside use).
- All-electric new construction
- All-electric additions and alterations

Question 7

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook
- Health and safety

Question 8

No response

Question 9

As an architect working in Sunnyvale, I applaud the city's CAP goals and Reach Code adoption. Eliminating natural gas from the built environment is not only affordable, it will contribute to improved health, safety, and welfare for everyone in Sunnyvale.

Galen Davis
inside Sunnyvale
August 8, 2020, 6:44 AM

Question 1

- Yes

Question 2

- Yes

Question 3

- No

Question 4

- Office

Question 5

- Somewhat

Question 6

- A total ban on natural gas (including outside use).
- All-electric new construction
- All-electric additions and alterations

Question 7

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook
- Health and safety
- Cost savings

Question 8

No response

Question 9

No response

Steve Zornetzer
inside Sunnyvale
August 8, 2020, 10:21 AM

Question 1

- Yes

Question 2

- No

Question 3

- No

Question 4

Non-residential Reach Codes: City of Sunnyvale

Sunnyvale Non-Residential Reach Codes: Please provide your feedback.

No response

Question 5

- Somewhat

Question 6

- All-electric new construction
- All-electric additions and alterations

Question 7

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook
- Health and safety

Question 8

No response

Question 9

No response

Name not available
August 8, 2020, 10:59 PM

Question 1

- Yes

Question 2

- No

Question 3

- No

Question 4

No response

Question 5

- Not Very

Question 6

- No Reach Codes

Question 7

No response

Question 8

- Reach Codes would be too costly
- I don't believe electric appliances perform as well as gas appliances
- Reach Codes should be a personal choice

Question 9

Stop high density. That will reduce emissions.

Name not available
August 9, 2020, 1:14 AM

Question 1

- No

Question 2

- No

Question 3

- No

Question 4

No response

Question 5

No response

Question 6

- All-electric new construction

Question 7

- Reduce greenhouse gas emissions

Question 8

No response

Non-residential Reach Codes: City of Sunnyvale

Sunnyvale Non-Residential Reach Codes: Please provide your feedback.

Question 9

No response

Name not shown
inside Sunnyvale
August 9, 2020, 5:57 AM

Question 1

- Yes

Question 2

- No

Question 3

- No

Question 4

No response

Question 5

- Somewhat

Question 6

- All-electric new construction
- All-electric additions and alterations
- All-electric for new construction with exceptions for cooking
- Mixed fuel with additional efficiency measures for new construction

Question 7

- Reduce greenhouse gas emissions
- Health and safety
- Cost savings

Question 8

No response

Question 9

No response

Name not available
August 9, 2020, 8:03 AM

Question 1

- Yes

Question 2

- No

Question 3

- No

Question 4

No response

Question 5

- Very

Question 6

- A total ban on natural gas (including outside use).
- All-electric new construction
- All-electric additions and alterations

Question 7

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook
- Health and safety
- Cost savings

Question 8

No response

Question 9

No response

Name not shown
inside Sunnyvale
August 9, 2020, 10:33 AM

Question 1

Non-residential Reach Codes: City of Sunnyvale

Sunnyvale Non-Residential Reach Codes: Please provide your feedback.

- Yes

Question 2

- No

Question 3

- Yes

Question 4

No response

Question 5

- Very

Question 6

- A total ban on natural gas (including outside use).
- All-electric new construction
- All-electric additions and alterations

Question 7

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook
- Health and safety
- Cost savings

Question 8

No response

Question 9

Many people work in Sunnyvale and eventually they will be driving more EV vehicles. EVs vehicles charging during the day while solar electric resources are abundant would be helpful to reduce greenhouse gases and serve the workers who drive EVs vehicles. This could be a benefit to attracting workers to a company. In addition, the more EV charging capacity at businesses and offices then this will encourage use of EV vehicles. Please consider adding for new office building construction a 'reach' for Electric Vehicle readiness and/or charging infrastructure beyond state mandated levels for non-residential new construction in Phase 1. If you are not able to incorporate this into phase 1 then consider adding it to a later phase such as 2 or 3. Allow for a waiver process so that an applicant could request an exemption for a particular project in which the applicant would confirm that they have a need for the waiver and have reviewed the benefits of 'reach' for Electric Vehicle readiness and/or charging infrastructure beyond state mandated levels for non-residential new construction in Phase 1. This waiver which would need approval by the Planning Commission or City Council.

Name not available
August 9, 2020, 11:00 AM

Question 1

- No

Question 2

- No

Question 3

- No

Question 4

No response

Question 5

- Somewhat

Question 6

- A total ban on natural gas (including outside use).
- All-electric new construction
- All-electric additions and alterations

Question 7

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook
- Health and safety

Question 8

No response

Question 9

No response

Name not shown
inside Sunnyvale
August 9, 2020, 12:48 PM

Non-residential Reach Codes: City of Sunnyvale

Sunnyvale Non-Residential Reach Codes: Please provide your feedback.

Question 1

- Yes

Question 2

- No

Question 3

- No

Question 4

No response

Question 5

No response

Question 6

- No Reach Codes

Question 7

No response

Question 8

- I don't believe it will make a difference in greenhouse gas emissions
- I don't believe electric appliances perform as well as gas appliances

Question 9

No response

Name not available
August 9, 2020, 2:04 PM

Question 1

- No

Question 2

- No

Question 3

- No

Question 4

- Retail

Question 5

- Very

Question 6

- A total ban on natural gas (including outside use).
- All-electric new construction
- All-electric additions and alterations

Question 7

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook
- Health and safety
- Cost savings
- Other - Excellent proposal to start with Reach Codes. We are in the two decades that will determine the fate of our children and many species. Bold action to stop causing the climate problem is needed immediately. We will be retrofitting new buildings soon..

Question 8

No response

Question 9

I hope you don't allow new gassy kitchens, but if you "have to", make them pre-wire for the upcoming upgrades during construction while it costs less and is easier than in retrofit.

Name not available
August 9, 2020, 2:48 PM

Question 1

- Yes

Question 2

- No

Question 3

- No

Non-residential Reach Codes: City of Sunnyvale

Sunnyvale Non-Residential Reach Codes: Please provide your feedback.

Question 4

No response

Question 5

- Extremely

Question 6

- A total ban on natural gas (including outside use).
- All-electric new construction
- All-electric additions and alterations

Question 7

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook
- Health and safety
- Cost savings

Question 8

No response

Question 9

No response

Kaushik Tota
inside Sunnyvale
August 9, 2020, 3:25 PM

Question 1

- Yes

Question 2

- No

Question 3

- No

Question 4

No response

Question 5

- Very

Question 6

- A total ban on natural gas (including outside use).
- All-electric new construction
- All-electric additions and alterations

Question 7

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook
- Health and safety
- Other - Establishing groundwork for sustainable growth in Sunnyvale

Question 8

No response

Question 9

First and foremost, thank you for expediting the reach code timeline in Sunnyvale. I am aware that this policy was supposed to come later according to CAP, but seeing as to how our neighbors in Santa Clara County have already established reach codes, I am happy to see that the usually ahead-of-the-curve Sunnyvale is now instituting reach codes. I would like to see some reconsideration in the exemption being provided to process loads facilities; in particular, the exemption for data servers seems rather peculiar, given Sunnyvale's position as a tech hub in Silicon Valley, with many companies potentially setting up data servers within city limits. I believe that this exemption should be reconsidered, as data servers are typically very large facilities that can emit sizable GHG emissions if allowed to utilize fossil fuels as an energy source. Alternatively, some kind of offset measure may be mandated for process loads facilities in order to compensate for or potentially discourage usage of natural gas. With regards to exemptions in general, the city may also consider the elimination of all blanket exemptions and have a waiver process whereby an applicant could request an exemption for a particular project which would need approval by the Planning Commission or City Council.

Name not available
August 9, 2020, 3:58 PM

Question 1

- Yes

Question 2

Non-residential Reach Codes: City of Sunnyvale

Sunnyvale Non-Residential Reach Codes: Please provide your feedback.

- No

Question 3

- No

Question 4

No response

Question 5

- Very

Question 6

- All-electric new construction
- All-electric additions and alterations
- All-electric for new construction with exceptions for cooking
- Mixed fuel with additional efficiency measures for new construction
- Other - Add a 'reach' for Electric Vehicle readiness and/or charging infrastructure beyond state mandated levels for non-residential new construction in Phase 1.

Question 7

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook
- Health and safety
- Cost savings

Question 8

No response

Question 9

I would like to personally thank the city for taking action with regards to clean energy. I believe that these reach codes provide a potential opportunity to cover CAP Strategy 3, Play 3.3, which calls for an increase in zero-emission vehicles. More specifically, points 3.J and 3.K, which cover the development of a Community Electric Vehicle Readiness and Infrastructure Plan and incentivize the acquisition of electric vehicles, respectively, should be emphasized and tied into the reach codes. This would provide structure for cleaner vehicular transport while also creating interest within the general population of Sunnyvale for carbon-free transportation. If executed correctly, these plans would increase the adoption of EVs, while also giving the City of Sunnyvale a solid strategy for dealing with the forthcoming transition.

Name not available
August 9, 2020, 4:14 PM

Question 1

- No

Question 2

- No

Question 3

- No

Question 4

No response

Question 5

- Somewhat

Question 6

- A total ban on natural gas (including outside use).
- All-electric new construction
- All-electric additions and alterations

Question 7

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook
- Health and safety
- Cost savings

Question 8

No response

Question 9

No response

Gary Bailey
inside Sunnyvale
August 9, 2020, 4:20 PM

Question 1

Non-residential Reach Codes: City of Sunnyvale

Sunnyvale Non-Residential Reach Codes: Please provide your feedback.

- Yes

Question 2

- No

Question 3

- No

Question 4

No response

Question 5

No response

Question 6

- All-electric new construction
- All-electric additions and alterations

Question 7

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook
- Health and safety

Question 8

No response

Question 9

No response

Name not available
August 9, 2020, 5:02 PM

Question 1

- No

Question 2

- No

Question 3

- No

Question 4

No response

Question 5

- Extremely

Question 6

- A total ban on natural gas (including outside use).
- All-electric new construction
- All-electric additions and alterations

Question 7

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook
- Health and safety
- Cost savings

Question 8

No response

Question 9

To start, I would just like to thank you for creating a detailed plan and reach codes to aim for a more environmentally-friendly community. It's important to take such action now and reduce the damage that has been built over the years. I would like to mention that both the residential and non-residential plans lack a concrete timeline for the phases, which can lead to uncertainty of how impactful the reach codes are. It was mentioned that the CAP strives to reach a 56% GHG reduction by 2030 and even 80% reduction by 2050. Stated as well was that these are ambitious goals and to achieve them, a thought out plan will be necessary. Although the phases are well thought-out, it will nice to set a timeline in which they will take place. This will lead to a more improved and set plan that can run smoother as well as guarantee a high chance and reaching the end goals.

Name not shown
inside Sunnyvale
August 9, 2020, 6:12 PM

Question 1

- Yes

Non-residential Reach Codes: City of Sunnyvale

Sunnyvale Non-Residential Reach Codes: Please provide your feedback.

Question 2

- No

Question 3

- No

Question 4

No response

Question 5

- Very

Question 6

- A total ban on natural gas (including outside use).
- All-electric new construction
- All-electric additions and alterations

Question 7

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook
- Health and safety
- Cost savings

Question 8

No response

Question 9

No response

Name not shown
inside Sunnyvale
August 9, 2020, 6:16 PM

Question 1

- Yes

Question 2

- No

Question 3

- No

Question 4

No response

Question 5

- Very

Question 6

- A total ban on natural gas (including outside use).
- All-electric new construction
- All-electric additions and alterations

Question 7

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook
- Health and safety
- Cost savings

Question 8

No response

Question 9

No response

Name not available
August 9, 2020, 6:23 PM

Question 1

- No

Question 2

- No

Question 3

- No

Question 4

No response

Non-residential Reach Codes: City of Sunnyvale

Sunnyvale Non-Residential Reach Codes: Please provide your feedback.

Question 5

- Somewhat

Question 6

- A total ban on natural gas (including outside use).
- All-electric new construction
- All-electric additions and alterations

Question 7

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook
- Health and safety
- Cost savings

Question 8

No response

Question 9

Please pass REACH codes

Name not shown
inside Sunnyvale
August 9, 2020, 6:45 PM

Question 1

- Yes

Question 2

- No

Question 3

- No

Question 4

No response

Question 5

No response

Question 6

- A total ban on natural gas (including outside use).
- All-electric new construction
- All-electric additions and alterations
- All-electric for new construction with exceptions for cooking

Question 7

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook
- Health and safety
- Cost savings

Question 8

No response

Question 9

No response

Mary Buxton
outside Sunnyvale
August 9, 2020, 9:00 PM

Question 1

- No

Question 2

- No

Question 3

- No

Question 4

No response

Question 5

No response

Question 6

- All-electric new construction

Question 7

Non-residential Reach Codes: City of Sunnyvale

Sunnyvale Non-Residential Reach Codes: Please provide your feedback.

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook
- Health and safety
- Cost savings

Question 8

No response

Question 9

No response

James Tuleya
inside Sunnyvale
August 10, 2020, 7:58 AM

Question 1

- Yes

Question 2

- Yes

Question 3

- No

Question 4

No response

Question 5

- Somewhat

Question 6

- A total ban on natural gas (including outside use).
- All-electric new construction
- All-electric additions and alterations
- Other - All-electric for new construction and major renovations/addtiions with exceptions only if applied for and approved by City Manager or Council

Question 7

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook
- Health and safety
- Cost savings
- Other - We in Silicon Valley need to lead to show the way for other parts of CA and the US to meet the urgent needs of our Climate Crisis.

Question 8

No response

Question 9

Exceptions should NOT be blanket exceptions for categories like commercial cooking or industrial. Instead, they should require application and explanation and then approval by City Manager or Council on a case by case basis. EV charging requirements at least at SVCE model level should be in Phase ONE, to avoid very high retrofit costs later.

Sunnyvale

Residential Reach Codes: City of Sunnyvale

August 13, 2020, 3:26 PM

Contents

Residential Reach Codes: City of Sunnyvale

Sunnyvale Residential Reach Codes: Please provide your feedback.

Summary Of Responses

As of August 13, 2020, 3:26 PM, this forum had:		**Topic Start**
Attendees:	136	July 22, 2020, 7:40 AM
Responses:	80	
Hours of Public Comment:	4.0	

QUESTION 1

Do you own property in Sunnyvale?

		%	Count
Yes		68.8%	55
No		31.3%	25

QUESTION 2

Do your own a business in Sunnyvale?

		%	Count
Yes		5.0%	4
No		95.0%	76

QUESTION 3

How informative did you find the reach code video presentation?

		%	Count
Extremely		13.7%	10
Very		46.6%	34

Residential Reach Codes: City of Sunnyvale

Sunnyvale Residential Reach Codes: Please provide your feedback.

	%	Count
Somewhat	31.5%	23
Not very	8.2%	6

QUESTION 4

Which of the following Reach Codes would you support? Choose any that apply.

	%	Count
A total ban on natural gas (including outdoor use)	52.5%	42
All electric for new construction	76.3%	61
All electric for additions and alterations of buildings	72.5%	58
All electric for new construction with exceptions for cooking	27.5%	22
No Reach Codes	12.5%	10
Other	10.0%	8

QUESTION 5

If you support Reach Codes, select the reasons why.

	%	Count
Reduce greenhouse gas emissions	98.6%	71
Support Sunnyvale's Climate Action Playbook goals	81.9%	59
Health and Safety	72.2%	52
Cost savings	55.6%	40
Other	12.5%	9

Residential Reach Codes: City of Sunnyvale

Sunnyvale Residential Reach Codes: Please provide your feedback.

QUESTION 6

If you don't support Reach Codes, select the reasons why.

		%	Count
The appliances installed in my home should be my choice		78.6%	11
I don't believe Reach Codes will make a difference in our greenhouse gas emissions		42.9%	6
Reach Codes would be too costly		50.0%	7
I don't think electric appliances perform as well as gas appliances		50.0%	7
Other		28.6%	4

QUESTION 7

Please express any additional thoughts, questions, or concerns you may have regarding Reach Codes.

Answered	41
Skipped	39

Residential Reach Codes: City of Sunnyvale

Sunnyvale Residential Reach Codes: Please provide your feedback.

Survey Questions

QUESTION 1

Do you own property in Sunnyvale?

- Yes
- No

QUESTION 2

Do your own a business in Sunnyvale?

- Yes
- No

QUESTION 3

How informative did you find the reach code video presentation?

- Extremely
- Very
- Somewhat
- Not very
- Not at all

QUESTION 4

Which of the following Reach Codes would you support? Choose any that apply.

- A total ban on natural gas (including outdoor use)
- All electric for new construction
- All electric for additions and alterations of buildings
- All electric for new construction with exceptions for cooking
- No Reach Codes
- Other

QUESTION 5

If you support Reach Codes, select the reasons why.

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals
- Health and Safety
- Cost savings
- Other

QUESTION 6

If you don't support Reach Codes, select the reasons why.

- The appliances installed in my home should be my choice
- I don't believe Reach Codes will make a difference in our greenhouse gas emissions
- Reach Codes would be too costly
- I don't think electric appliances perform as well as gas appliances
- Other

QUESTION 7

Please express any additional thoughts, questions, or concerns you may have regarding Reach Codes.

Residential Reach Codes: City of Sunnyvale

Sunnyvale Residential Reach Codes: Please provide your feedback.

Individual Responses

Name not shown
inside Sunnyvale
July 24, 2020, 10:32 PM

Question 1

- Yes

Question 2

- No

Question 3

- Very

Question 4

- A total ban on natural gas (including outdoor use)
- All electric for new construction
- All electric for additions and alterations of buildings
- Other - Pre-wiring for electric vehicle charging above state mandates in multi-family housing.

Question 5

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals
- Health and Safety
- Cost savings
- Other - Equity. Everyone deserves to live in healthy homes free of gas combustion by-products that are also comfortable, energy efficient and less expensive to operate.

Question 6

No response

Question 7

At some point in the process I hope we can review the actual proposed code language at least for phase 1. I like that future phases will include requirements for alterations/remodels to be all-electric. I was hoping there would be requirements in the first phase for pre-wiring for electric vehicles above state mandates in multi-family residences. Easy access to convenient charging is the thing that most discourages apartment dwellers from investigating electric vehicles. How long will it take to implement subsequent phases and who decides when it is time?

Estimate how much annual greenhouse gas emissions will be 'locked in' by allowing an exemption from the requirements for residential developments that already have a planning entitlement. Consider ways to offset that amount of GHG emissions with other measures.

Name not shown
inside Sunnyvale
July 25, 2020, 12:08 AM

Question 1

- Yes

Question 2

- No

Question 3

- Somewhat

Question 4

- A total ban on natural gas (including outdoor use)
- All electric for new construction
- All electric for additions and alterations of buildings

Question 5

- Reduce greenhouse gas emissions
- Health and Safety
- Cost savings

Question 6

No response

Question 7

I appreciate that in Sunnyvale significant remodels are considered new construction and subject to new construction building codes. I appreciate that the reach code will include detached ADUs. I appreciate that staff is looking down the road, including panel sizing calculations when an electrical box is to be replaced. And I appreciate that Sunnyvale has the Green Building Program in place to incentivize all-electric for buildings such as large hotels which would not be covered by this reach code, Phase 1. However, I urge staff to include strengthened EV requirements now, in Phase I. Cupertino's code would be a good model. It requires EV

Residential Reach Codes: City of Sunnyvale

Sunnyvale Residential Reach Codes: Please provide your feedback.

ready so that a resident could just plug in a charger without having to engage an electrician. The Cupertino reach code also specifies the number of Level 1 and Level 2 chargers for various sized residences. There is already substantial interest in EVs in this region. The sooner the switch is made to EVs the sooner the air gets cleaner and the sooner we reduce GHG emissions. I see no reason for foot-dragging at this point in history. Requiring EV ready for new construction is a comparatively easy ask—especially when the wires have to be there already anyway.

Rani Fischer
inside Sunnyvale
July 25, 2020, 4:07 PM

Question 1

- Yes

Question 2

- No

Question 3

- Not very

Question 4

- A total ban on natural gas (including outdoor use)
- All electric for new construction
- All electric for additions and alterations of buildings
- All electric for new construction with exceptions for cooking

Question 5

- Reduce greenhouse gas emissions

Question 6

No response

Question 7

No response

Name not shown
inside Sunnyvale
July 25, 2020, 10:37 PM

Question 1

- Yes

Question 2

- No

Question 3

- Very

Question 4

- A total ban on natural gas (including outdoor use)
- All electric for new construction
- All electric for additions and alterations of buildings

Question 5

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals
- Health and Safety
- Cost savings

Question 6

No response

Question 7

No response

Name not shown
outside Sunnyvale
July 27, 2020, 8:22 AM

Question 1

- No

Question 2

- No

Question 3

- Very

Question 4

Residential Reach Codes: City of Sunnyvale

Sunnyvale Residential Reach Codes: Please provide your feedback.

- A total ban on natural gas (including outdoor use)
- All electric for new construction
- All electric for additions and alterations of buildings
- All electric for new construction with exceptions for cooking

Question 5

- Reduce greenhouse gas emissions
- Health and Safety

Question 6

No response

Question 7

No response

Bill Hilton
inside Sunnyvale
July 27, 2020, 4:50 PM

Question 1

- Yes

Question 2

- No

Question 3

- Somewhat

Question 4

- All electric for new construction
- All electric for additions and alterations of buildings
- Other - Panel upgrade estimates when remodeling residential buildings.

Question 5

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals
- Health and Safety

Question 6

No response

Question 7

No response

Name not shown
inside Sunnyvale
July 28, 2020, 2:43 PM

Question 1

- Yes

Question 2

- No

Question 3

- Extremely

Question 4

- No Reach Codes

Question 5

No response

Question 6

- The appliances installed in my home should be my choice

Question 7

You are taking our choice away and telling us how to live and think. As it is we have WAY too many codes now. Most do not make any sense but make more money for the state.

Name not shown
inside Sunnyvale
July 28, 2020, 8:16 PM

Question 1

- Yes

Question 2

Residential Reach Codes: City of Sunnyvale

Sunnyvale Residential Reach Codes: Please provide your feedback.

- No

Question 3

- Somewhat

Question 4

- All electric for new construction
- All electric for additions and alterations of buildings

Question 5

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals
- Health and Safety

Question 6

No response

Question 7

It is important to balance energy goals with cost to property owners as you consider the overall approach and timelines.

Name not available

July 29, 2020, 8:27 AM

Question 1

- No

Question 2

- No

Question 3

- Extremely

Question 4

- A total ban on natural gas (including outdoor use)
- All electric for new construction
- All electric for additions and alterations of buildings
- All electric for new construction with exceptions for cooking

Question 5

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals
- Health and Safety
- Cost savings

Question 6

No response

Question 7

No response

Name not available

July 29, 2020, 3:08 PM

Question 1

- No

Question 2

- No

Question 3

- Very

Question 4

- All electric for new construction
- All electric for additions and alterations of buildings
- All electric for new construction with exceptions for cooking

Question 5

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals
- Health and Safety

Question 6

No response

Question 7

No response

Name not shown

Residential Reach Codes: City of Sunnyvale

Sunnyvale Residential Reach Codes: Please provide your feedback.

inside Sunnyvale
July 30, 2020, 6:21 AM

Question 1

- Yes

Question 2

- No

Question 3

- Extremely

Question 4

- A total ban on natural gas (including outdoor use)
- All electric for new construction
- All electric for additions and alterations of buildings

Question 5

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals
- Health and Safety

Question 6

No response

Question 7

No response

Name not available
July 30, 2020, 9:15 AM

Question 1

- Yes

Question 2

- No

Question 3

No response

Question 4

- No Reach Codes

Question 5

No response

Question 6

- The appliances installed in my home should be my choice
- I don't believe Reach Codes will make a difference in our greenhouse gas emissions
- I don't think electric appliances perform as well as gas appliances

Question 7

No response

Name not shown
inside Sunnyvale
July 30, 2020, 9:20 AM

Question 1

- Yes

Question 2

- No

Question 3

- Somewhat

Question 4

- No Reach Codes

Question 5

- Cost savings

Question 6

- The appliances installed in my home should be my choice
- I don't believe Reach Codes will make a difference in our greenhouse gas emissions
- Reach Codes would be too costly

Residential Reach Codes: City of Sunnyvale

Sunnyvale Residential Reach Codes: Please provide your feedback.

Question 7

No response

Name not available

July 30, 2020, 9:20 AM

Question 1

- No

Question 2

- No

Question 3

- Somewhat

Question 4

- A total ban on natural gas (including outdoor use)
- All electric for new construction
- All electric for additions and alterations of buildings

Question 5

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals
- Health and Safety
- Cost savings
- Other - Reduce fossil fuel dependence

Question 6

No response

Question 7

The more aggressive you can be, the better! Future generations will thank you.

Robert Jeckell

inside Sunnyvale

July 30, 2020, 10:32 AM

Question 1

- Yes

Question 2

- No

Question 3

- Very

Question 4

- All electric for new construction
- All electric for additions and alterations of buildings

Question 5

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals
- Health and Safety

Question 6

No response

Question 7

No response

Ian Van Wert

inside Sunnyvale

July 30, 2020, 10:43 AM

Question 1

- Yes

Question 2

- No

Question 3

- Extremely

Question 4

- All electric for additions and alterations of buildings
- All electric for new construction with exceptions for cooking

Question 5

Residential Reach Codes: City of Sunnyvale

Sunnyvale Residential Reach Codes: Please provide your feedback.

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals

Question 6

- The appliances installed in my home should be my choice

Question 7

No response

Ari Feinsmith
inside Sunnyvale
July 30, 2020, 11:16 AM

Question 1

- No

Question 2

- No

Question 3

- Somewhat

Question 4

- A total ban on natural gas (including outdoor use)
- All electric for new construction
- All electric for additions and alterations of buildings
- Other - Eliminate single family housing zoning codes. They reduce housing supply, therefore forcing people to live farther away from their jobs. Longer commutes mean more green house gas emissions.

Question 5

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals
- Health and Safety
- Cost savings
- Other - Electrical appliances are generally more efficient than gas appliances.

Question 6

No response

Question 7

I like the idea of pre-wiring electric vehicle chargers in homes. However, I would like to see the reach codes improve HVAC systems. HVAC systems are directly responsible for 12% of global green house gas emissions. The most effective way of reducing this is by using more efficient refrigerants. Currently, R-22 is the most commonly used refrigerant, but Bluon TdX 20 (AKA: R-458A) is much more efficient, cheaper, and has less GHG leaks. I would like to see the Reach Codes mandate that all new residential and non-residential buildings use the Bluon TdX 20 refrgerant for their HVAC systems. It is cost effective and would greatly reduce our GHG emissions. Here is more info: https://www.bluonenergy.com/sustainability/

Name not available
July 30, 2020, 12:19 PM

Question 1

- Yes

Question 2

- No

Question 3

- Very

Question 4

- No Reach Codes

Question 5

No response

Question 6

- The appliances installed in my home should be my choice
- I don't believe Reach Codes will make a difference in our greenhouse gas emissions
- Reach Codes would be too costly
- I don't think electric appliances perform as well as gas appliances

Question 7

These codes will only increase the cost of single family homes and drive out our neighborhoods, with little effect on the environment.

Name not available

Residential Reach Codes: City of Sunnyvale

Sunnyvale Residential Reach Codes: Please provide your feedback.

July 30, 2020, 1:47 PM

Question 1

- Yes

Question 2

- No

Question 3

- Very

Question 4

- All electric for new construction
- All electric for additions and alterations of buildings

Question 5

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals

Question 6

No response

Question 7

No response

Name not available
July 30, 2020, 4:48 PM

Question 1

- Yes

Question 2

- Yes

Question 3

- Somewhat

Question 4

- No Reach Codes

Question 5

No response

Question 6

- Other - Natural gas is the cleanest energy! Our electric grid cannot support more electric devices (cars & appliances)!!!

Question 7

No response

Name not available
July 30, 2020, 5:13 PM

Question 1

- No

Question 2

- No

Question 3

- Extremely

Question 4

- A total ban on natural gas (including outdoor use)

Question 5

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals
- Health and Safety
- Cost savings

Question 6

No response

Question 7

No response

Mark Hanlon
inside Sunnyvale
July 30, 2020, 5:46 PM

Residential Reach Codes: City of Sunnyvale

Sunnyvale Residential Reach Codes: Please provide your feedback.

Question 1

- Yes

Question 2

- No

Question 3

- Somewhat

Question 4

- All electric for new construction

Question 5

- Reduce greenhouse gas emissions

Question 6

- The appliances installed in my home should be my choice
- Reach Codes would be too costly

Question 7

There is a BIG difference between constructing a new building and replacing a failed major appliance. Mandating that a failed gas appliance be replaced by electric in an existing home could be cost prohibitive for the owner, and possibly lead to a house without heat. Think this through. Just because someone owns a house in Sunnyvale doesn't mean they have multiple thousands to re-wire/re-panel their home for a new stove or dryer. ... Several days later, I'm thinking it might be somewhat reasonable for all new PV installations to also require wiring to existing gas appliances at time of panel changes. This would make the transition from gas easier at time of replacement, and the cost burden could then be part of the price/payback calculations.

Timothy Oey
inside Sunnyvale
July 30, 2020, 9:12 PM

Question 1

- Yes

Question 2

- No

Question 3

- Not very

Question 4

- A total ban on natural gas (including outdoor use)
- All electric for new construction
- All electric for additions and alterations of buildings
- All electric for new construction with exceptions for cooking

Question 5

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals
- Health and Safety
- Cost savings

Question 6

No response

Question 7

The reach code presentation could have been documented on a web page or 1 pager instead of needing to listen through a longish presentation for the amount of information it contained.

Name not available
July 31, 2020, 8:53 AM

Question 1

- Yes

Question 2

- No

Question 3

No response

Question 4

- A total ban on natural gas (including outdoor use)
- All electric for new construction
- All electric for new construction with exceptions for cooking

Question 5

Residential Reach Codes: City of Sunnyvale

Sunnyvale Residential Reach Codes: Please provide your feedback.

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals

Question 6

No response

Question 7

No response

John Cordes
inside Sunnyvale
July 31, 2020, 2:17 PM

Question 1

- Yes

Question 2

- No

Question 3

- Somewhat

Question 4

- A total ban on natural gas (including outdoor use)
- All electric for new construction
- All electric for additions and alterations of buildings

Question 5

- Reduce greenhouse gas emissions
- Health and Safety
- Cost savings

Question 6

No response

Question 7

No response

Name not shown
outside Sunnyvale
July 31, 2020, 3:10 PM

Question 1

- No

Question 2

- No

Question 3

- Very

Question 4

- A total ban on natural gas (including outdoor use)
- All electric for new construction
- All electric for additions and alterations of buildings

Question 5

- Reduce greenhouse gas emissions
- Health and Safety
- Cost savings

Question 6

No response

Question 7

Induction stove tops are amazing, heat pumps for heating and cooling are a great idea! Thank you for taking this cost-effective step to help decarbonize our building stock.

Name not available
July 31, 2020, 5:38 PM

Question 1

- Yes

Question 2

- No

Question 3

- Not very

Residential Reach Codes: City of Sunnyvale

Sunnyvale Residential Reach Codes: Please provide your feedback.

Question 4

- No Reach Codes

Question 5

No response

Question 6

- I don't think electric appliances perform as well as gas appliances
- Other - Just follow the state guidelines.

Question 7

No response

Bruce Euzent

inside Sunnyvale
July 31, 2020, 8:41 PM

Question 1

- Yes

Question 2

- No

Question 3

- Somewhat

Question 4

- Other - More Solar. Less restrictions on Solar. Encourage simple energy saving like LED retrofits and hot water recirculating pumps

Question 5

- Reduce greenhouse gas emissions

Question 6

- The appliances installed in my home should be my choice
- Reach Codes would be too costly
- I don't think electric appliances perform as well as gas appliances

Question 7

Electricity is phenomenally expensive in California. Need to bring down the cost before making this an even more unaffordable place, Need to make So;ar easier and cheaper to do.

Adrian Elrod

outside Sunnyvale
July 31, 2020, 9:06 PM

Question 1

- No

Question 2

- No

Question 3

- Very

Question 4

- All electric for new construction
- All electric for additions and alterations of buildings
- All electric for new construction with exceptions for cooking

Question 5

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals
- Health and Safety
- Cost savings
- Other - Business

Question 6

No response

Question 7

No response

Name not available

July 31, 2020, 10:58 PM

Question 1

- Yes

Residential Reach Codes: City of Sunnyvale

Sunnyvale Residential Reach Codes: Please provide your feedback.

Question 2

- No

Question 3

- Not very

Question 4

- No Reach Codes

Question 5

No response

Question 6

- The appliances installed in my home should be my choice
- I don't believe Reach Codes will make a difference in our greenhouse gas emissions
- I don't think electric appliances perform as well as gas appliances

Question 7

No response

Name not shown
inside Sunnyvale
August 1, 2020, 7:15 AM

Question 1

- No

Question 2

- No

Question 3

- Extremely

Question 4

- All electric for new construction
- All electric for additions and alterations of buildings
- All electric for new construction with exceptions for cooking

Question 5

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals
- Health and Safety
- Cost savings

Question 6

No response

Question 7

I like how the reach code must be proven to be cost effective _first_.

Name not available
August 1, 2020, 10:33 AM

Question 1

- No

Question 2

- No

Question 3

- Very

Question 4

- All electric for new construction
- All electric for additions and alterations of buildings
- All electric for new construction with exceptions for cooking

Question 5

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals
- Health and Safety
- Cost savings

Question 6

No response

Question 7

No response

Residential Reach Codes: City of Sunnyvale

Sunnyvale Residential Reach Codes: Please provide your feedback.

Richard Eggers
inside Sunnyvale
August 1, 2020, 10:39 AM

Question 1

- Yes

Question 2

- No

Question 3

- Very

Question 4

- All electric for new construction with exceptions for cooking

Question 5

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals

Question 6

No response

Question 7

Are there any provisions for helping with the installation of solar panels for single family homes?

Name not available
August 1, 2020, 6:29 PM

Question 1

- Yes

Question 2

- No

Question 3

- Very

Question 4

- All electric for new construction

Question 5

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals
- Health and Safety

Question 6

No response

Question 7

No response

Name not shown
inside Sunnyvale
August 1, 2020, 7:42 PM

Question 1

- Yes

Question 2

- No

Question 3

- Somewhat

Question 4

- A total ban on natural gas (including outdoor use)
- All electric for additions and alterations of buildings
- All electric for new construction with exceptions for cooking

Question 5

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals
- Health and Safety
- Cost savings

Question 6

No response

Residential Reach Codes: City of Sunnyvale

Sunnyvale Residential Reach Codes: Please provide your feedback.

Question 7

I think we should also make financial incentives to reduce the use of natural gas and electricity. The tier system should be designed such that it is cost neutral for the average residence. Make it cheaper at the lowest tier but more expensive at the upper tiers. We should also try to reduce the use of energy by providing incentives to increase insulation and installing double or triple pane windows

---

Name not shown
inside Sunnyvale
August 2, 2020, 7:28 AM

Question 1

- Yes

Question 2

- Yes

Question 3

- Somewhat

Question 4

- No Reach Codes

Question 5

No response

Question 6

- The appliances installed in my home should be my choice
- I don't believe Reach Codes will make a difference in our greenhouse gas emissions
- Reach Codes would be too costly
- I don't think electric appliances perform as well as gas appliances
- Other - Costly all-electric is a regressive tax on those already struggling with the high cost of living here.

Question 7

Utility bills are already too high for many. Reach Codes make the problem worse while not solving the problem they claim to solve.

Name not shown
outside Sunnyvale
August 2, 2020, 1:50 PM

Question 1

- No

Question 2

- No

Question 3

- Somewhat

Question 4

- A total ban on natural gas (including outdoor use)
- All electric for new construction
- All electric for additions and alterations of buildings

Question 5

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals
- Health and Safety
- Cost savings
- Other - Lead the way for other cities to do the same.

Question 6

No response

Question 7

Though I'm not a resident of Sunnyvale, unlike other more locally driven issues, the issue of climate change does not know municipal boundaries so what happens in Sunnyvale does affect me.

Name not shown
outside Sunnyvale
August 3, 2020, 8:47 AM

Question 1

- No

Question 2

Residential Reach Codes: City of Sunnyvale

Sunnyvale Residential Reach Codes: Please provide your feedback.

- No

Question 3

- Very

Question 4

- No Reach Codes

Question 5

No response

Question 6

- The appliances installed in my home should be my choice
- Reach Codes would be too costly

Question 7

No response

Ariel Stein
inside Sunnyvale
August 3, 2020, 10:59 AM

Question 1

- Yes

Question 2

- No

Question 3

- Very

Question 4

- A total ban on natural gas (including outdoor use)
- All electric for new construction
- All electric for additions and alterations of buildings

Question 5

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals
- Health and Safety
- Cost savings

Question 6

No response

Question 7

Thank you for your work on implmenting Reach Codes in Sunnyvale! I'm glad to see Sunnyvale catching up with the rest of the Bay Area.

Name not available
August 3, 2020, 3:25 PM

Question 1

- Yes

Question 2

- No

Question 3

No response

Question 4

- All electric for new construction

Question 5

- Reduce greenhouse gas emissions

Question 6

No response

Question 7

No response

Name not shown
inside Sunnyvale
August 5, 2020, 2:23 PM

Question 1

Residential Reach Codes: City of Sunnyvale

Sunnyvale Residential Reach Codes: Please provide your feedback.

- Yes

Question 2

- No

Question 3

No response

Question 4

- A total ban on natural gas (including outdoor use)
- All electric for new construction
- All electric for additions and alterations of buildings
- All electric for new construction with exceptions for cooking

Question 5

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals
- Health and Safety

Question 6

No response

Question 7

No response

Ryan Dautel
outside Sunnyvale
August 5, 2020, 4:23 PM

Question 1

- No

Question 2

- No

Question 3

- Not very

Question 4

- All electric for new construction
- All electric for new construction with exceptions for cooking
- No Reach Codes
- Other - For existing structure, only require electric if 50% or more of building (i.e. the exterior walls and/or roof framing) is demolished.

Question 5

- Reduce greenhouse gas emissions
- Health and Safety
- Cost savings
- Other - Improve safety, reduce emissions, and cut energy costs for NEW housing.

Question 6

- The appliances installed in my home should be my choice
- Reach Codes would be too costly
- I don't think electric appliances perform as well as gas appliances
- Other - **Too costly to retrofit EXISTING residences**

Question 7

I would NOT ban natural gas altogether, at least NOT for existing homes and appliance replacements. Doing so could place major financial hardships on families should their electrical service be insufficient, thus requiring a costly, disruptive service change. Not to mention the thousands of dollars worth of new appliances and electrical work that would be required. Lower-income families would be disproportionately impacted. What if a family can't afford all the upgrades, and either ends up without a water heater, furnace, or means of cooking? And, especially during a pandemic, the need for livable, affordable housing is greater than ever before. Think about our vulnerable children, and if they weren't able to take hot baths because their family couldn't afford the retrofit work. In summary, I do not believe families should be forced to convert their existing homes; that should be a personal choice.

Name not available
August 5, 2020, 9:22 PM

Question 1

- Yes

Question 2

- No

Question 3

Residential Reach Codes: City of Sunnyvale

Sunnyvale Residential Reach Codes: Please provide your feedback.

- Not very

Question 4

- A total ban on natural gas (including outdoor use)
- All electric for new construction
- All electric for additions and alterations of buildings

Question 5

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals

Question 6

No response

Question 7

No response

Jean Staats
inside Sunnyvale
August 6, 2020, 12:52 PM

Question 1

- Yes

Question 2

- No

Question 3

- Very

Question 4

- All electric for new construction
- All electric for additions and alterations of buildings

Question 5

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals
- Health and Safety
- Cost savings

Question 6

No response

Question 7

I suggest the City invite Rod Diridon as a speaker for Sustainability Events in regard To Climate Change. Purpose of the suggestion is to raise community awareness and thus gain support for Reach Codes.

Christine Pepin
inside Sunnyvale
August 6, 2020, 2:33 PM

Question 1

- Yes

Question 2

- No

Question 3

No response

Question 4

- All electric for new construction
- All electric for additions and alterations of buildings

Question 5

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals

Question 6

No response

Question 7

Where can I find the reach code presentation video?

Name not shown
inside Sunnyvale
August 7, 2020, 8:27 AM

Question 1

Residential Reach Codes: City of Sunnyvale

Sunnyvale Residential Reach Codes: Please provide your feedback.

- Yes

Question 2

- No

Question 3

- Very

Question 4

- All electric for new construction with exceptions for cooking

Question 5

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals

Question 6

No response

Question 7

No response

Sandi Spires
inside Sunnyvale
August 7, 2020, 9:45 AM

Question 1

- Yes

Question 2

- No

Question 3

- Very

Question 4

- All electric for new construction
- All electric for additions and alterations of buildings
- All electric for new construction with exceptions for cooking

Question 5

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals
- Health and Safety

Question 6

No response

Question 7

Some concern about grandfathering in - and providing a reasonable upgrade path - for old homes like my 1950s Eichler.

Name not shown
inside Sunnyvale
August 7, 2020, 9:47 AM

Question 1

- No

Question 2

- No

Question 3

- Very

Question 4

- A total ban on natural gas (including outdoor use)
- All electric for new construction
- All electric for additions and alterations of buildings

Question 5

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals
- Health and Safety
- Cost savings

Question 6

No response

Question 7

As a Sunnyvale resident, I think reach codes are extremely important to help make electrification equitable for renters. As a renter, I do not have

Residential Reach Codes: City of Sunnyvale

Sunnyvale Residential Reach Codes: Please provide your feedback.

the ability to make changes to the property that I reside in despite wanting to live in an all-electric home to help reduce my carbon emissions and have better indoor air quality. With reach codes, renters have a greater opportunity to choose all-electric buildings in the future and can benefit from better health and lower pollution levels. I highly support Sunnyvale's reach code efforts and wanted to raise my voice for the renters within Sunnyvale who do not want to endure poor indoor air quality from natural gas usage. In addition, all-electric construction costs for new buildings is significantly less costly. This cost savings can be transferred to renters to help address the housing crisis within Sunnyvale and Silicon Valley.

Name not shown
outside Sunnyvale
August 7, 2020, 12:53 PM

Question 1

- No

Question 2

- No

Question 3

- Very

Question 4

- A total ban on natural gas (including outdoor use)
- All electric for new construction
- All electric for additions and alterations of buildings

Question 5

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals
- Health and Safety

Question 6

No response

Question 7

As an architect working in Sunnyvale, I applaud the city's CAP goals and Reach Code adoption. Eliminating natural gas from the built environment is not only affordable, it will contribute to improved health, safety, and welfare for everyone in Sunnyvale. Eliminating natural gas appliances will have a particularly positive impact on indoor air quality and thus the health of residents.

Galen Davis
inside Sunnyvale
August 8, 2020, 6:49 AM

Question 1

- Yes

Question 2

- Yes

Question 3

- Somewhat

Question 4

- A total ban on natural gas (including outdoor use)
- All electric for new construction
- All electric for additions and alterations of buildings

Question 5

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals
- Health and Safety
- Cost savings

Question 6

No response

Question 7

Why is this taking so long? Other cities have already passed this.

Steve Zornetzer
inside Sunnyvale
August 8, 2020, 10:25 AM

Question 1

- Yes

Residential Reach Codes: City of Sunnyvale

Sunnyvale Residential Reach Codes: Please provide your feedback.

Question 2

- No

Question 3

- Somewhat

Question 4

- All electric for new construction
- All electric for additions and alterations of buildings

Question 5

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals

Question 6

No response

Question 7

No response

Name not available

August 8, 2020, 2:45 PM

Question 1

- No

Question 2

- No

Question 3

- Very

Question 4

- A total ban on natural gas (including outdoor use)
- All electric for new construction
- All electric for additions and alterations of buildings

Question 5

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals
- Health and Safety
- Cost savings
- Other - Reach Codes transform the market and will save on retrofit costs

Question 6

No response

Question 7

Excellent proposal to start with Reach Codes. I think they are cost effective for small additions and remodels by having them prohibit the extension of gas pipes into those areas of the home that will need to be retrofitted sooner than we think.

---

lance scudder

inside Sunnyvale

August 8, 2020, 3:16 PM

Question 1

- Yes

Question 2

- No

Question 3

- Somewhat

Question 4

- All electric for new construction
- All electric for additions and alterations of buildings
- Other - All electric with no blanket exemptions would be best. Exemptions could be dealt with on a case-by-case basis.

Question 5

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals
- Other - Be a model city for other cities to see that it is possible and cost effective. (especially in other states)

Question 6

No response

Residential Reach Codes: City of Sunnyvale

Sunnyvale Residential Reach Codes: Please provide your feedback.

Question 7

I'm happy to see panel sizing as part of first phase. I think it could encourage earlier adoption of electric vehicles. Is there a timeline for how/when to move from first phase to second phase. what are the triggers?

Robert Whitehair
outside Sunnyvale
August 8, 2020, 5:20 PM

Question 1

- No

Question 2

- No

Question 3

- Extremely

Question 4

- A total ban on natural gas (including outdoor use)

Question 5

- Reduce greenhouse gas emissions

Question 6

- I don't believe Reach Codes will make a difference in our greenhouse gas emissions

Question 7

Reach codes are one way to attack climate change, now. If all cities worked together, the environmental impact of eliminating "natural" aka methane gas would be tremendous.

Name not shown
inside Sunnyvale
August 8, 2020, 9:01 PM

Question 1

- Yes

Question 2

- No

Question 3

- Very

Question 4

- All electric for new construction
- All electric for additions and alterations of buildings

Question 5

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals
- Health and Safety
- Cost savings

Question 6

No response

Question 7

- All electric for new construction is preferred with no blanket exemptions (manufacturing, data centers, commercial kitchens). Instead, exceptions could be approved case by case by Planning Commission and/or City Council with justifications). - A 'reach' for Electric Vehicle readiness or charging infrastructure is important to include for phase 1 (multifamily and non-residential) - Kudos for including major residential remodels (>50% exterior walls removed) in phase 1 - Kudos for panel sizing calculations in phase 1 residential - Suggest to build in timelines or triggers for when to evaluate future phases for both residential and non-residential.

Name not shown
inside Sunnyvale
August 8, 2020, 10:33 PM

Question 1

- Yes

Question 2

- No

Question 3

Residential Reach Codes: City of Sunnyvale

Sunnyvale Residential Reach Codes: Please provide your feedback.

- Very

Question 4

- All electric for new construction

Question 5

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals

Question 6

No response

Question 7

No response

Name not shown
inside Sunnyvale
August 9, 2020, 5:48 AM

Question 1

- Yes

Question 2

- No

Question 3

- Somewhat

Question 4

- All electric for additions and alterations of buildings
- All electric for new construction with exceptions for cooking

Question 5

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals
- Cost savings

Question 6

No response

Question 7

No response

Name not available
August 9, 2020, 8:13 AM

Question 1

- No

Question 2

- No

Question 3

- Very

Question 4

- A total ban on natural gas (including outdoor use)
- All electric for new construction
- All electric for additions and alterations of buildings

Question 5

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals
- Health and Safety
- Cost savings

Question 6

No response

Question 7

No response

Name not available
August 9, 2020, 9:36 AM

Question 1

- Yes

Question 2

Residential Reach Codes: City of Sunnyvale

Sunnyvale Residential Reach Codes: Please provide your feedback.

- No

Question 3

- Somewhat

Question 4

- A total ban on natural gas (including outdoor use)
- All electric for new construction
- All electric for additions and alterations of buildings

Question 5

- Reduce greenhouse gas emissions

Question 6

No response

Question 7

No response

Name not shown
inside Sunnyvale
August 9, 2020, 11:10 AM

Question 1

- Yes

Question 2

- No

Question 3

- Very

Question 4

- A total ban on natural gas (including outdoor use)
- All electric for new construction
- All electric for additions and alterations of buildings

Question 5

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals
- Health and Safety
- Cost savings

Question 6

No response

Question 7

For people doing major remodels or building new houses, eventually they might be driving more EV vehicles. EVs vehicles charging during the evening would be helpful since Sunnyvale is provided with 100% Clean Energy from Silicon Valley Clean Energy. This would reduce greenhouse gases and this will encourage use of EV vehicles. Please consider adding for new residential construction, additions, and major remodels a 'reach' for Electric Vehicle readiness and/or charging infrastructure beyond state mandated levels for residential new construction, major remodels, and additions in Phase 1. If you are not able to incorporate this into phase 1 then consider adding it to a later phase such as 2 or 3. Allow for a waiver process so that an applicant could request an exemption for a particular project in which the applicant would confirm that they have a need for the waiver and have reviewed the benefits of 'reach' for Electric Vehicle readiness and/or charging infrastructure beyond state mandated levels for residential new construction in Phase 1. This waiver would need approval by the Planning Commission or City Council.

Ed Lau
inside Sunnyvale
August 9, 2020, 12:16 PM

Question 1

- Yes

Question 2

- No

Question 3

- Very

Question 4

- A total ban on natural gas (including outdoor use)
- All electric for new construction
- All electric for additions and alterations of buildings

Question 5

Residential Reach Codes: City of Sunnyvale

Sunnyvale Residential Reach Codes: Please provide your feedback.

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals
- Health and Safety
- Cost savings

Question 6

No response

Question 7

I think the city needs to do a better job of publicizing this initiative and soliciting feedback. I found out about it only because I saw a Nextdoor notification a few hours before the end of the response period.

Name not shown
outside Sunnyvale
August 9, 2020, 2:56 PM

Question 1

- Yes

Question 2

- No

Question 3

- Somewhat

Question 4

- A total ban on natural gas (including outdoor use)
- All electric for new construction
- All electric for additions and alterations of buildings

Question 5

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals
- Health and Safety
- Cost savings

Question 6

No response

Question 7

To begin, I'd like to thank you for these efforts to reach for higher expectations in Climate Advocacy. It's great to see steps being taken to exceed what is needed for reach codes, but I had one issue with the proposed solution. As the demand for electric vehicles is exponentially growing in the Bay Area (last year, we saw a 6% increase in registered electric vehicle owners - San Francisco Chronicle), so should the standards that follow them. I believe that Sunnyvale should incorporate electric vehicle standards that exceed CalGREEN standards. Doing so would help ease range anxiety and would be more cost effective moving forward. I do feel we should amend the current proposition to incorporate this idea as doing so will lead to a smoother future when it comes to more and more of the population switching to environmentally-friendly electric vehicles.

Name not shown
inside Sunnyvale
August 9, 2020, 3:35 PM

Question 1

- No

Question 2

- No

Question 3

- Very

Question 4

- A total ban on natural gas (including outdoor use)
- All electric for new construction
- All electric for additions and alterations of buildings

Question 5

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals
- Health and Safety

Question 6

No response

Question 7

Thank you to the city of Sunnyvale for catching up to the rest of the county by beginning the process of adopting reach codes. A timeline for

the phases of the residential reach code rollout would be helpful in evaluating the impact it can realistically make towards reaching the 56% GHG reduction by 2030 goal listed by CAP.

Name not available
August 9, 2020, 4:04 PM

Question 1

- Yes

Question 2

- No

Question 3

- Very

Question 4

- All electric for new construction
- All electric for additions and alterations of buildings
- All electric for new construction with exceptions for cooking

Question 5

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals
- Health and Safety
- Cost savings

Question 6

No response

Question 7

No response

Gary Bailey
inside Sunnyvale
August 9, 2020, 4:31 PM

Question 1

- Yes

Question 2

- No

Question 3

No response

Question 4

- All electric for new construction
- All electric for additions and alterations of buildings

Question 5

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals
- Health and Safety

Question 6

No response

Question 7

No response

Name not available
August 9, 2020, 4:59 PM

Question 1

- No

Question 2

- No

Question 3

- Extremely

Question 4

- A total ban on natural gas (including outdoor use)
- All electric for new construction
- All electric for additions and alterations of buildings
- All electric for new construction with exceptions for cooking

Question 5

Residential Reach Codes: City of Sunnyvale

Sunnyvale Residential Reach Codes: Please provide your feedback.

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals
- Health and Safety

Question 6

No response

Question 7

Before anything else, I'd like to thank the city of Sunnyvale and Silicon Valley Clean Energy for finally starting to implement reach codes - this is a change that most surrounding municipalities have made and I can't say that I'm anything but excited and happy to see them implemented. While reading through the resources that were provided, one thing caught my eye - for the all electric mandate for remodeled homes, the threshold to consider a home "remodeled" is once 50% of all of the walls are removed/replaced. I was wondering why that threshold is so high, and if it would be possible to move that down to 25% of the walls being removed/replaced, considering that 38% of emissions related to residential areas come from construction. I feel that it would be more prudent to lower that threshold, so that we could further the carbon emission reduction within residential communities.

Name not available
August 9, 2020, 5:00 PM

Question 1

- No

Question 2

- No

Question 3

- Extremely

Question 4

- A total ban on natural gas (including outdoor use)
- All electric for new construction
- All electric for additions and alterations of buildings

Question 5

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals
- Health and Safety
- Cost savings

Question 6

No response

Question 7

To start, I would just like to thank you for creating a detailed plan and reach codes to aim for a more environmentally-friendly community. It's important to take such action now and reduce the damage that has been built over the years. I would like to mention that both the residential and non-residential plans lack a concrete timeline for the phases, which can lead to uncertainty of how impactful the reach codes are. It was mentioned that the CAP strives to reach a 56% GHG reduction by 2030 and even 80% reduction by 2050. Stated as well was that these are ambitious goals and to achieve them, a thought out plan will be necessary. Although the phases are well thought-out, it will nice to set a timeline in which they will take place. This will lead to a more improved and set plan that can run smoother as well as guarantee a high chance and reaching the end goals.

Name not available
August 9, 2020, 6:04 PM

Question 1

- Yes

Question 2

- No

Question 3

- Very

Question 4

- A total ban on natural gas (including outdoor use)
- All electric for new construction
- All electric for additions and alterations of buildings

Question 5

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals
- Health and Safety
- Cost savings

Residential Reach Codes: City of Sunnyvale

Sunnyvale Residential Reach Codes: Please provide your feedback.

Question 6

No response

Question 7

No response

Name not shown
inside Sunnyvale
August 9, 2020, 6:07 PM

Question 1

- Yes

Question 2

- No

Question 3

- Very

Question 4

- A total ban on natural gas (including outdoor use)
- All electric for new construction
- All electric for additions and alterations of buildings

Question 5

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals
- Health and Safety
- Cost savings

Question 6

No response

Question 7

No response

Name not shown
inside Sunnyvale
August 9, 2020, 6:13 PM

Question 1

- Yes

Question 2

- No

Question 3

- Extremely

Question 4

- A total ban on natural gas (including outdoor use)
- All electric for new construction
- All electric for additions and alterations of buildings

Question 5

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals
- Health and Safety
- Cost savings

Question 6

No response

Question 7

No response

Name not available
August 9, 2020, 6:21 PM

Question 1

- No

Question 2

- No

Question 3

- Somewhat

Question 4

Residential Reach Codes: City of Sunnyvale

Sunnyvale Residential Reach Codes: Please provide your feedback.

- A total ban on natural gas (including outdoor use)
- All electric for new construction
- All electric for additions and alterations of buildings

Question 5

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals
- Health and Safety
- Cost savings

Question 6

No response

Question 7

Please pass the REACH codes. We need all cities to be on board.

Name not shown
inside Sunnyvale
August 9, 2020, 7:22 PM

Question 1

- Yes

Question 2

- No

Question 3

- Very

Question 4

- A total ban on natural gas (including outdoor use)
- All electric for new construction
- All electric for additions and alterations of buildings
- All electric for new construction with exceptions for cooking
- Other - The top preference is a total ban on natural gas, but the others might be more practical.

Question 5

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals
- Health and Safety
- Cost savings

Question 6

No response

Question 7

No response

Name not available
August 9, 2020, 7:51 PM

Question 1

- Yes

Question 2

- No

Question 3

- Very

Question 4

- All electric for new construction with exceptions for cooking

Question 5

- Reduce greenhouse gas emissions

Question 6

No response

Question 7

In the presentation I would like to see data on how many metric tons of CO2 would be eliminated by the various proposals.

Name not shown
inside Sunnyvale
August 9, 2020, 8:12 PM

Question 1

- Yes

Residential Reach Codes: City of Sunnyvale

Sunnyvale Residential Reach Codes: Please provide your feedback.

Question 2

- No

Question 3

- Very

Question 4

- A total ban on natural gas (including outdoor use)
- All electric for new construction
- All electric for additions and alterations of buildings

Question 5

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals
- Health and Safety
- Cost savings

Question 6

No response

Question 7

Why have a Playbook if we don't follow it?

Mary Buxton
outside Sunnyvale
August 9, 2020, 9:03 PM

Question 1

- No

Question 2

- No

Question 3

No response

Question 4

- All electric for new construction

Question 5

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals
- Health and Safety
- Cost savings

Question 6

No response

Question 7

No response

Name not shown
inside Sunnyvale
August 9, 2020, 9:26 PM

Question 1

- No

Question 2

- No

Question 3

- Somewhat

Question 4

- A total ban on natural gas (including outdoor use)
- All electric for new construction
- All electric for additions and alterations of buildings

Question 5

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals
- Health and Safety
- Cost savings

Question 6

No response

Question 7

Thank you for aiming to achieve the goals of the Climate Action Playbook through these reach codes. When it comes to Decarbonizing

Residential Reach Codes: City of Sunnyvale

Sunnyvale Residential Reach Codes: Please provide your feedback.

Transportation and Sustainable Land Use, I like the idea of increasing 0 emission vehicles by requiring new homes to have the capability to install electric vehicle chargers; however, I believe that some ways we can make it more inclusive to residents living in apartments is firstly, by requiring property owners to contact their electric utility to install charging for resident which further promotes the increase of 0 emission vehicles in different households. Secondly, new construction of apartments should go beyond state requirements for electric vehicle readiness in Phase 1.

Name not shown
inside Sunnyvale
August 9, 2020, 9:28 PM

Question 1

- Yes

Question 2

- No

Question 3

- Somewhat

Question 4

- All electric for additions and alterations of buildings
- All electric for new construction with exceptions for cooking

Question 5

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals
- Health and Safety

Question 6

No response

Question 7

I also would like to see educational opportunities for residents on switching to electric (similar to the composting classes or water use reduction classes). I thinking everything should be all electric for all new construction and renovations right away with an exemption for cooking.

Name not shown
inside Sunnyvale
August 9, 2020, 10:53 PM

Question 1

- Yes

Question 2

- No

Question 3

- Very

Question 4

- A total ban on natural gas (including outdoor use)
- All electric for new construction
- All electric for additions and alterations of buildings

Question 5

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals
- Health and Safety
- Cost savings

Question 6

No response

Question 7

No response

Name not available
August 10, 2020, 2:17 AM

Question 1

- No

Question 2

- No

Question 3

- Very

Residential Reach Codes: City of Sunnyvale

Sunnyvale Residential Reach Codes: Please provide your feedback.

Question 4

- A total ban on natural gas (including outdoor use)
- All electric for new construction
- All electric for additions and alterations of buildings

Question 5

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals

Question 6

No response

Question 7

Thank you for the inclusion of the remodel clause. The requirements of all electric appliances, photovoltaics on high rise multifamily buildings, and pre wiring for electric vehicles is much appreciated. However, I've noticed that there could be possible improvements made. It would be beneficial that the remodel clause accounted for a larger number of remodels to increase the probability of achieving the greenhouse gas reduction goals.Thank you for time and efforts.

James Tuleya
inside Sunnyvale
August 10, 2020, 7:51 AM

Question 1

- Yes

Question 2

- Yes

Question 3

- Somewhat

Question 4

- A total ban on natural gas (including outdoor use)
- All electric for new construction
- All electric for additions and alterations of buildings
- Other - Including EV requirements per SVCE model; All electric for additions and alterations of buildings with exceptions for minor alterations that are not related to the electrical system

Question 5

- Reduce greenhouse gas emissions
- Support Sunnyvale's Climate Action Playbook goals
- Health and Safety
- Cost savings
- Other - We in Silicon Valley need to lead to show the way for other parts of CA and the U.S., since we must urgently address our Climate Crisis and it will take longer for others to move ahead.

Question 6

No response

Question 7

Great work to consider multiple phases needed over time to create the right framework. Great to start with All-Electric for residential homes, since our Climate Crisis is urgent and every year makes a big difference in GHGs; this will help us match/better our close neighbors in Mountain View and Cupertino, which will help the market adopt smoothly. Great idea to include requirements for electric panel readiness for the future to reduce re-work and added cost for future needs, To address the large % of greenhouse gasses from transportation, to avoid large retrofit costs in the future, and to improve climate equity for those in multifamily buildings, we must include requirements for EV infrastructure and readiness at least at the SVCE model level in Phase ONE. Include timelines and/or triggers for future phases.

Sunnyvale

GREEN BUILDING PROGRAM

These requirements apply to projects with a planning application that is "deemed complete" on or after July 1, 2019. For projects that do not require a planning application, these requirements apply to building permits submitted on or after July 1, 2019.

On May 7, 2019, the City Council revised the green building standards for new construction, additions, and remodels of buildings. The new requirements are effective for projects with a Planning Application that is 'deemed complete' on or after **July 1, 2019**. For projects that do not require a Planning Application, these requirements apply to building permits submitted on or after **July 1, 2019**.

GREEN BUILDING PROGRAM

Following are the steps for complying with the green building program:

- Identify minimum standards: Minimum standards are based on the type of project and scope of work. Refer to the tables on the reverse side of this brochure to determine green building requirements, level of achievement, and verification necessary for various types of projects.
- Submit Building Permit Plans: Building permit plans shall include the applicable green building checklist on a plan sheet. All required/selected points/credits shall be incorporated in the plans.
- Verification of Green Building Measures: The type of verification is described in the tables on the reverse side of this brochure.

  Green Point Rater/LEED AP verification requires the project LEED AP to provide a letter that confirms the project is designed to achieve the minimum points required. A similar letter, based on the actual construction, is required before occupancy/final inspection.

  USGBC Certification verification requires the project's LEED AP to provide a letter prior to permit issuance that confirms the project is designed to achieve the minimum points required and that the project has been registered with the USGBC. A similar letter, based on the actual construction, is required before occupancy/final inspection and shall also confirm if and when project will be submitted to the USGBC.

INCENTIVES

Incentives are offered for projects that exceed the minimum green building standards and are offered to encourage project applicants and developers to provide additional green building features.

Projects that add floor area to an existing site, qualify for the incentive if all buildings at the existing site meet the incentive level through an applicable LEED program (i.e. new construction, core and shell, commercial interiors, existing buildings). The LEED standard for the existing building(s) shall be met prior to occupancy of the new building(s).

MIXED-USE PROJECTS

Mixed use projects are required to meet the appropriate BIG standard for the residential portion and LEED for the non-residential portion. Alternatively, LEED may be applied to the entire project.

Build It Green *(BIG) is a non-profit organization whose mission is to promote healthy, energy- and resource-efficient building practices in California. www.builditgreen.org*

The ***U.S. Green Building Council*** *(USGBC), through the LEED program, encourages adoption of sustainable green building and development practices through the creation and implementation of universally understood and accepted tools and performance criteria. www.usgbc.org*

CALGreen *was adopted by the State of California and is the nation's first mandatory green building code which sets the minimum sustainability standards for new residential and non-residential construction.*

RESIDENTIAL PROJECTS

Type of Project	Minimum Standard	Voluntary Incentives
One Single-Family or Duplex Dwelling		
New Construction	CALGreen Mandatory Measures and GreenPoint Rated Checklist with 90 points minimum and verification by a GreenPoint Rater. *Applicants are **highly encouraged** to include any combination of the following items:* • *All-electric appliances[3] for the entire home (e.g. no gas line connection); or* • *Installation of a "cool roof" or "green roof"; or* • *Install EV chargers[2]; or* • *Greywater, recycled water, and/or rainwater catchment system(s)*	Projects may choose to increase lot coverage by 5% or qualify for staff level design review with a FAR up to 50% or 4,000 sq. ft. (whichever is less) if the project achieves: • 120 points, with Build It Green Certification; **or** • All-electric appliances[3] for the entire home (e.g. no gas line connection).
Addition (including all ADUs)	CALGreen Mandatory Measures as applicable to the scope of work. Reviewed by City staff	
Remodels and Alterations	CALGreen Mandatory Measures as applicable to the scope of work. Reviewed by City staff	--
Multi-Family Residential Development		
New Construction	CALGreen Mandatory Measures and GreenPoint Rated Checklist with 90 points minimum with Build It Green Certification. *Applicants are **highly encouraged** to include any combination of the following items:* • *All-electric appliances[3] in every unit (e.g. no gas line connection for the project); or* • *Installation of a "cool roof" or "green roof"; or* • *Install EV chargers[2]; or* • *Greywater, recycled water, and/or rainwater catchment system(s)*	Projects may choose to increase building height by 5', lot coverage by 5%, or receive a 5% density bonus[1] if the project achieves: 1. 120 points with Build It Green Certification, and 2. All-electric appliances[3] in every unit (e.g. no gas line connection for the project); and 3. Provides/installs one or more of the following items: a. A "cool roof" or "green roof"; or b. Electric Vehicle Chargers[2]; or c. Greywater, recycled water, and/or rainwater catchment system(s).
Additions, Remodels and Alterations	CALGreen Mandatory Measures as applicable to the scope of work. Reviewed by City staff	--

1. Projects that take advantage of the 5% green building density bonus are subject to Sunnyvale's affordable housing requirements for all units provided.
2. Installation of Level 2 electric vehicle chargers are required at a rate of 12.5% of the required parking spaces for the development, with a minimum of one charger required.
3. All-electric appliances include heat pump water heater, heat pump space heaters, induction cooktops, electric clothes dryers, among others.

NON-RESIDENTIAL PROJECTS

Type of Project	Minimum Standard	Voluntary Incentives
New Construction and Initial Tenant Improvements[1]		
≤ 5,000 sq. ft.	CALGreen Mandatory Measures. Reviewed by City staff	--
> 5,000 sq. ft. – 30,000 sq. ft.	CALGreen Mandatory Measures and LEED Gold Level with verification by a LEED AP	**Citywide (Excluding Moffett Park)** Projects can increase FAR by 10% or height by 10' by achieving: • LEED Gold Level with USGBC Certification[2] that achieves at least 75 total points with Design Phase Credits reviewed and approved by USGBC; ***and*** • All-electric[3] (e.g. no gas line connection). **Moffett Park** Projects can increase FAR by 15% (MP-I) or 20% (MP-TOD) by achieving: • LEED Gold Level with USGBC Certification[2] that achieves at least 75 total points with Design Phase Credits reviewed and approved by USGBC; ***and*** • All-electric[3] (e.g. no gas line connection).
> 30,000 sq. ft.	CALGreen Mandatory Measures and LEED Gold Level with USGBC Certification, including Design Phase Credits reviewed and approved by USGBC[2]	In addition, projects in Moffett Park can increase FAR by another 10%[4] by achieving: 1. One of the following certifications: a. LEED Platinum with USGBC certification[2] with Design Phase Credits reviewed and approved by USGBC; or b. Zero Energy[5] on the project site, certified by International Living Future Institute (ILFI); ***and*** 2. All-electric[3] (e.g. no gas line connection), ***and*** 3. Demonstration of additional features that provide Community Benefit.
Major Alterations (structural, mechanical, plumbing, and electrical alterations)[6]		
All Major Alterations	CALGreen Mandatory Measures and LEED Silver with verification by a LEED AP[7].	--

1. Projects in the Peery Park Specific Plan (PPSP) area are not eligible to receive incentives through the City's Green Building Program because they are eligible to achieve additional FAR for Green Building through the PPSP Community Benefits Program.
2. Although certification may occur after a project is finaled, the project's LEED AP must provide staff with a letter certifying that the building/project has been built to the plan and should be eligible to be certified at the approved LEED level prior to final sign-off of building permit(s).
3. All-electric appliances include heat pump water and space heaters, induction cooktops, electric clothes dryers, among others.
4. A Major Moffett Park Special Development Permit (reviewed and approved by City Council) is required for projects requesting the additional 10% FAR.
5. Although certification may occur after a project is finaled, the project's mechanical engineer must provide authorization that the design of the project meets all intent to achieve certification for Zero Energy prior to final sign-off of building permit(s).
6. See the Definition Section (last page) to identify which projects would be considered as Major Alterations.
7. Alternate means or methods that meet the intent of the Sunnyvale Green Building Program may be considered at the discretion of the Chief Building Official.

DEFINITIONS

Cool Roof means a roofing product that has been designed to reflect more sunlight and absorb less heat than a standard roof to help reduce electricity used for air conditioning by lowering roof temperatures.

Design Phase Credits means credits a project can obtain during the Design Application Phase of the LEED application process. The Design Phase Credits are reviewed and approved by USGBC. No actual credits will be awarded as part of this process, but USGBC confirms that the project design is anticipated to be awarded for the design credits at the end of the LEED certification process.

Green Roof means a roof of a building that is partially or completely covered with vegetation and a growing medium, planted over a waterproofing membrane. Green roofs are also commonly known as "living roofs," and includes both roof gardens, rooftop gardens, and landscaped roof.

International Living Future Institute (ILFI) refers to a nonprofit organization that has developed a sustainable building certificate program that promotes the most advanced measurement of sustainability in the built environment, including zero energy and zero carbon buildings. ILFI's certificate program includes different types of certifications: Living Building Certification, Petal Certification, Zero Energy Certification, Zero Carbon Certification. It has been certifying buildings since 2006.

Major Alteration means non-residential alterations where interior finishes are removed and significant upgrades to structural and mechanical, electrical and/or plumbing systems are proposed where areas of such construction are ten thousand gross square feet or more in existing commercial, office and industrial buildings (SMC 19.12.140).

Zero Energy Building means an energy-efficient building where 100% of the building energy needs on a net annual basis supplied by onsite renewable energy, usually without any onsite combustion, demonstrating zero energy performance.

Zero Energy Certification means a performance-based certification program administered and certified by ILFI. This certification requires 100% of the building energy offsets with the onsite renewable energy. The program requires 100% onsite energy generation and no combustion allowed on site, but some exceptions may be given for special circumstances for off-site renewable energy, onsite combustion, and other circumstances, with additional documentations required by ILFI.

Suzanne Park

From: Sharon Refvem <srefvem@hpsarch.com>
Sent: Friday, August 7, 2020 4:24 PM
To: Suzanne Park; reachcodes@sunnyvale.ca.gov
Subject: RE: Reach Code Announcement
Attachments: AIACA Electrification letter Final.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Hello,

I have reviewed Sunnyvale's Reach Code plans and responded to the survey's. Thank you for recognizing the importance of accelerating the adoption of all-electric building standards.

The state is rapidly moving towards this goal, which will make the existing gas infrastructure an increasingly stranded asset. I support a full gas ban as soon as possible. By taking this step now, in addition to health, safety, and welfare benefits, the City of Sunnyvale will be saving residents and businesses considerable future retrofit expense. Even PG&E supports avoiding investments in new gas infrastructure based on the state's long-term decarbonization goals. Here are two articles on PG&E's position: Bloomberg Law and GreenTech Media.

I currently serve as the Vice-Chair of AIA California's Committee on the Environment and have attached the letter that AIA California recently wrote to the CEC in support of an accelerated timeline for all-electric building requirements in the code for your reference.

Thank you for your foresight and action.

Sharon Refvem

Sharon Refvem, FAIA, LEED Fellow
Senior Associate | Director, Sustainability Resource Group

Hawley Peterson Snyder
1237 E. Arques Ave., Ste. B, Sunnyvale, CA 94085
T 650.968.2944 | **D** 408.940.8318 | M 650.867.3756 | **E** srefvem@hpsarch.com
hpsarch.com | *visit our new website!*

From: Suzanne Park [mailto:SPark@sunnyvale.ca.gov]
Sent: Thursday, July 30, 2020 9:40 AM
To: Suzanne Park <SPark@sunnyvale.ca.gov>
Subject: Reach Code Announcement

Reach Codes Head to Sustainability Commission, Planning Commission, and City Council

We are pleased to inform the community of the next phase in the preparation of Reach Codes for the City of Sunnyvale.

A Reach Code is a local building energy code that "reaches" beyond the state minimum requirements for energy use in building design and construction, and that leads the way to cleaner air, climate solutions, and renewable energy. Many communities are considering Reach Codes to assist with the reduction of greenhouse gas emissions by promoting electric energy use over natural gas energy use; some communities are taking aggressive steps to minimize new gas energy hookups.

Community members can comment on the preliminary program through two online surveys available until August 10. Two short videos on the City's YouTube channel explain the proposed codes. Final recommendations will include community input and reflect the City's Climate Action goals. They will be considered by the Sustainability Commission on August 17, 2020, the Planning Commission on September 14, 2020, and City Council on October 27, 2020.

The public is invited to Email us to receive updates or to provide feedback.

Sunnyvale

Follow us on:

Suzanne Park, P.E., CBO
Chief Building Official
Community Development Department

Phone: 408-730-7455
Email: spark@sunnyvale.ca.gov

Sunnyvale.ca.gov

July 22, 2020

California Energy Commission
Docket Unit, MS-4
1516 Ninth Street
Sacramento, CA 95814-5512

Re: Docket No. 19-BSTD-03

The American Institute of Architects California (AIA CA), an association of 11,000 architects in California, supports the adoption of an all-electric code for residential and commercial buildings in the 2022 update of the Energy Code.

Last year, our national component adopted a policy supporting urgent climate action as a health, safety, and welfare issue and an exponential acceleration of the 'decarbonization' of buildings. Aligned with this resolution, AIA CA supports required electrification of new construction for the 2022 Title 24 currently in development, as the most effective means to decarbonization. We believe that the move toward electrification is quickly moving 'mainstream' – as evidenced by the dozens of California cities which have approved electrification reach codes. We have supported these forward thinking codes now in place, and our members are currently working with dozens more cities across the state on the same trajectory.

We appreciate that the California Energy Commission is mandated to minimize the cost of energy services to Californians. We believe that for virtually all commercial and institutional buildings today in California, required electrification is consistent with that mandate, since numerous CEC commissioned studies have found that electrification is the lowest cost and least risk pathway to achieve the State's legislated climate goals by 2045. AIA CA believes that the necessary transition to this path must begin with the 2022 update to Title 24. Failure to make this course correction early would result in a continuation of the installation of equipment and infrastructure that will quickly become obsolete and thus have to be replaced before its end of life, which would waste taxpayer money and thus be contrary to the cost effectiveness requirements of the Warren-Alquist Act. Future renovation and replacement costs must be included in cost effectiveness analysis when considering continued onsite combustion in

buildings. While we recognize that there are some very limited circumstances where 100% electrification may not currently be feasible, we believe that the T24 standard can be written to provide the flexibility to address these particular situations while keeping the vast majority of new construction all electric.

Delaying electrification until the 2025 code cycle would leave less than 20 years to retrofit millions of existing buildings across California by the 2045 deadline. Retrofits are inherently more costly, time consuming, and disruptive to owners and tenants than if buildings were electrified from the start. For example, the Governor has set a goal of building 3.5 million new housing units by 2025. These should be built for full electrification right from the start rather than passing electrification retrofit costs on to future Californians.

The health, safety, and equity issues of fuel combustion in buildings are also a serious concern. Indoor and outdoor air pollution disproportionately impact disadvantaged communities and communities of color, and California continues to lead the nation in air pollution and its health impacts. These structural inequities must be addressed with urgency. Fossil fuel combustion in buildings release seven times more NOX pollution than do all of California's power plants, and UCLA research has demonstrated serious health impacts from combustion inside homes. A 2019 CEC report by Berkeley Economic Advising and Research found the "benefits of electrification significantly outweigh the costs" and "more dramatically, the public health benefits are greater...for disadvantaged communities and contribute to reducing inequality." The health related costs of combustion in buildings are significant and part of the CEC's responsibility to develop an energy code that works for all Californians.

Fortunately, solutions are readily available. All-electric buildings of all types and sizes are being designed today by AIA CA member architects across the state. They use efficient electric appliances that run on California's rapidly expanding clean renewable energy supply supplemented with solar. Rapid advances in energy storage and demand flexibility continually make our electric grid more efficient and affordable. Electrification will reduce carbon emissions and other pollutants, improve health outcomes, lower energy costs, help mitigate fire risk, and aid California in meetings its legislated carbon reduction targets. The 2022 code will become effective on January 1st, 2023, and that is high time for a Title 24 that is definitive in requiring electrification

Sincerely,

Debra Gerod, FAIA
AIA CA President