



**PUBLIC REQUEST TO ADDRESS
THE BOARD OF SUPERVISORS
COUNTY OF LOS ANGELES, CALIFORNIA**

MEMBERS OF THE BOARD

HILDA L. SOLIS
HOLLY J. MITCHELL
LINDSEY P. HORVATH
JANICE HAHN
KATHRYN BARGER

Correspondence Received

Agenda #	Relate To	Position	Name	Comments
The following individuals submitted comments on agenda item:				
5.		Favor	Andrea Davis	Climate Action is the most important topic this County can work on for the future of our survival as a species living here on Earth. Please approve the Climate Action Plan so we as a County can be a part of the statewide, national, and worldwide solutions for reversing the effects of global warming on the weather, the water, the air, and the endangered species including our own.
			BAERI PENN	
			Christy Zamani	
			Crist Khachikian	
			Dan Silver	Please see attached letter.
			Edward Brachfeld	Thank you !!!
			Gloria Sefton	Please adopt the Los Angeles County 2045 Climate Action Plan as recommended by staff and the Planning Commission. I strongly support the many sound measures in the plan which respond to the climate crisis and curtail greenhouse gas emissions. The plan is balanced and well-considered, and provides streamlined permitting for newly approved housing. Please act without delay.
			Jonathan Parfrey	
			Kelly Coyne	Please adopt the Los Angeles County 2045 Climate Action Plan as recommended by staff and the Planning Commission. I strongly support the many sound measures in the plan which respond to the climate crisis and curtail greenhouse gas emissions. The plan is balanced and well-considered, and provides streamlined permitting for newly approved housing. Please act without delay.
			Kevin Baaske	This is a chance for LA County to make a difference in the fight against climate change. We should not yield to monetary interests. That is how we got into this environmental mess. Please support the Climate Action Plan.
			Maggie Gardner	
			Margot D Eiser	Please adopt the Los Angeles County 2045 Climate Action Plan as recommended by staff and the Planning Commission. I strongly support the many sound measures in the plan which respond to the climate crisis and curtail greenhouse gas emissions. The plan is balanced and well-considered, and provides streamlined permitting for newly approved housing. Please act without delay.
Patricia Horsley				



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Correspondence Received

The following individuals submitted comments on agenda item:				
Agenda #	Relate To	Position	Name	Comments
5.		Favor	Peggy Gallaher	
			robyn eason	See letter attached.
			Ron Askeland	Please adopt the Los Angeles County 2045 Climate Action Plan as recommended by staff and the Planning Commission. I strongly support the many sound measures in the plan which respond to the climate crisis and curtail greenhouse gas emissions. The plan is balanced and well-considered, and provides streamlined permitting for newly approved housing. Please act without delay.
			Sandy Zelasko	Please adopt the Los Angeles County 2045 Climate Action Plan as recommended by staff and the Planning Commission. I strongly support the many sound measures in the plan which respond to the climate crisis and curtail greenhouse gas emissions. The plan is balanced and well-considered, and provides streamlined permitting for newly approved housing. Please act without delay.
			Sarah Wolf	
			Scarlett D Esion	
			stephanie pincetl	Please adopt the Los Angeles County 2045 Climate Action Plan as recommended by staff and the Planning Commission. I strongly support the many sound measures in the plan which respond to the climate crisis and curtail greenhouse gas emissions. The plan is balanced and well-considered, and provides streamlined permitting for newly approved housing. Please act without delay.
			Victoria Gartman	
			Violet Ouyang	Please adopt the Los Angeles County 2045 Climate Action Plan as recommended by staff and the Planning Commission. I strongly support the many sound measures in the plan which respond to the climate crisis and curtail greenhouse gas emissions. The plan is balanced and well-considered, and provides streamlined permitting for newly approved housing. Please act without delay.
		Oppose	Jacqueline Ayer	
			Jacqueline Ayer	
			Jeff Montejano	
			Mike Roos	
		Other	Jacqueline Ayer	
		Item Total	27	

Grand Total			27	
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ChargerHelp's Recommendations for the Los Angeles County Board of Supervisors

Los Angeles County Draft 2045 Climate Action Plan

April 5, 2024

1. **Measure T6:** increase of ZEV Market shares and reduction of Gasoline and Diesel Fuel Sales
 - a. This measure Includes installing public and private shared EV charging stations in unincorporated areas of Los Angeles County. AND
 - b. This measure includes the installation of EV charging stations in LA County facilities and properties in unincorporated areas.

ChargerHelp Recommendations:

Add, "T6.8-- Ensure high reliability of the EV charging infrastructure installed for public and private shared EV charging stations in unincorporated areas of Los Angeles County by adopting EV charging station performance standards."

Add, "T6.9-- Ensure high reliability of the EV charging infrastructure installed in County facilities and properties in unincorporated areas of Los Angeles County by adopting EV charging stations performance standards."

2. **Measure T7:** Electrifying County Fleet Vehicles
 - a. This measure includes EV charging infrastructure utilized for fleet vehicles including County buses, shuttles, and light duty vehicle fleet.

ChargerHelp Recommendations:

Add, "T7.3-- Ensure high reliability for EV charging infrastructure utilized for fleet vehicles including County buses, shuttles, and light duty vehicle fleet by adopting EV charging station performance standards."

3. **Measure T8:** Accelerating Freight Decarbonization
 - a. This measure includes EV charging infrastructure utilized for County-owned medium and heavy fleets. AND
 - b. This measure includes the installation of EV charging stations at new and existing warehouse loading docks for the use of medium and heavy-duty fleets.

ChargerHelp Recommendations:

Add, "T8.6-- Ensure EV charging infrastructure utilized for County-owned medium and heavy fleets is maintained and reliable by adopting EV charging station performance standards."

Add, "T8.7-- Ensure all new and existing warehouse loading docks installing EVCS for medium and heavy-duty fleets reach high reliability, by adopting EV charging station performance standards."

From: [Bill Mayben](#)
To: [DRP EPS Climate](#)
Subject: CAP assumptions
Date: Friday, February 9, 2024 1:39:13 PM

CAUTION: External Email. Proceed Responsibly.

Dear LA County CAP Staff;

>

> Nobody should know more about climate change than the UN IPCC; who gather detailed information worldwide and publish periodic updates and projections. In preparing to publish their last update, a final proofread revealed many of their base calculations to be simply wrong. In the brief interval between collecting data and pre-publication; the climate had shifted enough to render many projections inaccurate. They had to scramble to correct.

>

> I keep a phrase in mind; governments operate incrementally while climate changes exponentially. This is our Achilles Heel.

>

> LA county represents almost ten million people in itself; as one of 5 counties in the basin. The UN is particularly concerned about the 42 cities in the world with populations exceeding ten million; in that they are presently unable to handle their unique vulnerabilities in climate emergencies.

>

> This inability to meet the foundational elements Abraham Maslow called “The hierarchy of human needs”; as basic as water, food, shelter, clothing, safety, medical care, and transportation; leads to people unable to organize themselves to solve larger structural problems; and chaos ensues.

>

> LA County is embarking on an ambitious climate mitigation plan and is researching these issues; yet appears to be moving ahead of their adjacent counties. In a climate emergency they may find themselves with visitors. Collaboration is key. Information and technology sharing. Regional actions. There are no fences where climate is concerned.

>

> Climate scientists say mitigation will never be cheaper than it is today; becoming more expensive and urgent as weather deteriorates; until we must fall back onto desperate adaptation measures. Even with zero further GHG emissions; we face an only slightly less threatening future; so our solution must be “all of the above.”

>

> Given exponential weather disruption, as long as we pollute and mitigate simultaneously the time we have is only very slightly extended by our mitigation efforts. We must address GHG emissions at their source.

> After the attack on Pearl Harbor, in 1941, cooler heads realized we could not provide adequate fuels for the military and domestic consumption alike. Given an existential crisis; we rationed gasoline.

> Everyone wanted to do what they could.

>

> Now we face a greater existential crisis. To obtain tangible gains in reducing GHG emissions, I suggest we again ration fossil fuels; on an extinction schedule, starting with today’s usage and reducing incrementally each month to zero in 2045. California is a prime candidate to model this, as a programmed extinction of fossil fuels will never spring forth universally, suddenly all on its own.

> California has modeled social change, and we prevailed in smog control even when we were told repeatedly it was impossible. Governmental entities worldwide still look to California to see what we are actually accomplishing to combat climate change; instead of the worldwide cultural schizophrenia of slowing it while adding to it.

>

> We are told that it is a political problem; but I found, from 1972 forward; smog abatement was led by a few colleges; law and science. LA was emblematic in this effort; and the initial beneficiary. You recall the transition of “49 state Detroit cars vs. The California spec”? Now the entire world benefits; every new car is vastly more efficient.

> That was then, this is now.

> Now, LA County is among many other governmental bodies nationwide who are struggling to implement programs to reduce GHG without discussing the elephant in the living room. Just as in 1972, when we realized we could not reduce smog with policies which act only after emissions leave the tailpipes; our current incremental changes can never catch up with an expanding fossil fuel industry; each day putting profits ahead of certain crisis. Fossil fuels are an economy in which we are all both complicit and ultimately threatened with extinction of the worst kind.

> What would be the effects of all 5 LA basin counties enacting vehicle fossil fuel rationing; starting with California's current usage levels of more than 1.34 billion gallons per month; and evenly reducing the ration each month to zero in 2045?

> • For the first time this would proclaim a direct solution to an existential crisis; to the world; from political entities with history and credibility on the issue. Literally everyone would want to see the math.

> • A direct solution would be enunciated; that for all species to survive we must progressively transition to sustainable alternatives within the time we have to act. Stating in action that it cannot all happen on one day in 2045.

> • That immediate GHG reductions are in our grasp under a program allowing for a progressive transition over 20 years. We transitioned successfully from wood to coal to refined petroleum. Sustainable alternatives are a natural progression.

> • Within a context where consumers and industry alike could choose viable sustainable alternatives in an emerging economy, with lessened competition from established fossil fuel interests.

> • In a world where fossil fuel infrastructure would be required to be decommissioned parallel to reduced needs. There are many subsets to such a transition.

> • In a world where the effects of every other organized mitigation effort would not be reduced by increasing GHG emissions.

> • In a world where time became a major, recognized fact against an exponential threat.

> Yours,

> Bill Mayben

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> Sent from my iPhone



November 15, 2023
Ref. DOC 7050265

VIA EMAIL climate@planning.lacounty.gov

Ms. Thuy Hua
Los Angeles County Department of Regional Planning
320 West Temple Street
Los Angeles, CA 90012

Dear Ms. Hua:

Los Angeles County 2045 Climate Action Plan—Comment Letter

The Los Angeles County Sanitation Districts (Sanitation Districts) appreciates the opportunity to comment on the Los Angeles County (County) 2045 Climate Action Plan (2045 CAP). We thank you for considering and incorporating our previous comments submitted on July 6, 2022, and May 15, 2023 (copies enclosed). The Sanitation Districts continues to support the 2045 CAP but would like to provide the following additional comment below for your consideration:

- **Measure E5's performance objectives for Strategy 7: Conserve Water** aim to “Increase use of alternative water sources such that Unincorporated Los Angeles County demand is met by recycled water, graywater, or potable reuse: 25% by 2030, 50% by 2035, [and] 90% by 2045. Ensure that water demand for agricultural will be recycled or graywater: 30% by 2030, 50% by 2035, [and] 80% by 2045. Ensure that water demand for industrial will be recycled or graywater: 30% by 2030, 50% by 2035, [and] 80% by 2045.” While the Sanitation Districts supports converting waste into resources like recycled water, the numeric goals for Measure E5 are unrealistic. According to the Integrated Regional Water Management Plan for Greater Los Angeles County (2017), approximately 110 million gallons per day (MGD) of recycled water made up less than 10% of our County’s 1.5 million acre-feet of retail water demand. As stated in our May 15, 2023, comment letter, a partnership between the Metropolitan Water District of Southern California and the Sanitation Districts is expected to produce an additional 150 MGD for the region at the completion of the Pure Water Southern California (PWSC) project. Also, the Los Angeles Department of Water and Power’s Operation NEXT Water Supply Program is expected to produce 170 MGD or more of recycled water upon completion. Many smaller “purple pipe” municipal reuse and indirect potable reuse projects are also in the planning stages. Accounting for existing production and these planned projects, the wastewater treatment agencies within the region expect to meet at most 50% of water demand for Los Angeles County with recycled water by 2045. We aren’t aware what portion of this water will go to serve the needs of unincorporated areas within the County but given the distributed nature of projects and their overlap with unincorporated territory, it would be unlikely for them to feasibly serve 80% of unincorporated needs.

We again appreciate your leadership and your team’s dedication to help update the County 2045 CAP. Please contact me at (562) 908-4288, extension 2701, or rtremblay@lacsd.org, if the Sanitation Districts can be of any assistance as you work toward implementation of the 2045 CAP.

Very truly yours,

Raymond L. Tremblay
Raymond L. Tremblay
Department Head
Facilities Planning

RT:JL:MNH:pb

Enclosures

cc: Steve Cole – Santa Clarita Valley Water Agency
Brad Coffey – Metropolitan Water District of Southern California



May 15, 2023

Ref. DOC 6875668

VIA ELECTRONIC MAIL: climate@planning.lacounty.gov

Ms. Thuy Hua
Los Angeles County Department of Regional Planning
320 West Temple Street, 13th Floor
Los Angeles, CA 90012

Dear Ms. Hua:

Los Angeles County Revised Draft 2045 Climate Action Plan – Comment Letter

The Los Angeles County Sanitation Districts (Sanitation Districts) appreciates the opportunity to comment on the LA County Revised Draft 2045 Climate Action Plan (Revised Draft 2045 CAP). We thank you for considering and incorporating our previous comments submitted on July 6, 2022 (copy enclosed). The Sanitation Districts continues to support the Revised Draft 2045 CAP, however, would like to provide the following additional comments below for your consideration:

1. The Revised Draft 2045 CAP contains action measures, specifically Actions E5.2 and E5.3, related to the use of recycled water. The Sanitation Districts has a long history of providing affordable, high-quality recycled water to public and private water suppliers to help meet the water supply needs for more than five million people within the Sanitation Districts' service area. The recycled water is beneficially reused for industrial, commercial, and recreational applications; groundwater replenishment; agriculture; and the irrigation of parks, schools, golf courses, roadways, and nurseries. In addition to existing recycled water uses, the Sanitation Districts has partnered with the Metropolitan Water District of Southern California to explore the potential of a water purification project called Pure Water Southern California (formerly known as the Regional Recycled Water Program) at the Joint Water Pollution Control Plant, located in the City of Carson. At project completion, up to 150 million gallons per day (mgd) of water would be produced to recharge various regional groundwater basins and/or supplement regional water supply sources. We would appreciate if the Revised Draft 2045 CAP recognized these efforts.
2. The Sanitation Districts request that the County consider public agency projects covered by their own CAPs as in compliance with the Revised Draft 2045 CAP. Further, we request that a public agency be able to submit their own CAP in lieu of the checklist.

We again appreciate your leadership and your team's dedication to help update the Los Angeles County's 2045 CAP. Please contact me at (562) 908-4288, extension 2701, or rtremblay@lacsd.org, if the Sanitation Districts can be of any assistance as you work toward implementation of the Revised Draft 2045 CAP.

Very truly yours,

Raymond L. Tremblay

Raymond L. Tremblay
Department Head
Facilities Planning

RT:JL:MNH:pb

Enclosure

DOC 6920020



July 6, 2022

Ms. Thuy Hua
Los Angeles County Department of Regional Planning
320 W. Temple Street, 13th Floor
Los Angeles, California 90012

Dear Ms. Hua,

LA County Draft 2045 Climate Action Plan – Comment Letter

On behalf of the Los Angeles County Sanitation Districts (Sanitation Districts) we are pleased to support the LA County Draft 2045 Climate Action Plan (Draft 2045 CAP) and would like to provide the comments below for your consideration. The Sanitation Districts serve the wastewater and solid waste management needs of approximately 5.6 million residents in the Los Angeles Basin, Santa Clarita Valley, and Antelope Valley. We operate eleven water reclamation plants, two sanitary landfills, three materials recovery/transfer facilities, and two facilities that convert landfill gas into renewable energy. An important part of our mission is to convert waste into resources such as recycled water, energy, and recycled materials.

As stated in the Draft 2045 CAP, now, more than ever, climate change has become a real, urgent, and significant threat, with impacts being felt today in Los Angeles County and around the globe. The Draft 2045 CAP adapts Los Angeles County programs and services to reduce the unincorporated County areas' greenhouse gas (GHG) emissions and help limit global temperature increases. Further, the Draft 2045 sets forth Los Angeles County's path toward meeting the goals of the Paris Agreement and achieving carbon neutrality for unincorporated areas of the County. The document is comprehensive, thoughtful and reflects the diversity and complexity of Los Angeles County.

As mentioned above, the Sanitation Districts support the vision of the Draft 2045 CAP, however, we offer the following two comments for your consideration:

- 1) Many Sanitation Districts' facilities are included in the Draft 2045 CAP. To ensure potential emission reductions can be achieved and to avoid double-counting emissions or proposed reductions, an inventory boundary should be determined, and each individual agency should account for and report their own GHG activities within their organization's responsibilities and sphere of control. Similarly, emission estimation methods should reflect the same inventory boundary and rely on the best available information. The Sanitation Districts have performed such an inventory using site-specific data rather than population-based estimates as assumed in the Draft 2045 CAP. While both methods are acceptable, the publication of conflicting emission estimates can be confusing to the public and decision-makers. Due to these differences, we recommend that the Draft 2045 CAP include references to the Sanitation Districts' inventory and to state that Los Angeles County and the Sanitation Districts will work cooperatively to achieve carbon neutrality. A copy of our recently completed "2021 Greenhouse Gas Inventory Report" and a third-party verification of the report titled "Positive Verification Opinion for Greenhouse Gas Emissions and

Reductions for Emissions Year 2021” are attached. We would be happy to provide supporting data and information for our analysis, upon request.

- 2) The Draft 2045 CAP contains an action to capture all fugitive wastewater treatment process emissions and convert them to fuel. The Sanitation Districts would like to clarify whether Regional Planning meant to state that methane emissions from wastewater treatment processes should be captured and used as a vehicle fuel. GHG emission protocols assume nitrous oxide emissions are emitted from the wastewater treatment process and effluent discharge. If process nitrous oxide emissions cause Sanitation Districts’ facilities to become carbon positive, control technologies or process enhancements would be assessed. Regarding nitrous oxide emissions from wastewater effluent, it’s unlikely such a source could be controlled after being discharged from a treatment plant. In addition, fugitive emissions are defined by the EPA as “those emissions which could not reasonably pass through a stack, chimney, vent, or other functionally-equivalent opening,” so it’s unclear whether such a specific statement should be made about fugitive emissions. Therefore, we recommend this action be changed to reflect that methane produced during the wastewater treatment process is collected and converted into renewable energy or fuel. Please see our website (www.lacsd.org) under “Solid Waste Programs – Food Waste Recycling” and “JWPCP CNG Fueling Facility – Alternative Fuels” for further information about our activities to utilize digester gas from wastewater treatment from diverted processed organic waste to produce renewable natural gas that is available for use as a renewable low carbon vehicle fuel.

We know that updating Los Angeles County’s CAP was a significant undertaking and appreciate your leadership and all the people who have brought their dedication to help guide this effort. Please contact me at rtremblay@lacsd.org or at (562) 908-4288, extension 2701 if the Sanitation Districts can be of any assistance as you work toward implementation of the 2045 CAP.

Very truly yours,

Ray Tremblay
Raymond L. Tremblay
Department Head
Facilities Planning

RT:pb

Attachments

cc: climate@planning.lacounty.gov



April 11, 2024

The Hon. Lindsey P. Horvath, Chair
Board of Supervisors
County of Los Angeles
500 West Temple Street
Los Angeles, CA 90012
climate@planning.lacounty.gov

**RE: Item 5, April 16, 2024, Los Angeles County 2045 Climate Action Plan –
*SUPPORT***

Dear Chair Horvath and Members of the Board:

Endangered Habitats League (EHL) *strongly supports* the Climate Action Plan (CAP). For your reference, EHL is a regional conservation group dedicated to ecosystem protection and sustainable land use. We have been active participants in the CAP process, submitting comments. ***The CAP should be adopted without delay.***

Responding to stakeholder input, the plan went through several iterations. What is now before you is a *balanced and well-considered* program. It sets up-to-date GHG reduction targets and provides a comprehensive set of actions – across sectors from transportation to energy to agriculture – to achieve its goals. Climate change is an emergency that demands setting the CAP in motion.

We particularly point to the 2045 CAP’s voluntary CEQA Streamlining Checklist as a positive accomplishment. This will expedite General Plan-consistent housing. With an approved CAP in place, such projects can “tier” from the Program EIR and will be insulated from legal challenge on CEQA grounds. *The building industry should welcome this innovation.*¹ The CAP also treats controversial “carbon offsets” appropriately.

Please *adopt the CAP* and bring Los Angeles County into the forefront of responding to climate change. Thank you.

¹ In regard to the above, note that as a signatory to the “Tejon Ranch Conservation and Land Use Agreement,” EHL does not oppose development of Tejon Ranch’s Centennial Community project in Los Angeles County or its approvals. Additionally, in light of its site-specific measures, EHL is not advocating that the Climate Action Plan requires any changes to the Centennial project as currently approved by the relevant agencies.

Yours truly,

A handwritten signature in blue ink, appearing to read "Dan Silver". The signature is fluid and cursive, with a large initial "D" and a stylized "S".

Dan Silver
Executive Director



day one

175 n. euclid ave. pasadena, ca 91101
Phone: 626.229.9750
www.goDayOne.org

board of directors

natalie salazar

executive director crime stoppers

tom coston

light bringer project

seema satouriam

social worker
cedar-sinai medical center

lorraine nickels

human resource vp
kaiser permanente

delano yarbough

community activist retired PUSD principal

ashley mercedo

planning and development LAUSD

lead staff

christy zamani

executive director

claudia morales

director
community collaborative programs

ennifer imenez

director
prevention education programs

alisha lopez

director
tobacco control and prevention

nenezin gonazalez

director
environmental justice programs

angeli ue lopez

director
economic justice programs

colin bogard

director
active transportation

April 16, 2024

The Honorable Chair Lindsey P. Horvath and Members of the Board
821 Kenneth Hahn Hall of Administration
500 West Temple Street
Los Angeles, CA 90012

Re: Support of the 2045 Los Angeles County Climate Action Plan

Dear Chair Horvath and Members of the Board,

As a representative from Day One we would like to express our full support for the 2045 Los Angeles County Climate Action Plan (2045 CAP).

We applaud the County's commitment towards reducing greenhouse gas emissions and taking tangible steps towards combating climate change.

Action is needed now more than ever to improve air quality and decrease the impacts of greenhouse gas emissions. LA County remains one of the most polluted regions in the nation, negatively affecting the safety, public health, economy, and quality of life of all County residents. The Climate Action Plan would be a significant step towards reducing emissions in the unincorporated areas. The CAP identifies strategies, measures, and actions to reduce fossil fuel consumption in the following sectors: transportation, building energy and water, waste, agriculture, and energy supply. It has the potential to transform the direction of the County and build a more sustainable future for generations to come.

We therefore fully support the County's efforts to adopt the 2045 Los Angeles County Climate Action Plan and look forward to the Board's continued action as environmental leaders.

Sincerely,

Christy Zamani
Executive Director, Day One

Day One is a **c** **nonprofit** organization with a 35-year history of providing effective, high quality and culturally-sensitive public health education, intervention, and policy development.

Day One builds vibrant, healthy cities by advancing public health, empowering youth and igniting change.

Ta ID number -



Innovate. Advocate. Achieve. Together.

April 16, 2024

The Honorable Chair Lindsey P. Horvath and Members of the Board
821 Kenneth Hahn Hall of Administration
500 West Temple Street
Los Angeles, CA 90012

Re: Los Angeles County Climate Action Plan - SUPPORT

Dear Chair Horvath and esteemed Members of the Board,

Climate Resolve supports the 2045 Los Angeles County Climate Action Plan (2045 CAP). We applaud the County's commitment towards reducing greenhouse gas emissions (GHG) and taking tangible steps towards combating climate change.

According to a recent study by the nonprofit Center for Climate Integrity, L.A. taxpayers are on the hook for spending at least \$12.5 billion over the next 15 years to stem the effects of extreme heat, wildfire, water supply and sea level rise.

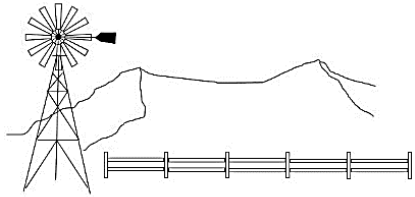
The Climate Action Plan provides a roadmap to curb GHG emissions in the unincorporated areas. The 2045 CAP identifies strategies, measures, and actions to reduce fossil fuel consumption in the following sectors: transportation, building energy and water, waste, agriculture, and energy supply. It has the potential to transform the direction of the County and build a more sustainable future for generations to come.

Climate Resolve – recipient of the 2024 American Climate Leadership Award – fully supports the County's efforts to adopt the 2045 Los Angeles County Climate Action Plan and look forward to the Board's continued climate stewardship.

Sincerely,

A handwritten signature in black ink that reads "Jonathan Parfrey". The signature is written in a cursive, flowing style.

Jonathan Parfrey
Executive Director



SAVE OUR RURAL TOWN

April 12, 2024

The Honorable Board of Supervisors
County of Los Angeles
383 Kenneth Hahn Hall of Administration
500 West Temple Street
Los Angeles, California 90012
Transmission of nineteen (19) pages and 8 attachments to
PublicComments@bos.lacounty.gov
And via <https://publiccomment.bos.lacounty.gov/>

Subject: Comments on the Climate Action Plan by Save Our Rural Town.

Reference: Project No. 2019-002015 Scheduled for Hearing by the Los Angeles County Board of Supervisors on April 16, 2024.

Dear Supervisors;

Save Our Rural Town ("SORT") respectfully submits the following comments on the referenced Draft Climate Action Plan ("CAP") that will be reviewed and considered by the Los Angeles County Board of Supervisors ("Board") for amendment into the County General Plan along with corresponding revisions to the General Plan Air Quality Element; these General Plan amendments will be processed pursuant to a Program Environmental Impact Report (PEIR).

While SORT supports the County's efforts to reduce greenhouse gas (GHG) emissions, several of the proposed CAP strategies and objectives threaten the rural character of communities in the Antelope Valley, create undue and unanalyzed environmental impacts, increase wildfire risks, and pose public safety hazards. SORT and others have worked ceaselessly to appraise the Department of Regional Planning regarding these concerns, some of our comments have had an effect; however, many comments have been ignored. And now, a new "wrinkle" has been added because on April 9, 2024, the Board considered and adopted a "last minute" motion to pursue activities which are intrinsically incompatible with, and even contrary to, findings and conclusions set forth

in the CAP PEIR¹. This motion was added by Supervisor Horvath via a "Supplemental Agenda" and insofar as SORT is aware, she did not conduct any public outreach before introducing it; the Board approved the motion perfunctorily and without discussion. This presents a dilemma: because we must ensure that the Board has plenty of time to review our concerns regarding conflicts with this motion and the CAP (as well as other shortcomings noted in the CAP and PEIR), we are compelled to submit our comments at the earliest practicable moment². However, this provides us with just a few short days in which to fully articulate all our concerns; therefore, our comments are necessarily brief. Nonetheless, and to ensure that the Board is fully appraised of our concerns with the CAP and the PEIR, SORT's previous comments submitted to the Department of Regional Planning are also provided (see Attachments 1 and 2). Please note: all comments were prepared by Jacqueline Ayer, a certified environmental engineer with nearly 40 years of environmental engineering experience and with particular expertise in powerline and electrical utility infrastructure development, land use, and environmental impact assessments. Accordingly, the comments offered herein constitute "substantial evidence" as that term is contemplated by the California Environmental Quality Act and should be accorded due weight.

The PEIR Fails to Properly Address and Mitigate Wildfire Hazards Posed by Activities that Will Be Advanced Through CAP Implementation.

The CAP establishes all the actions and measures that the County will pursue to reduce GHG emissions and work towards carbon neutrality, including "Action ES 3.6" which streamlines and prioritizes permitting for Battery Energy Storage Systems ("BESS") and utility scale solar projects (both of which will necessarily result in substantial increases in industrial infrastructure, new powerlines, and the destruction of many hundreds of thousands of acres of open space). The County is aware that the public has raised extensive concerns regarding wildfire impacts that will result from Lithium-based battery electric storage facilities ("BESS") and powerlines particularly in high and very high "fire hazard severity zones" ("FHSZs"). Fire risks posed by BESS facilities are also succinctly articulated in a report from the California Public Utilities Commission ("CPUC") that SORT just received this week and which is included as Attachment 4.

¹ The motion was identified as Agenda Item 85D; SORT learned on April 8 that it was added to the Board agenda as a last minute item on April 5. A copy of the motion is provided in Attachment 3.

² The public is directed to submit written comments via an electronic platform at <https://publiccomment.bos.lacounty.gov/> however this platform is not available to submit comments on agenda items slated for the April 16 Board Hearing until April 11. And, while comments can be submitted via email to PublicComments@bos.lacounty.gov, emails that are sent to this address are responded to with a statement that the comment should be submitted to <https://publiccomment.bos.lacounty.gov/>.

The PEIR admits that BESS facilities will be facilitated by the CAP (RDEIR at 3.1-13) and cursorily mentions that BESS facilities could ignite wildfires (RDEIR at 3.18-23) but it claims that "Mitigation Measure 3.18-3" renders wildfire impacts to be "less than significant" (RDEIR at 3.18-24). However, Measure 3.18-3 merely requires the development of a "Fire Protection Plan" which the PEIR asserts will "ensure that wildland fire-related hazards would not be exacerbated by installation or maintenance of infrastructure associated with future projects facilitated by the Revised Draft 2045 CAP measures and actions" (RDEIR at 3.18-23). SORT observes that Measure 3.18-3 will not mitigate BESS wildfire risks because BESS facilities by their very nature pose intrinsic and substantial wildfire risks that can never be eliminated by *any* "Plan". Specifically, BESS facilities are highly susceptible to "thermal runaway" which can *never* be stopped once it is initiated and *always* results in a substantial fire such as that shown in Figure 1. The Board is reminded that it only takes one ember from a BESS fire such as that depicted in Figure 1 to ignite a catastrophic wildfire which engulfs an entire community (particularly during "Santa Ana" wind events). SORT further points out that numerous developers have expressed an interest in constructing thousands of megawatts of BESS facilities on hundreds of acres in east Acton (where Santa Ana wind events originate) and that, once the CAP is adopted, approvals for these facilities will "streamlined". There is no question that the CAP will expressly facilitate development of BESS facilities in the Community of Acton; there is also no question that these BESS facilities pose a very significant and unmitigable wildfire risk to the community.

Figure 1. BESS Fire Resulting from a "Thermal Runaway" Event.



Source: <https://www.crowdjustice.com/case/bess-battery-storage-hazardous-material/>

The fact that BESS facilities pose an unavoidable wildfire risk due to the high incidence of thermal runaway is also demonstrated by BESS safety certification protocols established by "United Laboratories" ("UL") which require BESS designs to ensure that, when a BESS catches fire or explodes, the flames engulf only one BESS unit³. In other words, UL certification protocols constitute a tacit admission that BESS facilities pose very real and very significant wildfire ignition hazards.

To underscore this fact, it is noted that BESS shown in Figure 1 apparently complied with all the latest UL certifications (even though the figure clearly shows the flames affected more than one BESS unit). Additionally, aboveground powerlines that are constructed to serve new BESS facilities or utility scale generation projects facilitated by the CAP *always* pose a wildfire ignition threat, particularly during high wind events when flying debris (branches, tarps, mylar balloons, etc.) cause conductors to "arc" and "short"; this mechanism has resulted in countless wildfires in California over the last decade⁴.

These facts clearly demonstrate that all BESS facilities and aboveground power lines that are facilitated by the CAP pose very real and significant wildfire risks particularly in FHSZs; these facts also demonstrate that no "Fire Protection Plan" can *ever* be conceived of which will reduce these wildfire risks to a level that is "less than significant" because BESS facilities and power lines *by their very nature* pose intrinsic wildfire risks that can never be avoided or "planned away". Accordingly, "Mitigation Measure 3.18-3" is incapable of mitigating the wildfire risks posed by BESS facilities and aboveground powerlines to a level that is "less than significant" and it will certainly not ensure that "wildland fire-related hazards would not be exacerbated" by BESS or aboveground powerlines particularly in very high FHSZs like Acton. The PEIR is flat out wrong to conclude otherwise. The PEIR's finding that BESS fire risks are "less than significant" is fatally flawed; the PEIR must be amended to acknowledge that the fire risks posed by

³ UL test procedure 9540A applies to BESS; it merely requires that, when a BESS fire is ignited, the fire must not "propagate flames beyond the width of the initiating BESS".

⁴ The "Bobcat" Fire of 2020 was one of the largest wildfires ever in Los Angeles County and it was caused by a tree branch hitting a power line; it has been alleged that the utility had not conducted requisite vegetation management [<https://www.justice.gov/usao-cdca/pr/us-files-lawsuit-seeking-damages-southern-california-edison-and-tree-service-2020>]. However, properly trimming trees near power lines still does not prevent wildfires which can threaten the most populated areas in the County. For example, the "Getty" Fire threatened the very urban core of Los Angeles and it was ignited when a tree branch hit a power line even though the power line has been properly maintained by LADWP and all requisite vegetation management had been conducted [<https://www.ladwpnews.com/ladwp-statement-regarding-the-getty-fire-preliminary-investigation/>].

the BESS projects and the aboveground powerlines which will be facilitated by the CAP cannot be mitigated to a level that is "less than significant". Furthermore, the "Statement of Overriding Considerations" that the County adopts pursuant to Section 15021 of the Guidelines adopted pursuant to the California Environmental Quality Act ("CEQA") must identify wildfire impacts as a significant environmental effect which cannot be mitigated to a level that is "less than significant"; it must also identify specific benefits provided by the CAP which outweigh these wildfire impacts.

The PEIR Fails to Address the Public Safety Hazards Posed by the BESS Facilities that will be Facilitated by the CAP.

Over the last few months, SORT has become increasingly aware of the public safety hazards posed by BESS facilities when they undergo "thermal runaway" because such events release copious quantities of toxic gases including hydrogen fluoride, hydrogen cyanide and hydrogen chloride; every BESS fire creates a deadly toxic cloud that can stretch for miles and which threatens every living creature downwind of the event. As indicated in Attachment 4, the CPUC has expressed concerns regarding the public safety risks posed by BESS deflagration events. Yet, the PEIR does not analyze (or even mention) of these impacts or the public hazards they pose and instead simply declares that all public hazard impacts resulting from projects facilitated by the CAP are "less than significant", including:

- Impact 3.10-8 pertaining to adverse impacts of public hazards through "reasonably foreseeable upset and accident conditions involving the release of hazardous materials".
- Impact 3.10-9 pertaining to significant cumulative adverse impacts related to hazardous emissions "within one-quarter mile of sensitive land uses".
- Impact 3.10-11 pertaining to cumulative safety hazards for "people residing or working in the project area.
- Impact 3.4-3a pertaining to exposures of sensitive receptors to substantial toxic air contaminants or "TAC".
- Impact 3.4-4 pertaining to emissions "adversely affecting a substantial number of people".

The PEIR must be revised to acknowledge the public hazard impacts that will result from implementing CAP Action ES 3.6 to streamline and prioritize BESS approval; it also must be revised to incorporate appropriate mitigation measures to reduce these impacts. SORT recommends a mitigation measure which limits the placement of utility scale or grid connected BESS facilities to locations that are at least 2 miles from any property that could be used for residential or commercial development. If the PEIR is not revised to address the public hazard impacts of BESS development and include

appropriate mitigation measures, the "Statement of Overriding Considerations" that the County adopts pursuant to CEQA Guidelines 15021 must identify hazards associated with BESS developments as an environmental effect that will not be mitigated to a level that is "less than significant"; it also must identify the specific benefits that the CAP provides which outweigh the significant public safety risks posed by BESS development pursuant to the CAP. Frankly, SORT can conceive of no tangible public benefits that could possibly be derived from BESS facilities which outweigh the public safety risks that they pose.

Recent Actions by the Board Are Incompatible with the CAP, Contravene CAP Environmental Impact Conclusions, and Controvert PEIR Mitigation Measures.

The intent of the motion that was adopted by the Board on April 9, 2024, was supposedly to facilitate achievement of County GHG goals (see Attachment 3); ostensibly, that is also the purpose of the CAP slated for Board adoption on April 16, 2024. Unfortunately, the motion adopted on April 9 includes directives that are entirely inconsistent with the CAP and mandates actions which controvert PEIR mitigation measures and environmental impact findings. Furthermore, the April 9 motion demonstrates that the County does not intend to conform to the assumptions, conditions, limitations, conclusions, and findings established by the PEIR and will not enforce the mitigation measures established by the CAP's Mitigation Monitoring and Reporting Program ("MMRP").

For example, the CAP's MMRP imposes many mitigation measures on projects that are facilitated by the CAP; these measures are contingent on "project-level environmental reviews" and/or project-specific environmental studies "prior to approval"⁵. CEQA requires that these mitigation measures be "fully enforceable through permit conditions, agreements, or other measures" [CEQA Statute §21081.6(b)] and it also requires that the MMRP "ensure compliance during project implementation" [CEQA Statute § 21081.6(a)(1)]; courts have long held that EIRs are legally insufficient if Lead Agencies fail to provide for the implementation of adopted mitigation measures or if the EIR incorporates mitigation measures which cannot be, or will not be, implemented⁶. With regard to utility-scale renewable energy projects that will be facilitated by the CAP, both the CAP and the PEIR explain that these projects are regulated by the County's Renewable Energy Ordinance ("REO")⁷ and the PEIR further clarifies that all utility-

⁵ Measures 3.2-1, 3.2-2, 3.2-3, 3.3-1, 3.4-1, 3.4-2, 3.4-3, 3.4-4, 3.4-5, 3.4-6, 3.4-7, 3.4-8, BIO-1, BIO-2, 3.5-1, 3.5-2, 3.5-4, 3.5-5, 3.6-1, 3.6-2, 3.6-5, 3.13-2, 3.13-3, 3.15-1, 3.16-10. etc.

⁶ *Federation of Hillside and Canyon Associations v. City of Los Angeles* 83 Cal.App.4th 1252.

⁷ CAP Page C-6. RDEIR 3.2-10.

scale generation projects will be subject to discretionary permit requirements in accordance with the REO⁸; this necessarily compels all utility-scale generation projects to undergo environmental review pursuant to CEQA⁹ and thus ensures compliance with the MMRP and PEIR mitigation measures requiring utility-scale generation projects to undergo "project-specific environmental review". Essentially, the discretionary review requirement imposed by the REO satisfies the mitigation measure "enforcement" mandate under § 21081.6(b) and § 21081.6(a)(1) because it provides the requisite "project-specific environmental review" established by the MMRP. However, the April 9 motion directs that the REO be revised to strip out discretionary permit requirements for utility scale renewable generation projects¹⁰ and by adopting it, the County declared unequivocally that utility-scale generation projects facilitated by the CAP *will not* require discretionary permits and *will not* be subject to CEQA and *will not* undergo "project level environmental reviews".

The April 9 motion was nothing more than a bold and unabashed pronouncement that the County does not intend to enforce any MMRP mitigation measurements which require "project-level environmental reviews" on utility-scale generation projects facilitated by the CAP! However, and because CEQA prohibits the County from adopting an MMRP that incorporates mitigation measures which the County does not intend to implement, the County is now precluded by the April 9 Board action from certifying the CAP PEIR or adopting the CAP MMRP! And, if the County *does* certify the CAP PEIR and adopt the CAP MMRP, then it will violate §21081.6(b) and §21081.6(a)(1) because it has knowingly adopted MMRP mitigation measures that it does not intent to enforce. Furthermore, and as a result of the April 9 motion, the County cannot make the finding required by §21081 because, as the Court held in *Federation of Hillside and Canyon Associations v. City of Los Angeles* 83 Cal.App.4th 1252, there can be no evidence to support a finding that an EIR complies with §21081 when the Lead Agency fails to make a "binding commitment to implement the mitigation measures or, more appropriately, that they are incorporated into the project or required as a condition of project approval in a manner that will ensure their implementation".

⁸ PEIR Page 2.3-135. RDEIR Page 3.2-10.

⁹ Discretionary projects are subject to CEQA and undergo project-specific environmental review. Ministerial projects are not subject to CEQA and have no environmental review.

¹⁰ The motion orders the REO revised to authorize ministerial permitting for utility-scale generation projects, it expressly directs the REO to establish a "size threshold to determine whether a ministerial or discretionary permit is required", and it specifically mandates the REO to identify "development standards" for ministerially approved utility-scale generation projects.

It is simply incredible that, one week before the Board was scheduled to adopt the CAP, certify the PEIR, and find that the CAP complies with §21081 because it incorporates measures to mitigate significant environmental effects, the Board issued a directive that facially invalidates *all* of the CAP's mitigation measures pertaining to utility-scale generation projects by directing such projects to be approved ministerially and without the "project level environmental review" required by the MMRP. As a result, the County *cannot* adopt the requisite §21081 finding that mitigation measures are incorporated in the CAP because the Board declared on April 9 that the County will sidestep the "project-level environmental reviews" mandated by the MMRP by ministerially approving utility-scale generation projects facilitated by the CAP. Moreover, if the County *does* adopt a finding pursuant to § 21081, that finding *will not* withstand judicial review because it is not supported by substantial evidence and is in fact entirely controverted by the April 9 motion. The County has only two options to rectify this problem: it must either amend the PEIR to address and fully mitigate the environmental impacts that will result from ministerial review of utility-scale generation projects that will be advanced pursuant to the April 9 motion or it must clearly assert on the record that the motion adopted April 9 was in error and that the CAP *will not* facilitate ministerially approved utility-scale generation projects.

A number of other aspects of the April 9 motion controvert CAP PEIR conclusions and mitigation measures. For example, the April 9 motion directs staff to identify areas in the County where utility scale wind energy projects should be located to advance the County's GHG reduction goals; this is utterly contrary to the CAP's GHG reduction strategies and the PEIR's analyses of the CAP's environmental impacts which are both founded on the County's existing REO¹¹ that *expressly bans utility scale wind energy projects*. In other words, the CAP expressly concludes that the County will achieve its GHG emission reduction targets without the need to approve utility-scale wind generation projects. This **fact** explains why the CAP *does not* advance utility- scale wind generation projects and instead only advances utility-scale solar generation projects (page 3-15). It also explains why "Action ES 3.6" only prioritizes and streamlines solar projects and *does not* prioritize or streamline wind projects. It also explains why the PEIR does not identify utility-scale wind generation projects as activities that will be facilitated by the CAP (page 3.1-13 of the RDEIR). It also explains why the PEIR does not even address utility-scale wind generation projects and why it

¹¹ The CAP identifies the existing REO as a foundational element (Appendix C) and the PEIR identifies the REO as a fundamental component of various impact mitigation measures (see for example page 3.2-6 of the Recirculated Draft PEIR). In fact, the PEIR states that the "suite of provisions" in the REO provides environmental protections which reduce environmental impacts to levels that are "less than significant" (page 3.2-10 of the Recirculated Draft PEIR).

offers no mitigation measures to reduce their impacts; instead, the PEIR merely asserts that "utility scale wind energy facilities are not allowed" (page 3.3-10 of the RDEIR) and that wind turbines "result in a safety hazard for people residing or working in the project area due to collision risk, interference with radar or other air navigation tools, and other hazards related to air navigation"¹². Moreover, the PEIR's conclusions regarding environmental impact are entirely reliant on *all* the prohibitions and protective requirements imposed by the existing REO to minimize environmental impacts of any utility-scale generation projects facilitated by the CAP (page 3.2-10 of the RDEIR). Furthermore, the REO administrative record demonstrates that utility scale wind projects were appropriately prohibited by the REO because of the devastating impacts of such facilities (which can be 500 feet tall or higher) on protected bird species, on aerial firefighting capabilities, on air operations conducted by the Department of Defense (including out of Edwards Air Force Base, Plant 42, and aerospace contractor facilities in Palmdale), and on the efficacy of the County's adopted "dark skies" initiative (among other things). In other words, CAP GHG goals, PEIR environmental impact findings, and MMRP mitigation measures are all premised on *existing* environmental protections in the REO *including its ban on utility scale wind generation facilities*.

Equally important, the devastating environmental impacts of utility-scale wind energy facilities *were never analyzed in the PEIR*; therefore, the County is precluded from advancing utility scale wind projects as a means of achieving its GHG reduction goals. Nonetheless, and contrary to the determination clearly established by the CAP, the PEIR, and the MMRP that GHG reductions will be achieved *without* utility-scale wind energy projects, the April 9 motion establishes an unequivocal County directive to approve utility-scale wind energy projects anyway (and perhaps even ministerially without CEQA review!). This facially invalidates the PEIR (which precludes utility scale wind generation projects), contradicts MMRP's mitigation measures (which are based on the existing REO), and demonstrates that the County has no "binding commitment" to implement the PEIR and does not intend to enforce MMRP mitigation measures as required by §21081.6(b) and § 21081.6(a)(1). It also demonstrates that there is no evidence to support the requisite §21081 finding demanded by CEQA because the County is clearly not committed to enforcing MMRP mitigation measures or implementing the PEIR as written. The County has two options to rectify this problem: it must either amend the PEIR to address and fully mitigate environmental impacts resulting from the utility-scale wind projects that will be advanced by the April 9 motion or it must clearly assert on the record that the motion adopted April 9 was in error and that the County will not facilitate utility scale wind generation projects under the CAP.

¹² Findings of Fact page 78; page 2.3-214, page 3-30.

The April 9 motion also states that energy developers complain that "undergrounding" requirements imposed by the existing REO on new powerlines which are connected to new utility-scale generation projects are too expensive; this suggests the County intends to revise the REO and eliminate the "undergrounding" requirement. Should this happen, aboveground powerlines will be constructed on virtually every highway in the Antelope Valley to accommodate the hundreds of utility-scale generation projects facilitated by the CAP (because each project will have its own dedicated powerline). Notably, the PEIR does not address these impacts. In fact, the PEIR expressly concludes that powerline impacts from utility-scale energy projects facilitated by the CAP will be fully mitigated to a level that is "less than significant" because *the existing REO requires such powerlines to be placed underground* (see page 2.3-135); however, the April 9 motion completely undermines this conclusion and suggests that the Board intends to eliminate the undergrounding provisions in the existing REO.

Moreover, if the Board eliminates powerline "undergrounding" requirements in the existing REO, then the PEIR's environmental impact conclusions will be rendered erroneous and MMRP's mitigation measures will be eviscerated because both are contingent on the existing REO and its "undergrounding" powerline provisions. As explained above, CEQA demands that the County be fully committed to implementing the PEIR as written *including those provisions that rely on powerline undergrounding requirements established by the existing REO*; the April 9 motion suggests that the County is *not* committed to implementing critical PEIR environmental protection measures pertaining to the "undergrounding" of powerlines. Under such circumstances, the County cannot adopt the CAP or certify the PEIR; moreover, any §21081 finding that the County makes will not be supported by evidence because the County has evinced an intent to *not* underground powerlines connected to utility-scale generation projects that are facilitated by the CAP. The only solution to address this impasse is for the Board to clearly assert that the County will not remove powerline undergrounding provisions in the existing REO regardless of the statements made in the April 9 motion.

Additionally, the motion directs staff to facilitate the development of utility-scale renewable energy projects in the "Economic Opportunity Areas" that were established by the Antelope Valley Area Plan ("AVAP") expressly for the purpose of achieving a "jobs-housing balance" and providing local jobs as a critical means of reducing commuter activities and "vehicle miles traveled" (page LU-8 of Attachment 5). In other words, the April 9 motion materially controverts CAP strategies and goals pertaining to "job density" because it recommends the placement of hundreds of acres of non-job producing utility-scale generation projects (which operate remotely and are never staffed) in areas that are slated for job-producing uses by the AVAP. Furthermore, the

PEIR is predicated on the grounds that utility-scale generation projects will *not* be developed in "Economic Opportunity Areas"¹³; this is a foundational premise in MMRP mitigation measures. Accordingly, the April 9 directive to facilitate utility-scale generation projects in "Economic Opportunity Areas" to achieve GHG reductions is further proof that the County is not committed to enforcing CAP's mitigation measures or implementing the PEIR as written, and it is another reason why the County is precluded from certifying the PEIR or making the finding required by §21081.

Finally, the April 9 motion indicates that rooftop solar is not cost effective (page 1); if this is true, then Measure ES3 (requiring new development to incorporate rooftop solar) should be eliminated from the CAP because it will unnecessarily drive up new housing costs and impede the County's progress toward meeting goals and objectives established by the General Plan's Housing Element. Fortunately, the motion is factually erroneous; rooftop solar is actually more cost effective than utility scale generation (particularly when transmission costs are factored in); SORT explained this in our comments submitted to the Board pursuant to the April 9 motion (provided in Attachment 6 and available at: <https://file.lacounty.gov/SDSInter/bos/supdocs/190266.pdf>).

Other Concerns Posed by the CAP's Streamlined Review and Permitting for Utility-Scale Renewable Energy Projects and BESS Facilities.

The Draft CAP proposes a streamlined permitting process for BESS and utility-scale renewable projects and SORT understands that the County proposes to use the CAP to comply with the project-level review requirements of CEQA. However, CEQA streamlining cannot apply to utility-scale renewable energy projects (or, for that matter, their associated powerline facilities which are essential components of utility-scale generation projects) because the adopted AVAP states categorically that applications for utility-scale renewable energy production facilities shall be subject to CEQA and the County's environmental review and public hearing procedures (page LU-13). And, given the fire risk and public safety hazards posed by BESS facilities described above, these must also undergo full CEQA review and cannot be "streamlined" or otherwise expedited. Furthermore, these facilities must be consistent with relevant AVAP Goals and Policies, particularly Goal COS 12, Goal COS 13, Goal COS 14, and Policy ED 1.10 through ED1.13. For instance (and as discussed in more detail below), the AVAP establishes that the intent of rural lands is to provide for agricultural and animal uses and single-family residences and that the intent of rural commercial and industrial lands is to provide "light" and "low intensity" uses to serve the community and provide local employment; BESS and utility-scale generation projects do not achieve this intent.

¹³ RDEIER at 3.2-7, 3.3-5, 3.3-10, 3.12-12.

Additionally, there are significant environmental impacts associated with these types of projects that must be analyzed and mitigated. Numerous unincorporated communities are located in High and Very High Fire Hazard Severity Zones [Attachment 7] where powerlines are susceptible to failure and where both powerlines and BESS facilities can ignite wildfires. When such powerlines fail, they affect operations of critical facilities. For example, in 2017 the Thomas Fire damaged electric powerlines throughout the City of Ventura: this affected the City's water pumps (which run on electricity) and firefighters were unable to get water from the pumps to put out burning residences. The most numerous and largest fires in Southern California have been caused by electrical equipment and powerlines. Moreover, the Vincent substation operated by Southern California Edison lies within the rural Community of Acton; it is the primary energy "node" that connects the Los Angeles basin to the utility- scale renewable energy farms in the Antelope Valley and Tehachapi. The Vincent substation lies adjacent to a road that Acton residents rely on for their sole access and egress, and when a 500-kV transformer at the Vincent substation exploded in 2003, the residents had no viable escape route and could not "trailer out" their horses and belongings. And, although the CAP and PEIR address wildfire impacts posed by powerlines facilitated by the CAP, these wildfire impact analyses are all predicated on the assumption that new powerlines facilitated by the CAP will be placed underground in accordance with the existing REO; the April 9 motion controverts all these impact analysis results.

Furthermore, when fires occur too frequently, type conversion occurs and the native shrub lands are replaced by non-native grasses and forbs that burn more frequently and more easily, ultimately eliminating native habitats and biodiversity while increasing fire threat over time. Loss of biodiversity, or the variety of living organisms in County, impacts health, food, air quality, water resources, and culture, among other important aspects related to the quality of life. Wildfires in turn have their own significant impacts such including death, injury, trauma, mental health problems, property loss, displacement, water impacts, waste infrastructure challenges from increased debris production in burn areas, mud and debris flows, and impacts to domestic and barnyard animals including extended periods of disease vectors.

Finally, the Audubon Society has designated Antelope Valley as a "Globally Important Bird Area" because it supports avian life (including endangered and threatened species as well as "species of concern"); these as well as flora (including spectacular wildflower fields) and fauna in open fields, grasslands, riparian areas, chaparral, Joshua tree, juniper, pine, and even oak forests. Agricultural areas and windbreaks in the Antelope Valley which have historically provided nesting and forage for a variety of raptors are shrinking rapidly. The construction of utility scale solar farms in the Antelope Valley

will destroy habitat, obstruct and eliminate wildlife corridors, cause wildlife fatalities (particularly migratory birds that crash into the solar fields because they mistake them for large water bodies), and generate extensive dust storms because they remove native vegetation; this exposes residents to Valley Fever and excessive respiratory insults. The Antelope Valley already has the highest COPD rates in the state and has among the highest rates for both childhood asthma and Valley Fever. Additionally, there is significant construction noises created by the installation of tens of thousands of acres of utility scale solar farms in the Antelope Valley.

Strategies for Decarbonizing the Energy Supply.

Under Strategy 1, the County intends to require rooftop solar for all new residential development, install rooftop solar on existing development, and achieve the specific rooftop solar targets (page 3-21) including:

- The installation of rooftop solar on existing single-family homes and multifamily residential buildings; the CAP targets are 20 percent by 2030, 25 percent by 2035, and 35 percent by 2045.
- The installation of rooftop solar to existing commercial buildings; the CAP targets are 15 percent by 2030, 22 percent by 2035, and 32 percent by 2045.
- The installation of rooftop solar PV on all new multifamily residential buildings; the CAP targets are 80 percent by 2030, 85 percent by 2035, and 95 percent by 2045.

While SORT supports distributed renewable generation in the urban core and has shown that distributed generation is a more cost effective and environmentally responsible approach to achieving GHG reduction goals, we recognize that every new government requirement that is imposed on development adds to construction costs and decreases affordability. Therefore, we ask that the County carefully plan how it will achieve these Strategy 1 targets and collaborate with communities and developers to minimize impacts on construction costs.

SORT is also concerned with the impact that retrofitting existing residential development will have on homeowners who will be forced to enter into net metering agreements with Southern California Edison when the solar panels are activated; if done improperly, rooftop solar may not reduce electrical bills. This concern stems from changes made by the California Public Utilities Commission in 2023 to "Net Metering" tariffs which changed the cost effectiveness of solar. The new tariff is no longer based on the difference between the quantity of electricity imported by a customer and the

quantity exported; instead, the meter separately measures the power imported from, and exported to, the grid. The value of the exported and imported energy is determined independently, and customers are billed for the difference between the value of the power imported and exported by the residence, rather than the difference in quantity. The homeowner is not credited for the full retail rate; SORT understands that the price Southern California Edison pays for solar it receives under the new net metering scheme is about 75% less than under the prior net metering program. In other words, SCE pays homeowners pennies for each kilowatt-hour ("kWh") of electricity that they put on the distribution grid, then turns around and sells that same electricity to the surrounding homes for as much as 35 cents or more per kWh.

The only way to mitigate the potentially adverse cost impacts of the new net metering program is to install batteries which are themselves expensive and pose a fire risk; this may render rooftop non-economical for some homeowners. Solar could also affect resale values if the net metering agreement is viewed as undesirable or is a disincentive to prospective purchasers. Accordingly, implementation of the CAP's rooftop solar retrofit program will be challenging; it must be crafted to address the unique circumstances at each location where retrofitting is contemplated. Additionally, the County should make every effort to do what it can to improve net metering by lobbying the legislature and the California Public Utilities Commission to revise the current Net Metering Program and render it at least cost neutral for homeowners if not cost beneficial.

Measures that Increase Residential Development Costs

The CAP includes numerous measures that will increase the cost of residential development (including ADUs); these include:

Measure ES 5.3 - Establish an Offsite GHG Reduction Program for new development to use as a GHG reduction or mitigation pathway for 2045 CAP compliance and to fund programs for reducing GHG emissions in the built environment.

Measure T6.3 - Require all new development to install EVCSs [electric vehicle charging station] through a condition of approval/ordinance. Residential development must install EVCSs.

Measure E2.1 - Adopt an ordinance requiring all applicable new buildings to be zero-GHG emission.

Measure E2.2 - Adopt a ZNE [zero net energy] ordinance for all new residential buildings built after 2025 and all new nonresidential buildings built after 2030.

Measure E5.1 - Require dual waste piping to be installed in new residential developments to allow for future graywater irrigation systems.

SORT observes that some of these requirements may not be appropriate or achievable in rural areas. The "all" language should be removed and replaced with "as appropriate". Additionally, before the County imposes any more new requirements on development, it should conduct a study of all the fees that are already imposed upon new development and determine the impact on housing affordability and business retention. Finally, if the construction of ADUs is subject to these requirements, ADU development could be rendered economically infeasible.

Objectives Pertaining to Job Density

The CAP includes the following objectives pertaining to "Job Density" as a means of increasing the density and diversity of land uses near transit:

- *By 2030, achieve a job density of 300 jobs per acre.*
- *For communities with an imbalance of jobs/housing (± 20 percent), develop community plans to identify and quantify strategies for bringing that imbalance below 20 percent.*

SORT is very concerned that this objective will be applied to rural communities where there are only a few thousand residents spread over large areas; for example, the Community of Acton has only 7,500 residents distributed over 100 square miles and it has an overabundance of properties that are either industrially zoned or commercially zoned. Furthermore, the County General Plan and the Antelope Valley Area Plan restrict development in rural communities to achieve low density objectives and further establish that commercial and industrial zones are intended to provide low intensity uses that create local employment opportunities and are community serving. Moreover, Acton is home to many home-based businesses; in fact, Acton was the first unincorporated community in Los Angeles County to be granted zoning code provisions that allow home-based businesses.

Between the home based businesses and the (already too large) industrial and commercial zones, the Community of Acton is already positioned to provide local employment opportunities that balance local residential development; unfortunately however, the County has utterly failed to ensure that the commercial and industrial properties in Acton are utilized for in a manner that provides local jobs. For example, the County continually approves land uses in Acton's industrial and commercial areas that provide no local job opportunities (such as BESS facilities and outdoor storage

yards which are remotely controlled and employ no workers). In other words, *if* there is a jobs/housing "imbalance" in Acton, *then the fault lies solely with the County* because the County consistently and persistently fails to implement the General Plan and the Antelope Valley Area Plan by approving land uses which provide local job opportunities; instead, the County only approves land uses which provide no local job opportunities.

A "Jobs Density" of 300 workers per acre, if achievable at all, may only be appropriate in heavily urbanized areas; however, it is entirely inapplicable in rural communities and it certainly must not be applied to rural Antelope Valley communities like Acton, Neenach, Three Points, Antelope Acres, Pearblossom, etc. Instead, the County should ensure that rural communities have sufficient commercial, industrial, and home-based business opportunities to support the local population and then only allow local serving businesses which provide local employment opportunities to be developed in these areas. Accordingly, SORT stridently opposes the CAP's proposed 300 jobs/acre objective if it is applied to rural communities.

There are other reasons why the CAP's 300 jobs/acre objective cannot be applied to rural communities like Acton. For instance, the decarbonization goals established by the CAP require massive areas to be devoted to utility-scale generation facilities (see Attachment 2); if these facilities are constructed as utility-scale solar farms in open space areas of Los Angeles County, they will provide *no* sustainable job opportunities (because they are remotely controlled). Under such circumstances, the communities in which these utility-scale solar projects are located will *never* achieve the 300 jobs/acre CAP target. In other words, the CAP's GHG emission reduction goals will actually prevent the County from meeting the CAP's "job density" targets if GHG goals are achieved via utility-scale generation projects in open space areas of the County.

Additionally, rural communities have "Community Standards Districts" that have been established to protect rural, low-density communities and which expressly prohibit the type of high density development needed to reach the 300 jobs/acre CAP target. For example, the Acton CSD (provided in Attachment 8) was established by the County to protect and enhance the rural, equestrian, and agricultural character of the community and its sensitive features including significant ecological areas, floodplains, hillsides, National Forest, archaeological resources, multipurpose trail system, and the western heritage architectural theme. The standards are intended to ensure reasonable access to public riding and hiking trails and to minimize the need for installation of infrastructure such as sewers, streetlights, concrete sidewalks, and concrete flood control systems that would alter the community's character. Forcing a new Community Plan on Acton simply because it does not achieve a 300 jobs/acre target and even though there is

plenty of commercially and industrially zoned property and home based business opportunities to accommodate local workers is simply unconscionable and entirely unacceptable.

The County has also adopted the Antelope Valley Area Plan [Attachment 5] which is intended to protect all the rural communities in the Antelope Valley. A key objective of the AVAP is the "Preservation and enhancement of each unique town's rural character, allowing for continued growth and development without compromising the rural lifestyle" AVAP Policies include:

Policy LU 1.2: Limit the amount of potential development in rural preserve areas, through appropriate land use designations with very low residential densities, as indicated in the Land Use Policy Map (Map 2.1) of this Area Plan.

Policy LU 1.3: Maintain the majority of the unincorporated Antelope Valley as Rural Land, allowing for agriculture, equestrian and animal-keeping uses, and single-family homes on large lots.

Imposing a job density target of 300 jobs per acre in any rural community within the Antelope Valley is intrinsically incompatible with these adopted land use policies; it would also destroy the character of every rural community. Other protections incorporated in the AVAP that are contrary to the CAP's jobs density objective include:

- The AVAP "Rural Preservation Strategy" (Page I-6) establishes rural town centers to provide for the daily needs of local residents, reduce vehicle trips and provide local employment (Policy LU 5.2). Rural town centers are intended to support low density, low intensity uses; they could never support 300 job per acre.
- The AVAP "Rural Preservation Strategy" directs that the majority of new development occur in Rural Town Areas and allows for light agricultural, equestrian, and animal-keeping uses in these areas (Page I-7). Accordingly, Rural Town Areas could never support 300 job per acre.
- The AVAP "Rural Preservation Strategy" also establishes "Rural Preserve Areas" where low density residential development and agricultural uses are permitted (Page I-7); "Rural Preserve Areas" could never support 300 job per acre.
- The AVAP requires rural highway standards that minimize the width of paving and the placement of curbs, gutters, sidewalks, street lighting, and traffic signals. (Policy M3.2). Rural highways in the Antelope Valley could never support 300 jobs per acre.

- The Antelope Valley has vast expanses of land with limited infrastructure that is suitable for large-scale farming and other agricultural activities; the AVAP encourages the continuation and expansion of such activities to ensure that agriculture continues to be an important economic driver of growth (Policy ED 1.7). These agricultural areas lack the infrastructure required to support 300 jobs per acre and it is inconceivable that the County would eliminate agriculture to achieve an urban-based 300 jobs per acre objective.
- The AVAP identifies specific areas, such as the Palmdale Regional Airport, the High Desert Corridor, and the Northwest 138 Corridor where manufacturing and logistics services could expand (Policies ED 1.2 and ED 1.4); high density job growth should be directed to these areas and not to rural communities.

Moreover, the AVAP addresses the reduction of greenhouse gas emissions in a manner that differs from the Draft CAP because it utilizes the Antelope Valley's open space to provide large contiguous carbon sequestering basins (Policy LU 5.3.). This is something unique that rural areas can contribute to GHG emission reductions which urbanized areas cannot. This strategy will not be possible if the open space is developed to achieve the 300 jobs per acre requirement.

Additionally, the AVAP minimizes vehicle miles traveled and the number of vehicle trips sufficient in a manner that differs from what the Draft CAP proposes but is more appropriate to rural areas by 1) directing the majority of the unincorporated Antelope Valley's future growth to rural town centers, rural town areas, and economic opportunity areas; 2) encouraging the continued development of rural town center areas that provide for the daily needs of local residents by reducing the number of vehicle trips and providing local employment opportunities; and 3) encouraging the reduction of home-to-work trips through the promotion of home-based businesses, live-work units, and telecommuting (Policies M1.1, M1.2, and M2.1.).

While the AVAP supports the increase in Metrolink commuter rail service and the development of the California High Speed Rail System, this support was never intended to facilitate or trigger a requirement for developing new community plans to achieve a job density of 300 jobs per acre which, as explained above, is entirely inconsistent with the County's existing planning documents adopted for rural areas. Accordingly, SORT urges the Board to revise the CAP to include language which clarifies that the Antelope Valley is either exempt from the 300 jobs per acre CAP target or that the 300 jobs/acre target only applies within economic opportunity areas.

Conclusion.

Save Our Rural Town Respectfully requests that the County consider the above comments and make the adjustments recommended herein. If you have any questions or require additional information, please contact us at SORTActon@gmail.com.

Sincerely;

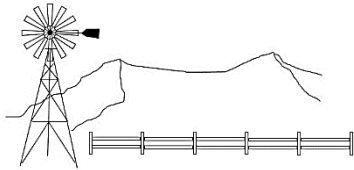
/S/ Jacqueline Ayer

Jacqueline Ayer, Director

Save Our Rural Town

ATTACHMENT 1

Save Our Rural Town Comments on the Draft Environmental Impact Report dated July 18, 2022.



SAVE OUR RURAL TOWN

July 18, 2022

Los Angeles County Department of Regional Planning
320 W. Temple Street, 13th Floor
Los Angeles, CA 90012

Electronic transmission of thirty-five (35) pages to:
climate@planning.lacounty.gov

Subject: Save Our Rural Town Comments on the Draft Environmental Impact Report prepared for the Draft Climate Action Plan.

Reference: Solicitation of Public Comment on the Draft Environmental Impact Report prepared for the Draft Climate Action Plan Issued April 25, 2022
Extension Deadline for Public Comments on the Draft Climate Action Plan Issued July 5, 2022

To Regional Planning Staff;

Please accept the following timely-filed comments offered by Save Our Rural Town ("SORT") pertaining to the referenced Draft Environmental Impact Report ("DEIR") prepared for the Draft Climate Action Plan ("DCAP").

SORT has a number of concerns regarding the DEIR that pertain to its project description, its project objectives, its alternatives analysis, its impact analyses, and other content. These concerns are enumerated individually below.

1.0 THE DEIR LACKS A CLEAR PROJECT DESCRIPTION.

Chapter 2 of the DEIR is titled "Project Description", but it fails to provide a clear and concise description of what the CAP "Project" actually is. It describes the "project area"; it also identifies County Plans, County aspirations, state objectives, and General Plan revisions that will result from the CAP. It has a section titled "Project Purpose and Objectives" which repeats California GHG emission reduction targets and explains that the CAP includes GHG emission reduction measures that are "consistent" with these targets. On page 2-8, the DEIR identifies the CAP "Project Objectives"; however, these "Project Objectives" are substantially flawed (as discussed in detail below). Then, the DEIR devotes many pages to discussing inventories and forecasts and explaining how the County General Plan is consistent with CAP strategies and measures, but it does not clearly state what the

CAP “Project” (or the “Proposed Action” per CEQA Statute Section §21001) even is. The “proposed action” finally becomes more clear on page 2-15 where the DEIR explains that the CAP will reduce GHG emissions to 40 percent below a 2015 baseline by 2030 and reduce GHG emissions to 50 percent below a 2015 baseline by 2035 (incidentally, there is a typographical error on page 2-15¹). This lack of a clear description of the “proposed action” is a substantial deficiency, and it makes it impossible to comply with the requirement imposed by §21001 of the California Public Resources Code that the County “consider alternatives to proposed actions affecting the environment” (as discussed in more detail below). This deficiency should be corrected by adding a paragraph at the beginning of Section 2 stating that the proposed action (also known as the CAP “Project”) is to reduce GHG emissions in Los Angeles County to 40 percent below the 2015 baseline by 2030 and reduce GHG emissions to 50 percent below the 2015 baseline by 2035 by implementing the strategies and measures that are identified in the CAP.

2.0 THE PROJECT OBJECTIVES PRESENTED IN THE DEIR ARE FLAWED.

Page ES-14 of the DEIR states that the CAP Project Objectives are 1) Implement the climate action policies of the General Plan”; 2) Identify appropriate GHG emissions reduction targets that closely align with state and local climate goals; and 3) Provide a road map to achieve GHG reductions to meet the GHG emissions reduction targets; 4) Encourage “sustainable housing production”; and 5) Demonstrate a level of GHG emissions below which the County would have less than cumulatively considerable GHG impacts for future environmental review projects and provide CEQA streamlining for development projects; 2). While the last two objectives are reasonable, the first three objectives are at best superfluous and nonsensical; at worst, they violate CEQA. The first objective is oddly circular and arguably pointless because the CAP *is* a component of the General Plan and it establishes many (if not most) of the “climate action policies of the General Plan”. Therefore, it essentially states that the primary objective of the CAP is to implement the CAP. This objective is also redundant because the County is statutorily required to implement *all* General Plan policies (including climate action policies); thus, it is absurd to establish as an objective that which is already required by law. The second is equally superfluous because it states that an objective of the CAP is to “identify” GHG reduction targets; however, these targets (to reduce GHG emissions to 40 percent below 2015 levels by 2030 and 50 percent below 2015 levels by 2035) are already “identified”. In fact, they comprise the “proposed action” itself. It is circular nonsense to assert that a CAP Project objective is to “identify” targets that already established and have thus already been “identified”. Finally, the third objective is written in a manner which violates CEQA. Specifically, while it is perfectly reasonable to establish a CAP project objective which states “Provide a road map to achieve GHG reductions”, CEQA precludes a project objective

¹ The first line of paragraph 2 should read “The Draft 2045 CAP’s 2035 target was selected based on guidance provided in the 2017 Scoping Plan and was chosen as a milestone target to put the County on the trend to achieve a long-term aspirational goal of carbon neutrality by 20~~3~~45.”

which requires that the targets which comprise the CAP “Project” (i.e., the “proposed action”) be achieved. The reason is clear: if the statement of project objectives established by an EIR includes an objective which states that the proposed action must be achieved, then the range of project alternatives to be considered will be improperly constrained to only those alternatives which achieve the proposed action. All other alternatives will be deemed “infeasible” and/or rejected for not meeting project objectives. Accordingly, while CEQA does permit the County to establish as an objective “Provide a roadmap to achieve GHG reductions”, it does not permit the County to constrain the roadmap in a manner which requires that it “meet the GHG emissions reduction targets” that comprise the proposed action.

The objectives presented in the CAP DEIR reveal a conspicuous lack of understanding of the importance of developing clearly formulated objectives and why clearly formulated objectives are so important to the CEQA process. Project objectives must be sufficiently broad to enable the Lead Agency to develop a reasonable range of feasible alternatives; they must also be sufficiently specific and quantitative to ensure that they provide a meaningful basis upon which to evaluate project alternatives and quantify the extent to which alternatives achieve the objectives. An EIR’s project objectives must also be stable, finite, and consistent with the Project. Multiple objectives set forth in the CAP DEIR do not meet these requirements because they are circular in nature. They also fail to reflect the project purpose expressed on page 1-2 of the DCAP which is to “reduce GHG emissions associated with community activities in unincorporated Los Angeles County”. They also do not reflect the purpose set forth on page 2-7 of the DEIR to “effectively meet GHG emissions reduction targets for 2030 and 2035 that are consistent with the state’s targets and executive orders”. One of the objectives is so constrained that it violates CEQA because it precludes consideration of feasible project alternatives. These are substantial deficiencies, and unless they are corrected, the CAP’s CEQA analysis will not withstand judicial review. These deficiencies can be corrected by revising the DEIR project objectives as follows:

~~1. Implement the climate action policies of the General Plan.~~

~~21. Combat the effects of climate change and achieve GHG emission reductions legislated by SB32 and AB 32 and recommended by Gubernatorial Executive Orders through 2035. Identify appropriate GHG emissions reduction targets that closely align with state and local climate goals.~~

~~32. Provide a road map to achieve GHG reductions associated with community activities in unincorporated Los Angeles County to meet the GHG emissions reduction targets.~~

43. Encourage sustainable housing production at all levels of affordability, including increasing housing densities near transit to the extent allowed in the General Plan.

54. Demonstrate a level of GHG emissions below which the County would have less than cumulatively considerable GHG impacts for future environmental review projects and provide California Environmental Quality Act (CEQA) streamlining for development projects (serve as a “qualified CAP”).

3.0 THE DEIR ALTERNATIVES ANALYSIS DOES NOT COMPLY WITH CEQA.

§21001 of the California Public Resources Code establishes the legislative intent behind CEQA and, among other things, it requires Lead Agencies to “consider alternatives to proposed actions affecting the environment” before approving “proposed actions”. In the context of CEQA, alternatives are optional ways that the project proponent could achieve most of their project objectives, while also reducing or eliminating the environmental impacts of the “proposed action”. [California Public Resources Code Section 21002; see also *Friends of the Old Trees v. Department of Forestry & Fire Protection* (1997)]. A robust alternatives analysis is essential to the CEQA Process, and it enables a Lead Agency to demonstrate that it has taken a “hard look” at the project objectives and thereby selected alternatives that allow for meaningful comparison [*Residents Ad Hoc Stadium Committee v. Board of Trustees* (1979)]. Courts overturn EIRs due to an improper or incomplete analysis of alternatives [*Cleveland National Forest Foundation v. San Diego Association of Governments* (2017); *North Coast Rivers Alliance v. Kawamura* (2015); *Habitat and Watershed Caretakers v. City of Santa Cruz* (2013); *Watsonville Pilots Association v. City of Watsonville* (2010)]. Although CEQA does not provide an ironclad rule governing the nature or scope of alternatives that are analyzed (other than requiring a “No Project alternative” be analyzed), it does apply the “rule of reason”; it also mandates that the Lead Agency consider alternatives to the “proposed action” which constitutes the “Project” (which is why a precise and stable project description is so critical to CEQA’s purpose). CEQA Alternatives typically involve changes to the scope, extent, and intensity of the proposed action. Within the context of the CAP, CEQA-compliant alternatives to the “proposed action” that achieves 40% GHG emissions by 2030 and 50% GHG reductions by 2050 would necessarily include different GHG emission reduction targets that achieve most of the project objectives while lessening the extent of the project’s significantly adverse environmental effects.

This issue was explored in detail in the scoping comments that SORT provided²; however and remarkably, none of SORT’s scoping comments appear anywhere in the DEIR³. SORT’s scoping comments clarified that the EIR must consider alternatives to the “Project” that

² SORT Director Jacqueline Ayer provided extensive comments during the scoping meeting; these comments begin at time stamp 34:58 of the recorded scoping meeting [<https://www.youtube.com/watch?v=yF1pXlHd4&t=3s>]. In particular, SORT explained that CEQA requires the CAP EIR to consider more alternatives than just the “Project” (consisting of 40% GHG reductions by 2030, 50% GHG reductions by 2035, and carbon neutrality by 2045) and the “No Project”. In particular, SORT pointed out that the CAP EIR must consider alternative targets that will achieve GHG emission reduction objectives but lessen the substantially adverse environmental effects that “Project” will create [time stamp 36:20].

³ None of the comments that SORT put into the record during the scoping meeting are reflected in the DEIR. In fact, the DEIR does not even acknowledge that SORT participated in the CAP scoping effort. This is a problem because it suggests that SORT did not “exhaust all administrative remedies” by actively participating in every aspect of the CAP development process. This error must be rectified and the Final EIR must reflect SORT’s participation in the CAP scoping process.

will achieve GHG emission reduction objectives while reducing the scope and extent of the significant adverse environmental impacts that will result from the “Project”. SORT further pointed out that CEQA will not allow decisionmakers (i.e., the Board of Supervisors) to adopt the targets that comprise the CAP “proposed action” unless the Final EIR conclusively demonstrates that alternatives which reduce GHG emission targets are either “infeasible” or would not lessen any significantly adverse environmental effects. Naturally, no such finding can be made because 1) Alternatives which achieve GHG emission targets that are lower than the “proposed action” are certainly as feasible (if not more feasible) than the targets established for the “proposed action”; and 2) Alternatives which achieve reduced GHG emission targets will *by definition* lessen significantly adverse environmental effects⁴.

Notably, the DEIR does not comply with CEQA alternative analysis requirements because it does not identify any alternatives to the “proposed action” (namely, reducing GHG emissions to 40 percent below a 2015 baseline by 2030 and 50 percent below a 2015 baseline by 2035). In fact, and notwithstanding the “No Project” Alternative, the only alternatives analyzed in the DEIR address measures that would be implemented *in addition to* the “proposed action”. For instance, Page 4-10 of the DEIR asserts that “Alternative 1” consists of all the elements of the CAP Project *as well as* the purchase of carbon offsets to further reduce GHG emissions. Similarly, “Alternative 2” is described on page 4-12 as comprising all the elements of the CAP Project *as well as* the implementation of an aggressive “Zero Net Energy” (“NZE”) program to further reduce GHG emissions. Neither of these comply with CEQA’s requirement that the EIR present “alternatives to the proposed action” *because they fully incorporate the proposed action in addition to other actions*. Accordingly, the DEIR does not present a “reasonable range of alternatives” as required by CEQA. It must also be pointed out that the DEIR’s “Alternative 2” NZE Program is already largely incorporated in the DEIR⁵.

The failure of the DEIR to provide a reasonable range of alternatives is perhaps understandable given that the DEIR lacks a clearly articulated project description which precisely identifies the proposed action (as explained above). This error must be rectified by developing alternatives to the proposed action which meet most of the project

⁴ Reducing GHG emission reduction targets will result in fewer acres of desert lands converted to utility scale renewable energy, battery storage, and transmission infrastructure purposes. Reducing building decarbonization targets will result in fewer wildfires ignited by rural residents using generators, barbecues, and camp stoves to cope with extended electrical power shutoffs (as discussed elsewhere). It is axiomatic that the significant adverse environmental effects that are caused by the implementation of aggressive GHG emission reduction targets will be lessened if the GHG emission reduction targets are reduced.

⁵ The NZE Program established by “Alternative 2” is only slightly more aggressive than the measures already incorporated in the DCAP (see for example Action ES3.1, ES3.2, E1.3, and the Performance Objectives for Strategy E2.)

objectives but reduce significant environmental impacts. The following alternatives are recommended:

Alternative 1: Reduce GHG emissions to 40 percent below the 1990 baseline by 2030 (or 3.84 MMTCO_{2e}) and maintain this GHG emission level through 2035 by implementing strategies and measures to achieve and maintain these reductions: This alternative ensures GHG emission reduction objectives are met because it comports with all legislative actions that have been adopted to reduce GHG emissions (including AB32 and SB32). It is also consistent with the horizon year established for the adopted County General Plan. It also complies with all the elements required for designation as a “Qualified CAP” under CEQA Guidelines Section 15183.5 (b). Accordingly, it meets all of the CAP project objectives. It also substantially lessens significant adverse environmental impacts because it requires approximately 30% less acreage devoted to solar panels than the “proposed action”⁶ and thereby saves tens of thousands of acres of desert open space; it also significantly reduces the need for electrical storage and transmission facilities in high fire hazard areas and reduces the extent of significantly adverse environmental impacts.

Alternative 2: Reduce GHG emissions to 40 percent below the 1990 baseline by 2030 (or 3.84 MMTCO_{2e}) and reduce GHG emissions to 50 percent below the 1990 baseline by 2035 (or 3.84 MMTCO_{2e}) by implementing strategies and measures that achieve these reductions. This alternative would ensure GHG emission reductions will meet and even exceed all legislative actions adopted to reduce GHG emissions including AB32 and SB32. It is also consistent with the horizon year established for the adopted County General Plan. It also provides all the elements required for designation as a “Qualified CAP” under CEQA Guidelines Section 15183.5 (b). Accordingly, it meets all of the project objectives. It also substantially lessens significant adverse environmental impacts because it requires 15% less acreage devoted to solar panels than the “proposed action”⁷. By extension, it will also substantially lessen the significant adverse environmental impacts created by the “Proposed Action”.

In short, the alternatives analysis presented by the DEIR fails to comply with CEQA and must be revised to properly address CEQA’s requirement that Lead Agencies “consider alternatives to proposed actions affecting the environment”.

⁶ The “Proposed Action” involves reducing GHG emissions to 50% of 2015 levels by 2035. Page 2-2 of the DCAP asserts that GHG emissions in 2015 were 5.5 million metric tons carbon dioxide equivalent (MTCO_{2e}), which means that the “Proposed Action” would result in GHG emissions of 2.75 MTCO_{2e} by 2035. Alternative 1 described above will maintain 2035 GHG emissions at 3.84 MTCO_{2e} (which is 40% of the County’s 1990 GHG level of 6.4 MTCO_{2e}). The Alternate 1 GHG reductions would be approximately 30% less than the “Proposed Action”, and would thus require approximately 30% less industrial scale renewable energy resources.

⁷ The “Proposed Action” reduces GHG emissions to 2.75 MTCO_{2e} by 2035. Alternative 2 reduces GHG emissions to 3.2 MTCO_{2e} (which is 50% of the County’s 1990 GHG level of 6.4 MTCO_{2e}). The Alternate 2 GHG reductions would be approximately 15% less than the “Proposed Action”, and would thus require approximately 15% less industrial scale renewable energy resources.

4.0 THE DEIR IGNORES SIGNIFICANTLY ADVERSE ENVIRONMENTAL EFFECTS.

The EIR fails to consider the following significantly adverse environmental effects that will result from the CAP's electrification and decarbonization activities.

Effects of Unreliable Electric Service in Rural Areas.

Los Angeles County residents frequently experience power brown-outs and black-outs which, in turn, cause traffic accidents, utility failures, curtail operations of life sustaining electrical equipment, interrupt elevator operations, and pose other significant public safety and health risks. These events occur because the California power grid is too anemic and fragile to serve the existing electrical load; such utility system deficiencies will be exacerbated and amplified by CAP electrification and decarbonization strategies, measures and actions because these activities will further and substantially strain the already deficient power grid. Such impacts can only be mitigated by making the CAP implementation schedule contingent on the robustness of the California power grid; if the grid is not sufficiently robust to accommodate implementation of particular CAP strategy by a particular timeframe, the implementation schedule must be delayed until such point as the grid is sufficiently robust. Alternatively, the DEIR can recognize that the CAP implementation schedule can be met without regard for potential grid deficiencies *if* CAP strategies, measures and actions are achieved via distributed generation (since distributed generation avoids the need to pull power from the grid).

Wildfire Risks Posed by Decarbonization Activities in Rural North Los Angeles County:

The DEIR ignores the very real and very significant wildfire impacts that will result from CAP decarbonization activities in areas that experience unreliable electrical service such as in Acton and Agua Dulce. Specifically, forcing residents in areas with unreliable electric service to rely solely on electricity for heating and food preparation by eliminating fossil fueled stoves and heating units will drive residents to resort to outdoor, "open flame" methods to meet their heating and cooking needs, including the use of barbecues, lanterns, camp stoves, campfires, smokers and other paraphernalia. This is not opinion, it is fact.

For example, the devastating Tick Fire of 2019 was ignited in Agua Dulce by a rural resident who was using an outdoor barbecue/smoker to prepare a meal for his family because Southern California Edison ("SCE") had cut off electricity to the circuit that served his home. The Tick fire compelled the evacuation of more than 40,000 people and it forced terrified residents to flee in the pitched blackness of night because there was no electricity to light their homes. Neighbors helped each other evacuate when garage doors would not open. Because of SCE's power outage, all communication lines were down (including cellular service, cable internet service, land lines and satellite service) so residents never received evacuation orders and the fire was moving too fast for fire department personnel to reach endangered neighborhoods. One Acton resident drove to the home of relatives in Sand Canyon at 2 AM to check on them; he found them sound asleep and completely oblivious to the danger that was only two streets away. All of these terrifying events occurred as a direct result of a rural resident using a barbecue to cook their meal because

their electrical service was unreliable. The DEIR ignores the very real wildfire risks that are posed in rural areas where electrical service is unreliable; it also ignores the fact that these wildfire risks will be significantly exacerbated by CAP decarbonization activities which eliminate the fossil fueled stoves and heaters that rural residents depend on during SCE power outages⁸.

Wildfire ignition risks extant in areas where electrical service is unreliable were addressed at length by the California Public Utilities Commission which found that people do in fact resort to unsafe outdoor cooking and heating practices when their electrical service is cut⁹; these risks are reduced when residents have access to indoor, non-electrical cooking and heating appliances that operate even when power is shut off. This is not opinion, it is fact. As explained above, rural residents in homes equipped with fossil fuel stoves and heaters have been able to safely prepare meals and heat their homes without posing any wildfire risks throughout the several weeks of collective power outages that have occurred in Acton between 2019 and 2022.

It should be noted that constructing “microgrids” or other “local” community power supply systems will **not** mitigate the increased wildfire risks posed by CAP decarbonization policies in rural communities that have unreliable electrical service. This is because power outages within a community remove all distribution lines from service *including the lines that connect to microgrids and all other “local” community power supply systems*. This means that any power generated by a microgrid will not be distributed to homes or businesses in the community because the distribution network is down.

The DEIR fails to address the significantly adverse effects created by the increased wildfire risks that will result from the application of CAP decarbonization strategies in areas that have unreliable electricity service; this is a substantial deficiency that must be corrected. Moreover, there is a feasible mitigation measure available to eliminate these impacts; namely, establishing a mitigation policy wherein CAP decarbonization strategies do not apply to rural areas where electrical service is unreliable.

⁸ Since 2019, the Communities of Acton and Agua Dulce have experienced more severe and lengthy power outages than any other communities in California. These events have gone on for days; residents have even lost 2 weeks of classroom time during both the 2019 -2020 and 2020-2021 school years. To cope with these events, rural residents operate small generators that power their fossil fuel heating systems (for heat), well pumps (for water), and other essential equipment; because their stoves operate on fossil fuels, rural residents are still able to prepare meals for their families despite the power outages. CAP decarbonization activities will eliminate the fossil fuel heaters and stoves, and drive rural residents to resort to outdoor, open flame cooking and heating methods that will substantially increase the chance of igniting a wildfire (as the Tick fire demonstrated).

⁹ California Public Utilities Commission Decision D.09-09-030 at page 44. This decision is incorporated herein by reference. https://docs.cpuc.ca.gov/PublishedDocs/WORD_PDF/FINAL_DECISION/107143.PDF

Public Safety Risks of CAP Transit Oriented Development Policies: A cornerstone of the DCAP is increased transit ridership; the expansion of transit-oriented development and the elimination of parking facilities near transit stations are just some of the activities that will result from the CAP. While the DEIR discusses some of the impacts associated with these measures, it ignores the significantly adverse health and safety effects that will result from increased ridership on Los Angeles County transit systems. Specifically, the DEIR fails to address the increased stabbings, murders, rapes, immolations, assaults and robberies that will result from expanded transit use¹⁰. This is no small thing; the use of transit systems in Los Angeles County is hazardous, and the safety risks posed to transit users is on the rise. In April, KTLA 5 (a local news source) reported that LA METRO statistics show violent crime on their system is up 36% just this year and that shootings, stabbings, and fighting now occur frequently while “riders watch helplessly”¹¹. On January 13, 2022, an emergency room nurse was murdered while she waited for her bus at a stop near LA Union Station. On May 2, 2022, a man was set on fire while waiting for a bus at a stop in downtown Los Angeles. On May 11, 2022, a man was set on fire on the L Train in Pasadena. On February 12, a man was stabbed and robbed in an MTA station on the 11600 Block of Avalon Boulevard. Rapes, robberies, stabbings and shootings are now commonplace throughout Los Angeles County transit systems, and on July 3, 2022, the Los Angeles Times reports that “Violent crime and verbal abuse at Union Station have become unbearable”. Recent reports by KFI reporter Steve Gregory reveal the overwhelming brutality that commuters have routinely endured on Los Angeles County Transit since 2019. The threats to life and property that transit users now face every day are very real and very significant, and neither the County of Los Angeles nor any of the cities in the County of Los Angeles have developed any plans or measures to reduce these threats. Accordingly, the DEIR should have addressed these dangerous circumstances as an “existing condition” in the baseline “environmental setting” analysis required by CEQA [Guidelines Section 15125].

Furthermore, the DEIR should have analyzed the increased safety threats that will result from achieving the increased transit use that will result from the “proposed action”. Accordingly, the DEIR is deficient. These significantly adverse environmental effects must be clearly enumerated, feasible mitigation measures must be developed, and all of it must be considered and weighed by the decisionmakers before they approve the CAP, certify the EIR, and adopt a statement of overriding considerations as required by CEQA.

5.0 THE DEIR’S IMPACT ANALYSIS IS DEFICIENT.

The DEIR fails to properly analyze many of the significantly adverse environmental impacts that it identifies. These deficiencies are described below.

¹⁰ These impacts are not addressed in Section 3.15 pertaining to transportation impacts. In fact, the DEIR completely ignores the public safety implications of CAP transit strategies and measures.

¹¹ <https://www.youtube.com/watch?v=9OfWGMkhOBA>

The DEIR Analysis of Impact 3.4-7 is Flawed: The impact that ostensibly addresses PM10 and PM2.5 particulate emissions resulting from CAP implementation is identified in the DEIR as “Impact 3.4-7” which addresses cumulative air quality impacts “associated with localized air pollutant and TAC emissions” (TAC referring to “Toxic Air Pollutants”). There are so many errors in the analysis of Impact 3.4-7 that it is difficult to know where to begin. First, the DEIR identifies “DPM” as the most likely source of localized emissions and TAC emissions that will generate Impact 3.4-7 (see page 3.4-63); the DEIR does not define DPM, but it is assumed that DPM refers to “Diesel Particulate Matter”. The DEIR is very much mistaken in presuming that the primary source of localized air pollutants that will result from CAP implementation is diesel particulate matter. As discussed in detail in a later section, the primary source of localized air pollutants from CAP activities is the significant PM10 and PM2.5 emissions that will result from the ambient dust generated by the construction and operation of many tens of thousands of acres of utility scale solar farms in the desert. The DEIR ignores this fact.

Second, the DEIR asserts that Impact 3.4-7 will be reduced by the decarbonization, building electrification, and fossil fuel reductions achieved by the CAP; in this, the DEIR could not be more wrong. The PM10 and PM2.5 emissions from solar farms resulting from CAP implementation will not be reduced by the CAP’s decarbonization, electrification, and fossil fuel elimination measures; to the contrary, these CAP measures will result in even higher PM10 and PM2.5 emissions because they will drive the construction and operation of many tens of thousands of acres of more farms.

Third, the DEIR wrongly identifies the activities that are the potential sources of localized air pollution and TAC emissions as vehicles and construction projects. The DEIR *completely ignores* the significant PM10 and PM2.5 emission levels resulting from solar farm development and operation and it does not even identify solar farms as a potential emission source! It is a common misconception that PM10 and PM2.5 emissions are intrinsically anthropogenic and that ambient dust is not a substantial source of PM10 or PM2.5 emissions. This is incorrect. In rural areas, the primary source of PM10 and PM2.5 emissions is ambient dust. For example, the Imperial Valley is a non-attainment area for PM2.5, and the source of 70% of PM2.5 emissions in the Imperial Valley is dust¹²; virtually none of it comes from mobile sources or “DPM”. The DEIR ignores all of this, and it improperly applies a myopically urban lens to the pollutant emissions that will result from the utility scale solar farms developed as a result of the CAP. The County is hereby informed that these solar farms will generate significant PM10 and PM2.5 emissions, these emissions will exceed adopted standards, they will pose significantly adverse environmental effects, and CEQA demands that these emissions be mitigated to the greatest extent feasible.

¹² https://ww3.arb.ca.gov/planning/sip/planarea/imperial/final_2018_ic_pm25_sip.pdf

Fourth, the DEIR only focusses on TAC emissions and their associated health risk impacts in its analysis of localized emissions from CAP projects in localized areas¹³; it ignores non-TAC emissions. However, (and as discussed below), an individual solar farm in the Antelope Valley will routinely and persistently generate significant ambient dust; these dust events disperse significant quantities of PM10 and PM2.5 pollutants into surrounding communities¹⁴ and they increase with every solar farm that is developed.

Fifth; the DEIR's superficial assessment of pollutant impacts culminates in a patently false and alarmingly dismissive statement that "mitigation measures may not be able to reduce impacts" so "cumulative localized and health risk impacts from criteria air pollutant and TAC emissions would be significant below significance thresholds". This statement reveals an utter lack of understanding of the sources of particulate emissions that will result from the CAP project; it also reveals an appalling ignorance regarding how these emission sources can be (and should be) controlled. As discussed in more detail below, none of the Air Quality mitigation measures presented in the DEIR will reduce pollutant emissions generated by the CAP; the DEIR appears to acknowledge this, because it concludes that "No feasible mitigation measures are available" (page 3.4-64). However, nothing could be further from the truth. Numerous feasible mitigation measures are available, and some are mandatory in jurisdictions outside of Los Angeles County. For example, solar farms in Kern County are required to install continuous particulate monitors to demonstrate continual compliance with particulate standards. Furthermore, the application of just a few inches of mulch on solar farm properties is a very effective means of controlling particulate emissions¹⁵. These mitigations measures should have been included in the DEIR but they were not. Instead, the DEIR completely ignores the dust/PM10/PM2.5 emissions which will be generated by the massive solar farm projects that the CAP demands, and then wrongly concludes that these air quality impacts cannot be properly mitigated. If these substantial errors are not corrected, the CAP EIR will not withstand judicial review.

The DEIR also ignores significant PM10 and PM2.5 emissions resulting from CAP waste diversion strategies. Specifically, CAP waste diversion measures will triple the number of weekly trash trucks trips on dirt roads in the Antelope Valley because three separate trucks must be deployed to pick up the segregated organic, recyclable, and trash waste. This will result in significant PM10 and PM2.5 emissions that exceed adopted thresholds of significance. This has already been pointed out to the County in comments submitted to the Department of Public Works; these comments are incorporated herein by reference.

¹³ Page 3.4-63 states: "However, multiple future projects (projects facilitated by the Draft 2045 CAP together with other cumulative projects) could result in localized and TAC emissions within a localized area that could expose receptors located near the multiple future projects to TAC emissions that could result in health risk impacts."

¹⁴ During "dust events" local PM10 and PM2.5 concentrations increase by several factors of ten. https://hero.epa.gov/hero/index.cfm/reference/details/reference_id/2656871

¹⁵ <https://www.epa.gov/system/files/documents/2021-11/bmp-dust-control.pdf>.

The DEIR's Analysis of Valley Fever Impacts is Defective: The DEIR's treatment of Valley Fever impacts is utterly deficient and it ignores all the extensive scoping comments that were provided regarding this issue. Specifically, the DEIR presumes (wrongly) that Valley Fever is only a concern during the construction portion of a project (Line #1 of page 3.4-64). It further concludes (wrongly) that Valley Fever impacts will be less than significant because construction projects will comply with OSHA regulations and AVAQMD Rule 403. The trite and specious manner in which the DEIR addresses Valley Fever concerns is appalling. The incidence of Valley Fever is tied directly to the presence of ambient dust because it is caused by *Coccidioides Immitis* spores in soil that become airborne during wind events which create ambient dust. Like other desert areas of California, Valley Fever is on the rise in the Antelope Valley because *Coccidioides Immitis* spores thrive in the desert environment that it provides¹⁶. Accordingly, every new solar farm that is developed in the Antelope Valley as a result of the CAP will directly and significantly increase the Valley Fever risks posed to rural residents.

The DEIR ignores all of this. Worse yet, it assumes (wrongly) that compliance with OSHA regulations will reduce these risks; nothing could be further from the truth. First, OSHA regulations will only be applicable during the construction phase of a solar farm project and will not apply during the 30+ year operational phase when ambient dust emissions (and by extension, Valley Fever risk) predominates. Second, OSHA regulations only protect the construction workers and do nothing to protect the rural residents who live adjacent to the solar farms and will breathe the dust that is generated. Third, OSHA regulations require workers to wear respirator masks at all times while working in the hot sun to install solar panels; SORT members have observed that solar farm construction workers discard their masks and do not wear them (presumably because the desert climate makes wearing a mask uncomfortably hot). Therefore, the DEIR is utterly wrong to conclude that OSHA compliance mitigate Valley Fever impacts.

The DEIR also assumes that compliance with AVAQMD Rule 403 will reduce Valley Fever impacts to "less than significant" because it presumes that Rule 403 successfully controls ambient dust. This is incorrect. An inspection of AVAQMD Rule 403 reveals that it primarily addresses construction, track-out, demolition, and bulk material operations (none of which are applicable to solar farm operations). And, while Rule 403 does identify two generic ambient dust "standards" that prohibit property owners from emitting dust that remains visible beyond the property line or allowing PM10 emissions to exceed 50 micrograms per cubic meter "when determined, by simultaneous sampling, as the difference between upwind and downwind samples collected on high-volume Particulate Matter samplers or other USEPA-approved equivalent method", Rule 403 imposes *no monitoring requirements*, so these standards are not enforced. In fact, they are completely unenforceable. Equally important, Rule 403 permits significant continual dust emissions as long as dust levels do not exceed a 20% opacity limit (a *significant* amount of dust).

¹⁶ cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/CocciEpiSummary2019.pdf

Furthermore, Rule 403 has no PM2.5 compliance requirement, and the 50 micrograms per cubic meter PM10 concentration it allows is actually *the maximum concentration permitted* by California air quality standards over a 24-hour averaging period and it is *more than twice* the annual average PM10 concentration permitted in California. In other words, the lax standards imposed by AVAQMD Rule 403 allow a solar farm operator to claim compliance while, at the same time, permit the occurrence of significant dust emissions and (by extension) the dispersal of significant quantities of Valley Fever spores. Thus, and contrary to what the DEIR presumes, Rule 403 compliance requirements are not dispositive and because Rule 403 is not even enforced anyway (as explained below), it does not constitute “substantial evidence” to support the DEIR’s conclusion that the increased risk of Valley Fever posed by CAP activities is “less than significant”.

Furthermore, the “dust control plans” that AVAQMD routinely approves for Antelope Valley solar farms do not mitigate any particulate emission impacts. In fact, the only substantive requirement that the AVAQMD imposes on dust control plans for solar farm operations is that the farm operator must put a sign on the fence which directs people to call the AVAQMD when dust is “observed”. When a call is placed, an AVAQMD technician will eventually arrive but he/she will not conduct the “hivol” PM10 sampling required to demonstrate compliance with Rule 403, so AVAQMD does not even bother to assess whether a violation occurred. And, in any event, by the time an AVAQMD inspector does arrive, the “dust event” is usually over. In other words, constructive enforcement of the lax standards established by Rule 403 never occurs on the Antelope Valley solar farms, so the DEIR substantially errs in concluding that Rule 403 effectively mitigates the significant Valley Fever risks posed by CAP activities. Stated more plainly: Rule 403 does not control or reduce ambient dust generated by solar farms in the Antelope Valley because Rule 403 incorporates lax standard, it includes no monitoring provisions, and it is not enforced anyway. Accordingly, Rule 403 does not prevent substantial dust events created by the operation of solar farms, and it certainly does not reduce Valley Fever concerns to a level that is “less than significant”. The DEIR grossly errs in declaring otherwise.

The DEIR’s Analysis of groundwater impacts is Deficient: The DEIR concludes that activities related to the CAP Project will not contribute to cumulative decreases in groundwater supplies or impede sustainable management of groundwater supplies (impact 3.11-8) because projects will be “subject to enforceable requirements of the Basin Plan, SGMA, and Watermaster-imposed pumping restrictions” and because Los Angeles County requires facilities to “be designed to facilitate on-site infiltration to maintain groundwater recharge”. However, neither of these factors address the significant quantities of water that will be used to clean the thousands of acres of solar panels installed at the massive solar farms that will be developed to achieve CAP strategies. Solar panel washing activities will not be subject to the Basin Plan, SGMA, or Watermaster jurisdiction because the water that is used to wash the panels is likely to come from either AVEK (supplied via LA County waterworks) or water haulers who extract groundwater from Acton and other places and are not subject to any basin plan, SGMA, or watermaster jurisdiction. The latter impacts groundwater

supplies outside of the Antelope Valley. It is understood that solar farm operators often claim that they rarely if ever wash their panels, but such claims are nonsense. In fact, a study conducted by the University of California at San Diego reveals that, on average, solar panels lose a little less than 0.05 percent of their overall efficiency per day due to dust accumulation¹⁷; this translates to a nearly 20% loss of renewable generation in a year. Other studies indicate that washing flat solar panels can increase output by 35% or more however washing tilted panels is less effective if they are in an area with adequate rainfall¹⁸. Rain events in the Antelope Valley are very few and far between, so the many tens of thousands of acres of solar panels that will be installed because of the CAP will be washed at least once or twice per year, and that will result in a significant amount of water used. Since this water usage will not be subject to Basin Plan or SGMA or watermaster requirements, the EIR's conclusion that CAP activities will not result in decreased groundwater supplies lacks substantive basis. This is particularly true if the water that is used to wash the many tens of thousands of acres of solar panels is delivered by water haulers that extract groundwater from the Acton basin or other basins outside the Antelope Valley. Accordingly, the DEIR is wrong to assert that the CAP will have a less than significant adverse impact on groundwater supplies. The only way to ensure that the CAP does not have a significantly adverse impact on groundwater supplies would be to adopt a mitigation measure in the EIR which prohibits utility scale solar farms from using hauled water extracted from groundwater basins outside the Antelope Valley for cleaning solar panels.

The DEIR Analysis of Land Use Impacts is Flawed: The DEIR concludes (wrongly) that Land Use impacts of CAP implementation will be "less than significant (impacts 3.12-1 and 3.12-2). Notably, the DEIR's analysis of land use impacts ignores land use conflicts that will result from development of the massive industrial renewable energy generation, storage, and transmission facilities needed to implement CAP decarbonization and electrification strategies. More particularly, the DEIR fails to consider that CAP activities will result in land uses which substantially conflict with adopted County land use policies; it also fails to address the adverse land use impacts that will result from CAP implementation and which were never addressed in either the Final EIR that was adopted for the County General Plan or the Final EIR that was adopted for the Antelope Valley Area Plan ("AV Plan"). As explained in the following paragraphs, the land use conflicts that will result from CAP implementation are not "less than significant".

The County General Plan explicitly calls for "Protecting Rural Communities" [page 74] and it establishes "Protected Rural Communities" as a principal goal of the Land Use Element [page 88]. It further states "The placement, configuration, and distribution of land uses

¹⁷https://ucsdnews.ucsd.edu/pressrelease/cleaning_solar_panels_ofTEN_not_worth_the_cost_engineers_at_uc_san_diego_fi

¹⁸ <https://googleblog.blogspot.com/2009/07/should-you-spring-clean-your-solar.html>

have a significant impact on a community's quality of life...." The General Plan also encourages developments that are compatible with community identity and character and existing conditions, such as rural and natural environmental settings" [page 74]. It also asserts "Successful community design standards build upon the characteristics of both the natural and man-made environments that are unique to each community" and it includes "standards to minimize the visual impact of man-made structures on the rural landscape". These rural protection provisions are imbedded in the County General Plan because the County General Plan was adopted based on the fundamental premise that the purpose of Rural Lands is to provide for "Single family residences; equestrian and limited animal uses; and limited agricultural and related activities" [page 78]. The County General Plan *never* contemplated that many tens of thousands of acres of rural land in the Antelope Valley would be plowed under to develop massive industrial electrical generation, storage and transmission facilities because the County General Plan *never* anticipated the decarbonization and electrification strategies that are proposed in the CAP.

Incredibly, the DEIR completely ignores these critical rural protection provisions adopted by the County General Plan Land Use Element, and it certainly does not articulate how the many tens of thousands of acres of industrial solar farms in and around rural communities in the Antelope Valley that will result from the CAP are materially consistent with these rural protection provisions. In fact, the DEIR does not demonstrate that the CAP is consistent with the General Plan (as required by CEQA); instead, the DEIR chooses a few select General Plan policies and discusses them in the context of the DCAP¹⁹. In other words, the DEIR's General Plan consistency analysis is completely backwards: instead of showing that the DCAP is consistent with the General Plan (as required by CEQA), it shows how a few General Plan policies are consistent with the DCAP. Worse yet, the DEIR ignores all the rural protection provisions contained in the General Plan and does not even try to reconcile the residential and agricultural purposes underlying the "Rural Land Use" designation with the many tens of thousands of acres of industrial solar facilities that will be installed on Rural Lands in the Antelope Valley as a result of the CAP. Perhaps this is by design; one cannot reconcile the irreconcilable. The DEIR's Land Use Impact analysis is utterly deficient and ignores all the numerous General Plan policies which the CAP directly controverts. Above all the DEIR errs substantially by ignoring the fact that the industrial development activities that will occur on "Rural Lands" as a result of CAP implementation is intrinsically in conflict with the fundamental purpose of the Rural Lands designation.

Some of the General Plan Land Use Policies that the DEIR ignores include:

- Policy LU 6.1 is to "Protect rural communities from the encroachment of incompatible development that conflict with existing land use patterns and service standards". CAP

¹⁹ Page 3.12-9 of the DEIR indicates that the only General Plan Land Use Policies that were considered pertain to "Well-designed and healthy places that support a diversity of built environments"; the DEIR completely ignores several critical General Plan Land Use Policies that will be utterly controverted by CAP activities.

implementation will result in a substantial encroachment of incompatible industrial development in rural communities that substantially conflicts with the existing land use patterns and service standards. The DEIR ignores this.

- Policy LU 6.2 is to “Encourage land uses and developments that are compatible with the natural environment and landscape.” The CAP is not consistent with this policy; to the contrary, the industrial development in the Antelope Valley resulting from CAP implementation is intrinsically incompatible with the natural environment and landscape. CAP activities will result in the destructive conversion of many tens of thousands of contiguous acres of “natural environment and landscape” into industrial energy generation, storage, and transmission facility development and it is all unnecessary because using distributed resources to generate and store energy locally (where it is used) will obviate the need for such destruction of the “natural environment and landscape”. Yet, the DEIR fails to direct the CAP-driven renewable generation development activities to utilize distributed facilities. In fact, the DEIR fails to even acknowledge that reliance on distributed generation and storage rather than industrial scale generation and storage will eliminate nearly all of the significantly adverse environmental impacts that are identified in the DEIR!
- Policy LU 6.3 is to “Encourage low density and low intensity development in rural areas that is compatible with rural community character, preserves open space, and conserves agricultural land.” Nothing about the industrial solar farms that will be developed in the Antelope Valley as a result of CAP activities is compatible with rural character. CAP activities will certainly not preserve open space or conserve agricultural land; to the contrary, CAP implementation will result in high intensity industrial development that will cover many tens of thousands of acres in rural areas and will be entirely incompatible with surrounding rural community character. CAP activities will be wholly inconsistent with this land use policy, and the DEIR is deficient for failing to recognize this and for failing to direct CAP implementation to rely on distributed resources to ensure CAP consistency with this adopted Land Use Policy.

It is also important to note that the DEIR completely ignores all the land use goals and policies that have been adopted in the AV Plan *even though Antelope Valley residents will arguably be more affected by CAP implementation than any other County residents*. This substantial deficiency must be corrected and the following issues must be fully addressed in the Final EIR that is issued for the CAP.

- The AV Area Plan describes rural unincorporated Antelope Valley is a “mosaic of unique small towns” that are “unified by an extraordinary environmental setting that includes agricultural lands, natural open spaces, expansive mountain views, diverse ecological habitats, and dark night skies” [page I-2]; however, and unless properly conditioned by the DEIR, CAP activities will render the Antelope Valley a “mosaic of unique small towns that are unified by a vast industrial network comprised of many tens of thousands of

acres of sterile, bare dirt utility scale solar farms, brightly lit battery storage facilities, and transmission infrastructure that surround them and connect them”.

- The industrial-scale renewable energy development activities that will result from CAP implementation also conflict with numerous Land Use Goals and Policies adopted in the AV Area Plan. For instance, the AV Plan establishes Goal LU 1 as the first and most important goal for achieving “A land use pattern that maintains and enhances the rural character of the unincorporated Antelope Valley.” Notably, the thousands of acres of industrial utility scale solar farms, battery storage facilities, and transmission facilities resulting from CAP implementation will not “maintain and enhance rural character” in unincorporated Antelope Valley; to the contrary, it will greatly degrade and diminish rural character by expanding sterile industrial development into and surrounding rural communities. CAP activities will directly conflict with many of land use policies adopted pursuant to Goal LU 1, including:
 - Policy LU 1.2 to “Limit the amount of potential development in rural preserve areas (which are depicted in Map 2.2), through appropriate land use designations with very low residential densities” [“Rural Preserve Areas” comprise at least 80% of unincorporated Antelope Valley, and it is where nearly all the industrial development resulting from CAP implementation will occur];
 - Policy LU 1.3 to “Maintain the majority of the unincorporated Antelope Valley as Rural Land, allowing for agriculture, equestrian and animal-keeping uses, and single-family homes on large lots” [instead of agricultural, equestrian, and animal keeping uses in unincorporated Antelope Valley, the CAP will drive massive expansions of industrial energy infrastructure in unincorporated Antelope Valley];
 - Policy LU 1.5 to “Provide varied lands for residential uses sufficient to meet the needs of all segments of the population, and allow for agriculture, equestrian uses and animal-keeping uses in these areas where appropriate” [CAP implementation will convert many tens of thousands of acres of rural land that the AV Area Plan intended to be used for residential, agricultural, equestrian, and animal keeping uses to industrial energy generation, storage, and transmission uses].
- Other AV Area Plan Land Use policies controverted by CAP activities include:
 - Policy LU 5.3 to “Preserve open space areas to provide large contiguous carbon sequestering basins” [CAP implementation eliminates open space areas and destroys native vegetation, thereby eliminating carbon sequestering basins].
 - Policy LU 6.2 to “Ensure that the Area Plan is flexible in adapting to new issues and opportunities without compromising the rural character of the unincorporated Antelope Valley” [the “new opportunities” for massive industrial scale electrical generation, storage, and transmission facility development driven by the CAP will entirely compromise the rural character of the unincorporated Antelope Valley].

If not properly conditioned by the DEIR, CAP activities will controvert these and other AV Area Plan Goals and policies. For instance, Policy ED 1.11 establishes that the development of utility-scale renewable energy projects should be limited to “appropriate locations” and be developed with “appropriate standards to ensure that any negative impacts to local residents are sufficiently mitigated”; this policy compels the DEIR to include controls and mitigation measures to ensure that the negative impacts on local residents stemming from the massive renewable energy project activities driven by the CAP are sufficiently mitigated. The DEIR fails to comport with this policy because it simply declares that aesthetic impacts, air quality impacts, biological resource impacts, and other impacts will be significant and fails to incorporate any substantive measures to mitigate these impacts. At a minimum, the DEIR must direct CAP renewable resource development activities to rely on local distributed generation resources rather than remote utility scale resources. Equally bad, the DEIR wrongly dismisses the air quality impacts, Valley Fever impacts, groundwater impacts, and other impacts from CAP activities as “less than significant”. At a minimum, the DEIR must impose dust monitoring and control measures and water restrictions to address these impacts that are indeed “significant”.

In short, the DEIR fails to address the substantial and significant conflicts with adopted General Plan and AV Plan goals and policies that are posed by CAP activities; therefore, the DEIR is substantially deficient.

The DEIR Analysis of Utility Impacts is Substantially Flawed and Materially Deficient.

There are numerous errors in the DEIR’s analysis of “Utility Impacts” presented in Section 3.17. For example, the DEIR deems water supply impacts to be “Less-than-Significant” (Impact 3.17-2) based on erroneous assumptions and incorrect claims regarding CAP Measures, Actions, and Performance Objectives. Specifically, page 3.17-14 states

”The Draft 2045 CAP includes a number of measures and actions to increase the use of alternate water sources and reduce water consumption. Included within Measure E8 are implementing actions to develop a net-zero water ordinance, remove barriers for retrofitting on-site gray water recycling systems, and partner with LA County to explore the potential for indirect potable reuse. The performance goals for Measure E5 include the following: (1) Meet 100 percent of Countywide water demand by recycled water, gray water, and/or direct potable reuse by 2045; and (2) achieve 80 percent use of recycled water for agricultural and industrial uses by 2045. Measure E6, which is intended to reduce indoor and outdoor water consumption, includes the following performance goals: (1) Reduce water consumption by 50 percent by 2045; (2) adopt a water efficiency ordinance for existing buildings; (3) achieve net-zero water in 100 percent of new development by 2030; (4) reduce outdoor landscaping water use by 50 percent by 2045; and (5) reduce municipal water consumption by 50 percent by 2045.”

There are a number of problems with these statements. First, there is no Measure E8 (there is also no Measure E9 which is referred to on Page 3.17-19). Second, there are no measure addressing “barriers for retrofitting on-site gray water recycling systems”. Third, the CAP does not direct a partnership with “LA County to explore the potential for indirect potable reuse”; rather, Action E5.4 asserts “Partner with LA County water districts and retail suppliers to explore the potential for widespread utilization of direct potable reuse through pilot projects”. Fourth, the Performance Goals established for Measure E5 are not “countywide”; they only address unincorporated areas. Fifth, Measure E5 does not include a performance goal to “achieve 80 percent use of recycled water for agricultural and industrial uses by 2045”. Sixth, Measure E6 does not include a performance goal to “Reduce water consumption by 50 percent by 2045”. Seventh, Measure E6 does not include a performance goal to “achieve net-zero water in 100 percent of new development by 2030”. Eighth, Measure E6 does not include a performance goal to “reduce outdoor landscaping water use by 50 percent by 2045”. Ninth, Measure E6 does not include a performance goal to “reduce municipal water consumption by 50 percent by 2045”. Finally, and as indicated in comments on the DCAP that have been submitted separately, from an engineering perspective, it is impossible for the County to achieve the Measure E5 Performance Objective of meeting 100% of County water demand by recycled water + gray water + potable reuse because the County’s water supply is not a “closed system” and the cleanup of sewage streams always results in a sizeable amount of “reject water” that contains high concentrations of the contaminants removed from the sewage stream. Furthermore, “Net Zero Water” directives are completely infeasible in rural desert communities that have no sewage service and where little rainfall occurs.

The DEIR states on page 3.17-15 that “Groundwater resources needed to support future projects would be subject to regulations associated with basin adjudications or GSPs to ensure that future water demands do not exceed sustainability goals”. However, this statement is erroneous because a number of rural unincorporated communities are not located within an adjudicated basin or subject to a GSP (including Acton and Agua Dulce). Taken together, these facts demonstrate that the DEIR lacks basis to conclude that water supply impacts of the CAP will be “Less-than-Significant” because the facts upon which this conclusion is based are not facts at all.

The DEIR also asserts that the CAP activities will not result in wastewater treatment providers making a determination that their wastewater treatment facilities have inadequate capacities to serve the demand created by CAP activities, and thereby concludes that this impact is “less than significant” (page 3.17-15). This conclusion is absurd. CAP activities will require massive increases in wastewater treatment and conveyance facilities to achieve its ambitious recycled water, gray water, and potable reuse “Performance Objective”. This “Performance Objective” cannot be met with existing wastewater treatment facilities; to the contrary, it will overwhelm existing wastewater treatment facilities. In fact, if wastewater treatment providers *don’t* determine that their facilities have insufficient capacity to serve CAP activities, then they will be unable to justify the

facility expansions that will be required to implement the CAP. In other words, from inception, it is recognized that existing wastewater treatment facilities operated by wastewater treatment providers do not have sufficient capacity to achieve CAP objectives, thus CAP implementation will absolutely require wastewater facility providers to conclude that their facilities have inadequate capacities to accommodate CAP activities. CAP implementation will require extensive new wastewater treatment and conveyance facilities to supply the recycled water to the end user. It will also require sufficient new cleanup facilities to convert all county sewage flows into clean drinking water which complies with safe drinking water standards. The amount of new “high level” wastewater treatment facilities, new water recycling facilities, and new water conveyance facilities that will be required to achieve CAP objectives is *staggering*. Remarkably, the DEIR ignores all of this, and instead concludes (wrongly) that the CAP will have no impact on wastewater treatment providers because “Increases in demand for wastewater treatment are generally associated with an increase in population”. The DEIR fails to grasp that it is the CAP itself that will drive increased demand for wastewater treatment, not population growth.

The DEIR asserts that CAP activities will not result in significant impacts to solid waste management facilities or generate solid waste in excess of local infrastructure capacity (impact 3.17-4 on page 3.17-16). This statement is false. The County does not have sufficient capacity in local organic waste facilities to achieve the CAP’s 75% organic waste diversion objective by 2025, and it certainly has insufficient capacity to achieve the 90% organic waste diversion objective by 2045. Currently, local infrastructure only has sufficient capacity to treat 666,000 tons per year of organic waste, but the County generates more than 5 million tons per year²⁰; this means that local infrastructure can only process about 12% of the organic waste generated by the County. Therefore, achieving the CAP’s 75% - 95% organic waste diversion objectives will overwhelm the capacity of local infrastructure. The DEIR materially errs in concluding otherwise. CAP implementation will have a significant impact on local solid waste facilities, and will require massive expansions of organic waste handling facilities. Other errors found on page 3.17-16 include: 1) The performance goal for Measure W2 is to reduce organic waste disposal (in landfills) by 90 percent by 2045, not 95%; and 2) Measure W3 does not include implementing actions to increase the diversion of recyclable materials because there is no Measure W3.

The DEIR concludes the CAP will not result in cumulatively considerable impacts related to new infrastructure because it will not increase demand for new infrastructure beyond that already anticipated with the expected population growth (page 3.17-17). This statement is false. CAP activities will result in substantial increases in wastewater treatment facilities and solid waste facilities independent of what is “anticipated with the expected population growth”. The CAP will require new, cumulatively considerable infrastructure even if no population growth occurs.

²⁰ “Los Angeles County Countywide Organic Waste Management Plan 2020 Annual Report” found here: <https://pw.lacounty.gov/epd/swims/ShowDoc.aspx?id=15950&hp=yes&type=PDF>

The DEIR asserts that projects facilitated by the CAP will have a “less than significant” cumulative impact on water supplies because projects facilitated by the CAP will not “cause or contribute a cumulatively considerable contribution to a significant cumulative impact relating to insufficient water supplies” (impact 34.17-6 on page 3.17-18). This statement is incorrect. As indicated above, the assumptions upon which the DEIR concluded that the CAP would have a ‘less than significant’ impact on water resources were erroneous. Because the CAP will have incrementally significant impacts on water resources, it’s significant impacts on water resources will also be cumulatively considerable. The DEIR is wrong to assert otherwise.

The DEIR asserts that projects facilitated by the CAP will have a “less than significant” cumulative impact on wastewater treatment capacity because projects facilitated by the CAP will not “cause or contribute a cumulatively considerable contribution to a significant cumulative impact relating to inadequate wastewater treatment capacity” (impact 3.17-7 on page 3.17-19). This assertion is based on the premise that CAP activities will not generate wastewater exceeding wastewater treatment capacities projected by the County General Plan. This premise is incorrect. As indicated above, CAP activities will significantly increase demand on wastewater treatment facilities far beyond any capacities ever anticipated by the General Plan, and CAP implementation will result in the construction of new and cumulatively considerable wastewater treatment, water treatment, and water conveyance facilities. Because the CAP will have incrementally significant impacts on wastewater treatment capacities, it’s significant impacts on wastewater treatment capacities and will require the construction of incrementally significant wastewater treatment facilities, the CAP’s wastewater treatment impacts will be cumulatively considerable. The DEIR is wrong to assert otherwise.

The DEIR states that projects facilitated by the CAP will have a “less than significant” cumulative impact on solid waste facility capacity because projects facilitated by the CAP will not “cause or contribute a cumulatively considerable contribution to a significant cumulative impact relating to the generation of solid waste in excess of the capacity of local infrastructure” (impact 3.17-8 on page 3.17-20). This statement is incorrect. As indicated above, CAP implementation will significantly increase demand on organic waste facilities and will result in the construction of new and cumulatively considerable organic waste facilities. Because the CAP will have incrementally significant impacts on solid waste treatment capacities and will require the construction of incrementally significant solid waste facilities, the CAP’s solid waste impacts will be cumulatively considerable. The DEIR is wrong to assert otherwise.

The DEIR Analysis of Wildfire Impacts is Substantially Flawed:

The DEIR states that projects facilitated by the CAP would not exacerbate wildfire risks or increase exposure to the risk of an uncontrolled spread of a wildfire and that such impacts are therefore “Less-than-Significant” (Impact 3.18-2 on page 3.18-16). Notably, the DEIR’s analysis of this impact only considers structure fires, electric vehicles, fuel buildup on

forest lands, housing, and the construction of EV charging facilities, composting facilities, water recycling facilities, and renewable generation facilities; the DEIR further concludes that compliance with the County Code will ensure that these elements do not significantly exacerbate wildfire risks (see page 3.18-17). The DEIR ignores the electrical lines that will result from CAP implementation and it trivializes the wildfire risks posed by battery storage facilities; thus, it concludes that CAP activities projects will not significantly exacerbate wildfire risk or significantly increase exposure to the risks of uncontrolled wildfire spread. For the reasons set forth below, these conclusions are incorrect. Accordingly, the DEIR's analysis of Impact 3.18-2 is deficient and the DEIR errs in asserting that Impact 3.18-2 is "less than significant".

The DEIR states that projects facilitated by the CAP will not require the installation of infrastructure that will exacerbate fire risk or result in ongoing impacts on the environment; it thus concludes that the CAP will result in "less than significant" fire risks and environmental impacts (Impact 3.18-3 on page 3.18-19). This conclusion is based on the assumption that CAP related projects will implement "Mitigation Measure 3.18-3 which requires the preparation of a "project-specific fire prevention plan". However, the County asserts it has no jurisdiction over Southern California Edison ("SCE"), thus it is not clear how the County can require SCE to submit a "project-specific fire prevention plan" for its electrical lines or battery storage facilities. More importantly the "project-specific fire prevention plan" almost exclusively addresses wildfire prevention during project construction, thus fails to mitigate the significant wildfire risks posed by electrical line and battery storage facility operations. In fact, the only component of the "project-specific fire prevention plan" that addresses project operations specifies measures that are completely useless for preventing wildfire ignitions from electrical lines, battery facilities, and compost piles²¹. In other words, and contrary to what the DEIR states, "Mitigation Measure 3.18-3" does not reduce wildfire risks posed by the electrical lines, battery facilities, compost piles,

²¹ The section of Mitigation Measure 3.18-3 that pertains to project operations states "The fire prevention plan shall include a section dedicated to fire safety and prevention for project operations. The section shall identify state-of-the-art fire safety and prevention measures for project related infrastructure that can ignite fires, such as power lines, battery storage facilities, and composting facilities. Fire safety and prevention measures shall include preventive measures such as monitoring systems (both electronic and manual) and alarms, cooling systems, and circuit breakers, where applicable, as well as fire suppression measures, such as requirements for enclosures, and fire extinguishers and firefighting equipment to be maintained on-site and/or within maintenance vehicles." Notably, *none of these measures reduce wildfire risks posed by electrical lines*, not even a circuit breaker. Opening a circuit breaker merely stops current flow on an electrical line when a "fault" is detected; it does nothing to stop the wildfire that was ignited the instant the fault occurred. Moreover, wildfire ignitions will not be prevented because fire extinguishers are placed near an 80 foot high power line or because SCE maintenance vehicles have firefighting gear. Fire extinguishers and firefighting gear is only useful after an ignition occurs; they do nothing to prevent the ignition or reduce ignition risk. Project operation measures (continued)

and other infrastructure resulting from CAP activities. The DEIR appears to acknowledge this because page 3.10-9 explains that battery storage facilities are quite susceptible to “Thermal Runaway” (which is a euphemism for cascading explosions that result in uncontrollable fires which often last for days and occur with frightening frequency) and page 3.18-19 affirms that wildland fire impacts of battery storage facilities “could be significant”. Moreover, when they are ignited, battery storage facilities always burn through their enclosures; and, because battery storage facilities, electrical lines, and compost piles are *always* remote, there will never be any personnel available to use the fire extinguishers or firefighting equipment required by MM 3.18-3. In other words, the fire risks posed by the operation of electrical lines, battery facilities and compost piles that will result from CAP activities are not in any way not reduced by MM 3.18-3; accordingly, the DEIR grossly errs in declaring that Impact 3.18-3 is “less than significant”.

The DEIR’s analysis of Impact 3.18-3 also fails to consider the ongoing and significant environmental impacts that will result from CAP activities involving industrial solar farm developments; as discussed elsewhere, these projects create significant adverse impacts. The DEIR’s conclusions regarding Impact 3.18-3 are fatally flawed.

The DEIR concludes that the risks of loss, injury, or death due to wildland fires that are posed by CAP activities are “less than significant” (“Impact 3.18-5” on page 3.18-22). This conclusion is premised on the assumption that “new development would be required to comply with the LA County Fire Code, the California Building Code, and policies in the General Plan” and that development will only occur in areas that have adequate ingress, egress, water, and water pressure to meet flow standards “in the event that a fire needs to be extinguished”. The DEIR is incorrect.

First, neither the County Code nor the Building Code nor General Plan policies impose standards that are sufficient to reduce wildfire risks posed by electrical lines and battery storage facilities to a level that is “less than significant”. This is not opinion, it is fact. If the County Code and the California Building Code and General Plan policies were sufficient to reduce the wildfire risks posed by electrical lines to a level that is “less than significant”, then neither the Woolsey Fire nor the Malibu Canyon Fire would have occurred, and no battery storage facility fires would occur either. Therefore, the DEIR grossly errs in asserting such measures reduce wildfire risks to a level that is “less than significant”.

(continued) identified in MM 3.18-3 are similarly useless against a battery facility fire; these fires go on for days, they burn out their enclosures, they release toxic and combustible gases that result in explosions, (continued) and they are entirely immune to fire extinguishers and firefighting equipment. The only measure that works is to smother the battery facility under tons of sand or deluge them with water. The DEIR offers no measures to protect from the toxic gases that battery storage facilities release when even a small amount of overheating occurs. Compost piles are immune to MM 3.18-3 measures; a recent compost fire in the West Antelope Valley took days to extinguish even though the fire department used bulldozers and heavy equipment to extinguish the fire. MM 3.18-3 does not reduce the risk of wildfire ignitions or other hazardous circumstances.

Second, electrical lines and battery storage facilities are not constructed in areas that have adequate water flow and water pressure²²; in fact, electrical lines are installed in the most remote areas of the County because they traverse Forest Service lands to deliver power from the Antelope Valley to urban Los Angeles. Accordingly, the DEIR's conclusion that electrical lines and battery storage pose a less than significant wildfire risk because they comply with code requirements pertaining to water resources and access/egress is patently false.

The DEIR's claim that "Mitigation Measure 3.18-3" will reduce wildfire risks posed by electrical lines to a level that is "less than significant" is completely erroneous. It is an indisputable fact that electrical lines pose significant wildfire risks; over just the last 5 years, electrical facilities have been responsible for numerous conflagrations that have destroyed many thousands of homes and claimed more than 100 victims, including the Woolsey Fire, the Thomas Fire, the Camp Fire, the Easy Fire, the Dixie Fire, the Bobcat Fire, the Saddleridge Fire, the Tubbs Fire, the Getty Fire, the Kincade Fire, the Zogg Fire, the Cascade Fire, the Redwood Valley Fire, the Sulphur Fire, the Cherokee Fire, the Norrbom, Adobe, Patrick, Pythian, and Nuns Fires, the Atlas Fire, and the Pocket Fire, (to name a few). The DEIR's declaration that the paltry elements of mitigation measure 3.18-3 will reduce the wildfire risk posed by electrical lines is ridiculous:

- You cannot install a "cooling system" on an electrical line,
- You cannot "enclose" an electrical line, you can only underground it (SCE refuses).
- Alarms and monitoring systems merely provide notification that a wildfire has ignited; they do nothing to prevent such an ignition.
- Fire extinguishers do not stop an 80-foot electrical line from igniting a wildfire
- The presence of firefighting equipment in a maintenance vehicle at SCE's headquarters in Rosemead does nothing to suppress wildfires ignited on SCE lines in the forest.
- Circuit breakers only cut power on a line when a fault occurs; it is the fault that ignites the fire, so cutting power after a fault occurs does not prevent wildfire risks.

It is not clear how the County has jurisdiction to impose MM 3.18-3 on SCE projects, so it isn't really a "mitigation measure" anyway. CEQA does not permit a Lead Agency to conclude that a mitigation measure renders an impact to be "less than significant" if there is no substantial evidence showing that the measure does indeed render the impact "less than significant". As indicated above, MM 3.18-3 will not reduce the wildfire risks posed by CAP activities; therefore, the DEIR's conclusion that the wildfire impacts posed by CAP activities are "less than significant".

²² Electrical lines are not constructed in areas with access, egress or water; they are constructed in remote areas and SCE relies on helicopters for access. They are not equipped with any water infrastructure at all. Similarly, battery storage facilities are often not served by municipal water facilities.

The DEIR also states that projects resulting from CAP implementation will not exacerbate cumulative wildfire risks and or increase exposure to wildfire spread; the DEIR thereby concludes that such impacts are “less than significant” (Impact 3.18-7 on page 3.18-24). This conclusion is premised on the analysis of Impact 3.18-2 which found that CAP implementation will have a “less than significant” effect on incrementally exacerbating wildfire risks or increasing exposure to wildfire spread. However, and as discussed above, the DEIR’s analysis of Impact 3.18-2 is completely flawed because CAP activities will incrementally exacerbate wildfire risk quite significantly. Because CAP implementation will significantly exacerbate wildfire risk on an incremental level, it will also significantly exacerbate wildfire risk on a cumulative level. Therefore, Impact 3.18-7 is not “less than significant”, and the DEIR errs substantially in declaring that it is.

The DEIR states that CAP implementation will not result in projects which require the installation of infrastructure that will cumulatively exacerbate fire risks or result in cumulative impacts on the environment; it thereby concludes that such impacts are “less than significant” (Impact 3.18-8 on page 3.18-25). This conclusion is premised on the analysis of Impact 3.18-3 which found that CAP projects will not require facilities that exacerbate fire risks or result in environmental impacts. However, and as discussed above, the DEIR’s analysis of impact 3.18-3 is completely flawed because CAP activities will result in projects that require the installation of infrastructure that significantly exacerbates fire risk and significantly impacts the environment. Because CAP implementation will incrementally result in projects that require the installation of infrastructure that significantly exacerbates wildfire risk and significantly impacts the environment, it will also result in cumulatively considerable projects which require the installation of infrastructure that significantly exacerbates wildfire risk and significantly impacts the environment. The CAP infrastructure that will exacerbate wildfire risk at a cumulatively considerable level include battery storage, electrical line, and compost facilities. The CAP infrastructure that will significantly affect the environment at a cumulatively considerable level includes the many tens of thousands of industrial solar facilities that will be constructed in the Antelope Valley. Accordingly, Impact 3.18-8 is not “less than significant”, and the DEIR errs substantially in declaring that it is.

The DEIR states that projects resulting from CAP activities will not expose people or structures to a significant cumulative risk of loss, injury or death involving wildland fires and thereby concludes that such impacts are “less than significant” (Impact 3.18-10 on page 3.18-27). While the DEIR admits that projects implemented to achieve the CAP could “increase the risk of an ignition during construction and operation, thus potentially exacerbating wildland fire hazards, which would be a significant cumulative impact”, it concludes that such impacts will be reduced to a level that is “less than significant” by implementing MM 3.18-3. However, and as discussed in detail above, MM 3.18-3 does not reduce incremental wildfire exposure risks posed by individual projects that are developed to implement the CAP, thus it will certainly not reduce the cumulative risks posed by such projects. Accordingly, the DEIR errs in asserting Impact 3.18-10 is “less than significant”.

The DEIR Analysis of Population Impacts is Flawed.

The DEIR concludes that CAP activities will not induce substantial unplanned population growth in an area either incrementally (Impact 3.14-1) or cumulatively (Impact 3.14-3) because the DEIR asserts that the CAP supports development and growth profiles already adopted in the County General Plan. The DEIR is mistaken. The County General Plan *never* anticipated that many tens of thousands of acres of “Rural Lands” would be devoted to utility scale solar farm developments; in fact, the County General Plan explicitly assumed that these lands would be used for residential purposes (as discussed above). Because of the CAP, much of the residential development that the County General Plan assumed would occur in the Antelope Valley will have to be relocated elsewhere. Accordingly, Impact 3.14-1 and Impact 3.14-3 will not be “less than significant” because the CAP will drive population growth into areas that were not anticipated by the County General Plan.

6.0 THE DEIR’S MITIGATION MEASURES ARE FLAWED AND WILL NOT REDUCE SIGNIFICANTLY ADVERSE ENVIRONMENTAL IMPACTS.

Many of the mitigation measures cited in the EIR will not actually mitigate anything, so the DEIR errs in claiming that they will. Deficient mitigation measures include:

Mitigation measure M 4.15: Reducing parking requirements does not reduce vehicle trips; it just makes driving inconvenient and it causes profoundly adverse impacts on the disabled because it requires them to walk great distances from where they find parking to their destination. Unlike metropolitan New York City, the transit system in Los Angeles County is slow, infrequent, sparse, and (as discussed above) quite dangerous. This, coupled with the fact that Los Angeles County is massively large, means that most locations cannot be safely accessed in a reasonable time via transit. Therefore, people will continue to drive to their destinations because no other feasible options are available. Furthermore, once people transition to “all electric” vehicles, GHG reductions will be achieved and there will be no need to inconvenience drivers by eliminating parking opportunities. It is an absurd conclusion that significant vehicle trip reductions will be achieved in unincorporated Los Angeles County by eliminating parking opportunities. This mitigation measure is not well founded and does not reduce the impacts it purports to address.

Mitigation Measure 3.2-1: Mitigation Measure 3.2-1 is purported to reduce aesthetic impacts and is premised on the notion that aesthetic can be minimized by 1) Adjusting the location, height, scale and massing of CAP activities; 2) “Stepping them back” so that they are “sensitive to the physical and visual character of the affected area”; and 3) Prohibiting projects that negatively affect the quality of views from designated areas. These mitigation measures will not mitigate any aesthetic impacts created by the utility scale renewable energy projects that will be greatly expanded as a result of CAP implementation. There is no way to adjust the location, height, scale, or massing of a 6,000 acre industrial solar farm in a manner that “protects scenic views” or is “sensitive to the visual character” of the bucolic rural community that is adjacent to it. There is also no possibility that the County

would ever prohibit the development of a massive utility scale solar farm in the Antelope Valley simply because it affects the quality of views from designated areas. In practice, the County does not care a whit about “the quality of views”; that is why the County continues to rubber stamp utility scale solar farms in the Antelope Valley and gives no consideration to the cumulative aesthetic effects of the 54,000 acres of solar farms that have already been constructed in the Antelope Valley. Stated more plainly, Mitigation Measure 3.2-1 will not reduce the aesthetic impacts of CAP activities, and the County will not implement it anyway. Therefore, it is insufficient for the purposes of CEQA.

Mitigation Measure 3.2-2: Mitigation Measure 3.2-2 supposedly reduces aesthetic impacts by requiring the installation of “Visual Screening and Other View Protection Measures” where CAP activities are visible from publicly accessible vantage points (i.e., roads). Specifically, it requires the development of a “berm of sufficient height” around utility scale solar farms. Drivers traveling along roads that are adjacent to these solar farms will have these high berms on both sides of them and will have the sense that they are traveling in a channel or open top tunnel which is not aesthetically pleasing. Mitigation Measure 3.2-2 does not mitigate aesthetic impacts.

Mitigation Measure 3.2-3: Mitigation Measure 3.2-3 reduces glare impacts of CAP activities by addressing lighting concerns. However, it does not mitigate the glare impacts resulting from the tens of thousands of acres of new solar panels that will be installed in desert communities as a result of CAP implementation. Glare from flat plate photovoltaic systems is equivalent to glare from smooth water which²³, while not hazardous for aviation purposes, will nonetheless cause glare problems for the residents and communities that are surrounded by these solar farms. Accordingly, the glare in desert communities that will result from the significant expansion of utility scale solar farms will not be mitigated by MM3.2-3; the DEIR is wrong to conclude otherwise.

Mitigation Measure 3.3-1: Mitigation Measure 3.3-1 requires the County to avoid undeveloped lands when siting utility-scale solar projects and constrains such uses to current and formerly contaminated lands, landfills, and mine sites. If implemented, this mitigation measure would substantially mitigate CAP activity impacts in the Antelope Valley. The problem is, the County will never implement this mitigation measure because it effectively precludes solar farm development throughout most of the Antelope Valley. In other words, while SORT supports this mitigation measure, the DEIR fails to grasp that it will never be implemented by the County. This is because it is the County’s practice to “rubber stamp” every single utility scale solar farm that is proposed without regard for whether it is located on formerly contaminated lands, landfills, or mine sites. This is an important mitigation measure, but it will be completely ignored by the County and it will never be applied to any CAP activity.

²³ <https://www.hindawi.com/journals/isrn/2011/651857/>

Mitigation Measures 3.4-1, -2, -3, -4, -5, and -6: Mitigation Measures 3.4-1, 3.4-2, 3.4-3, 3.4-4, 3.4-5 and 3.4-6 are intended to mitigate air emission impacts resulting from CAP activities. However, none of these mitigation measures address the extensive PM10 and PM2.5 emissions which will result from the ambient dust generated by the operation of tens of thousands of acres of utility scale solar farms that are constructed to achieve CAP objectives. This is not conjecture; it is fact. Solar farm operations in the Antelope Valley generate significant ambient dust because the AVAQMD never requires operators to install particulate monitors or dust control measures. As shown in the following pictures, solar farms in the Antelope Valley are “bare dirt” and they are never required to install dust monitors or dust control measures (like mulch); as a result, the constant winds in the Antelope Valley create significant particulate clouds (the Antelope Valley has the highest average windspeeds in the County)²⁴. Rural residents of the Antelope Valley who breath this air experience significant respiratory insults resulting from exposure to PM10 and PM5 emissions which in turn creates significant health impacts. This is no small thing; cardiopulmonary disease rates in the Antelope Valley are far higher than anywhere else in the County²⁵. Childhood asthma rates and COPD rates in the Antelope Valley are particularly high²⁶ and are among the highest in the nation²⁷. This has been pointed out to the County time and again²⁸ and these facts were even included in CAP scoping comments submitted on February 1, 2022. But the DEIR ignores them and the County ignores them. Even the Health Department ignores them. In fact, the Health Department has not launched one single program to address health problems in the Antelope Valley. More to

²⁴ <http://www.usa.com/rank/california-state--average-wind-speed--city-rank.htm>

²⁵ Los Angeles County Health Department “Key Indicators of Health” report. This “county wide” report has not been updated since 2017. Instead, the Health Department has prepared more local health reports focusing on specific areas. Although the Antelope Valley has the worst “health indicators” in the county, and although much of Antelope Valley is designated as a “disadvantaged community”, the Health Department does not prioritize health issues in the Antelope Valley. Insofar as can be determined, the Health Department has not conducted any health assessments in the Antelope Valley since 2017 and does not indicate any intent to conduct such health assessments in the future. [http://publichealth.lacounty.gov/ha/docs/2015LACHS/KeyIndicator/PH-KIH_2017-sec%20UPDATED.pdf]

²⁶ According to County Health Data presented in 2017, the age adjusted COPD mortality rate in the Antelope Valley is 58.9 per 100,000; 14.7 percent of children 0-17 were diagnosed with asthma and had an attack within the last reporting year.

²⁷ CDC COPD statistics: [https://www.cdc.gov/copd/data.html#:~:text=COPD%20Death%20Rates%20in%20the,34.3%20per%20100%2C000%20in%202019\).](https://www.cdc.gov/copd/data.html#:~:text=COPD%20Death%20Rates%20in%20the,34.3%20per%20100%2C000%20in%202019).) CDC Childhood asthma surveillance data (specifically, Table 1): <https://www.cdc.gov/asthma/most-recent-data-states.htm>

²⁸ These facts have been presented to the Department of Regional Planning several times in comments submitted in response to proposed solar farm projects. These facts were also presented to the County’s “Chief Sustainability Officer” in comments submitted in 2019 on the Draft “County Sustainability Plan”. These facts have been consistently ignored.

Figure 1. A “Bare Dirt” Solar Farm Constructed in the Antelope Valley Near the Rural Community of Antelope Acres (this is a photo of the “Dry Ranch” Project).



Figure 2. A Residence in the Community of Antelope Acres That is Overcome by Dust Blowing off a Utility Scale Solar Farm West of Town (photo from local resident).



the point, the County rubber stamps every single utility scale solar farm application that it receives without requiring monitors or dust controls. These measures are required by other agencies (including Kern County agencies), but agencies in Los Angeles County refuse to even consider them. Instead, the County relies on a “Dust Control Plan” processed by the Antelope Valley AQMD which imposes no requirements on the operator other than to post a sign that has a phone number to call when blowing dust is observed (as discussed above). The CAP EIR must be substantially revised to properly address the significantly adverse impacts of the PM10, PM2.5, and dust pollution that will be generated by the solar farms

that will be constructed as a result of the CAP Project AND the CAP EIR must incorporate meaningful particulate monitoring and control measures to mitigate these impacts.

7.0 THE CEQA RECORD PROVIDES INSUFFICIENT BASIS TO CERTIFY THE EIR AND ADOPT A STATEMENT OF OVERRIDING CONSIDERATIONS.

As indicated above, the DEIR fails to assess many of the significant adverse effects that will result from achieving CAP GHG emission reduction targets. This is remarkable, particularly since the 50% GHG reduction target for 2035 and the carbon neutrality target for 2045 are completely “optional” in that the County has no statutory or legislative mandate to achieve them; in other words, these CAP targets are simply things that the County can choose to do or not. More importantly, CEQA mandates that the County’s decision regarding whether to adopt one or both of these targets must factor in the significant adverse environmental effects that each of these targets will cause. Notably, the DEIR does not even acknowledge that the scope and extent of significantly adverse environmental impacts will magnify substantially if the County transitions from a 40% GHG reduction target in 2030 to a 50% reduction target in 2035 and it certainly does not articulate that even more significantly adverse environmental effects will occur if the carbon neutral target is achieved. Instead, the DEIR simply lists (some of) the significantly adverse environmental effects that will result from the collective implementation of these targets. This bland “yes/no” impact assessment strategy that is adopted by the DEIR gives no consideration to the fact that the scope and extent of significantly adverse environmental effects will increase substantially with each successive target that is achieved. For example, the DEIR fails to mention the increasingly adverse effects of destroying tens of thousands of acres of desert to develop the utility scale solar farms needed to implement the transportation electrification and building decarbonization strategies that are required to transition from 40% GHG reductions in 2030 to 50% GHG reductions by 2035; it also completely ignores the many more tens of thousands of desert acres that will be destroyed to achieve “carbon neutrality” by 2045.

Unfortunately, this “yes/no” approach does not provide County decisionmakers (i.e., the Board of Supervisors) with the information they need to make an informed decision on whether the significant adverse effects of adopting a 50% GHG reduction target or a carbon neutral target are truly outweighed by a discernable benefit. In this manner, the DEIR utterly controverts the core purpose of CEQA, which is to “Inform governmental decision makers and the public about the potential, significant environmental effects of proposed activities and identify the ways that environmental damage can be avoided or significantly reduced” [CEQA Guidelines Section 15002].

In a nutshell, the DEIR fails to provide the decisionmakers with the information required to make an informed decision regarding whether the benefits of adopting the purely optional 50% GHG reduction target by 2035 or the purely optional carbon neutrality goal by 2045 outweigh the significant environmental effects that will result from achieving these targets.

Accordingly, the DEIR provides an insufficient basis for the decisionmakers to certify the EIR and adopt a “Statement of Overriding Considerations” as required by CEQA.

These substantial deficiencies can only be corrected by revising the DEIR to include a quantified analysis of 1) the climate change benefits accrued by transitioning from a 40% GHG reduction target in 2030 to a 50% GHG reduction target by 2035 and a carbon neutral target by 2045; 2) the climate change benefits accrued by transitioning from a 50% GHG reduction target in 2035 to a carbon neutral goal by 2045; 3) the increased significant adverse environmental effects of transitioning from a 40% GHG reduction target in 2030 to a 50% GHG reduction target by 2035; and 3) the increased significant adverse environmental effects of transitioning from a 50% GHG reduction target by 2035 to a carbon neutral target by 2045. The first two analyses must be performed within a global context because reducing GHG emissions in unincorporated Los Angeles County will not provide any “local” climate change benefits. The last two analyses must account for all significantly adverse environmental effects, including the area conversion of open desert lands to utility scale renewable energy “farms” and battery storage “farms” that will cause aesthetic impacts, pose fire risks, and eliminate carbon sequestration lands and require additional transmission infrastructure be constructed in very high fire hazard areas. The last two analyses must also address the adverse environmental effects of building decarbonization on rural residents and rural communities where electrical service is highly unreliable (as discussed above). The second analysis would also have to account for the fire risks posed by the massive battery storage facilities that will have to be constructed to achieve these targets; they would also have to account for population increases, transmission losses, and other factors which will further drive the need to convert additional desert acreage to utility-scale renewable energy purposes. These analyses are not difficult and can be performed by any competent engineer. In fact, the County has already received at least one report which details key elements of such an analysis²⁹. And, without such an analysis, the Board cannot demonstrate that the environmental impacts of achieving carbon neutrality by 2045 or even a 50% reduction in GHG emissions from a 2018 baseline by 2035 are indeed outweighed by materially substantial climate change benefits.

8.0 CLARIFICATION REGARDING THE RELATIONSHIP BETWEEN THE EIR AND PROJECTS CARRIED OUT TO ACHIEVE CAP STRATEGIES IS NEEDED.

The DEIR identifies many mitigation measures that it claims will mitigate impacts to a level that is “less than significant”, but neither the DCAP nor the DEIR provide a mechanism which assures that future activities conducted to achieve CAP decarbonization and electrification measures will be conditioned with these mitigation measures. For instance, consider Mitigation Measure 3.13-1 which the DEIR asserts will reduce construction noise impacts to a level that is less than significant. Mitigation Measure 3.13-1 involves

²⁹ A report Titled “Assessment of The Land Area Required to Fully Decarbonize Los Angeles County Via Photovoltaic Solar Generation” was submitted to DRP on March 16, 2022.

installing “temporary sound barriers”, equipping equipment with mufflers, sound-insulating hoods or enclosures, vibration dampers, and other technologies, and reducing non-essential idling of construction equipment. Notably, the County does not impose such conditions on any of the enormous utility scale solar farms that it has approved for construction in the Antelope Valley. In fact, the County has imposed almost no mitigation measures on any utility scale solar farm that it has approved over the last 10 years, and those few mitigation measures that the County does impose are never enforced. So, what mechanism will be used to ensure these conditions are met going forward? Both the CAP and the EIR must didactically state that every project approved in the future which in any way contributes to achieving any CAP measure or strategy will be subject to all the mitigation measures that are expressed in the CAP EIR.

9.0 OTHER CONCERNS WITH THE DEIR

SORT has other concerns with the DEIR. Specifically:

Pages 1-2 to 1-3:

These pages make certain representations that 1) The DEIR presents a “Program Level Analysis”; 2) The DEIR evaluates “general impacts” of the CAP but does not “examine the potential site-specific impacts of the many individual projects that may be proposed in the future” as a result of the CAP; 3) As a “first-tier” document that focuses on the “big picture”, the DEIR “anticipates later environmental review of specific projects”; and 4) Later activities facilitated by the CAP would be examined in the light of the DEIR “to determine whether an additional environmental review is needed”. SORT agrees with all of these assertions. However, the DEIR goes on to assert that, if later activities would have impacts that were not examined in the DEIR, then “preparation of either a project-specific negative declaration or EIR could be appropriate”. Implicit in this assertion is the false implication that later CAP-related activities would not be subject to environmental review unless they create impacts that were not analyzed in the DEIR. This is incorrect.

Future activities related to the CAP will be subject to environmental review even if they only create impacts that were analyzed in the DEIR because the DEIR’s impact analysis is so high-level, so lacking in quantitative specificity, so qualitative, and so generalized that it is almost completely useless for the purposes of CEQA. In fact, the DEIR deliberately avoids any quantitative analysis of cumulative environmental impacts even when the record provides sufficiently detailed information to allow such an analysis. For example, the record demonstrates that achieving the “carbon neutral Los Angeles County” goal expressed on Page 3-7 of the DCAP will require 509,000 acres of new solar; since unincorporated Los Angeles County comprises approximately 11% of the total County population and approximately 65% of the total County area, achieving the “carbon neutral” goal in unincorporated areas will require approximately 51,000 acres of new solar panels. The DEIR could easily analyze the cumulative impacts of these massive solar development “activities” in terms of elimination of desert wildland, desert habitat, wildlife corridor connectivity, aesthetics, dust, destruction of lands needed for carbon sequestration, the

expansion of electrical infrastructure and electrical lines through high fire hazard areas, etc.; instead, the DEIR ignores this quantitative evidence and provides only a cursory and generalized list of potential impacts without considering how they are cumulatively considerable or even admitting that these significantly adverse impacts increase with every GHG reduction target achieved. The DEIR does not even acknowledge that these impacts can be mitigated by distributing these solar panels throughout the urban and suburban areas of the County (where the power is used). The record also includes substantial evidence that the County has consistently failed to consider the cumulative effects of the many tens of thousands of acres of industrial solar farms that have already been installed in the Antelope Valley; it appears that the DEIR intends to carry this failure forward, because it suggests that future activities which implement the CAP will only be subject to environmental review if they result in impacts that were not analyzed in the DEIR. SORT disputes this. All industrial-scale solar farm “activities” proposed for construction in the Antelope Valley or in other rural areas are subject to environmental review and are required to address cumulatively considerable impacts. The DEIR must reflect this fact.

The DEIR Does not Appear to Analyze the “Project” Described in the DCAP:

The DEIR does not analyze the impacts of achieving “Carbon Neutrality” by 2045; in fact, the DEIR asserts that the project it analyzes will result in GHG emissions of approximately 1.2 million metric tons of carbon dioxide equivalent (“MTCO₂e”) by 2045 (page 4.3). Nonetheless, “Carbon Neutrality” by 2045 is a DCAP goal, and once the DCAP is incorporated into the County General Plan, the “Carbon Neutrality” goal becomes obligatory. Because the DEIR does not assess the impacts of achieving “Carbon Neutrality” by 2045, the “Carbon Neutrality” goal cannot be included in the CAP at all. Moreover, the DEIR addresses impacts associated with activities that will be conducted after the 2035 General Plan (and CAP) horizon. Accordingly, the scope and endpoint of the “Project” assessed by the DEIR is inconsistent with the General Plan planning horizon.

Table 2-3:

Table 2-3 wrongly identifies the Executive Orders issued by the California Governor as “Legislation/Regulation”. Executive Orders are not “Legislation” or Regulation”; in fact, they have no force or effect at all unless they invoke Emergency Powers. None of the Executive Orders identified in Table 2-3 invoked Emergency Powers when they were issued; accordingly, they are neither “Legislation” nor Regulation”. The DEIR is wrong to claim that they are.

Page 2-7:

Page 2-7 states that the DCAP “identifies measures to effectively meet GHG emissions reduction targets for 2030 and 2035 that are consistent with the state’s targets and executive orders described above”. This is incorrect. First, no state GHG goals have ever been established for 2035 via either legislation or executive orders. Second, the DCAP’s 2030 GHG reduction objective is much more aggressive than any 2030 target established

via either legislation or executive orders; in fact, Figure 2.5 of the DCAP demonstrates that the DCAP's 2030 GHG emission reduction target is approximately 20% more stringent than what has been established via either legislation or executive orders. Neither the DEIR nor the DCAP explain why the County's target is so much more aggressive than what has actually been legislatively established. And, as explained above, the DEIR's alternative analysis is deficient because it fails to consider lower GHG emission reduction targets as a means of reducing environmental impacts.

Page 3.17-13 Reveals Fundamental Deficiencies:

Page 3.17-13 includes statements that are either erroneous or confirm the concerns that the public has raised regarding the DEIR's failure to properly identify and address the significant adverse impacts of CAP activities.

First, the statement "In general, projects facilitated by Draft 2045 CAP measures and actions are expected to result in beneficial environmental impacts on utilities by reducing water demand, reducing demand on water recycling facilities, and reducing demand for natural gas and electrical power through energy efficiency measures and measures to achieve low-carbon energy use" is categorically incorrect. The CAP will increase water recycling; thus, it will *increase* demand on water recycling facilities. The CAP will increase electrical use; thus, it will *increase* demand for electrical power facilities; in fact, the CAP's "low carbon energy use" will substantially increase demand on electrical power. More importantly, CAP activities will not result in "beneficial environmental impacts on utilities"; to the contrary, they will require extensive expansion of electrical utilities and result in significantly adverse environmental impacts on rural communities in the Antelope Valley. The only way to prevent these impacts is for the DEIR to include definitive language that the CAP strategies will be implemented via local (distributed) generation and not industrial utility scale generation, storage, and transmission.

Second, the statement that "Draft 2045 CAP would result in primarily beneficial impacts with regard to the use of water, wastewater treatment, electric power, natural gas, and stormwater drainage" is categorically incorrect. The impacts of CAP decarbonization measures on rural residents who have unreliable electrical service will be exceedingly deleterious and endanger the lives and property of rural residents (as explained above). Furthermore, CAP activities will substantially increase electrical demand and further strain an already deficient grid; this will result in more blackouts, more brownouts, more heat related deaths, more traffic accidents, and many other problems that the DEIR has conveniently ignored. The manner in which this DEIR misrepresents facts and falsely portrays adverse impacts as "beneficial impacts" is appalling.

Third, the statement "Future projects facilitated by Draft 2045 CAP measures and actions would be evaluated on an individual basis once details are known" confirms all the concerns expressed above that the many tens of thousands of acres of industrial scale electrical generation, storage, and transmission facilities resulting from CAP implementation *will only be evaluated on an individual basis and will never be evaluated for*

their cumulatively considerable impacts as required by CEQA. As a “Programmatic” environmental document, The DEIR is supposed to consider the cumulatively considerable impacts of the activities that will result from the “Proposed Action” and include alternatives and mitigation measures to reduce these cumulatively considerable impacts; *the DEIR utterly fails in this regard.* The following observations and supplemental information provide the County with sufficient information to rectify these deficiencies.

Public comments on the CAP include quantitative, engineering evidence which demonstrates that 509,000 acres of new solar panels will be required to achieve the CAP’s 2045 “carbon neutral Los Angeles County” goal (page 3-7). Unincorporated Los Angeles County comprises approximately 11% of the County population, and approximately 65% of the total County area, thus implementing the CAP measures needed to achieving full electrification and decarbonization in just the unincorporated area will require at least 51,000 acres of new solar panels. If the 51,000 acres of solar facilities that are required to achieve CAP decarbonization and electrification targets are located remotely in desert areas and rely on industrial-scale solar farms, storage farms, and transmission facilities, then CAP implementation will unquestionably result in cumulatively significantly adverse environmental impacts. Accordingly, the County has a statutory CEQA obligation to address these cumulatively significant environmental impacts in a meaningful way by ensuring they are accounted for in the EIR and mitigated to the greatest extent feasible. The DEIR does not account for these cumulatively considerable impacts; it does not even acknowledge that such impacts can be reduced to a level that is “less than significant” by including policies directing that CAP activities rely on local distributed generation rather than remote utility scale generation. The DEIR must be revised to properly consider the cumulatively considerable impacts of the constructing and operating the 51,000 acres of industrial scale solar farms that will be required to achieve the CAP “Project” and the cumulatively considerable impacts of constructing and operating the 509,000 acres of industrial scale solar farms that will be result when the County Leverages its “climate leadership” to achieve a “carbon neutral Los Angeles County” as expressed on Page 3-7 of the DCAP. It must also identify feasible alternatives (such as distributed generation) to reduce these impacts.

10. CONCLUSION

SORT respectfully requests that the above comments be incorporated into the CAP Final EIR. If you have questions or require clarifications, please contact us at SORTActon@gmail.com.

Sincerely,

/S/ Jacqueline Ayer

Jacqueline Ayer

Director, Save Our Rural Town

ATTACHMENT 2

**Decarbonization Report Submitted by Save Our Rural Town in
Response to the Notice of Public Scoping Meeting.**

ASSESSMENT OF THE LAND AREA REQUIRED TO FULLY DECARBONIZE LOS ANGELES COUNTY VIA PHOTOVOLTAIC SOLAR GENERATION

March 7, 2022

PREPARED BY

Jacqueline Ayer
Director, Engineering Operations
AIR QUALITY SPECIALISTS

Mailing address:
4533 MacArthur Blvd. #564
Newport Beach, CA 92660



AIR QUALITY SPECIALISTS

WE'VE BUILT OUR NAME AROUND QUALITY

Summary: Full decarbonization of Los Angeles County will require the development of more than 700 square miles of new solar panels. The environmental impacts that this development will have on pristine deserts and rural communities will be significant and can only be avoided if the County's decarbonization program is founded on the premise that truly reliable and sustainable renewable energy is only achievable through distributed generation.

The County of Los Angeles has recently released several plans and documents that evince a clear intent to decarbonize the County by transitioning to zero emission energy and transportation systems and attain "Carbon Neutrality" by 2045¹. Achieving this objective will require a significant expansion of renewable energy resources to eliminate greenhouse gas emissions ("GHG emissions") from the County. A review of the plans and publications issued in support of the County's decarbonization goal reveals that there has been no consideration given to the scope and extent of the renewable generation resources required to achieve carbon neutrality countywide; this is a critical parameter that ought to be factored into County decarbonization plans from inception. Accordingly, Air Quality Specialists ("AQS") has prepared the following estimate of the total area of solar panels that will be required to fully decarbonize Los Angeles County.

GHG sources in the County are extensive and diverse, however major GHG sources include residential and non-residential electrical usage, natural gas usage, and transportation fuel usage (gasoline and diesel). The analysis prepared by AQS (presented in Attachment A) indicates that a minimum solar panel area of 294,000 acres will be required just to decarbonize existing electrical usage, replace existing gasoline and diesel sales with sufficient electricity to support electric powered vehicles, and decarbonize a portion of the natural gas that is currently used within Los Angeles County². Notably, these sources account for less than 75% of the County's actual GHG

¹ County-wide decarbonization is a foundational element of the County Sustainability Plan adopted in 2019 [<https://ourcountyla.lacounty.gov/>]. Additionally, The "Los Angeles County Climate Action Plan" intends to decarbonize all unincorporated areas and "Lead by example" to decarbonize the rest of the county [https://planning.lacounty.gov/site/climate/wp-content/uploads/2021/12/NOP_CAP-Initial-Study_Final.pdf].

² This analysis was derived based on the following energy data provided by Los Angeles County for 2017: 1) Total electricity usage = 67,569 GWhr; 2) Total natural gas usage (excluding power generation and cogeneration) = 295,601,312 MMBtu; 3) Total gasoline sales = 3,659,000,000 gallons; 4) Total diesel sales = 301,000,000 gallons. Data obtained from Los Angeles County: <https://data.lacounty.gov/dataset/LA-County-Annual-Gasoline-and-Diesel-Fuel-Sold-Mil/3cnn-cvz8>.

footprint³, so full decarbonization of Los Angeles County is estimated to require more than 424,000 acres of solar panels⁴ (nearly 700 square miles). This result does not factor in the area required to accommodate ancillary facilities such as transmission and distribution infrastructure needed to deliver this new renewable power to customers or energy storage facilities necessary to support a reliable "clean" grid. And, when transmission losses and population growth are accounted for, the area required to decarbonize Los Angeles County by 2045 increases by another 20 percent⁵ to 509,000 acres (or 795 square miles).

This estimate is consistent with renewable energy area projections prepared for other decarbonization programs across the country. For instance, the "Solar Future Study" released in 2021 by the U.S. Department of Energy ("DOE") predicts that nearly 7,000 TWhr of solar generation will be required to largely decarbonize the United States by 2050⁶. Given that Los Angeles County accounts for 3.17% of the U.S. population⁷, DOE's estimate indicates that, on a population basis, 222 TWhr (or 222,000 GWhr) of solar generation will be required to largely decarbonize Los Angeles County. This value, when reconciled with data recently published by the Institute of Electrical and Electronics Engineers demonstrating that 2.2 acres of solar panels will produce 1 GWhr/year⁸, yields a solar panel area projection of 488,000 acres (or 763 square miles) to largely decarbonize Los Angeles County.

³ As indicated in Attachment A, these sources account for approximately 73 million metric tons of CO₂ (MMTCO_{2e}), but the County's total carbon footprint is 105 MMTCO_{2e} [see the "Los Angeles County Sustainability Plan" adopted August 6, 2019 at page 106].

⁴ 424,000 acres was derived by linearly scaling up the calculated 294,000 acre value (which accounts for only 72 MMTCO_{2e} of the County's total GHG Footprint) to derive the area required to decarbonize the County's existing 105 MMTCO_{2e} footprint.

⁵ This 20% estimate is actually low; the Southern California Association of Governments projects area population to increase 19% by 2045 (derived from Table 3 of SCAG's SoCal Connect Demographics And Growth Forecast Report [https://scag.ca.gov/sites/main/files/file-attachments/0903fconnectsocial_demographics-and-growth-forecast.pdf?1606001579] and the U.S. Energy Administration estimates transmission and distribution losses in California exceeded 5% in 2020 (derived from Data Table 10 of U.S. EAI's State Electricity Profiles at <https://www.eia.gov/electricity/state/california/2020>).

⁶ U.S. Department of Energy released its "Solar Futures Study" September 2021. <https://www.energy.gov/sites/default/files/2021-09/Solar%20Futures%20Study.pdf> at 49.

⁷ in 2019, the population of Los Angeles County was 10.4 million and the population in the U.S was 328.3 million.

⁸ IEEE report: 1 GWhr/year requires 2.2 acres of solar panels: "Land Requirements for Utility-Scale PV" found here: <https://ieeexplore.ieee.org/document/9676427/metrics#metrics>.

Another analysis prepared by The Nature Conservancy ("TNC") projects that the State of California will require 1.6 - 3.1 million acres of wind and solar by 2050 to support the movement toward "electrifying everything"⁹. Given that Los Angeles County comprises 26.3% of the population of California¹⁰, TNC's estimate suggests that, on a population basis, the decarbonization of Los Angeles County will require 420,800 - 815,300 acres of renewable generation resources.

The County's decarbonization objective can be achieved by either directing renewable energy generation and storage to occur locally so that power is reliably and sustainably created where it is used (referred to as "distributed generation" or "in-situ generation") or by directing renewable energy generation and storage to occur remotely in massive solar farms (often located in desert open spaces) which require the conversion of vast areas of pristine desert and agricultural lands to industrial uses and the construction of extensive high voltage transmission lines through Very High Fire Hazard Severity Zones to deliver power to the County's urban "load". Power will be delivered via a handful of open-air, high voltage transmission substations which are themselves vulnerable to outage as a consequence of natural and man-made events. The substation and transmission line vulnerabilities that are presented by the remote generation option introduce substantial reliability concerns which do not exist in the distributed generation model. Though these issues have not been considered by the County in its contemplation of a decarbonization strategy, it is certain that the environmental impacts resulting from a "remote generation" path will be tremendous¹¹. Such impacts would also be unnecessary because the County's "developed" area is sufficiently large to accommodate the 700+ square miles of solar panels needed to achieve and maintain carbon neutrality in Los Angeles County by 2045¹² as shown in Attachment B.

⁹ https://www.scienceforconservation.org/assets/downloads/PoP_PolicyRecsSumm_2019.pdf

¹⁰ In 2019, the population of Los Angeles County population was 10.4 million and the population of California was 39.51 million.

¹¹ These impacts include, but are not limited to, the elimination of extensive biological resources, wildlife corridors and habitat, ambient dust clouds rivaling "dust bowl" conditions, death and injury to wildlife (for example, migrating waterfowl often mistake solar panel farms for large bodies of water- <https://www.kcet.org/redefine/water-birds-turning-up-dead-at-solar-projects-in-the-desert>) and wildfire ignitions in high fire hazard areas.

¹² According to Page 90 of the County's adopted Sustainability Plan, 64.4% of the County is classified as "natural area" which means that 35.6% is developed. Los Angeles County is 4,084 square miles in area; thus, more than 1,400 square miles of Los Angeles County is "developed" ($.356 \times 4084 = 1454$).

The environmental impact of achieving the County's decarbonization goal is not the only issue that the County has heretofore declined to address; a number of social outcomes and human impacts have also been overlooked. For example, as part of its net-zero energy strategy, the County is aggressively pursuing transit-oriented districts and advocating for programs and policies that make driving inconvenient (such as reduced parking requirements in new developments and the elimination of traffic lanes) and expensive (such as supporting gas tax increases, congestion pricing, and moving toward an all-electric vehicle future). A potential equity outcome of these policies is that driving will eventually become a privilege that is only enjoyed by the "well off".

Another impact of the County's decarbonization program that has yet to be addressed relates to the decarbonization of buildings and the energy grid. Specifically, as fossil fuels are eliminated from the County, residents and businesses will become increasingly dependent on electrical generation resources that are not always reliable. To address this, the County is expected to adopt very aggressive (and arguably hypothetical) energy efficiency and "demand management" targets; if these targets are not achieved, residents and business throughout the County will experience substantially more involuntary power shutoffs (brownouts and blackouts). This is no small thing; power shutoffs pose extensive public safety risks¹³ and threaten the wellbeing of customers who are dependent on electrical devices and equipment. In rural areas of the County, power shutoffs have become almost routine: Since 2019, rural residents in the County have experienced more than 20 lengthy power shutoffs (many lasting 2 days or more), and the local school district serving the Communities of Acton and Agua Dulce lost nine days of classroom time during both the 2019-2020 school year and the 2020-2021 school year¹⁴. During a recent snowstorm event in the Antelope Valley, rural residents were without power for nearly a week while temperatures remained near freezing; those residents who relied on propane for heat were more fortunate than those whose homes

¹³ In Decision D.90-90-030, the California Public Utilities Commission assessed the risks caused by power shutoffs; they include increased fire risk from people using generators, candles, lanterns, camp stoves and barbecues, increased traffic accidents due to non-functioning traffic signals and street lights; impaired fire-fighting capabilities due to the loss of water pressure, impaired water and sewage facilities due to pumping loss; schools close; customers with disabilities remain trapped because elevators do not function; loss of cellular phone and internet communication networks, etc.

¹⁴ These events are described in public comments on file with the California Public Utilities Commission in response to power shutoffs initiated in Los Angeles County by Southern California Edison between 2019 and 2021.

were heated with electricity. Presumably, the County will eliminate propane resources as part of its decarbonization strategy; the adverse effect that this will have on residents in rural communities has never been considered or addressed by the County.

The evaluation presented herein addresses only a small portion of the changes and environmental impacts that will result from implementing the County's decarbonization strategy and insofar as AQS can determine, the County has not given them any thought. This is troubling; it is essential that the County develop its decarbonization program responsibly and in a manner which anticipates and mitigates the environmental impacts and social outcomes that it will create. The decarbonization plans and strategy documents that have been issued by the County thus far merely set ambitious goals and provide optimistic descriptions of positive GHG reduction outcomes; the County appears disinclined to do the "hard work" that is necessary to ensure that the potentially significant adverse impacts of decarbonization are adequately addressed and properly mitigated. For example, the Sustainability Plan adopted by the County Board of Supervisors in 2019 presents and discusses County GHG emissions and it establishes a full countywide decarbonization target date of 2045, but it fails to even acknowledge that achieving this target will have environmental consequences. Similarly, the initial study issued recently for the County's Climate Action Plan ("CAP")¹⁵ echoes the decarbonization objectives established by the Sustainability Plan, but it fails to consider any of the impacts described above. The Initial Study also concludes that most impacts will be "less than significant" because the CAP is simply a "policy document" that merely "supports development already allowed under the General Plan" and will therefore not result in many direct effects¹⁶. However, this conclusion is flawed; the County General Plan was adopted in 2015 and long before the Sustainability Plan was developed, thus it never anticipated the County's current decarbonization goals and it certainly never contemplated the need to develop 700+ square miles of new renewable energy facilities.

Perhaps this assessment will help spark a meaningful discussion on how the County can develop a decarbonization program which comprehensively considers and mitigates potentially adverse environmental impacts and achieves true resiliency and equity for all County residents.

¹⁵ CAP Initial Study at pp. 1-2. https://planning.lacounty.gov/site/climate/wp-content/uploads/2021/12/NOP_CAP-Initial-Study_Final.pdf.

¹⁶ Id at 10, 17, 20, 23, 29,32, etc.

ATTACHMENT A

**CALCULATED LAND AREA REQUIRED TO ACHIEVE
FULL DECARBONIZATION OF LOS ANGELES COUNTY**

LAND AREA REQUIRED TO DECARBONIZE LOS ANGELES COUNTY

	Non-res electricity	Res electricity	TOTAL electricity	Total natural gas	Total NG excl cogen & gen	Gasoline sales	Diesel sales
Year	(GWh)	(GWh)	(GWh)	(MMBTU)	(MMBTU)	(10 ⁶ gallons)	(10 ⁶ gallons)
2015	49,130	20,472	69,602	447,565,899	276,113,141	3,465	328
2016	49,141	20,330	69,471	455,096,480	287,770,711	3,577	309
County data used: 2017	48,100	19,469	67,569	456,679,135	295,601,312	3,659	301

DECARBONIZE ELECTRICAL USAGE

% of electrical energy that contributes to GHG: 45% (Note 1)
 Electrical generation to be decarbonized: 30,406 GWhr

DECARBONIZE NATURAL GAS USAGE

(excluding cogen & electrical generation uses)

Natural gas usage to be decarbonized: 295,601,312 MMBTU
 % of Natural gas used for space heating: 40% (Note 2)
 Btu of heating by existing space heating systems: 100,504,446 MMBTU (Note 3)
 Heat pump GWhr required for equivalent Btu: 8,375 GWhr (Note 4)
 % of Natural gas used for non-space heating: 60%
 GWhr required for equivalent BTU : 51,984 GWhr (Note 5)

DECARBONIZE GASOLINE SALES

Gasoline usage to be decarbonized: 3.659.E+09 gallons
 MMBTU of gasoline used: 440,126,474 MMBTU (Note 6)
 MMBTU of gasoline to be decarbonized: 110,031,619 MMBTU (Note 7)
 Gasoline energy to be decarbonized: 32,250 GWhr equivalent energy
 Electrical energy to operate EV equivalent: 37,941 GWhr (Note 8)

DECARBONIZE DIESEL SALES

Diesel usage to be decarbonized: 3.010.E+08 gallons
 MMBTU of diesel used: 41,351,681 MMBTU (Note 9)
 MMBTU of diesel to be decarbonized: 14,473,088 MMBTU (Note 10)
 Diesel energy to be decarbonized: 4,242 GWhr equivalent energy
 Electrical energy to operate EV equivalent: 4,991 GWhr (Note 8)

County 2017 energy usage to be decarbonized: 133,698 GWhr
Solar panel area required to generate 1 GWhr/ yr: 2.2 Acres/GWhr-yr (Note 15)
294,136 Acres of solar panels

GHG EMISSIONS CALCULATED FOR THESE SOURCES

Electrical usage:
 709 MTCO₂ /GWhr (emission factor: c-based electricity-Note 11)
 45% % of electrical generation that is carbon-based (Note 1)
 30,406 GWhr of electricity to decarbonize
 21,557,967 MTCO₂ from electricity generation
 21.56 MMTCO₂ from electricity generation

Natural gas usage (excluding cogen & electrical generation uses):
 0.0053 MTCO₂ per therm (emission factor: natural gas - Note 12)
 0.0530 MTCO₂ per MMBTU of natural gas
 15.67 MMTCO₂ from natural gas used in LA County

Gasoline sales:
 0.008887 MTCO₂ per gallon (emission factor: gasoline - Note 13)
 32.52 MMTCO₂ from gasoline sold in LA County

Diesel sales
 0.01018 MTCO₂ per gallon (emission factor: diesel -Note 14)
 3.064 MMTCO₂ from diesel sold in LA County

TOTAL GHG EMISSIONS FROM THESE SOURCES

72.8103 MMTCO₂

Note: This analysis considers only four retail sources of GHG emissions in Los Angeles County; it does not account for the County's full GHG footprint (which is actually 105 MMTCO₂ - Note 16). The total area of solar panels required to fully decarbonize Los Angeles County is estimated by linearly scaling up these calculated results. The required solar panel area to fully decarbonize Los Angeles County is estimated to be: **424,174 Acres**

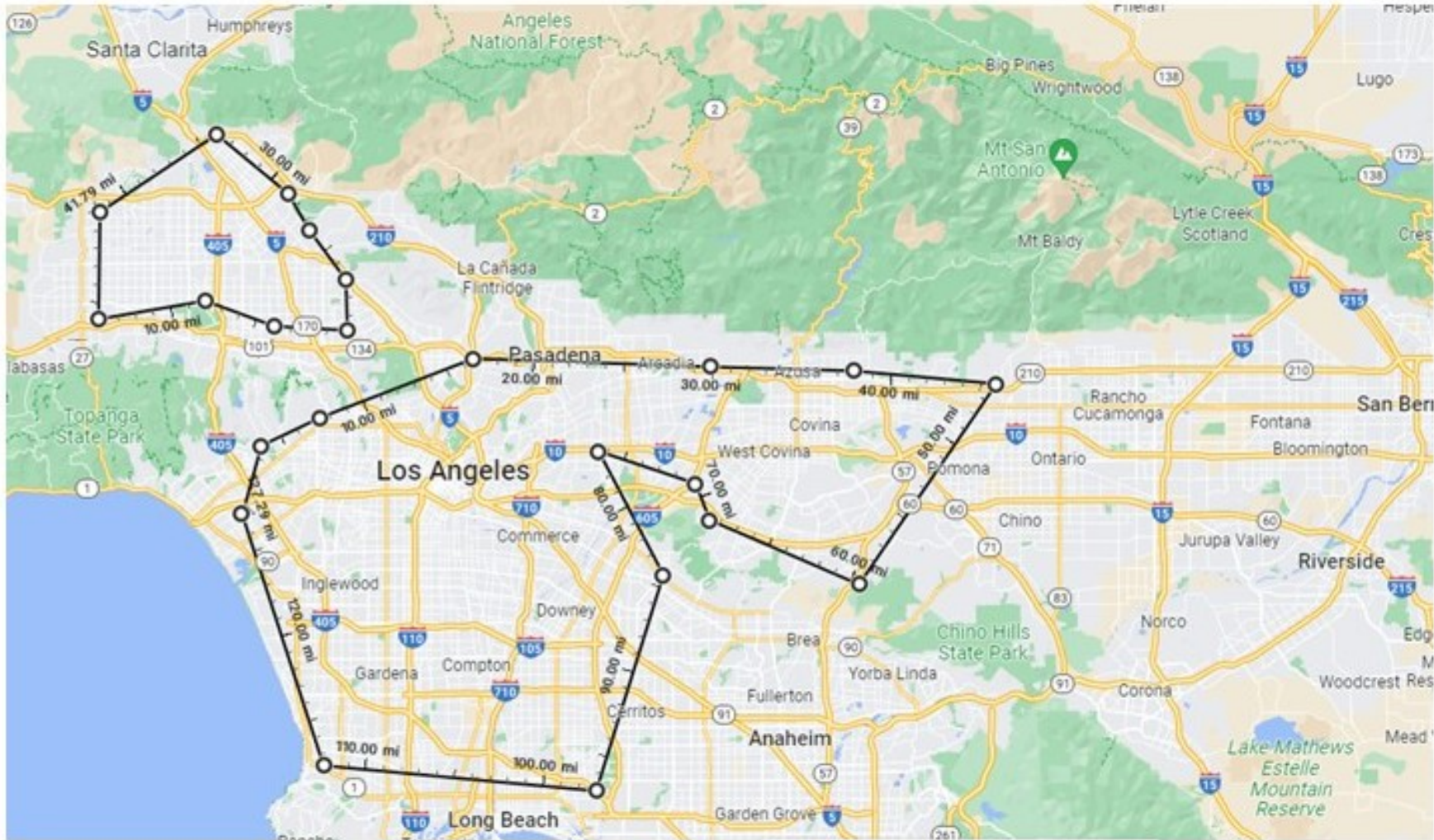
NOTES

- 1 Power content data from the CEC [<https://www.energy.ca.gov/programs-and-topics/programs/power-source-disclosure/power-content-label>]
41% of power sold by the Los Angeles County Department of Water and Power came from coal + natural gas and 7% is of an "unspecified" origin.
20% of power sold by Southern California Edison came from natural gas and 34% is of an "unspecified" origin.
38% of power sold in California came from coal + natural gas and 9% is of an "unspecified unknown" origin.
Reconciling these data: 45% of electricity used in Los Angeles County generates GHG emissions.
- 2 Assumes space heating is 40% of natural gas usage in buildings (residential + commercial) from NRDC report "Decarbonization of Heating Energy Use in California Buildings" [<https://www.synapse-energy.com/sites/default/files/Decarbonization-Heating-CA-Buildings-17-092-1.pdf>]
- 3 Assumes existing space heaters achieve a moderate efficiency (AFUE): 85% [<https://www.energy.gov/energysaver/furnaces-and-boilers>]
- 4 Assumes gas fired space heaters replaced with air source heat pumps with 8.2 Energy Star Rating of 12000 Btu/kWhr [https://www.energystar.gov/products/heating_cooling/heat_pumps_air_source/key_product_criteria]
- 5 Non space heat sources largely employ direct heat and are thus assigned a 1:1 energy equivalency of: 0.0002931 GWhr per MMBTU
- 6 U.S. Energy Information Administration: 120,286 BTU/gallon of gasoline [<https://www.eia.gov/energyexplained/units-and-calculators/>]
- 7 This assumes a 25% powertrain efficiency for gasoline engines.
- 8 Total Electric Vehicle efficiency (wall to wheels) is: 85% (from IEEE study of Level 1/Level 2 chargers [<https://ieeexplore.ieee.org/document/7046253>])
- 9 U.S. Energy Information Administration: 137,381 BTU/gallon diesel [<https://www.eia.gov/energyexplained/units-and-calculators/>]
- 10 This assumes a 35% powertrain efficiency for diesel engines.
- 11 EPA Adopted Emission Rate: 0.000709 MTCO₂/kWhr [<https://www.epa.gov/energy/greenhouse-gases-equivalencies-calculator-calculations-and-references>]
- 12 EPA Adopted Emission Rate: 0.0053 MTCO₂/therm [<https://www.epa.gov/energy/greenhouse-gases-equivalencies-calculator-calculations-and-references>]
- 13 EPA Adopted Emission Rate: 0.008887 MTCO₂/gal gasoline [<https://www.epa.gov/energy/greenhouse-gases-equivalencies-calculator-calculations-and-references>]
- 14 EPA Adopted Emission Rate: 0.01018 MTCO₂/gal diesel [<https://www.epa.gov/energy/greenhouse-gases-equivalencies-calculator-calculations-and-references>]
- 15 IEEE Report on Land Requirements for Utility-Scale Solar PV [<https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=9676427>]
- 16 According to page 106 of the County Sustainability Plan, Los Angeles County GHG emissions totaled 105 MMTCO₂ in 2015
- 17 U.S. EIA: <https://www.eia.gov/tools/faqs/faq.php?id=105&t=3#:~:text=The%20U.S.%20Energy%20Information%20Administration,States%20in%202016%20through%202020>.

ATTACHMENT B

**MAP OF URBAN PORTIONS OF LOS ANGELES COUNTY
DEMONSTRATING THAT 700 SQUARE MILES OF
SOLAR PANELS COULD BE ACCOMMODATED WITHIN
THE COUNTY'S DEVELOPED FOOTPRINT.**

Urban Portions of Los Angeles County are Sufficient to Easily Accommodate 700+ Square Miles of New Solar Panels



(Note: The irregular shapes depicted on the map cover 700 square miles of the County's existing urban area.)



Jacqueline Ayer <sortacton@gmail.com>

Re: Engineering Assessment of the Solar Panel Area Required to Decarbonize Los Angeles County

1 message

Jacqueline Ayer <sortacton@gmail.com>
To: Thuy Hua <THua@planning.lacounty.gov>

Wed, Mar 16, 2022 at 4:48 PM

Thank you very much,

On Wed, Mar 16, 2022 at 4:34 PM Thuy Hua <THua@planning.lacounty.gov> wrote:

Thank you, Ms. Ayer. Confirming receipt.

From: Jacqueline Ayer <sortacton@gmail.com>
Sent: Wednesday, March 16, 2022 4:31 PM
To: Thuy Hua <THua@planning.lacounty.gov>
Cc: DRP EPS Climate <climate@planning.lacounty.gov>; Jacqueline Ayer <sortacton@gmail.com>
Subject: Engineering Assessment of the Solar Panel Area Required to Decarbonize Los Angeles County

CAUTION: External Email. Proceed Responsibly.

Dear Ms. Hua;

The Scoping Comments provided by SORT on January 13 in response to the County's Notice of Preparation of a Draft Program Environmental Impact Report for the County's revised Climate Action Plan ("CAP") made reference to the significant amounts of renewable energy that will be required to achieve the "carbon neutrality" goal that was set forth in the Initial Study prepared for the CAP EIR. These comments were offered because SORT is particularly interested in ensuring that the County properly assess the environmental impacts resulting from achieving carbon neutrality. And, while the initial study itself mentions that the CAP will only apply to unincorporated areas, it also clarifies that the CAP will report GHG emissions on a state and regional basis, and it makes specific reference to Sustainability Plan targets and County GHG targets (which, according to the Sustainability Plan, involve achieving carbon neutrality countywide). To gain a better understanding of the amount of new renewable generation that would be required to achieve "countywide carbon neutrality", SORT conducted a comprehensive literature search, and found that this issue has never been addressed. To rectify this substantial deficiency, a comprehensive engineering analysis was performed, the results of which demonstrate that achieving full decarbonization of Los Angeles County by 2045 will require more than 500,000 acres (or more than 700 square miles) of new solar panels. To ensure that these results are factored into the CAP and inform the CEQA review that is now underway for the CAP, I have attached the engineering report and respectfully request that it be considered and incorporated into the CAP administrative record.

If you have any questions or require further information, please do not hesitate to contact me at ActonSORT@gmail.com

Sincerely;

Jacqueline Ayer

Director, Save Our Rural Town

ATTACHMENT 3

Motion Adopted by the Board of Supervisors on April 9, 2024.

MOTION BY SUPERVISOR LINDSEY P. HORVATH

April 9, 2024

Accelerating Renewable Energy Development and Promoting Community

Resiliency in Los Angeles County

Los Angeles County is working aggressively to transition to 100% clean energy, improve our air quality, and achieve carbon neutrality by 2045. We have made significant strides, including transitioning many of the County’s residents to 100% renewable electricity through the Clean Power Alliance (CPA), setting stricter emissions controls from stationary energy sources, and reducing greenhouse gas (GHG) emissions through vehicle electrification and expansion of public transit. Despite impressive progress, recent County analysis has found that we will miss our 2030 GHG emissions targets without further action.

Transitioning to clean power is not just about meeting our climate goals. Clean energy offers the promise of improved health benefits, particularly for low-income and disadvantaged communities. In 2023, the American Lung Association gave LA County a failing grade for air quality, citing us with some of the dirtiest air in the nation. Clean energy investments have the potential to create tens of thousands of new jobs, and utility-scale solar and wind can produce electricity at a lower cost than distributed rooftop solar. The Los Angeles Department of Water and Power’s *LA100* roadmap study estimates that

MOTION

SOLIS _____

MITCHELL _____

HAHN _____

BARGER _____

HORVATH _____

transitioning the City of Los Angeles' power grid to 100% clean energy by 2035 would result in a minimum of 8,600 annual construction jobs and 2,000 permanent new jobs in operations and maintenance.

Just five years after its creation, the Clean Power Alliance's is now the third largest load-serving entity in the California Independent System Operator territory and roughly two-thirds of its more than one million customer accounts receive 100% renewable electricity, earning CPA the recognition of number one green energy provider in America by the US Department of Energy. But as more utilities and western states increase their clean power standards and new renewable energy projects face long timelines to secure local permits and connect to the grid, it has become increasingly difficult to procure renewable energy in California at the speed necessary to support the clean energy transition. CPA, for example, recently had to delay by two years the transition of its remaining unincorporated LA County customers to 100% renewable energy due to projected renewable energy supply constraints.

In December of 2016, the Board of Supervisors adopted the Renewable Energy Ordinance (REO) which updated planning and zoning codes for reviewing and permitting small scale and utility scale solar projects, aiming to protect public health, safety, and welfare and to minimize environmental impacts. The ordinance established new requirements in response to concerns from communities regarding visual aesthetics, fire safety, health concerns related to construction impacts, and environmental impacts. The REO incentivizes small-scale and structure-mounted projects and regulates ground-mounted utility-scale solar facilities. These regulations require transmission lines that connect these facilities to the broader electricity grid to be built underground and

mandates setbacks, measures to minimize fugitive dust, and a Conditional Use Permit (CUP) for utility-scale solar projects. The REO also prohibits ground-mounted, utility-scale solar projects in Economic Opportunity Areas or Significant Ecological Areas and bans new wind development.

Since the REO went into effect, very few utility-scale renewable energy projects have been approved in the County, most notably due to the expense of undergrounding transmission lines. Industry analysts report that undergrounding transmission lines costs seven to ten times more than building transmission overhead. From 2003 until the REO was adopted, 10 CUPs for utility-scale solar energy facilities were approved, and their renewable energy supply totaled more than 1,177 megawatts of clean energy. By contrast, since the REO was adopted, only three projects have been approved for a total of 86 megawatts of clean energy. Meanwhile dozens of projects and thousands of megawatts of utility grade renewable energy projects have continued to be built in neighboring incorporated communities and in adjacent Kern, Riverside, and San Bernardino Counties, while the cities of Lancaster and Palmdale became hubs of renewable energy development, providing jobs, increasing the local tax base, and mitigating greenhouse gas emissions.

Recognizing that renewable energy supply and transmission infrastructure was not meeting demand, Governor Newsom signed AB 205, which became effective late in 2023. The law allows developers of new utility-scale renewable energy and transmission projects to seek land use and permitting approvals through the California Energy Commission (CEC) rather than local jurisdictions. The CEC's certification is in lieu of any permit, certificate, or similar document required by any state or local agency and

supersedes any applicable statute, ordinance, or regulation by any local jurisdictions to the extent permitted by federal law. While developers typically prefer to work with local governments for many reasons, as it stands, our local land use and permitting for clean energy projects risks being usurped by the State.

For these reasons, a revision to the REO should be contemplated in a way that benefits the entire region, as well as providing local resiliency and community benefits to nearby communities. Rural communities particularly face harsh summer and winter weather, and sometimes unreliable electricity service with increasing numbers of Public Safety Power Shutoffs (PSPS). Local communities have long complained that they do not see adequate benefits from the energy projects that are nearby and reform to the ordinance could help to change that if it included specific requirements to subsidize or directly develop property and neighborhood scale renewable energy and storage systems.

Two strategies to create greater community resiliency is through the deployment of distributed energy resources (rooftop solar paired with batteries at individual buildings) and community-level microgrids powered by renewable energy. Battery energy systems, when paired with renewable energy like solar photovoltaics systems, allow a property to store energy and release it when the power is most needed, including during a grid outage. In a December 2023 motion, the Board directed the Department of Regional Planning to conduct stakeholder engagement and prepare a best-practices-informed ordinance for permitting larger scale Battery Energy Storage Systems. A microgrid is a self-sufficient energy system that can operate independently of or in parallel to the larger grid to keep individual buildings or small communities powered when the larger grid

suffers disruptions or outages. Programs are already in place that can be utilized to develop microgrids, such as the California Public Utilities Commission's Microgrid Incentive Program. The Cameron Corners Microgrid in San Diego County serves as an example of a successful zero-emission microgrid that keeps critical facilities on during emergencies and PSPS. A requirement that conditions new development of utility scale renewables on also investing in distributed energy resources or microgrids could deliver resiliency and energy cost savings costs to residents in neighboring communities.

Amendments to the REO that increase the supply of clean energy in our County, create local jobs, and improve the resiliency of our most impacted communities would benefit all residents. The alternative will extend our reliance on fossil fuels, negatively impacting our air quality, do nothing to promote the resiliency of vulnerable communities, and risk losing our local land use, environmental review, and permitting authority to the State.

I, THEREFORE, MOVE that the Board of Supervisors:

1. Direct the Department of Regional Planning, with the assistance of the Chief Sustainability Office, LA County Fire Department, and LA County Public Works, prepare updates to the Renewable Energy Ordinance, with a focus on accelerating development of utility-scale renewable energy facilities, including, but not limited to, the following components:
 - a. Identify certain areas in the County as renewable energy development zones. These zones and corridors would allow utility-scale renewable energy facilities. The Department should evaluate opportunities in all supervisorial districts, including larger brownfield sites. Areas where

facilities are currently prohibited, such as some of the Economic Opportunity Areas identified in the Antelope Valley Area Plan, should be considered.

- b. Establish a size threshold to determine whether a ministerial or discretionary permit is required for these projects. There should be clear development standards for both ministerial and discretionary permits.
 - c. Develop an approach to ensuring community benefits for renewable energy projects that promotes community resiliency in impacted areas. This can include the required development of community-scale renewable energy and storage systems, micro-grids serving individual or multiple sites, or payments into a community benefit fund that would subsidize solar and storage projects in vulnerable communities.
 - d. Evaluate the ban on utility-scale wind energy and make a recommendation based on market and environmental factors on whether it should be allowed on a discretionary basis in certain zones.
 - e. Apply relevant best practices and development standards from other California jurisdictions.
2. Direct the Department of Regional Planning, with the assistance of the Chief Sustainability Office, County Fire Department, and Public Works, to conduct outreach related to the Renewable Energy Ordinance update, including clean energy companies, environmental groups, labor, community organizations such as Town Councils, and other relevant stakeholders who will help craft

the updated ordinance. This outreach will include a collaborative effort to identify a set of criteria with areas and corridors, such as renewable energy development zones, that would allow utility-scale renewable energy facilities and have the least impact on the environment and our unincorporated communities.

3. Evaluate the opportunity to, and potential efficiencies of, aligning this effort with the December 19, 2023 Board motion “Developing a Los Angeles County Ordinance for Renewable Energy Zoning, Standards, and Requirements” and grant the Director of Regional Planning discretion to implement accordingly.

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LPH:ao

ATTACHMENT 4

Best Safety Practices Report for Battery Energy Storage Systems ("BESS") Obtained From the California Public Utilities Commission.

ATTACHMENT F: SAFETY BEST PRACTICES¹

Due to the market readiness and scalability, installations of stationary lithium-ion battery energy storage systems are ramping up quickly to play a major role in California's clean energy portfolio. California's dependence on this technology is expected to grow from just over 2,500 MW at the end of 2021 to potentially tens of gigawatts by 2045. As installations accelerate, so does the urgency to address safety.

Over the course of one year, from September 2021 through September 2022, safety events occurred at each of the three separate (and distinct) grid-scale battery systems installed on California's Moss Landing site. These events, plus the industry's broader experience with safety events over the last decade, underscore the need to manage the risks stemming from hazardous materials in batteries and the unique properties of thermal runaway. For the safety and reliability of California's electricity system the CPUC and other stakeholders will need to continuously monitor and guide safe designs, development, maintenance, and operations of stationary batteries according to best practices.

Energy storage safety is a risk management issue—and a complex one. Large-scale battery systems in themselves are complex with many potential points of failure and potential situations that could lead to harm from fire, thermal runaway, or explosion. How these systems interface with the local environment is a challenge. Effective management and mitigation of these risks also require communication and coordination channels that are a challenge to develop given the number and scope of parties involved.

Historically, major safety-related events involved about 2% of large-scale battery storage installations in the U.S., occurred within 1–2 years of installation, and destroyed about 1–2% of its capacity. Based on this very limited information, for every 10 GW of new battery storage installed in California it would be reasonable to expect a handful of safety-related events at new sites, affecting operations of installations potentially several hundred MW in size. This outlook may change as we observe lithium-ion batteries age and as the industry evolves towards different technologies.

The observed range of outcomes of actual safety-related events provide opportunities to learn and improve battery technology. These events help us to better understand the risk profile of battery storage investments and the potential harm to people, communities, the environment, and electricity supply when risks are poorly understood, under-mitigated, or under-managed. Investigations and assessments of these events have driven and shaped the industry's efforts towards improving safety best practices.

This attachment aims to provide the most current understanding of safety best practices for stationary energy storage systems with a focus on lithium-ion batteries. We draw from industry studies, lessons learned from specific safety-related events, and expert opinion to summarize safety risks and remedies associated these installations. Although this attachment (and most of the industry's codes and standards we reference) focuses on lithium-ion batteries, many of the best practices we outline are translatable to other energy storage technologies as they reach commercial scalability.

We address three major questions:

- **What are the key safety issues**, considering actual events and types of safety impacts we observe?
- **What are current best practices**, including perspectives of regulators, utilities, technical experts, and energy storage developers?
- **What are the remaining concerns and next steps?**

¹ This is an attachment to the CPUC Energy Storage Procurement Study © 2023 Lumen Energy Strategy, LLC and California Public Utilities Commission. No part of this work may be reproduced in any manner without appropriate attribution. Access the main report and other attachments at www.lumenenergystrategy.com/energystorage.

CONTENTS

- Definition of Safety 3
- Fire Versus Thermal Runaway..... 3
- How Lithium-Ion Chemistries Compare..... 5
- Risk Management of Complex Systems 6
- Safety Events in Context 7
- Case Studies of Safety Events 8
 - Kahuku Wind Farm—August 2012**..... 9
 - Elden Substation—November 2012**..... 9
 - Franklin Facility—August 2016** 11
 - South Korea—2017–2018** 12
 - McMicken Battery Energy Storage System—April 2019**..... 12
 - Industrial Warehouse—June 2021**..... 14
 - Grand Ridge Energy Storage Project—July 2021**..... 15
 - Victorian Big Battery Project—July 2021**..... 16
 - California’s Moss Landing Site** 18
 - Dallas Energy Storage 1–3/Moss 300—September 2021**..... 19
 - Dallas Energy Storage 4/Moss 100—February 2022** 21
 - Valley Center Battery Storage Project—April 2022** 22
 - Elkhorn Battery Energy Storage Facility—September 2022** 22
- Known and Observed Impacts 24
- Lessons Learned from Safety-Related Events 24
- Best Practices and Next Steps..... 26
 - Risk Assessment 26
 - Emergency Preparedness..... 28
 - System and Site Design 30
 - Operations, Diagnostics, and Maintenance 32
- Key Observations 34
- References 35

Definition of Safety

We define **safety risk** as the possibility of the following undesirable outcomes of energy storage installation and operations: harm to humans, harm to surrounding communities, and/or harm to the environment. These outcomes may have secondary negative impacts in the form of destruction of infrastructure and property, associated financial losses, and/or reduced reliability of electricity supply.

It follows that **safety** is our ability to mitigate and manage those defined risks of harm. For the purposes of this paper, energy storage equipment, hardware, and software safety reflect the ability of the installation, as it is designed and built, to mitigate and manage system failures that lead to undesirable outcomes. The effectiveness of safe operations, procedures, and processes depend upon the safety of a system's components and design. Safe operations, procedures, and processes also refer to additional actions involved parties take to further reduce risks over the life of an energy storage installation.

Specific safety thresholds, defining a “safe” versus “unsafe” installation, must be established by the regulatory authority as the acceptable amount of residual risk after mitigation and management efforts are in place. Generally, we find that public reactions and the evolution of safety codes and standards imply that any degree of direct harm to humans, the environment, or surrounding communities is unacceptable and should be avoided. A “safe” failure, for example, results in no harm to humans, communities, nor the environment—although it may result in complete destruction of the energy storage system. From a regulatory perspective, safety thresholds must also be in harmony with other regulatory objectives of reliable and resilient electricity supply, avoiding the harm of fossil fuel-based energy investments, and cost-effectiveness. So, even a “safe” failure, as defined by safety codes and standards, is undesirable from an electricity regulator’s perspective unless damage to the storage system and other infrastructure is minimal and recovery is within an acceptable timeframe.

Best practices in safety are clearer and more effective if they are determined with these specific safety objectives and risk tolerances in mind. In this paper we do not speak for the CPUC on their safety objectives and risk tolerances. However, we do make the general assumption of an extremely low tolerance for any direct harm to humans, the environment, or surrounding communities. We also assume some desire to (a) synergize with efforts to support the reliability and resiliency of electricity supply, and (b) consider impacts on ratepayer cost-effectiveness.

Fire Versus Thermal Runaway

The main vehicles of harm from an energy storage system are uncontrolled fire and thermal runaway.

In our research and in various accounts of actual safety-related events we find a strong theme of confusion over the characteristics of thermal runaway versus fire. Specifically, we observe that insufficient knowledge transfer and coordination among the technical community, utilities, emergency responders, and regulators—on how thermal runaway is distinct as a chemical process, how to prevent it, and what to do if it starts—significantly contributes to undermanaged safety risk.

A few important characteristics of thermal runaway are as follows:

- Thermal runaway is a chemical reaction **distinct from fire** but with similar characteristics.
- Thermal runaway is similar to fire in that it is preceded by a temperature spike (which may or may not be due to a short circuit) and it releases significant heat and pressure once initiated.

- Lithium-ion battery cells in thermal runaway rupture and release large volumes of **toxic and flammable gases** including hydrogen fluoride. If the released gases come in contact with water they produce environmental contaminants including hydrofluoric acid (CDC n.d.).
- Thermal runaway is similar to fire in that it can lead to a catastrophic chain reaction, or **thermal runaway propagation**, if it is able to heat nearby battery cells beyond certain thresholds.
- If oxygen is present, **thermal runaway can also start a fire** as surrounding materials are overheated or damaged surrounding materials and with buildup of flammable gases.
- However, thermal runaway is distinct from fire in that it is an internal chemical reaction that **does not involve oxygen or flame**.
- Thus **thermal runaway cannot be stopped by firefighting techniques** to deprive fire of oxygen, nor can it be observed by presence of flame.

Propagation of thermal runaway through an energy storage system can be limited by two methods:

- The first method is to disperse its fuel—in this case, battery cells. As a practical matter fuel is best dispersed prior to a thermal runaway event and as part of the design of the energy storage system. This can be done by building a system with sufficient physical and/or thermal barriers between cells, modules, and racks.
- The second method is to cool thermal runaway enough to interrupt the chain reaction to surrounding cells. In practice, this has been most frequently attempted by application of large volumes of water spray, albeit with risk of worsening the situation depending on battery chemistry and packaging, arcing from energized equipment, chemical reaction and runoff (e.g., production of flammable gases, hydrofluoric acid), and/or steam-related damage to the system.

Water spray in controlled lab experiments has been shown to inhibit thermal runaway propagation temporarily and with extremely large volumes of water (Zhang et al. 2021; Long et al. 2013.). In practice, thermal runaway propagation in large stationary systems has not been successfully “extinguished” (a misleading fire-related term) by emergency responders once it starts. Limitations on exactly where water can be safely applied, coupled with the very large volumes of water needed, have made water spray as an emergency treatment of thermal runaway mostly ineffective with stationary energy systems in practice. Future system and site designs may improve the effectiveness of water applications. Overall, proactive and preventative measures to slow or limit thermal runaway through energy storage system design and to contain its impacts through site configuration are essential components of an effective risk management approach.

When faced with actual thermal runaway, industry literature and case studies indicate emergency responders’ most effective response is to focus on site containment rather than on trying to “extinguish” thermal runaway—especially if responders do not have specific information about what it would take to stop or slow thermal runaway propagation at a particular site. This containment approach includes efforts to (a) prevent heat and flame from spreading to surrounding area and structures, (b) prevent toxic gas release from harming nearby people and communities, and (c) maintain a safe distance from the storage system and allow thermal runaway to self-extinguish. In the section below, “Case Studies of Safety-Related Events” we highlight some of the unmistakably brave but largely unsuccessful trial-and-error

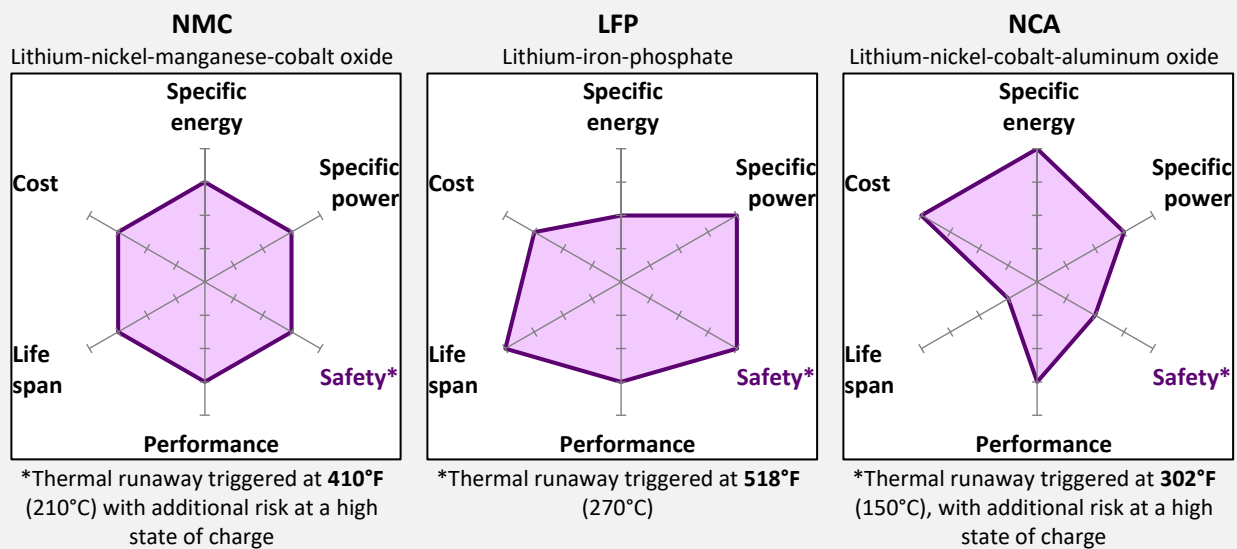
emergency responders have gone through when attempting to extinguish or slow thermal runaway propagation once it starts.

How Lithium-Ion Chemistries Compare

Underlying battery chemistries differ in how prone they are to thermal runaway and this is an important safety risk factor to consider. Battery chemistries have other tradeoffs that must also be considered in order to develop a market-ready and scalable technology (Figure 1).

In 2021 the dominant chemistry in global stationary battery energy storage markets—and in California’s stationary battery energy storage fleet—is **lithium-nickel-manganese-cobalt oxide (NMC)**. NMC measures relatively well across many dimensions, including energy and power ratings, safety, performance under heat and cold, life span, and cost. Thermal runaway is typically triggered at 410°F (210°C) with additional risk at a high state of charge (Cadex 2019). In practice, however, cost and supply chain issues with cobalt, plus rare but dramatic safety failures and public scares, have driven developers and electricity system planners to consider alternative chemistries. Wood Mackenzie projects NMC market share in global stationary energy storage to drop from 60% in 2020 to 30% in 2030 (Wood Mackenzie 2020).

Lithium-iron-phosphate (LFP), by comparison, is projected to grow from 15% market share in global stationary battery energy storage in 2020 to 35% by 2030 (Wood Mackenzie 2020). LFP generally measures better in safety, power rating, and life span compared to NMC, with the tradeoff of a lower energy rating. Previously higher cost than NMC, LFP total installed costs dropped slightly below NMC by the end of 2021 (Viswanathan et al. 2022). LFP is more tolerant of full charge and high voltage, but it has higher stationary energy losses than NMC. Thermal runaway is typically triggered at a higher temperature of 518°F (270°C) regardless of state of charge (Cadex 2019). LFP is considered one of the safest lithium-ion chemistries.



Note: Higher score reflects more desirable characteristics, e.g., higher cost score means lower cost.
 Source: Modified from (Cadex 2019) and using updated cost data from (Viswanathan et al. 2022).

Figure 1: Key tradeoffs of lithium-ion battery chemistries.

Lithium-nickel-cobalt-aluminum oxide (NCA) also has a substantial global market share: about 15% in 2020. Wood Mackenzie projects NCA's market share to grow to about 20% by 2030 (Wood Mackenzie 2020). NCA is lower cost compared to NMC, but it measures worse in safety. Thermal runaway is triggered at a lower temperature of 302°F (150°C), with additional risk at a high state of charge as with NMC (Cadex 2019).

Risk Management of Complex Systems

Risk management of a complex system is a difficult process of addressing many layers of risks that are interrelated. Throughout this paper we refer to four layers of risk: points of failure, failure modes, system risks, and residual risk.

Points of failure. An energy storage system has many components especially considering the number of individual battery cells required for a lithium-ion battery system. Lithium-ion systems involve about 5,000 cells per MWh of capacity, which scales up to millions of cells making up the 300+ MWh systems being installed in the 2020s. Each cell and other component of the system is a potential **point of failure**—the risk of which can be minimized via quality control, testing, and ongoing monitoring and maintenance but cannot be entirely eliminated.

Failure modes. Failure of a single component (such as one cell) has the potential to trigger thermal runaway and instigate a cascading catastrophic event. Ex post investigations into actual events have yielded valuable information about how potential points of failure translate into **failure modes**. Failure modes are essentially points of failure expressed in the context of a broader situation, like overheating due to a short circuit or flaws in hardware design.² Development and refinements of industry-wide codes and standards, and adhering to them proactively, are crucial to addressing the risks of failure modes.

System failure. Risk management of an energy storage installation must also recognize it as a complex system in which failure modes can emerge and combine in unexpected ways. Failures within a complex system can have a multiplier effect on undesirable outcomes that are not well understood simply by summing the risks of individual failure modes. Ex post investigations into actual events and codes and standards address complex system risk to some degree and help us to understand how to mitigate large fires, thermal runaway propagation, and hazardous explosions. But guidance from these investigations and from even the most up-to-date codes and standards must be supplemented with local and site-specific expertise on a specific installation.

Residual risk. A prudent risk management approach accepts that, despite even the best risk management and mitigation activities, failures will happen at unexpected times and in unexpected places. Strategies to address this residual risk include plans to slow and contain fire, thermal runaway, and explosion if they do happen, and fail-safes to avoid cascades into the worst outcomes for people, the environment, property, and reliability.

² For example, see failure modes outline in (Chiu et al. 2013).

Safety Events in Context

All electricity infrastructure creates safety risk that needs to be managed through a combination of technology, design, and ongoing maintenance and operating procedures—battery storage systems are not unique in this. But as a relatively new technology and application many states are poised to invest significantly in, safety-related events draw widespread media coverage and public concern. What we know so far is that although these events are rare they can have dramatic impacts on the health of individuals and surrounding communities. These events can also have secondary impacts on the reliability of electricity supply to customers and on ratepayer costs.

At the end of 2019 the U.S. had 163 large-scale battery storage systems installed with 1,000 MW/1,700 MWh capacity with an average system size of 6 MW (EIA 2021). Up to that time only three known major safety-related events occurred, involving only 2% of installations. Those events resulted in destruction of 18 MW/14 MWh of battery storage, or only 1–2% in terms of total U.S. capacity. All three situations, however, involved significant emergency response efforts, including one event in the city of Surprise, Arizona that resulted in severe injuries to several responders. All three also occurred about 1–2 years after initial installation of the systems.

Between beginning of 2020 and end of September 2021 large-scale battery storage MW capacity tripled in the U.S.: increasing by 2,200 MW to almost 3,300 MW (EIA 2022). Most of these new installations occurred in 2021. Within that timeframe in 2020 and 2021 another two events occurred at large-scale battery storage systems in the U.S. Relative to prior events, both were apparently minor events and perhaps reflecting evidence of industry improvements in safety risk management. It remains to be seen what unmanaged risks will be revealed at newly installed sites, as well as aging existing sites, over the next few years.

Each safety-related event gives the industry an opportunity to learn and improve battery technology and how we use it. These events drive a great deal of the industry's discussion around how to improve safety best practices and address risk management gaps that are revealed. The next sections summarize historical safety-related events, known and observed impacts, and lessons learned.

Case Studies of Safety Events

This section includes summaries of ten safety-related events with stationary energy storage battery systems in the U.S., plus discussion of events in Australia and South Korea.³ To collect this information we reviewed technical reports, media and public accounts, and various assessments within the fire safety and energy storage research and policy communities. Our selected case studies include:

- **Kahuku Wind Farm**—August 2012 in Kahuku, Hawai'i
- **Elden Substation**—November 2012 in Flagstaff, Arizona
- **Franklin Facility**—August 2016 in Franklin, Wisconsin
- **South Korea**—2017–2018 in various locations
- **McMicken Battery Energy Storage System**—April 2019 in Surprise, Arizona
- **Industrial Warehouse**—June 2021 in Morris, Wisconsin
- **Grand Ridge Energy Storage Project**—July 2021 in Marseilles, Illinois
- **Victorian Big Battery Project**—July 2021 in Geelong, Australia
- **Dallas Energy Storage/Moss 300**—September 2021 in Moss Landing, California
- **Dallas Energy Storage/Moss 100**—February 2022 in Moss Landing, California
- **Valley Center Battery Storage Project**—April 2022 in Valley Center, California
- **Elkhorn Battery Energy Storage Facility**—September 2022 in Moss Landing, California

To understand the implications of each event, we focused on the following questions:

- What were the circumstances?
- Was anyone hurt?
- How much damage was done?
- How was electricity supply reliability affected?
- What were the main contributing factors to the impacts and severity of the event?

³ For information about other safety events around the world we recommend starting with the Electric Power Research Institute's BESS Failure Event Database (EPRI 2022).

Kahuku Wind Farm—August 2012

Kahuku, Hawai'i

First Wind's wind plus storage installation in Kahuku included 30 MW of wind turbines and a 15 MW/10 MWh transmission-sited lead acid energy storage system contained within a 2,500 square foot warehouse. The energy storage system provided continuous voltage regulation, smoothing minute-to-minute wind output. Operations began in February 2011, followed by three incidents involving the energy storage system: one in April 2011, another in May 2011, then again in August 2012.

Due to the August 2012 event, wind farm operations were interrupted and the energy storage system was destroyed. It took over a year to bring the wind farm back online. In the process, First Wind abandoned an expansion project at the site. The energy storage system was replaced with a new Dynamic Volt-Amp Reactive (DVAR) system to provide the needed voltage regulation and the wind farm was brought back online in February 2014.

Emergency responders delayed entering the warehouse building for 7 hours in August 2012 due to safety concerns and awareness of chemical and physical hazards from the prior two incidents at the site. They attempted use of a dry chemical extinguisher and water directly to the site with limited success. Efforts then were focused on containing the observed fire to the energy storage building until it self-extinguished. The fire burned for 13 hours and smoldered for 36 hours, releasing significant smoke in the process. The warehouse building was apparently not designed for the hazard level and parts of it collapsed. No persons were reported harmed. A 2016 hazard assessment for the National Fire Protection Association concluded that, "These fires [at Kahuku wind farm] demonstrate the need for better understanding of ESS fires so that the owner and fire departments responding to these incidents can better prepared in the event of a fire." The event apparently resulted in about \$30 million in damage.

Exact cause of the August 2012 fire was not publicized, although first alarm activation and visual evidence indicates fire origination within an inverter cabinet. Cause of the first two fires in April and May 2011 was linked to undersized capacitors contained in the battery system's inverters and led to litigation among the involved parties. The battery developer Xtreme Power had a significant portion of its business in Hawai'i and it filed for Chapter 11 bankruptcy protection in January 2014.

Elden Substation—November 2012

Flagstaff, Arizona

Arizona Public Service's (APS) lithium-ion energy storage system at Elden substation was a 0.5 MW/1.5 MWh distribution-sited pilot project installed in 2011 to better understand the benefits of storage including improved renewable integration and distribution system utilization. The battery system included



Image Credit: Jay Armstrong

Figure 2: Event at Kahuku Wind Farm—August 2012.

16 closed cabinets, each containing 28 sealed modules of 24 cells, within a 28'x8.5'x11.5' container configured to be transportable on a flatbed trailer. The system was installed within the substation fencing.

In November 2012, after about 11 months of operations, the system was destroyed by fire and thermal runaway. The Flagstaff Fire Department observed 10–15' flames and smoke upon arrival to the site. Responders were initially instructed not to flow water within 50–75' of the fence housing the substation and they reported not being aware of the specific chemical hazards at the time. Flame lengths grew to an observed 50–75' during the event. Responder efforts were to prevent fire spread to nearby forested area, extinguish fire, and cool the equipment. One responder experienced chemical exposure upon removal of a safety mask. The fire department cleared and turned the site over to APS after about 1.5 hours.

An in-depth root cause analysis conducted by experts at Performance Improvement International (PII) did not determine exact cause but identified 5 primary factors (“failure modes”) that contributed to the event. Two out of five contributing factors involved component failures initiating the event. PII found (a) severely discharged cells below the minimum voltage threshold (a measure of state of charge) at the origin of thermal runaway, and (b) controller software and system design that allowed and continuously attempted charging of cells below that threshold. The system previously had a “near miss” with thermal runaway due to these two factors in May 2012 and PII found the issues were not resolved at the time.

Another two factors contributed to thermal runaway propagation through the battery system. Hardware design was one contributing factor, including issues with design of the water cooling system, water leakage, insufficient separation of cells, and inability to isolate individual banks. The presence of electric faults was another contributing factor, including material and placement of busbars that caused melting and ground faults that aided thermal runaway.

The fifth contributing factor created delays in responding to the situation. Inadequate monitoring—including no temperature alarm, no status signal on failed relays, no daily checks, and alarms going to unattended stations—prevented situational awareness needed to address component failures more proactively. It should also be noted that the system vendor and utility’s emergency response plan did not prepare first responders enough to understand the specific hazards of the site nor immediate course of action for containing the fire and cooling the equipment.



Image Credit: Arizona Public Service

Pre-Event



Image Credit: Performance Improvement International

Post-Event

Figure 3: Event at Elden substation—November 2012.

Franklin Facility—August 2016

Franklin, Wisconsin

S&C Electric Company (S&C)—an electric power systems engineering and manufacturing company—manufactured and assembled power quality and energy storage systems at its facility in Franklin, Wisconsin.

In August 2016 a fire occurred at the facility involving a partially-assembled system of lithium-ion batteries within its shipping container (Figure 4). The energy storage system's fire suppression and containment system was nonfunctional as it was only partially assembled. Over 20 fire departments were involved, apparently due to the severity of the fire and weather conditions. Smoke was observed upon arrival at the site. One firefighter injury was initially reported although not part of final descriptions of the event. The Franklin Fire Department estimated damages on the order of \$3 million.

S&C stated the fire began in one of the DC power and control compartments of a battery rack within the energy storage system while the system was under construction. Once the fire started it spread to the adjacent batteries and initiated thermal runaway. Upon arrival, responders reviewed material safety data sheets, applied an alcohol-resistant aqueous film-forming foam per those instructions, then applied water for cooling which did not extinguish but helped limit thermal runaway to within the container. Thermal runaway self-extinguished after a few hours.

S&C's final public assessment of the situation included emphasis on a need for better information and training on fighting battery fires, noting that material safety data sheets are not enough. The company also outlined five elements of their approach to safety:

- Intelligent controls (their battery and power conversion system);
- Protective devices (fuses, AC circuit breakers, DC circuit breakers);
- Fire suppression systems;
- System design (power conversion system, battery components and systems, compartmentalization, and containerization); and
- Container.



Image Credit: National Fire Protection Association

During Event



Image Credit: Greentech Media

Type of Storage System Involved

Figure 4: Event at S&C's Franklin Facility—August 2016.

South Korea—2017–2018

various locations

Energy storage systems in South Korea have received global attention in part due to the volume of fire incidents reported. The government launched a 5-month investigation in late 2018 and suspended deployment of new energy storage system installations in response to 23 fires in 2017 and 2018. Results of the investigation were announced in June 2019, identifying four primary causes:

- **Inadequate battery protective systems**, e.g., protection against overvoltage and overcurrent
- **Faulty operating procedures** and inadequate management of operating environment, thus exposing ESS to repeated condensation and dryness, leading to accumulated dust inside battery module and broken insulator
- **Improper installation** of energy storage systems
- **Lack of overall control systems** and lack of comprehensive protective and management system in which EMS, PMS, and BMS with different manufacturers were not operated together by a system integration (SI) business

In addition, investigators noted a practice of aggressive daily cycling, from zero state of charge to full state of charge, which is known to severely degrade batteries.

McMicken Battery Energy Storage System—April 2019

Surprise, Arizona

Arizona Public Service's (APS) lithium-ion McMicken energy storage system was a 2 MW/2 MWh distribution-sited project installed in 2017 for the purposes of facilitating new renewables on the grid with voltage regulation and power quality services. The system was installed adjacent to a substation and within its own fencing. The system included 27 racks, each containing 14 modules of 28 cells, within a 50'x13'x12' container the size of a large shipping container.

In April 2019, after about 2 years of operations, the system was destroyed by rapid thermal runaway over the course of 3 hours followed by an explosion. The system's temperature monitor, laser-based Very Early Smoke Detection Apparatus (VESDA), and Novec 1230 clean agent gas fire suppression system reportedly operated and responded as designed. A passerby reported smoke about 45 minutes after VESDA registered an alarm condition and the Surprise Fire-Medical Department was dispatched. At about the same time the battery developer (Fluence) and APS apparently had notified authorities. The first fire engine arrived about seven minutes later (at 5:49 p.m.). The Fire-Medical team observed a toxic smoke emanating from the battery storage facility and called for backup. About 30–40 minutes later the Peoria Fire-Medical Department's HAZMAT team arrived. The HAZMAT team entered the fenced area several times to take readings and assess the situation. About 1.5 hours later (at 8:01 p.m.) they opened the door to the container and an explosion described as "a jet of flame that extended at least 75 feet outward and an estimated 20 feet vertically" severely injured four members of the HAZMAT team. Additionally, four members of the Fire-Medical team plus one officer from the Surprise Police Department were sent to a hospital for overnight observation for chemical exposure. Post-event assessments and cleanup at the site were particularly difficult as the storage system was at a high (90%) state of charge.



Image Credit: DNV GL

Pre-Event

Image Credit: DNV GL

Post-Event

Figure 5: McMicken Battery Energy Storage System event—April 2019.

APS and LG Chem (the battery manufacturer) each commissioned technical analyses on the event which disagreed on the exact origin of thermal runaway. The APS analysis, conducted by DNV GL, found that thermal runaway was initiated by a voltage drop within one faulty battery cell. The LG Chem analysis, conducted by Exponent, rebutted this conclusion and instead found the cause to be a heat source external to the cells. A third analysis, conducted by Underwriters Laboratories (UL), did not address the topic of initial component failure and instead focused on emergency response and applicable design codes and standards. UL also issued a formal response to the DNV GL report to address inaccuracies it saw in DNV GL's description of the development process, scopes, and test methodologies of UL standards.

Beyond event initiation, the DNV GL report identified several factors contributing to event severity:

- **No thermal (or physical) barrier** between cells; module-to-module barriers insufficient
- The **fire suppression system** was designed to contain initial small fires and not to prevent or suppress cascading thermal runaway; no bulk cooling mechanism (such as water).
- Once the clean agent was discharged it took **45 minutes to visually confirm the potential fire** and dispatch emergency responders.
- **Flammable gases** accumulated from thermal runaway with no ventilation.
- **Emergency responders** did not have an extinguishing, ventilation, or entry procedure in the event of cascading thermal runaway that would produce significant flammable gases.

DNV GL made several recommendations to address these contributing factors. It also noted a need for a more comprehensive risk management approach that would include input from, and communication among, the battery manufacturer, developer, and procuring utility.

UL's analysis identified several contributing factors related to lack of proactive education and training of emergency responders on battery energy storage system hazards and emergency procedures, limitations in sensory and communications systems for situational awareness, lack of ventilation to prevent an explosive concentration of gases, and a fire suppression system not designed for explosion protection. UL made a number of recommendations to improve situational awareness, and emergency preparedness and response.

This event halted APS' energy storage development opportunities. Two years later, in 2021, APS resumed energy storage development with enhanced safety protocols including:

- System design that anticipates failure; and
- Outdoor placement at least 100 feet away from any occupiable building space (Spector 2021).

In addition, a storage developer working with APS has highlighted the safety benefits of LFP battery systems and the need to increase coordination with first responders (Spector 2021).

Industrial Warehouse—June 2021

Morris, Illinois

In June 2021 significant thermal runaway propagation in batteries stored in an unlicensed solar and storage industrial warehouse led to a dangerous situation for the surrounding community and emergency responders. The site held approximately 100 tons of batteries.

Smoke and flames were observed over the course of about 1.5 days until contained by concrete, and it took weeks for authorities to declare the site fully under control. About 3,000 homes within a square mile southwest of the site were evacuated for 3 days due to large volumes of toxic smoke emanating from the warehouse. The governor issued a disaster proclamation and The Red Cross supplied food and water to the more than 300 first responders from multiple federal, state, and local agencies and organizations.



Image Credit: ABC7 Chicago

Figure 6: Event at an industrial warehouse in Morris, Illinois—June 2021.

The event started mid-day and responders reportedly began applying water spray until they were told the batteries would explode upon contact with water. By that evening responders had obtained and applied large volumes of a dry fire suppression chemical called Purple-K with no apparent effect. By the next evening, responders had consulted with the Illinois Environmental Protection Agency (IL EPA) and others and decided on an unconventional approach to smother the burning and smoking batteries with 28 tons of concrete. The concrete successfully extinguished visible flames and contained the toxic smoke from thermal runaway. Responders described the decision to use concrete as an effort to buy time while they sought advice and expertise from across the nation on how to best handle the situation.

After application of concrete responders and authorities connected with an expert who explained the nature of thermal runaway, why it was not stopped by the concrete, and why it needs to self-extinguish. Responders then focused efforts on the possibility thermal runaway would “break through” the concrete. They dug a trench to contain chemical runoff in case they would need to apply water spray. They continuously monitored the site and air quality until the site was declared under control.

Complexities with post-event cleanup included the need for residents to wipe down all surfaces with soap and water upon return to their homes, similar cleanup of public sites (such as playgrounds) by responders, and the need for contractors entering the warehouse to have appropriate protective equipment. Environmental damages are yet to be determined. According to the IL EPA may include contaminated runoff, air contaminants, and/or hazardous wastes. Two days after the event started the IL EPA referred the responsible party (Superior Battery Inc.) to the Illinois Attorney General’s Office for enforcement. In its referral the IL EPA requested investigation into the cause of the event, site containment and inspection, site cleanup and restoration, and procedures to prevent future events. Superior Battery agreed to begin cleanup in October 2021 and is facing two lawsuits for danger to the public and the environment.

Grand Ridge Energy Storage Project—July 2021

Marseilles, Illinois

Invenergy LLC’s 31.5 MW/12.2 MWh Grand Ridge Energy Storage Project was installed in May 2015 for the purposes of providing market-based regulation services. It was built on the site of an existing 210 MW wind farm, an existing 20 MW solar project, and an existing 1.5 MW/1 MWh energy storage system. The battery utilizes lithium iron phosphate chemistry.

In July 2021 an incident at the site destroyed one out of eighteen storage containers—or about 2 MW of the project. No persons were reported hurt, no environmental damage was apparent, and the incident received very little press. Fire was observed in the morning, and by mid-evening the visible flames were extinguished by responders. Responders were able to access the interior of the container and they applied water spray to cool the equipment. A responder reported the ability to apply water spray due to the battery’s lithium iron phosphate chemistry (as opposed to the batteries involved in the Morris, Illinois incident—we are not aware of any advantages of LFP under water spray compared to NMC). Invenergy has said it is conducting an investigation.



Image Credit: Invenergy

Installation Pre-Event

Image Credit: LaSalle County Emergency Management Agency

During Event

Figure 7: Grand Ridge Energy Storage Project event—July 2021.

Victorian Big Battery Project—July 2021⁴

Geelong, Australia

The Victorian Big Battery Project is a 300 MW/450 MWh transmission-sited project installed at the end of 2021. The site design includes 212 Tesla Megapacks, each about 1.5 MW.

In July 2021 two of the 212 Tesla Megapacks were damaged while the project was in the process of initial energization testing. Smoke was initially observed by a site supervisor, then flames were observed shortly thereafter (Figure 8). When responders arrived they applied water externally to nearby exposure equipment and allowed the reactions to self-extinguish. Responders monitored the Megapack temperatures using thermal imaging cameras and drone technology, and in total it took 3.5 days until thermal runaway self-extinguished and the site was declared under control. Energy Safe Victoria (ESV, Victoria's safety regulator) conducted an investigation over the next two months, concluded the event to be a safe failure, and took a number of actions to prevent recurrence. ESV conditionally allowed Tesla to continue energization testing in September 2021. The testing and commissioning process continued and the site officially began commercial operations in December 2021.

The root cause was identified as most likely a cooling system leak in one of the Megapacks. The leak apparently caused an arc fault in the power electronics during the energization testing period, which created a heat spike that initiated thermal runaway in the battery cells. Immediate situational awareness was obscured by various systems not being fully integrated and operational at the time. The Supervisory Control and Data Acquisition (SCADA) system, which reports real-time battery system information to operators, was not functional as it required 24 hours to fully integrate with the project but the Megapacks operated for testing for only 13 hours. Then, when the Megapacks were turned off, the monitoring systems, cooling system, and battery protection system also turned off.

⁴ Ozdemir 2021; ESV 2021; Kolodny 2021; Neoen 2021; Blum et al. 2022.



Image Credit: Fire Rescue Victoria

Figure 8: Victorian Big Battery Project event—July 2021.

How thermal runaway spread to an adjacent Megapack was of particular concern as the systems were evaluated under UL 9540A testing methods and their spacings were designed to mitigate inter-pack propagation. ESV required this issue to be addressed in Tesla’s investigation. ESV also noted that, “Designers are also working to ensure that Megapacks are engineered to fully mitigate the risk of fire propagation from one unit to another under Victorian climatic conditions,” suggesting that propagation to the second Megapack may have been aided by weather factors such as wind, ambient temperature, and/or humidity. An investigation conducted by Fisher Engineering, Inc. confirmed that untested wind speeds were a key contributing factor, reaching up to 36 miles per hour during the event compared to a maximum of 12 miles per hour under the UL 9540A testing environment. In an interview, ESV characterized this situation as a “near miss” when considering an event like this in the context of other times of the year with higher temperatures and stronger winds.

The investigation identified some needed enhancements to procedures, firmware, and hardware. It also noted a clear and effective emergency preparedness and emergency response process involving several parties: the developer (via system designs), facility staff, subject matter experts, and emergency responders. In an interview, ESV shared lessons learned and stressed the importance of (a) regulator engagement in safety review from the time of installation and throughout operations, (b) a better understanding of an installation’s technology and its safety risks, and (c) a better understanding of interactions with the surrounding and natural environment.

California’s Moss Landing Site

Moss Landing, California

The Moss Landing site hosts several large energy storage installations and has been the hub of a string of safety events in northern California.

The site was developed for a natural gas-fired power plant in the 1950s under the ownership of PG&E. In the late 1990s Duke Energy purchased the site and subsequently invested in a major refurbishment that included retirement of the original units 1–5, construction of units 6 and 7, and construction of two new combined cycle units (for more information see CEC 2000). At the end of 2016, then-owner Dynegy retired units 6 and 7. In 2018, Dynegy Inc. merged with Vistra Energy Corp. and Vistra owns the site as of the time of this report.

In late 2018 the CPUC approved two PG&E contracts to develop energy storage on the Moss Landing site. One RA contract with Vistra is for a 300 MW/1,200 MWh installation. The project is also known as “Phase I of the Moss Landing Energy Storage Facility,” “Dallas Energy Storage 1–3,” and “Moss 300.” One engineering/procurement/construction (EPC) contract is with Tesla to develop a PG&E-owned installation. The project is formally known as the “Elkhorn Battery Energy Storage Facility.” In 2020 the CPUC approved another PG&E contract with Vistra for a 100 MW/400 MWh installation known as “Phase II of the Moss Landing Energy Storage Facility,” “Dallas Energy Storage 4,” and “Moss 100.” Moss 300 reached operations in late 2020, and Elkhorn and Moss 100 reached operations in mid-2021.

Each of these installations experienced a safety event over the course of a year (Figure 9). We discuss each event separately in the next few pages. Importantly, each installation reflects a distinct approach to site design. Moss 300 is built inside of a refurbished building that previously housed the retired gas-fired units’ turbines. Elkhorn is built outdoors as an array of Tesla Megapacks—similar in design to the Victorian Big Battery Project. Moss 100 is developed within a new structure placed near the two operating natural gas-fired combined cycle units (Figure 10). In 2022 the CPUC approved another PG&E contract with Vistra to expand the site further with a 350 MW/1,400 MWh installation. Vistra has announced plans to continue building westward (inland) with an additional 750 MW/3,000 MWh energy storage in the future.

	Installation Name	MW	MWh	CPUC Contract Approval	Operating Status	Ownership	Safety Event
1	Dallas Energy Storage 1–3 /Moss 300	300	1,200	Nov 2018	Online Dec 2020	Vistra	Sep 2021
3	Dallas Energy Storage 4 /Moss 100	100	400	Aug 2020	Online Jul 2021	Vistra	Feb 2022
2	Elkhorn Battery Energy Storage Facility	182.5	730	Nov 2018	Online Aug 2021	PG&E	Sep 2022
4	Moss 350	350	1,400	Apr 2022	Under Development	Vistra	n/a

Figure 9: Battery storage installations and timing of safety events at the Moss Landing site.

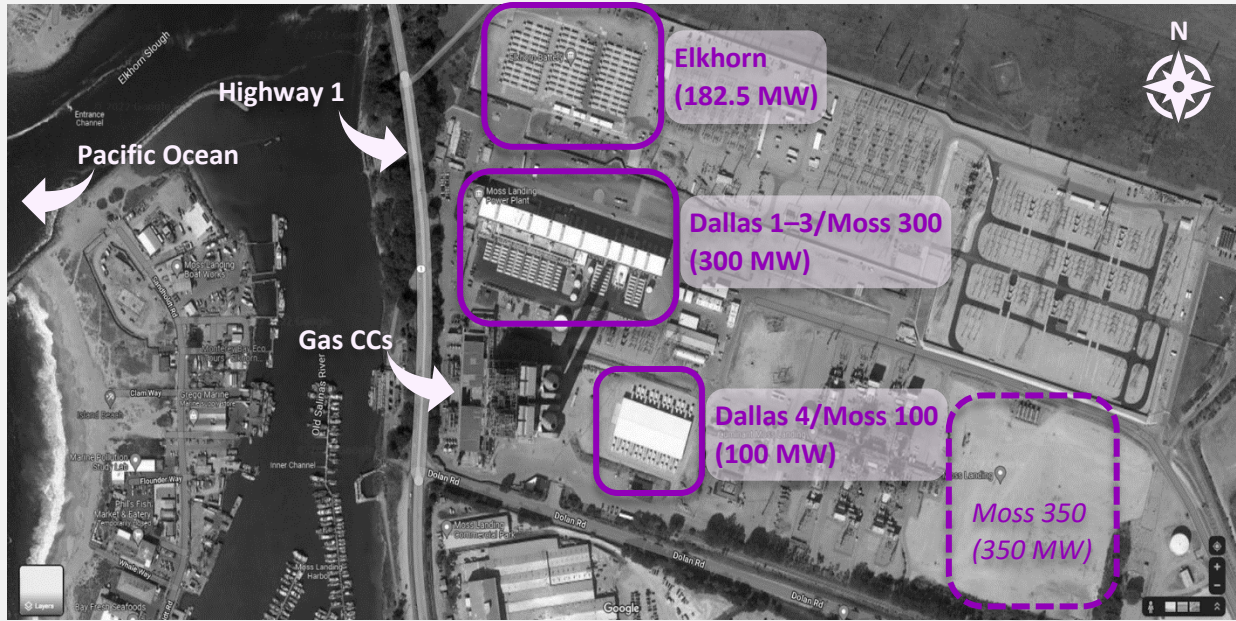


Image credit: Site image from Google Maps; annotated by Lumen.

Figure 10: Configuration of battery storage installations at the Moss Landing site.

Dallas Energy Storage 1–3/Moss 300—September 2021 Moss Landing, California

The Moss 300 installation is a 300 MW/1,200 MWh transmission-sited project owned by Vistra Corp. and installed at the end of 2020. The project includes three 100-MW battery arrays, with a total of 4,539 racks each containing 22 modules (Vistra 2022). The project is located within the Moss Landing site’s existing and refurbished two-story turbine hall (Figure 10, Figure 11). The project is contracted by PG&E for local reliability purposes pursuant CPUC proceedings to replace retired natural gas-fired capacity.



Image credit: Vistra Corp.

Figure 11: Moss 300 building exterior and interior.

In September 2021, the North County Fire Protection District of Monterey County responded to a fire alarm at the Moss Landing site (Principi 2021). When they arrived, no fire was present but battery modules in Moss 300 had overheated and were producing smoke. Hazmat and environmental teams were also called to the scene. After inspection of the situation, emergency responders determined that the batteries were not in thermal runaway and the smoke was originating from other materials surrounding the batteries as the batteries overheated. Seven percent of the battery modules were damaged (almost 7,000 modules, or almost 320 racks), along with other facility equipment. No injuries were reported. In February 2022 another similar safety event occurred at Vistra’s adjacent Moss 100 site. Vistra reportedly postponed its Moss 300 reenergization until further investigations could be conducted. Vistra did not bring the Moss 300 project (mostly) back online until late June 2022 (Colthorpe 2022)—almost a year after the September 2021 incident.

After a 5-month investigation, in January 2022, Vistra released a statement describing the facility, incident findings, and corrective actions (Vistra 2022). Vistra described the origin of the event as the combination of (a) a source of smoke at or near the facility’s air handling unit and (b) due to a programming error, an overly-sensitive Very Early Smoke Detection Apparatus (VESDA) that was prematurely triggered. After the fire suppression sprinkler system activated, hose and pipe leaks sprayed water directly onto battery racks. Water also leaked from the upper floor onto battery racks on the lower floor. This type of water exposure caused short-circuiting and arcing, battery damage, and more smoke—which then led to continued VESDA activation.

Vistra’s corrective actions include complete pressure-testing of the water delivery system, installation of a system to monitor for water leaks, VESDA re-programming, installation of smoke detectors in all air handling units, and sealing gaps in the facility’s upper floor.

This incident at Moss 300 highlights the challenges with water as an effective fire suppressant but a potential risk with energized equipment. The Moss 100 event also highlights the sudden and significant impact safety events have on the electricity grid’s resources: from a safety codes and standards perspective, and in terms of emergency response, this event was a safe failure. However, Moss 300 was on outage almost an entire year, including during the time of the year when California has the greatest need to move solar generation from daytime to avoid solar curtailments (spring) and during September when the grid is most stressed and in need of resources to help meet peak demand.

Dallas Energy Storage 4/Moss 100—February 2022

Moss Landing, California

Moss 100 is a 100 MW/400 MWh transmission-sited lithium-ion battery system installed in July 2021. The battery system is situated within a new standalone structure on the Moss Landing site (Figure 10, Figure 12). The project is contracted by PG&E for system reliability purposes pursuant to the CPUC's integrated resource planning proceedings.

In February 2022, the North County Fire Protection District of Monterey County again responded to an emergency call at the Moss Landing site (Principi 2022). No fire was found at the scene. This time, emergency responders found the Moss 100 fire suppression system was activated and spraying water. Vistra shut down the facility pending investigation and repairs, then brought it back online in late June 2022 along with the Moss 300 project—5 months after shutdown. No injuries from the incident were reported.

At the time of this report, the exact cause is not yet publicly clear. A Vistra statement (Vistra 2022) and news reports indicate that the cause may be similar or the same as the September 2021 safety event at Moss 300. Something triggered the facility's smoke detection equipment which was apparently overly sensitive due to a programming error. Then, apparently (but to be confirmed): the fire suppression system activated and sprayed water, water contacted the batteries due to water hose leak(s), which then caused the batteries to overheat, and surrounding materials released smoke as they melted/scorched.

Like the Moss 300 safety event, this incident at Moss 100 highlights the challenges with water as an effective fire suppressant but a potential risk with energized equipment. The Moss 100 event also highlights the sudden and significant impact safety events have on the electricity grid's resources: from a safety codes and standards perspective and in terms of emergency response this event was a safe failure. However, Moss 100 was on outage for 5 months, and in the time of the year when California has the greatest need to move solar generation from daytime to avoid solar curtailments (spring).



Image credit: Vistra Corp.

Figure 12: Moss 100 building exterior.



Image credit: Terra-Gen.

Figure 13: Valley Center Battery Storage Project.

Valley Center Battery Storage Project—April 2022

Valley Center, California

Terra-Gen’s 140MW/560MWh lithium-ion installation came online in March 2022. The facility is designed as an outdoor array of containers (Figure 13). The project is contracted by SDG&E for system reliability purposes pursuant to the CPUC’s integrated resource planning proceedings.

In April 2022 fire crews responded to a small electrical fire at the site (Roadrunner 2022). The fire triggered the battery system’s fire suppression system which then extinguished the fire. The event was contained to one battery module and no injuries were reported. Further details on the cause of the electrical fire are not publicly available. Although light on data, we included this case study as an example of how properly-functioning fire suppression systems, which are designed to contain initial small fires, play an important role in mitigating safety risks.

Elkhorn Battery Energy Storage Facility—September 2022⁵

Moss Landing, California

The Elkhorn Battery Energy Storage Facility is a 182.5 MW/730 MWh transmission-sited project installed in August 2021. The facility is designed as an outdoor array of 256 Tesla Megapacks (Monterey County 2022c)—similar to the Victorian Big Battery Project. Along with Moss 300, the project is contracted by PG&E for local reliability purposes pursuant CPUC proceedings to replace retired natural gas-fired capacity.

⁵ Most event information from Monterey County 2022a; Monterey County 2022b; Monterey County, 2022c; Monterey County, 2022d; KSBW8 2022.

On September 20, 2022 a fire was detected at about 1:30 a.m. and fire crews arrived shortly thereafter. Fire crews followed a pre-planned strategy, based on their training, to not attempt to extinguish the thermal runaway and to instead focus on protecting surrounding structures with water spray. The fire was extinguished in 5 hours by about 6:30 a.m., then the thermal runaway process continued and released gas (including hydrogen fluoride) into the surrounding community.

Local officials then issued a shelter-in-place advisory and closed nearby roads including Highway 1 in both directions (Figure 10). Residents were told to shut windows and turn off ventilation systems. The surrounding area was monitored for toxic gas levels. The shelter-in-place and road closures were ended at 6:50 p.m. on the same day. The fire was contained to one megapack and no injuries were reported.

Cause of the fire and thermal runaway are unknown publicly as of the time of this report. We included this case study as an example of an effective fire response strategy, and of the importance of communication and knowledge-sharing with the community and local officials.

News reports we reviewed indicated community confusion and concern about the nature and impacts of the toxic gas release. This highlights some challenges in knowledge transfer of safety events to local authorities and their communities. Community impacts from gas release of lithium-ion batteries in thermal runaway reached the national stage over a year prior (June 2021) with the industrial warehouse event in Morris, Illinois. Many important safety lessons were learned in that event that can be helpful to California communities.



Image credit: David Paul Morris/Bloomberg

Facility pre-event



Image credit: KION 46 News Channel

Community gas release during event

Figure 14: Elkhorn Battery Energy Storage Facility—September 2022.

Known and Observed Impacts

Based on these case studies we observe the following known and observed negative impacts of under-managed, under-mitigated, or residual safety risk:

- **Emergency responders and staff**—injury from fire or explosion; chemical exposure (air or contact) such as from released hydrogen flouride (HF) and phosphoryl fluoride (POF3) gases (*see* Larsson 2017).
- **Communities**—chemical exposure, chemical runoff, displacement from homes due to evacuation, shelter-in-place, temporary shut-down of local economy, fears of known and unknown risks.
- **Environment**—release of contaminants of concern, chemical runoff from emergency water spray such as hydrofluoric acid, and fire propagation.
- **Electricity infrastructure**—loss or partial loss of battery system and attached equipment.
- **Other property**—loss or partial loss of surrounding and adjacent structures.
- **Reliability of electricity supply**—outage or permanent loss of storage capacity, outage of other onsite electricity supply (e.g., wind turbines) during event and recovery period.
- Cost, time, and hazards of **post-event investigations and cleanup**.

It should also be noted that the more extreme events create some public backlash and have hindered storage market growth as ex post investigations and risk assessments take place. After the event at McMicken in 2019, for example, Arizona Public Service paused on its energy storage deployment plans for two years. Earlier in 2018, South Korean regulators deployment of new energy storage system installations in response to more than 20 fires in 2017 and 2018.

Lessons Learned from Safety-Related Events

Ex-post studies and assessments of safety-related events provide valuable information on specific failure modes and circumstances leading to catastrophic situations. This information has shaped development of safety codes and standards and other best practices. In addition, we observe several themes in lessons learned from safety-related events that continue to guide efforts to improve safety:

- **A need for more comprehensive and complete proactive risk assessment**—This was explicitly addressed in DNV GL’s report on the McMicken event, but also apparent in the emergency response process of other events (DNV GL 2020). DNV GL noted that manufacturers, developers, operators, and utilities each have unique information on known and possible safety risks; and that they all need to communicate ahead of time to develop an assessment that combines their knowledge into a complete set of known, possible, and unknown hazards.
- Relatedly, a **need for more proactive coordination with emergency responders**—In nearly every safety-related event emergency responders were presented with very limited information on the hazards of the situation on-the-spot. They are consequently required to manage an emergency situation in which they don’t have a full picture of what the hazards are, are not fully aware of the limitations of dry chemical suppressant, are not clear on when/where/how to apply water, and are not sure of when or how to approach or enter the structure. Emergency response plans are

needed that include proactive communication and training for both staff and emergency responders on relevant risks, what emergency events may look like, and how to handle them.

- **Need for integrated system supervisor with complete situational awareness at all times**— Installations designed to operate too remotely and/or with various detection and management systems monitored by multiple separate parties inhibit fast and efficient emergency response. A single integrated platform and/or coordinator for all operating and monitoring systems is needed. Also, events point to a need for situational awareness even when the batteries are offline.
- Codes and standards have evolved rapidly to address many types of component and system-level risks, but within limits. **Risk management activities beyond meeting codes and standards are needed** in order to address secondary impacts like reliability of storage and co-located electricity supply, and to establish broader multi-party coordination and communication protocols such as emergency response plans.
- **Events in other jurisdictions don't reflect some California-specific and local risks and implications**—such as local environmental extremes, grid outages during a heat wave or extreme wildfire weather and how that might affect the storage system, fire propagation from and to the storage system in certain locations, and water supply constraints.

Best Practices and Next Steps

This section summarizes best practices and next steps, drawing from lessons learned from safety-related events; efforts by federal, state, and local agencies; and other efforts by stakeholders and industry experts to enhance safety practices.

We divide risk management and mitigation activities into four components:

- Risk assessment
- Emergency preparedness
- System and site design
- Operations, diagnostics, and maintenance

Risk Assessment

The industry has learned a great deal through experience and ex post investigations about how specific failure modes can manifest, how design and operations can affect fire and thermal runaway propagation risks, and the range of severity of impacts on people and equipment. These events and experiences provide valuable information to guide development of best practices in safety.

As a result, best practices are trending towards more comprehensive proactive (ex ante) risk assessments of battery storage installations. *Who* should conduct an ex ante risk assessment, *why*, and *scope of risks* to assess depend on stakeholder perspective, and defining this perspective and its objective is important for an effective risk management strategy.

We focus on the type of risk assessment of ratepayer-funded installations involving the CPUC and utilities with the dual objective to minimize harm to people, communities, and the environment, and to maximize reliability and quick recovery in the event of a storage component or system failure. We propose the following risk management objective from this perspective:

Safety risk management objective: minimize harm to people, communities, and environment, and maximize reliability and quick recovery in the event of a component or system failure

In a complex system many sources and combinations of failures can contribute to risks. **Underlying battery chemistry and technology**, its inherent safety risks and failure modes, and how sensitive it is to fire and thermal runaway propagation is a key consideration. It is standard practice for manufacturers to provide material safety data sheets and/or emergency response guides which document a battery's chemical hazards and safe handling procedures.

More than a dozen codes and standards have been developed to identify and address safety risks of other **individual components of a battery installation** beyond the batteries themselves, including inverters, capacitors, battery management systems, and energy management systems. Going further, about a half dozen additional codes and standards identify and address risks of various **components assembled into an installation**. These include guides for ventilation and thermal management; for electrolyte spill containment and management; for installation, maintenance, and operations; and for managing electrical, fire, and shock hazards.

To assess risks more holistically at a **complete energy storage system** level (e.g., storage container and all contents and attachments), Underwriters Laboratories developed a test method (UL 9540A) for observation and evaluation of behavior of a replica system in an actual thermal runaway situation. This is a destructive lab test in which thermal runaway is instigated then observed—at the cell level, module level, unit/rack level, and installation level. A favorable test outcome, or “safe” failure, is essentially thermal runaway that self-extinguishes without significant propagation, flaming, or explosion. Less favorable outcomes provide guidance for additional risk mitigation and management that may be needed to meet fire codes and other safety objectives.

Codes and standards for an **entire built environment** (including immediate area and structures surrounding the storage container) identify and address various electrical, fire, and building safety risks. Projects that trigger review under the California Environmental Quality Act (CEQA) undergo additional risk assessment that helps to translate component- and system-level failures into risks to the surrounding people and environment. Tests results under UL 9540A, for example, can be assessed against a specific site plan and local environment in order to determine whether or not something like a fire wall needs to be built to provide extra protection to the surrounding area.

Next Steps for Risk Assessment

In many of the case studies we reviewed it is unclear to what extent the full spectrum of safety risks were assessed in advance and, if they were, how broadly these risks were communicated to all parties involved in risk mitigation and management. These experiences indicate a benefit to both the real-time battery system supervisors and their regulators having a more comprehensive understanding of how a specific battery systems’ electrical and thermal stability can fail, types of hazards that can result, and potential secondary impacts on electricity system reliability and ratepayer costs.

One important next step in risk assessment of the utilities’ energy storage procurements is to inventory and better understand each individual installation’s safety risks. National and international codes and standards identify many—but not all—of the risk factors we observe in actual safety-related events.

Some **local or site-specific factors** may require additional consideration beyond codes and standards. Tests under UL 9540A, for example, are performed within a controlled environment where heat and gas release can be measured. Notably in the Victorian Big Battery Project event flames propagated to a second adjacent Tesla megapack despite the product having been subject to tests under UL 9540A. In its assessment of the event the Australian regulator, Energy Safe Victoria, emphasized a need for designers to consider Victorian climatic conditions to mitigate fire propagation.

Events like the Victorian Big Battery Project and industrial warehouse in Illinois highlight the dangers of gaps in 24/7 real-time situational awareness—even with the batteries offline. Thermal runaway and subsequent fire and propagation is a vulnerability of some batteries regardless of operational status of the battery system. Some additional consideration beyond codes and standards may be needed to better understand **grid or battery system outage as a failure mode**, how the outage might coincide with external stressors (such as a heat wave or high wildfire threat), how the outage affects monitoring and thermal management equipment, and consequences to fire and thermal runaway propagation risks.

Risks to grid reliability and ratepayer costs will certainly require additional consideration beyond codes and standards. After destruction of its battery system in 2012 the Kahuku Wind Farm was shut down for over a year until replacement equipment could be installed. After its September 2021 safety event the

Moss 300 facility was shut down for almost a year, coming (mostly) back online in June 2022 (Colthorpe, 2022). This type of impact on the operability and reliability of energy storage systems and any onsite generation could materially affect ratepayers, but it is not a risk factor considered within the scope of codes and standards. Complete and permanent destruction of the storage system under UL 9540A, for example, would be considered a favorable test outcome as long as flames, gas and chemical release, and explosion are sufficiently contained in that situation.

It should also be noted that **codes and standards are evolving rapidly** as the industry climbs the learning curve of energy storage safety. Safety measures at a new battery system installation could conceivably become out-of-date within months. Older, pre-2018 systems are almost certainly out-of-date with current best practices. Furthermore, consistency in interpretation of codes and standards may be a challenge. It will be up to storage system owners and their regulators to update their understanding of safety risks accordingly and determine if continued status quo operations are acceptable, if retrofits or updates are needed, or if decommissioning would be the best course of action. Although built to safety standards at the time of its installation in 2014, the design of SCE's Tehachapi was severely out of step with codes and standards by 2020 (SCE, 2021). The cost to retrofit to meet current codes and standards was a major factor in the decision to retire the facility in 2021 (SCE, 2021).

Once risks are identified and known, **proactive communication of those risks to all parties involved** is clearly an urgent and essential area for improvement across the industry. Nearly every safety-related event reveals major communication barriers that undermine risk mitigation and management efforts. Poor communication with local authorities and emergency responders is the most visible example of this to the public eye. In several safety-related events, responders were forced to assess risks on the spot by assembling information from various sources including materials safety data sheets, battery system supervisors, outside experts, and responders' own experience with fire and hazardous materials. Less visible is the essential communication among the many parties involved in developing and managing a battery system. In its investigation of the McMicken event, DNV GL observed that a more comprehensive ex ante risk management approach could have been achieved with better communication among the battery manufacturer, developer, and procuring utility on the key risks each party was aware of (DNV GL 2020). DNV GL suggested this knowledge transfer could be facilitated using a Johari window technique to reveal blind and hidden risks (DNV GL 2020).

Emergency Preparedness

No one can fully control or predict when or where a battery system failure mode leads to fire and thermal runaway propagation. Emergency preparedness is a mitigation strategy that assumes fire and thermal runaway propagation will happen, with a more focused objective of setting the stage for fast and efficient real-time mitigation of harm to people, communities, and environment. The more severe an emergency, the more mitigation objectives narrow to the most important goal: to protect the lives and health of people. Actual safety-related events have provided valuable information on where gaps in emergency preparedness lie and how they can be addressed.

Site designs are improving to include better situational awareness tools, egress for staff or other persons onsite, access for emergency responders, structural integrity to withstand extreme conditions, and physical buffers to protect surrounding buildings and landscape. Updates to codes and standards and their applications in recent years include enhancements to firefighting, preparedness for explosive gases and vapors, spill control, smoke detection, and signage. It has also become increasingly clear that site design

and installation must include the input of local emergency responders who are experts in their community's terrain and weather patterns. Dr. Paul Christensen, a professor of electrochemistry at Newcastle University whose research focuses on lithium-ion battery fires and safety, summarizes this point: "If the design is approved, and then the fire and rescue service are brought in—that's the wrong way around." (Kolodny 2021) He also recommends:

- A monitoring system that provides internal visibility (e.g., within the storage container) at any time;
- Enough clearance for responders to maneuver around a system and direct a hose if needed; and
- Water access including onsite hydrants and capped pipes into the storage container to allow flooding with an external hose if needed (Kolodny 2021).

These guidelines are consistent with observations and activities of other experts in the field. Various monitoring systems need to be accompanied by staffing and process strategies for 24/7 situational awareness—whether the storage system is online or offline and under a variety of grid and environmental conditions. Depending on battery chemistry and technology, battery system designs may need to be modified in order to allow safe application of water in an emergency.

Proactive and robust emergency training and coordination among battery system operators, supervisors, and emergency responders is another area where the industry is adapting and innovating quickly. Best practices in managing safety risks acknowledge that all parties involved in real-time emergency response need to be trained on types of possible failures and hazards, how to identify them and assess the overall situation, and what course of action to take in different situations. Knowledge-sharing on the characteristics of thermal runaway, how it is different from fire, and its chemical and explosive hazards has been an area of particular focus. Emergency responders likely have significant experience with fire and/or chemical hazards, but they may have never seen or managed thermal runaway. In many of the safety-related events we observe fire responders put significant time and effort into attempting to extinguish thermal runaway like a fire, putting themselves at risk in the process.

Next Steps for Emergency Preparedness

As with risk assessment, national and international codes and standards are being continuously improved and they provide valuable guidance. But gaps remain particularly in consideration of certain installation-specific factors as well as communication among many parties to develop a coordinated risk management approach.

The most urgent and fruitful next step in emergency preparedness is for battery system owners and supervisors, their regulators, and state and local emergency responders to coordinate in a battery system **safety knowledge exchange**, then formalize that exchange through an established training program and updates to state and local requirements for battery systems (e.g., city fire code, permitting review process). In New York, for example, the New York State Energy Research and Development Authority (NYSERDA) developed training webinars and a guidebook for local governments including model (boilerplate) law for storage system requirements, a model permit application, a model inspection checklist, and information on how battery system safety is incorporated into state fire and building codes. They also provide technical assistance to local authorities.

Deep investigation into the McMicken event revealed that very little information was communicated to responders, forcing them to improvise in a dangerous situation. Timelines of other safety-related events indicate a similar problem at other sites. In addition to this general knowledge exchange, each installation must have an **emergency response plan** that is readily available in an actual emergency and that provides enough information to responders for quick situational assessment and best course of action. The plan should include information on how to identify and address thermal runaway specifically. It may be helpful to consult with the emergency responder community on the most useful elements of an emergency response plan from their perspective. A widely vetted emergency response plan could then be used as a model for other installations.

System and Site Design

Ideally, system design is informed by an initial risk assessment that points to specific design needs, such as ventilation for hazardous gas buildup. It should also be informed by an emergency preparedness strategy that identifies useful design-related emergency tools such as perimeter clearance and placement of fire hydrants. Although still in development, best practices in energy storage safety have made significant progress towards this type of integrated risk management strategy and that is what we highlight here.

A battery system contains many design elements and we do not discuss them exhaustively in this paper. But as the industry learns lessons from safety-related events a few design elements have become central to the discussion of best practices.

Lithium-ion NMC has thus far been the dominant **chemistry for battery storage systems**, but cost and supply chain issues with cobalt, plus rare but dramatic safety failures and scares, have driven developers and electricity system planners to consider alternative chemistries. After the event at McMicken in 2019 Arizona Corporation Commission (ACC) Commissioner Sandra D. Kennedy found utility-scale energy storage based on certain lithium-ion chemistries to “not [be] prudent and create unacceptable risks.” The letter suggested consideration of other technologies such as liquid flow, liquid metal, zinc air, nickel iron, and magnesium batteries—and consideration of non-battery storage. In 2021, Tesla announced plans to switch its Megapack chemistry from NMC to LFP (Plautz 2021). Wood Mackenzie projects NMC market share in global stationary energy storage to drop from 60% in 2020 to 30% in 2030, and for LFC to grow from 15% to 35% (Wood Mackenzie 2020).

If NMC is the chemistry of choice, its inherent safety risks can be addressed by **increasing physical and thermal barriers** between cells, modules, and/or racks. This reduces energy density and may increase costs but is crucial to slow or contain thermal runaway once initiated. Self-contained installations placed outside with sufficient perimeter clearance helps to protect surrounding structures and landscape. If the installation is placed within an existing building or structure, such as a warehouse, it may need additional physical separation.

The industry has pushed to improve **operating tools and fail-safes** in response to safety-related events. Battery management systems should be able to detect and fully isolate deteriorated or malfunctioning cells. Energy management systems should be tuned to avoid operational extremes that risk rapid cell damage (such as extreme charge discharge ramps, depth of cycle, states of charge). Battery and energy management systems should be able to talk to each other in order to better recognize and address

potential issues—such as thermal runaway risk as a function of temperature and state of charge (Rosewater 2019).

Monitoring and situational awareness equipment are essential to address a failure mode quickly before it cascades into fire or thermal runaway propagation. This equipment includes temperature monitors and smoke detection equipment like a laser-based Very Early Smoke Detection Apparatus (VESDA). Other gas monitoring equipment may be needed to detect thermal runaway absent fire. Several safety-related events revealed the need for internal camera systems to visually confirm possible fire quickly and remotely without endangering staff or emergency responders. Depending on the system type and local climate a temperature control system (such as HVAC) and/or additional environmental monitoring such as humidity or fine particle sensors may be needed.

The purpose of a **fire suppression and response system** has caused some confusion around safety-related events, mainly tied to confusion around the distinction of fire versus thermal runaway. Installation of a fire suppression and response system is standard practice and essential for control of fire within a system—hopefully before thermal runaway can initiate (fire can trigger thermal runaway). Once thermal runaway is initiated, however, fire extinguishing agents and techniques will not stop it. In practice, thermal runaway is only contained by (a) the physical and thermal barriers that were put in place as part of the system and site design and (b) if it can be safely applied, large volumes of water to cool the reaction. Accordingly, system and site designs that include **extra water supply** and a layout to safely apply water spray or flood the storage system are emerging as a best practice (Kolodny 2021). Designs with proper **ventilation** to prevent buildup of flammable gases such as via Pacific Northwest National laboratory's IntelliVent have become part of best practices (PNNL n.d.).

Containerized systems placed outdoors on a concrete pad, away from occupiable spaces, fenced, and with sufficient space for emergency responders to maneuver has become a standard site design for utility-scale storage. The site should include a fluid collection system for emergency response efforts to contain any potential chemical runoff. Appropriate signage is needed to warn staff and responders of various hazards. State and local fire and building codes may need to be updated to address the safety of a system placed indoors, even if the system is containerized.

Next Steps for System and Site Design

Next steps in system and site design safety best practices largely follow gaps in risk assessment as previously discussed. Lessons learned from safety-related events point to the need for designs to **better address local or site-specific factors, grid or battery system outage as a failure mode, and secondary risks to reliability and ratepayer costs.**

Large-scale systems trend towards containers placed outdoors but for **customer-sited installations** the best approach is not as clear. Safe placement and installation depends on a number of factors including local environmental conditions and it requires close scrutiny by local fire and permitting authorities. It also requires input from developers and installers to ensure rules are feasible and do not create major barriers to storage adoption. This process can be complex. The New York City Buildings Department and New York City Fire Department worked with stakeholders for several years to develop codes for indoor placement that fit both safety objectives and available technology (St. John 2017; St. John 2020). In general, any indoor placement—even in a garage—potentially restricts air flow and endangers the surrounding structure, property, and/or nearby people in the event of fire or thermal runaway. On the

other hand, outdoor placement in unfavorable climate conditions like a hot, dusty, desert-like environment can pose its own risks. In 2017 Standards Australia drafted safety rules in a best practices guide (AS/NZS 5139) that would essentially ban indoor installation of lithium-ion battery systems (Colthorpe 2017a; 2017b). After significant backlash from stakeholders Standards Australia re-worked and finalized the rules in 2019 to allow indoor installation with certain protections like use of cement sheeting when adjacent to occupied space, clearance from appliances and room egress, and exclusion from certain hidden enclosed spaces and habitable rooms (Podder 2021).

The industry has identified **better integration of the many management and control systems** operating an energy storage system as a key area of needed improvement. Better integration means management and control systems that talk to each other, that incorporate inputs from **situational awareness monitors**, that communicate with an integrator software that performs higher-level system optimization functions, and that reports comprehensive status and operational data to system supervisors. As the industry makes technological advances in this space it would be prudent for both new and existing energy storage systems to utilize best in class software to the extent feasible. One potential advancement, for example, is in machine learning-based **predictive maintenance**. The software would utilize all historical system data and look for complex statistical relationships to proactively alert system supervisors of potential issues needing inspection. A key component to this and other integrator solutions that rely on a complete picture of the energy storage system will be **improved data collection and retention** of the system's data.

For an existing system, we recognize that migrating to new IT systems is a difficult process and that it requires testing to ensure the new system is working as designed. Similar issues arise with **compliance with rapidly-changing codes and standards** in general. Energy storage owners, regulators, and permitting authorities will need to monitor codes and standards developments and have a decision-making framework for allowing status quo operations, or requiring a retrofit versus retirement assessment of energy storage systems that no longer meet the latest safety guidelines.

Large utility-scale battery systems may need to be **tested and designed to address grid or battery system outage as a failure mode** in order to minimize (a) delays in responding to failures, and (b) secondary risks to reliability and ratepayer costs. The system should be designed to provide 24/7 situational awareness even in a grid or storage system outage situation. If the grid is functioning normally but the storage system is on outage, the configuration should be designed to minimize downstream outages of co-located electricity supply (such as solar or wind).

Operations, Diagnostics, and Maintenance

Best practices are trending towards hardware and software solutions to improved operations, diagnostics, and maintenance in system designs. But even with the best information technology in place, system design alone cannot address the need for 24/7 oversight and routine checks by knowledgeable and experienced persons.

An energy storage system can include many different detection and management tools, such as temperature and smoke detection, fire suppression, battery management, power control, energy management, and site management. These systems can potentially be monitored by different parties. Best practices trend towards **providing supervisory staff with a more complete picture** of what is going on with the system. Beyond technological solutions this includes a streamlined communication and

decision-making process. It also needs to include training on the types of risks involved and types of situations that could occur, and training on an emergency response plan.

The industry has learned a great deal in the past few years about how different **operating use cases and operating practices** affect battery cell degradation and safety risks. Experiences in South Korea, for example, highlighted the need to avoid overcharging and aggressive cycling. Those experiences also demonstrated the need to consider and manage the day-to-day operating environment. Warranty or operating contract terms may set preferred operating parameters as a starting point. Battery system operators may also set their own preferred state of charge operating range (to avoid very low and very high states of charge) or ramping and cycling operating limits.

Routine visual inspections and equipment tests are a standard practice. In California, for example, the County of Santa Clara Development Services Office developed a field inspection checklist for residential battery storage systems in 2015 that has been held as a model for the state. In 2017 the CPUC's Safety and Enforcement Division (SED) collaborated with stakeholders to develop an inaugural safety assessment checklist (CPUC SED 2017). The checklist includes an emergency plan; regular inspections of equipment by companies or utilities; and inspections of interconnection equipment, structure, detection and protection systems, fans and cooling equipment, electrical, battery module, and hazardous materials policy by SED inspectors.

Next Steps for Operations, Diagnostics, and Maintenance

Data collection and retention is becoming increasingly important as system monitoring, management, and control tools advance and as operating use cases become more sophisticated. Experts at Sandia National Laboratories emphasize the importance of data acquisition systems that include remote access and 30 or more days of on-board memory (for example see Schenkman 2020). Larger data reservoirs will likely be needed as systems become more predictive. Relatedly, regular **software and firmware updates** are becoming increasingly important, including tests and checks to ensure the updates installed and are performing correctly (for example see Fioravanti et al. 2020).

As discussed earlier in system and site design, **predictive maintenance tools** using machine learning models are on the technological frontier. These models would utilize all historical system data and look for complex statistical relationships to proactively alert system supervisors of potential issues needing inspection.

Routine inspections by local or state authorities will need to consider the increasing importance of software and firmware in energy storage operations, diagnostics, and maintenance.

Key Observations

Energy storage safety is a complex risk management issue that involves many parties.

Historically, major safety-related events involved about 2% of large-scale battery storage installations in the U.S., occurred within 1–2 years of installation, and destroyed about 1–2% of its capacity.

In 2021 and 2022, safety events in California are increasing along with the state’s acceleration of large lithium-ion battery installations.

The definition of energy storage system “safety” from an electricity regulator’s perspective considers both direct impacts (e.g., harm to humans, the environment, or surrounding communities) and impacts on the reliability and resilience of electricity supply.

Lithium-ion batteries are unique from other electricity supply resources in their ability to rapidly decompose through a fire-like and extremely hazardous process called thermal runaway.

Public and industry confusion over the difference between fire and thermal runaway is a major source of misinformation on appropriate management of lithium-ion battery safety risks.

Although large volumes of water spray can help limit thermal runaway propagation, thermal runaway is best addressed proactively through energy storage system design and site configuration.

Lithium-ion chemistries differ in their vulnerabilities to thermal runaway. The industry is trending away from the more sensitive NMC chemistry and towards the more stable LFP chemistry.

Risk management of complex systems must consider multiple layers of risk, including: points of failure, failure modes, system risks, and residual risk.

Case studies of safety-related events demonstrate a range of failure modes and situations, offer valuable information on known and observed impacts, and point to themes in lessons learned.

Risk management and mitigation activities include four components: risk assessment; emergency preparedness; system and site design; and operations, diagnostics, and maintenance.

California’s next steps in risk assessment are to investigate (a) **local or site-specific factors** that heighten or change risk profiles, (b) **grid or battery system outage** as a failure mode, (c) **risks to grid reliability and ratepayer costs**, (d) procedures for keeping the storage fleet up with **codes and standards**, and (e) methods for **improving communication and knowledge-sharing** among all parties involved.

California’s next steps in emergency preparedness are to build a robust and ongoing **safety knowledge exchange** and ensure **emergency response plans are well vetted within that safety community** including local officials and emergency responders.

California’s next steps in system and site design mirror next steps in risk assessment, including steps to (a) ensure designs **better address local or site-specific factors, grid or battery system outage as a failure mode, and secondary risks to reliability and ratepayer costs**; (b) **improve battery management systems, control systems, and learning from historical system data**; and (c) consider **retrofit versus retire** options for systems that no longer meet codes and standards.

California’s next steps in operations, diagnostics, and maintenance include improvements in **data collection and retention, software and firmware upkeep, and predictive maintenance**.

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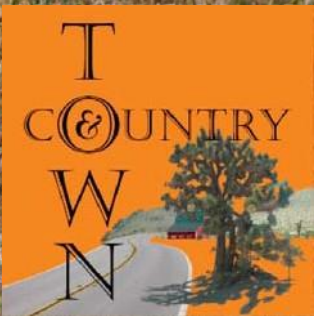
ATTACHMENT 5

The Antelope Valley Area Plan.

Antelope Valley Area Plan

Town & Country

June 2015



Los Angeles County Department of Regional Planning

Antelope Valley Area Plan

*Town &
Country*

June 2015



Antelope Valley Area Plan

To enrich lives
through effective



To improve the quality
of life through
innovative and
resourceful physical
and environmental
planning, balancing
development and June 2015

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Antelope Valley Area Plan

Town & Country

June 2015

TABLE OF CONTENTS	iii
Chapter 1 INTRODUCTION	I-1
I. PURPOSE AND VALUES	I-2
Purpose	I-3
Values	I-3
II. BACKGROUND	I-4
Setting	I-4
History	I-4
Past and Current Planning Efforts	I-5
Community Participation	I-5
III. VISION AND STRATEGY	I-5
Vision Statement	I-5
Issues	I-6
Rural Preservation Strategy	I-6
IV. HOW TO USE THE ANTELOPE VALLEY AREA PLAN	I-8
Definitions	I-8
Area Plan Format and Content	I-8
Applicability.....	I-8
Guidance	I-10
Chapter 2 LAND USE ELEMENT	LU-1
I. BACKGROUND	LU-2
Purpose	LU-2
Issues	LU-2
Vision and Strategy	LU-2
II. GOALS AND POLICIES	LU-3

III.	LAND USE POLICY MAP	LU-5
	Rural Town Center Areas	LU-5
	Rural Town Areas	LU-6
	Rural Preserve Areas	LU-7
	Economic Opportunity Areas.....	LU-7
	Public and Open Space Land	LU-8
	Land Use Legend	LU-9
IV.	ADDITIONAL CONSIDERATIONS	LU-11
	Special Management Areas	LU-11
	Major Planned Infrastructure Projects	LU-11
	Utility-Scale Renewable Energy Production Facilities	LU-12
	Palmdale Regional Airport	LU-12
	Amendments to the Land Use Policy Map	LU-13
Chapter 3	MOBILITY ELEMENT	M-1
I.	BACKGROUND	M-2
	Purpose	M-2
	Issues	M-2
	Vision and Strategy	M-2
II.	GOALS AND POLICIES	M-2
	Travel Demand Management	M-2
	Highways and Streets	M-3
	Truck Traffic	M-4
	Regional Transportation	M-5
	Local Transit	M-5
	Bikeways and Bicycle Routes	M-6
	Trails	M-6
	Pedestrian Access	M-7
Chapter 4	CONSERVATION AND OPEN SPACE ELEMENT	COS-1
I.	BACKGROUND	COS-2
	Purpose	COS-2
	Issues	COS-2
	Vision and Strategy	COS-2
II.	GOALS AND POLICIES	COS-3
	Water Resources	COS-3
	Biological Resources	COS-4

	Scenic Resources	COS-5
	Agricultural Resources	COS-6
	Mineral Resources	COS-7
	Air Quality	COS-7
	Energy	COS-7
	Dark Night Skies	COS-10
	Vegetation Conservation	COS-10
	Green Building	COS-10
	Open Space	COS-11
Chapter 5	PUBLIC SAFETY, SERVICES AND FACILITIES ELEMENT	PS-1
I.	BACKGROUND	PS-2
	Purpose	PS-2
	Issues	PS-2
	Vision and Strategy	PS-2
II.	GOALS AND POLICIES	PS-3
	Fire Hazards	PS-3
	Geological Hazards	PS-3
	Flood Hazards	PS-3
	Law Enforcement	PS-4
	Disaster Preparedness and Emergency Response	PS-4
	Parks and Recreation	PS-5
	Schools	PS-6
	Libraries	PS-6
	Health Facilities	PS-6
Chapter 6	ECONOMIC DEVELOPMENT ELEMENT	ED-1
I.	BACKGROUND	ED-2
	Purpose	ED-2
	Issues.....	ED-2
	Vision and Strategy	ED-2
II.	GOALS AND POLICIES	ED-3
	High-Tech Manufacturing.....	ED-3
	Transportation and Logistics.....	ED-3
	Agriculture.....	ED-3
	Renewable Energy.....	ED-4
	Construction and Housing.....	ED-4
	Recreation, Tourism and Filmmaking.....	ED-5
	Regional Economic Development Strategies.....	ED-5

Chapter 7 COMMUNITY-SPECIFIC LAND USE CONCEPTS COMM-1

I. BACKGROUNDCOMM-2
PurposeCOMM-2
Vision and StrategyCOMM-2
Community Standards DistrictsCOMM-2

II. LAND USE CONCEPTSCOMM-3
ActonCOMM-3
Antelope AcresCOMM-6
CrystalaireCOMM-7
El Dorado and White Fence FarmsCOMM-8
Elizabeth Lake and Lake Hughes (The Lakes)COMM-8
FairmontCOMM-10
GormanCOMM-11
Green ValleyCOMM-11
Juniper HillsCOMM-12
Lake Los AngelesCOMM-13
LakeviewCOMM-14
Leona ValleyCOMM-15
Littlerock and Sun Village (Southeast Antelope Valley)COMM-16
LlanoCOMM-18
NeenachCOMM-19
PearblossomCOMM-20
Quartz HillCOMM-21
RooseveltCOMM-22
Three PointsCOMM-24

Chapter 8 PLAN IMPLEMENTATION IMP-1

I. INTRODUCTION.....IMP-2

II. IMPLEMENTATION PROGRAMS.....IMP-2
Significant Ecological Areas Program.....IMP-2
Agricultural Resource Areas Program.....IMP-2
Economic Opportunity Areas.....IMP-3
Transfer of Development Rights Program.....IMP-4
Scenic Drives Program.....IMP-5
Antelope Valley Community Standards Districts.....IMP-6

Appendix A Conservation and Open Space Element Resources APP-A-1

Chapter 1

Chapter 1: Introduction

Table of Contents

I.	Purpose and Values.....	I-2
	Purpose	
	Values	
II.	Background.....	I-4
	Setting	
	History	
	Past and Current Efforts	
	Community Participation	
III.	Vision and Strategy.....	I-5
	Vision Statement	
	Issues	
	Rural Preservation Strategy	
IV.	How to Use the Antelope Valley Area Plan.....	I-8
	Definitions	
	Area Plan Format and Content	
	Applicability	
	Guidance	

I. PURPOSE AND VALUES

Purpose

The purpose of the Antelope Valley Area Plan (Area Plan) is to achieve the communities' shared vision of the future through the development of specific goals, policies, land use and zoning maps, and other planning instruments. This shared vision is articulated in the Town and Country Vision Statement, which was developed by the Antelope Valley communities in various workshops in 2008. It goes:

The Antelope Valley region is a wonderful place to live, work, play, and raise a family. The Valley is a mosaic of unique small towns in which rural lifestyles are cherished. These diverse towns are unified by an extraordinary environmental setting that includes agricultural lands, natural open spaces, expansive mountain views, diverse ecological habitats, and dark night skies. The Valley's network of trails, roads, and transit link these dispersed towns to each other and to a wide offering of local-serving businesses and quality social, educational, cultural, and recreational services and facilities.

Residents, business owners, and property owners collaborate with a responsive local government to ensure that life in the Antelope Valley region will continue to be exciting, enjoyable, and rewarding. The growing population's need for additional housing and employment opportunities is balanced against the need to respect historical heritage and preserve the natural environment. Public improvements and private developments are sustainable, conserving available resources and relying on alternative energy sources, and complement the small scale of existing rural towns. A wide array of activities and opportunities for youth ensure that the Valley's high quality of life will be sustained for future generations.

The Area Plan is a blueprint for future development and conservation in the Antelope Valley that informs decision-making at all levels to help ensure that individual activities are consistent with, and supportive of, the communities' vision. It is a tool for residents, elected officials, planners, service providers, and developers. Each group will use the Area Plan in different ways, but all are guided by its vision, goals, and policies. Residents will use the Area Plan as a benchmark in attaining their aspirations for the development and preservation of their communities. Elected officials and planners will refer to the Area Plan when allocating resources to address residents' most important issues and priorities. Service providers will use the Area Plan as a guide for deciding which infrastructure and improvement projects should be undertaken and which programs should be established or improved. Developers will look to the Area Plan's goals and policies in deciding what to build, including location, character, and appearance.

As a component of the Los Angeles County General Plan, the Antelope Valley Area Plan refines the countywide goals and policies in the General Plan by addressing specific issues relevant to the Antelope Valley, such as community maintenance and appearance, and provides more specific guidance on

elements already found in the General Plan. The General Plan provides guidance on all issues not covered in the Area Plan.

The Area Plan also helps further the countywide objective of reducing greenhouse gases in order to meet the goals of the California Global Warming Solutions Act of 2006 (Assembly Bill 32) and California's Sustainable Communities and Climate Protection Act (Senate Bill 375), which aim to achieve reductions of greenhouse gases. Los Angeles County has undertaken countywide measures to address these mandates, including adoption of the Green Building, Drought Tolerant Landscaping, and Low Impact Development Ordinances in 2008. The Area Plan strengthens these efforts by including goals and policies to support local development practices and initiatives to reduce greenhouse gas emissions. Implementation of the Land Use, Mobility, and Conservation and Open Space Elements contained in this Area Plan cumulatively affect the future reduction of greenhouse gases both locally and regionally.

Values

All aspects of the Area Plan are informed by a set of core values that ground and guide the Area Plan. In order to best serve the common interests represented in this Area Plan, planning values outline the shared responsibilities of the many partners who will work together to transform goals and policies into a realized vision. The core values of the Antelope Valley Area Plan are:

1. **Collaboration:** The issues and actions identified in the Area Plan are multi-dimensional and complex. As such, it takes a collaborative effort to accomplish the Area Plan's goals. Working in partnership with individuals from public agencies, private organizations and throughout the community, participants in planning and implementation of the Area Plan can come together to achieve the community's vision.
2. **Participation:** The dedicated commitment and ongoing participation of community members, service providers and elected officials will ensure that the Area Plan's implementation over time remains in line with the communities' vision. Community participation also demonstrates to elected leaders and service providers that constituents support the implementation of the Area Plan and expect results.
3. **Accountability:** By adopting this Area Plan, elected leaders have expressed their commitment to achieving the communities' vision by adhering to the Area Plan's goals and policies and by using the implementation actions to guide their work. Land use decisions will be made to benefit the needs of the community as a whole and not individual interests. Accountability means that all stakeholders take responsibility for their respective components of the Area Plan.
4. **Stewardship:** In order for the Area Plan to be effective in achieving the community's goals, people who live, learn, work, and play in the Antelope Valley will have to take an active role in ensuring the Area Plan's timely and thorough implementation. Community members and service providers can and should provide feedback on the insights into the Area Plan's effectiveness.

5. **Balance:** As the diverse and sometimes conflicting needs of current and future stakeholders evolve, the tools within the Area Plan create a framework which allows for balanced decisions to be made. For residents of the Antelope Valley, achieving a balance will unfold gradually. This shall be achieved by encouraging growth and development in appropriate areas of the Antelope Valley and ensuring that these enhance the quality of life of the communities without compromising their rural character.

II. BACKGROUND

Setting

The Antelope Valley planning area is bounded by the Kern County border to the north, the Ventura County border to the west, the Angeles National Forest (inclusive) to the south, and the San Bernardino County border to the east. It excludes the Cities of Lancaster and Palmdale. This area covers approximately 1,800 square miles and includes over two dozen communities.

For a map of the Antelope Valley and the immediate vicinity, please see Map 1.1: Planning Area Boundary.

History

The historic development of the Antelope Valley started in 1876 with the completion of the Southern Pacific Railroad line from San Francisco to Los Angeles via the Antelope Valley. Many communities began to develop, including Lancaster, Palmdale, Rio del Llano and Littlerock, all dependent upon stock raising, dry farming and fruit orchards.

The World War II years brought the development of Edwards Air Force Base and a doubling of the Antelope Valley population. Military defense work expanded in the 1950s, and Palmdale Airport emerged as a national center for jet testing. The latter part of the decade saw the start of an economic downturn throughout the country that slowed military investments in Antelope Valley projects.

The final decades of the 20th century saw the Antelope Valley emerge with major new housing opportunities as vast acreages were subdivided for affordable tract homes. Lancaster and Palmdale incorporated as independent cities, and rural communities continued to grow. Farming regained its status as a productive employer, but the area continued to develop without balancing the growth in housing with a corresponding growth in jobs and investment in infrastructure. Today, many who live in the Antelope Valley commute to jobs in other parts of the Los Angeles Basin. New local commercial centers are expanding the shopping, entertainment and employment opportunities of Antelope Valley residents. For additional information on the setting and history of the Antelope Valley, please see Background Report.

Past and Current Planning Efforts

The previous Antelope Valley Areawide General Plan was adopted by the Los Angeles County Board of Supervisors on December 4, 1986. It contained Valleywide goals and policies pertaining to land use, housing, community revitalization, community design, human resources, circulation, public services and facilities, governmental services, environmental resource management, noise abatement, seismic safety, public safety, and energy conservation. This Area Plan replaces the previous Antelope Valley Areawide General Plan in its entirety.

This Area Plan covers issues that were important in 1986 and are still important to the communities; for example, managing growth, minimizing disruption of ecological resources, placing development away from natural hazards, and ensuring a variety of housing types and costs. This Area Plan also addresses new issues that have emerged in recent years; for example, maintaining agricultural uses, improving mobility, developing renewable energy resources, and curbing greenhouse gas emissions.

Community Participation

The Area Plan is the result of a highly inclusive and extensive community participation program launched in the fall of 2007. Through a series of 23 community meetings, residents and other stakeholders worked alongside planners to develop a shared vision of the future, identify community issues, draft proposals for the future, and prioritize their recommendations, forming the foundation of the Area Plan.

Building on the foundation laid by the communities, planners partnered with other County departments to explore the recommendations, refine the proposed goals and policies, plan for program implementation, and gather support to ensure success. Plan development is an iterative process, and in this case, the communities were included in the earliest steps of development and subsequent rounds of review. The Area Plan began with, and will be realized by, the dedicated residents and stakeholders who have committed, and will continue to commit their time, energy and interests to the Antelope Valley.

III. VISION AND STRATEGY

Vision Statement

At the heart of the County's approach to community planning is the idea that the Area Plan is an adopted version of the communities' aspirations for the future. Collectively, those aspirations amount to a community vision, based on shared values and common goals. The communities reached consensus on the following vision statement:

The Antelope Valley region is a wonderful place to live, work, play, and raise a family. The Valley is a mosaic of unique small towns in which rural lifestyles are cherished. These diverse towns are unified by an extraordinary environmental setting that includes agricultural lands, natural open spaces, expansive mountain views, diverse ecological

habitats, and dark night skies. The Valley's network of trails, roads, and transit link these dispersed towns to each other and to a wide offering of local-serving businesses and quality social, educational, cultural, and recreational services and facilities.

Residents, business owners, and property owners collaborate with a responsive local government to ensure that life in the Antelope Valley region will continue to be exciting, enjoyable, and rewarding. The growing population's need for additional housing and employment opportunities is balanced against the need to respect historical heritage and preserve the natural environment. Public improvements and private developments are sustainable, conserving available resources and relying on alternative energy sources, and complement the small scale of existing rural towns. A wide array of activities and opportunities for youth ensure that the Valley's high quality of life will be sustained for future generations.

This vision of the Antelope Valley's future serves as a touchstone through the planning process, and it is reflected in the land use map, goals, and policies that comprise the Area Plan.

Issues

Through the planning and visioning process, the County identified issues of Valleywide significance that, it determined, were best addressed in a comprehensive and coordinated manner. In anticipation of future growth, the planning effort focused on ways to manage this growth and addressed the need for balance on the following issues:

1. Preservation and enhancement of each unique town's rural character, allowing for continued growth and development without compromising the rural lifestyle;
2. Preservation of open space around existing towns, in order to preserve hillside areas and significant ridgelines, conserve biological resources, provide opportunities for recreation, and make more efficient use of existing infrastructure in the core areas;
3. Planning for integrated circulation systems, including bikeways, walkways, and multi-purpose trails;
4. Conservation of significant resources, including agricultural lands, mineral resources, water supply, and scenic areas;
5. Preservation of public health, safety, and welfare, through identification of natural and environmental hazards, including noise, seismic, fire, and airborne emissions, and designation of land uses in an appropriate manner to mitigate these impacts; and
6. Coordination on enhancing public and community services such as law enforcement, fire protection, and parks.

Rural Preservation Strategy

The Area Plan's Rural Preservation Strategy addresses issues of Valleywide significance in a manner that builds upon the communities' vision statement. While each community in the Antelope Valley possesses its own identity, they are all unified in the pursuit of preserving the rural lifestyle and the rural

character of the region. This rural character is what makes the Antelope Valley so unique and valuable to the rest of Southern California.

The term “rural” is defined by the following characteristics:

- Living in a low density environment without high intensity land uses, such as regional commercial centers;
- A natural, peaceful, quiet setting, with the ability to find a sense of solitude;
- Views of adjacent natural areas by day, such as hillsides and ridgelines, and views of starry skies by night;
- Agricultural and equestrian uses that are sensitive to the land; and
- An absence of infrastructure generally found in urban and suburban areas, including but not limited to curbs, gutters, sidewalks, street lighting, and traffic signals.

The Rural Preservation Strategy is based on four types of environments – rural town center areas, rural town areas, rural preserve areas, economic opportunity areas – that serve different purposes. Collectively, these environments preserve the rural character of the region, conserve environmental resources, and protect residents from potential hazards while allowing for additional growth and development. For more information on these environments, please see Chapter 2: Land Use Element.

Rural town center areas are the focal points of rural communities, serving the daily needs of residents and providing local employment opportunities. The majority of new locally-oriented public facilities and new locally-oriented commercial uses should be directed to these areas. These areas will provide pleasant pedestrian environments and will be accessible by a range of transportation options to reduce vehicle trips. Some of these areas will allow for a mix of commercial and residential uses.

Rural town areas provide a transition between rural town center areas and rural preserve areas, as they are occupied by a mix of residential and light agricultural uses. Residents living in these areas are willing to forego urban infrastructure and services in order to live in a rural environment. The majority of new residential development should be directed to these areas, provided that such development is consistent with the existing community character and allows for light agricultural, equestrian, and animal-keeping uses where appropriate. These areas will provide transportation linkages to rural town center areas and other nearby destination points.

Rural preserve areas are areas outside of the Town Areas, which are largely undeveloped and generally not served by existing or planned infrastructure and public facilities. Many of these areas contain environmental resources, such as Significant Ecological Areas, Scenic Resource Areas, and Agricultural Resource Areas. In addition, many of these areas contain safety hazards, such as Seismic Zones, Very High Fire Hazard Severity Zones, and Flood Zones. The primary benefit of these areas is that they provide habitat for regionally significant biological species while simultaneously providing scenic value to residents. A secondary benefit of these areas is that they contain natural resources which provide economic opportunities. Development in these areas should be limited to single family homes at very low densities, light and heavy agricultural uses, including equestrian and animal-keeping uses, and other uses where appropriate.

Economic opportunity areas are defined clusters of land along the routes of two new proposed major infrastructure projects in the Antelope Valley, namely the High Desert Corridor and the Northwest 138 Corridor Improvement Project. These areas were identified as having tremendous potential for economic growth and development. Thus, any development induced by these two infrastructure projects should be guided to these areas so that the areas around them can be preserved and maintained at low density, or agricultural uses. This is intended to balance the growth and development which the two projects will undoubtedly bring, with the general intent of this Area Plan to preserve the ecological value and rural character of the Antelope Valley.

The Rural Preservation Strategy necessitates a “trade-off” between preserving rural character and developing additional infrastructure, as infrastructure improvements are typically funded by increased property tax revenues and developer fees. In rural town center areas and rural town areas, the amount of potential development allowed by this Area Plan will be equal to, or greater than, the amount of potential development allowed by the previous Area Plan. Therefore, those areas are likely to benefit from increased property tax revenues and developer fees, which can help fund additional infrastructure. In rural preserve areas, the amount of potential development allowed by this Area Plan will be far less than the amount of potential development allowed by the previous Area Plan. Therefore, rural preserve areas are unlikely to benefit from increased property tax revenues and developer fees, which may make it difficult to fund additional infrastructure. The Area Plan acknowledges this “trade-off” by directing additional infrastructure to rural town center areas and rural town areas, where the placement of additional infrastructure may be more cost-effective and environmentally sensitive, and not to rural preserve areas, where the placement of additional infrastructure may not be necessary. Residents of rural preserve areas should be prepared to forego additional infrastructure in order to live in a very remote rural environment and enjoy the benefits offered by such an environment. On the other hand, the economic opportunity areas provide an opportunity for the Area Plan to maximize the investment that state and regional agencies are bringing into the area, while still achieving the general goal of rural preservation in the Antelope Valley.

IV. HOW TO USE THE ANTELOPE VALLEY AREA PLAN

Definitions

The following definition shall apply only as it specifically appears in this Area Plan and shall not be used in any other context outside of this Area Plan.

“Legal lot” means any lot created in compliance with the provisions of the Subdivision Map Act, or would qualify for a conditional certificate of compliance as provided in the Subdivision Map Act. Where a conditional certificate of compliance is reviewed by the County, the conditions imposed therein will be based on those required at the time the lot was created, including land use density and required area under the zoning code.

Area Plan Format and Content

The Area Plan is organized into eight chapters. Chapter 1 (Introduction) presents the Area Plan's purpose and values, the geographic area, and the communities' vision statement. Chapter 2 (Land Use Element) discusses how the communities' vision translates into a development pattern through the concept of land use. Chapter 3 (Mobility Element) describes the multi-modal approach to moving around the Antelope Valley. Chapter 4 (Conservation and Open Space Element) describes conservation efforts to address potential threats to natural resources. Chapter 5 (Public Safety, Services and Facilities Element) provides measures to ensure services are in place to maintain the safety and welfare of residents. Chapter 6 (Economic Development Element) provides the blueprint for the planning area to build a healthy and sustainable economic base that will drive development and private-sector led conservation and preservation of open space in the area. Chapters 2 through 6 contain goals and policies specific to each chapter's respective topic but all work jointly to comprehensively implement the overall vision. Chapter 7 (Community-Specific Land Use Concepts) highlights each established town and describes its land use form in more detail. Finally, Chapter 8 (Plan Implementation) describes future planning activities that will be undertaken to further implement the goals and policies of this Area Plan. Appendix A includes descriptions of the Significant Ecological Areas within the Antelope Valley Area Plan.

Applicability

The following provisions shall apply to complete applications filed prior to the effective date of this Antelope Valley Area Plan.

The applicant can choose whether the application will be reviewed for consistency with the previously adopted Antelope Valley Areawide General Plan or this Antelope Valley Area Plan. In either case, approval of the application is not guaranteed.

If an application is reviewed for consistency with the previously adopted Antelope Valley Areawide General Plan, the applicant may modify the application prior to consideration by the Regional Planning Commission, Hearing Officer, or Director. The modification will be reviewed for consistency with the previously adopted Antelope Valley Areawide General Plan if it does not change the housing type (e.g., from single family to two family or multifamily) nor increase:

- The residential density;
- The floor area or lot coverage of non-residential space;
- The amount of grading; or
- The area of ground disturbance.

A modification may necessitate the submittal of revised, updated, or additional materials and reports, such as site plans, elevations, and oak tree reports. In addition, a modification may necessitate

additional environmental review pursuant to the California Environmental Quality Act and the County's environmental review procedures.

Modification to an application that is already approved but not used, can be reviewed for consistency with the previously adopted Antelope Valley Areawide General Plan if it is found to be in substantial conformance with such application as determined by the Director. Otherwise a modification shall be considered a new application and shall be reviewed for consistency with this Antelope Valley Area Plan.

If an approval is used and has a grant term, the approved use may be maintained until the end of the grant term. At the end of the grant term, the use shall be subject to the Antelope Valley Area Plan policies in effect at that time. During the grant term, a modification to the approved use will be reviewed for consistency with the previously adopted Antelope Valley Areawide General Plan if the modification is found to be in substantial conformance with such application as determined by the Director. Otherwise, a modification to the approved use shall be subject to the Antelope Valley Area Plan policies in effect at that time.

If an approval is used and does not have a grant term, the approved use may be maintained in perpetuity unless a time limit is specified in the Zoning Code. In addition, all applicable non-conforming use provisions of the Zoning Code shall apply to the approved use. A modification to the approved use will be reviewed for consistency with the previously adopted Antelope Valley Areawide General Plan if the modification is found to be in substantial conformance with the use originally approved as determined by the Director. Otherwise, a modification to the approved use shall be subject to the Antelope Valley Area Plan policies in effect at that time.

Guidance

The Antelope Valley Area Plan is a component of the Los Angeles County General Plan. All of its maps, goals, policies, and implementing actions must be consistent with the elements of the Countywide General Plan. Users should be guided by the following:

- **General Plan Applicability:** Should any areas of conflicting interpretation arise, unless specifically noted, the provisions of the Countywide General Plan shall prevail.
- **Comprehensive Area Plan:** The Land Use Policy Map is never to be interpreted as a stand-alone document, but must be interpreted in light of applicable written policies in the Area Plan.
- **Equally Weighted Policies:** No policy, whether in written or diagram form, shall be given greater weight than any other policy in evaluating the policy intent of this Antelope Valley Area Plan.
- **Vision and Rural Preservation Strategy:** The interpretation of policy should be governed by the Vision and Rural Preservation Strategy of the Antelope Valley Area Plan.

- **Established Town Descriptions:** Descriptions of established towns in Chapter 7 are intended to provide more detailed descriptions of existing land use patterns, local character, and desired local development patterns, and should be referred to in addition to the remainder of the Area Plan in planning for local projects.
- **Non-Conforming Uses:** All legally established uses in existence at the time of adoption of this Antelope Valley Area Plan are deemed to be consistent with this Area Plan, although Zoning Ordinance provisions regarding Non-Conforming Uses may apply.
- **Undersized Parcels:** Existing legal lots may be developed (following current development requirements) regardless of lot size. For example, a 10 acre parcel designated Rural Land 20 (1du/20ac) may still develop one home.
- **Pending Projects:** Completed applications filed prior to the effective date of this Area Plan shall be allowed to be reviewed for consistency with the previously adopted Area Plan. Projects may be maintained as originally approved provided the approval is still valid and has not expired. Any subsequent changes of use or intensity shall be subject to the policies of this Area Plan.
- **Community Standards Districts:** Community-specific zoning regulations shall be consistent with the goals and policies of this Area Plan. Such regulations shall be instituted only when a unique or detrimental condition exists within a community that prevents implementation of this Area Plan.
- **Regulatory Codes:** Title 21 (Subdivision) and 22 (Zoning) of the Los Angeles County Code provide detailed development guidelines that work to implement this Area Plan. Project applications shall refer to these codes, including Community Standards Districts, to ensure that development and land use activities are compatible with the zoning and to not threaten the health, safety, and welfare of the communities.
- **Staff Consultation:** While the Antelope Valley Area Plan is meant to be a guide for the public in determining allowable uses of private property, the public is encouraged to consult with members of the County's planning staff prior to investing in the preparation of development plans that might later prove to be inconsistent with the Antelope Valley Area Plan.

In addition to the direction provided by this Area Plan, new development and land use activities are regulated by many agencies other than the Department of Regional Planning. Obtaining approval for certain types of actions may require proof of the availability for public services, fair-share provisions for public facilities, and other permitting. The applicant for any such application is advised to consult with all applicable departments and agencies.

Chapter 2

Chapter 2: Land Use Element

Table of Contents

I.	Background.....	LU-2
	Purpose	
	Issues	
	Vision and Strategy	
II.	Goals and Policies.....	LU-3
III.	Land Use Policy Map.....	LU-5
	Rural Town Center Areas	
	Rural Town Areas	
	Rural Preserve Areas	
	Economic Opportunity Areas	
	Public and Open Space Land	
	Land Use Legend	
IV.	Additional Considerations.....	LU-12
	Special Management Areas	
	Major Planned Infrastructure Projects	
	Utility-Scale Renewable Energy Production Facilities	
	Palmdale Regional Airport	
	Amendments to the Land Use Policy Map	
	 LIST OF TABLES	
	Table L-1: Land Use Legend	

I. Background

Purpose

Land use is the act of defining compatible activities and built forms in order to determine their appropriate distribution within a given area. Land use authority is given to local governments to shape the physical environment by recognizing daily needs and directing future long-term changes in housing, business, recreation, and open space.

This Land Use Element contains two major components, the Land Use Goals and Policies, and Land Use Policy Map, which explain how development and preservation of land should occur in the Antelope Valley. The Land Use Goals and Policies articulate how the Area Plan's Vision Statement and Rural Preservation Strategy will be achieved by setting out intended land use outcomes. As a visual reflection of the Land Use Goals and Policies, the Land Use Policy Map provides land use designations that establish locations for various types and densities of land use in the unincorporated Antelope Valley. The Land Use Policy Map determines the highest intensity of future development that the land can accommodate within a certain timeframe.

Issues

Over the last few decades, the Antelope Valley experienced surges of development pressures. Policymakers and citizens gained greater knowledge of how new development contributes to environmental degradation, resource scarcity, and natural hazard risks. Accordingly, local governments needed to balance increased growth with obligations to protect existing natural resources. These new obligations, combined with a better understanding of the importance of balancing rural and urban areas in Los Angeles County, have created a new model for regional development. This new model, which directs new investment to areas with existing and/or planned services and facilities and away from areas with natural hazards and environmental resources, will shape land use in the Valley, with policies that emphasize resource efficiency, economic growth, and the preservation of rural character. Over the next 20 years, this Element will balance growth and economic development, the desires of residents to preserve their rural way of life, and the need for hazard avoidance and mitigation to determine the level of development that these factors can support.

Vision and Strategy

The Area Plan's Vision Statement sets the tone of this Element, which is intended to create opportunities for the Antelope Valley to change and grow while preserving the rural lifestyle enjoyed by current residents and support a vibrant economy. The Area Plan's Rural Preservation Strategy guides the Land Use Policy Map, creating a pattern of rural town center areas, rural town areas, rural preserve areas, and economic opportunity areas. Each town in the Valley will flow outward from vibrant town centers that offer a range of housing and local-serving activities for day-to-day living. Lower-density rural residences will surround these town centers, buffered by large contiguous open spaces that contain habitat areas, recreational spaces, and rural economic activities. In addition, the Rural Preservation Strategy and the Land Use Policy Map lay out the framework for how the Antelope Valley

will deal with the changes that result from, and take advantage of the opportunities brought on by, new state and regional infrastructure projects, particularly the High Desert Corridor and the Northwest 138 Corridor Improvement Project.

II. Goals and Policies

Goals LU 1: A land use pattern that maintains and enhances the rural character of the unincorporated Antelope Valley.

- Policy LU 1.1: Direct the majority of the unincorporated Antelope Valley's future growth to rural town center areas and identified economic opportunity areas, through appropriate land use designations, as indicated in the Land Use Policy Map (Map 2.1) of this Area Plan.
- Policy LU 1.2: Limit the amount of potential development in rural preserve areas, through appropriate land use designations with very low residential densities, as indicated in the Land Use Policy Map (Map 2.1) of this Area Plan.
- Policy LU 1.3: Maintain the majority of the unincorporated Antelope Valley as Rural Land, allowing for agriculture, equestrian and animal-keeping uses, and single-family homes on large lots.
- Policy LU 1.4: Ensure that there are appropriate lands for commercial and industrial services throughout the unincorporated Antelope Valley sufficient to serve the daily needs of rural residents and to provide local employment opportunities.
- Policy LU 1.5: Provide varied lands for residential uses sufficient to meet the needs of all segments of the population, and allow for agriculture, equestrian uses and animal-keeping uses in these areas where appropriate.

Goal LU 2: A land use pattern that protects environmental resources.

- Policy LU 2.1: Limit the amount of potential development in Significant Ecological Areas, including Joshua Tree Woodlands, wildlife corridors, and other sensitive habitat areas, through appropriate land use designations with very low residential densities, as indicated in the Land Use Policy Map (Map 2.1) of this Area Plan.
- Policy LU 2.2: Except within economic opportunity areas, limit the amount of potential development within Scenic Resource Areas, including water features, significant ridgelines, and Hillside Management Areas, through appropriate land use designations, as indicated in the Land Use Policy Map (Map 2.1) of this Area Plan.
- Policy LU 2.3: Except within economic opportunity areas, limit the amount of potential development in Agricultural Resource Areas, including important farmlands designated by the State of California and historical farmland areas, through appropriate land use designations with very low residential densities, as indicated in the Land Use Policy Map (Map 2.1) of this Area Plan.
- Policy LU 2.4: Except within economic opportunity areas, limit the amount of potential development in Mineral Resource Areas, through appropriate land use designations with

very low residential densities, as indicated in the Land Use Policy Map (Map 2.1) of this Area Plan.

- Policy LU 2.5: Except within economic opportunity areas, limit the amount of potential development in riparian areas and groundwater recharge basins, through appropriate land use designations with very low residential densities, as indicated in the Land Use Policy Map (Map 2.1) of this Area Plan.
- Policy LU 2.6: Except within economic opportunity areas, limit the amount of potential development near the National Forests and on private lands within the National Forests, through appropriate land use designations with very low residential densities, as indicated in the Land Use Policy Map (Map 2.1) of this Area Plan.

Goal LU 3: A land use pattern that minimizes threats from hazards.

- Policy LU 3.1: Except within economic opportunity areas, prohibit new development on fault traces and limit the amount of development in Seismic Zones, through appropriate land use designations with very low residential densities, as indicated in the Land Use Policy Map (Map 2.1) of this Area Plan.
- Policy LU 3.2: Except within economic opportunity areas, limit the amount of potential development in Very High Fire Hazard Severity Zones, through appropriate land use designations with very low residential densities, as indicated in the Land Use Policy Map (Map 2.1) of this Area Plan.
- Policy LU 3.3: Except within economic opportunity areas, limit the amount of potential development in Flood Zones designated by the Federal Emergency Management Agency, through appropriate land use designations with very low residential densities, as indicated in the Land Use Policy Map (Map 2.1) of this Area Plan.
- Policy LU 3.4: Except within economic opportunity areas, limit the amount of potential development on steep slopes identified as Hillside Management Areas, through appropriate land use designations with very low residential densities, as indicated in the Land Use Policy Map (Map 2.1) of this Area Plan.
- Policy LU 3.5: Except within economic opportunity areas, limit the amount of potential development in landslide and liquefaction areas, through appropriate land use designations with very low residential densities, as indicated in the Land Use Policy Map (Map 2.1) of this Area Plan.
- Policy LU 3.6: Except within economic opportunity areas, limit the amount of potential residential development in airport influence areas and near military lands, through appropriate land use designations with very low residential densities, as indicated in the Land Use Policy Map (Map 2.1) of this Area Plan.
- Policy LU 3.7: All development projects located on parcels that are within an airport influence area shall be consistent with all policies of that airport's land use compatibility plan.

Goal LU 4: A land use pattern that promotes the efficient use of existing and/or planned infrastructure and public facilities.

- Policy LU 4.1: Direct the majority of the unincorporated Antelope Valley's future growth to the economic opportunity areas and areas that are served by existing or planned infrastructure, public facilities, and public water systems, as indicated in the Land Use designations shown on the Land Use Policy Map (Map 2.1) of this Area Plan.

Goal LU 5: A land use pattern that decreases greenhouse gas emissions.

- Policy LU 5.1: Ensure that development is consistent with the Sustainable Communities Strategy adopted in 2012, an element of the Regional Transportation Plan developed by the Southern California Association of Governments.
- Policy LU 5.2: Encourage the continued development of rural town centers that provide for the daily needs of surrounding residents, reducing the number of vehicle trips and providing local employment opportunities.
- Policy LU 5.3: Preserve open space areas to provide large contiguous carbon sequestering basins.
- Policy LU 5.4: Ensure that there is an appropriate balance of residential uses and employment opportunities within close proximity of each other.

Goal LU 6: A land use pattern that makes the Antelope Valley a sustainable and resilient place to live.

- Policy LU 6.1: Periodically review changing conditions to ensure that land use policies are compatible with the Area Plan's Rural Preservation Strategy, including economic opportunity areas.
- Policy LU 6.2: Ensure that the Area Plan is flexible in adapting to new issues and opportunities without compromising the rural character of the unincorporated Antelope Valley.

III. Land Use Policy Map

The Land Use Policy Map (Map 2.1: Land Use Policy) implements the Goals and Policies through the framework of rural town center areas, rural town areas, rural preservation areas and economic opportunity areas outlined in the Area Plan's Rural Preservation Strategy (Map 2.2: Rural Preservation Strategy). These areas are described below and are further explained in the discussion of land use concepts for each community that is provided in Chapter 7: Community Specific Land Use Concepts.

Rural Town Center Areas

Rural town center areas are the focal points of rural communities, serving the daily needs of residents and providing local employment opportunities. The majority of new locally-oriented public facilities and new locally-oriented commercial uses should be directed to these areas. These areas will provide pleasant pedestrian environments and will be accessible by a range of transportation options to reduce

vehicle trips, as directed in the policies of the Mobility Element. Some of these areas will allow for a mix of commercial and residential uses.

Rural town center areas are located within the following Antelope Valley communities:

- Acton – Along Crown Valley Road between Gillespie Avenue and Soledad Canyon Road.
- Antelope Acres – Along 90th Street West between Avenue E-4 and Avenue E-12.
- Gorman – Along the Golden State Freeway surrounding the Gorman School Road interchanges.
- Lake Hughes – Along Elizabeth Lake Road between Trail I and Mountain View Road.
- Lake Los Angeles – Along Avenue O between 167th Street East and 172nd Street East, and along 170th Street East between Avenue O and Glenfall Avenue.
- Leona Valley – Intersection of Elizabeth Lake Road and 90th Street West.
- Littlerock – Along Pearblossom Highway between Little Rock Wash and 89th Street East.
- Pearblossom – Along Pearblossom Highway between 121st Street East and 133rd Street East.
- Quartz Hill – Along 50th Street West between Avenue L-6 and Avenue M-2.
- Roosevelt – Intersection of 90th Street East and Avenue J.
- Sun Village – Along Palmdale Boulevard between Little Rock Wash and 110th Street East, and along 90th Street East between Palmdale Boulevard and Avenue Q-14.

On the Land Use Policy Map, the primary land use designations in the rural town center areas include:

- Rural Commercial (CR)
- Mixed-Use – Rural (MU-R)
- Major Commercial (CM)
- Light Industrial (IL)

Rural Town Areas

Rural town areas provide a transition between rural town centers and rural preserve areas, as they are occupied by a mix of residential and a wide variety of agricultural uses. The majority of new residential development should be directed to these areas, provided that such development is consistent with the existing community character and allows for various agricultural, equestrian, and animal-keeping uses where appropriate. These areas will provide transportation linkages to rural town center areas and other nearby destination points, as directed in the policies of the Mobility Element.

On the Land Use Policy Map, rural town areas are designated as Residential or as Rural Land, depending on the density of existing residential development. These land use designations include:

- Residential 30 (H30) – Maximum density of 30 residential units for each 1 net acre of land.
- Residential 18 (H18) – Maximum density of 18 residential units for each 1 net acre of land.
- Residential 9 (H9) – Maximum density of 9 residential units for each 1 net acre of land.
- Residential 5 (H5) – Maximum density of 5 residential units for each 1 net acre of land.
- Residential 2 (H2) – Maximum density of 2 residential units for each 1 net acre of land.
- Rural Land 1 (RL1) – Maximum density of 1 residential unit for each 1 gross acre of land.

- Rural Land 2 (RL2) – Maximum density of 1 residential unit for each 2 gross acres of land.
- Rural Land 5 (RL5) – Maximum density of 1 residential unit for each 5 gross acres of land.

These maximum densities shall apply to all new land divisions. Existing legal lots may be developed with one residential unit each, regardless of lot size, provided that such development meets applicable County Code requirements, and the siting of the structure is supportive of the policies in this Area Plan.

In addition, some rural town areas are designated for commercial or industrial use. These land use designations acknowledge existing commercial or industrial uses or identify appropriate locations for future commercial and industrial uses to serve local residents.

Rural Preserve Areas

Rural preserve areas are areas of the unincorporated Antelope Valley outside of Rural Town Center and Town Areas, which are largely undeveloped and generally not served by existing infrastructure and public facilities. Many of these areas contain environmental resources, such as Significant Ecological Areas, Scenic Resource Areas, and Agricultural Resource Areas. In addition, many of these areas contain safety hazards, such as Seismic Zones, Very High Fire Hazard Severity Zones, and Flood Zones. The primary benefit of these areas is that they provide habitat for regionally significant biological species while simultaneously providing scenic values to residents. A secondary benefit of these areas is that they contain natural resources which provide economic opportunities. Development in these areas should be limited to single-family homes at very low densities, light and heavy agricultural uses, including equestrian and animal-keeping uses, and other uses where appropriate.

On the Land Use Policy Map, rural preserve areas are designated as Rural Land with a range of very low densities that reflect the underlying constraints, environmental resources, and safety hazards. These land use designations include:

- Rural Land 10 (RL10) – Maximum density of 1 residential unit for each 10 gross acres of land.
- Rural Land 20 (RL20) – Maximum density of 1 residential unit for each 20 gross acres of land.

The lowest land use densities (RL20) of the Area Plan have been used primarily for the Seismic Zones and Significant Ecological Areas, as these are areas where it is critical to limit development to ensure the safety of residents as well as the preservation of important ecological resources in the area. These maximum densities shall apply to all new land divisions. Existing legal lots may be developed with one residential unit each, regardless of lot size, provided that such development meets applicable County Code requirements, and the siting of the structure is supportive of the policies in this Area Plan.

In addition, some rural preserve areas are designated for commercial or industrial use. These land use designations acknowledge uses or identify appropriate locations for future commercial and industrial uses to serve local and regional needs.

Economic Opportunity Areas

The Land Use Policy Map of the Area Plan also identifies three economic opportunity areas (EOAs). These are areas where major infrastructure projects are being planned by state and regional agencies, which would bring tremendous opportunities for growth and economic development in the vicinity of these projects. These projects include the High Desert Corridor on the east side of the Antelope Valley, and the Northwest 138 Corridor Improvement Project on the west side. Both projects are being undertaken by Los Angeles County Metropolitan Transportation Authority (Metro) and California Department of Transportation (Caltrans).

The Area Plan identifies three EOAs located along the proposed route of the two projects. These are the East EOA, encompassing the communities of Lake Los Angeles, Sun Village, Littlerock, Pearblossom, Llano, and Crystalaire; the Central EOA, located along Avenue D, just north of William J. Fox Airfield and west of State Route 14 Freeway; and the West EOA near the Interstate 5 along State Route 138/Avenue D, immediately east and west of the California Aqueduct and including portions of the Neenach and Gorman communities.

The EOAs include areas identified as existing Rural Town Centers, or Rural Town Areas. The EOAs also include areas that have the potential to develop as future Rural Town Areas, as well as Non-Preserve Areas that may be used for a variety of rural uses compatible with the surrounding areas, such as residential, agricultural and open-space uses. Wherever appropriate, these EOAs are designated with land use designations that would allow for a balanced mix of residential, commercial, and light industrial uses, while preserving the rural character and ecological resources of the surrounding areas. A jobs-housing balance is achieved by using medium-density residential, commercial and industrial land use designations in areas appropriate for development, while designating areas with important ecological resources as open space conservation areas. The land use designations within the EOAs include:

- Residential 18 (H18) – Maximum density of 18 residential units for each 1 net acre of land.
- Residential 5 (H5) – Maximum density of 5 residential units for each 1 net acre of land.
- Residential 2 (H2) – Maximum density of 2 residential units for each 1 net acre of land.
- Rural Land 1 (RL1) – Maximum density of 1 residential unit for each 1 gross acre of land.
- Rural Land 2 (RL2) – Maximum density of 1 residential unit for each 2 gross acres of land.
- Rural Land 10 (RL10) – Maximum density of 1 residential unit for each 10 gross acres of land.
- Rural Land 20 (RL20) – Maximum density of 1 residential unit for each 20 gross acres of land.
- Conservation (OS-C)
- Rural Commercial (CR)
- Mixed Use – Rural (MU-R)
- Light Industrial (IL)
- Heavy Industrial (IH)

Public and Open Space Land

Existing open space lands throughout rural town center areas, rural town areas, rural preserve areas and EOAs are identified on the Land Use Policy Map as one of the following Open Space designations, depending on the use of the land:

- Parks and Recreation (OS-PR)
- Conservation (OS-C)
- Water (OS-W)
- Bureau of Land Management (OS-BLM)
- National Forest (OS-NF)
- Military Land (OS-ML)

Privately owned lands within the National Forest are designated on the Land Use Policy Map as Rural Land, indicating the underlying infrastructure constraints, environmental resources, and safety hazards.

Existing public and semi-public facilities are designated on the Land Use Policy Map as Public and Semi-Public Facilities (P).

Land Use Legend

Table L-1: Land Use Legend

Land Use	Code	Permitted Density or FAR	Purpose
RURAL			
Rural Land 1	RL1	Residential: Maximum 1du/1 gross ac Non-Residential: Maximum FAR 0.5	Single-family residences; equestrian and limited animal uses; and limited agricultural and related activities.
Rural Land 2	RL2	Residential: Maximum 1 du/2 gross ac Non-Residential: Maximum FAR 0.5	
Rural Land 5	RL5	Residential: Maximum 1 du/5 gross ac Non-Residential: Maximum FAR 0.5	
Rural Land 10	RL10	Residential: Maximum 1 du/10 gross ac Non-Residential: Maximum FAR 0.5	Single-family residences; equestrian and animal uses; and agricultural and related activities.
Rural Land 20	RL20	Residential: Maximum 1 du/20 gross ac Non-Residential: Maximum FAR 0.5	
RESIDENTIAL			
Residential 2	H2	Residential: 0–2 du/net ac	Single-family residences.
Residential 5	H5	Residential: 0–5 du/net ac	

Residential 9	H9	Residential: 0–9 du/net ac	
Residential 18	H18	Residential: 0–18 du/net ac	Single-family residences, two-family residences
Residential 30	H30	Residential: 0-30 du/net ac	Single-family residences, two-family residences, multifamily residences.
COMMERCIAL			
Rural Commercial	CR	Residential: 0-5 du/net ac Non-Residential: Maximum FAR 0.5	Limited, low-intensity commercial uses that are compatible with rural and agricultural activities, including retail, restaurants, and personal and professional offices.
MIXED USE			
Mixed Use - Rural	MU-R	Residential: 0-5 du/net ac Non-Residential: Maximum FAR 0.5 Mixed Use: 0-5 du/net ac and FAR 0.5	Limited, low intensity commercial uses that are compatible with rural and agricultural activities, including retail, restaurants, and personal and professional offices; residential and commercial mixed uses.
INDUSTRIAL			
Light Industrial	IL	Non-Residential: Maximum FAR: 1.0	Light industrial uses, including light manufacturing, assembly, warehousing and distribution.
Heavy Industrial	IH	Non-Residential: Maximum FAR: 1.0	Heavy industrial uses, including heavy manufacturing, refineries, and other labor and capital intensive industrial activities.
PUBLIC AND SEMI-PUBLIC			
Public and Semi-Public Facilities	P	Residential: Density Varies Non-Residential: Maximum FAR: 3.0	Public and semi-public facilities and community-serving uses, including public buildings and campuses, schools, hospitals, cemeteries, and fairgrounds; airports and other major transportation facilities. Other major public facilities, including planned facilities that may be public-serving but may not be publicly accessible, such as landfills, solid and liquid waste disposal sites, multiple use stormwater treatment facilities, and major utilities. * In the event that the public or semi-public use of mapped facilities is terminated, alternative uses that are compatible with the surrounding development, in keeping with community character, are permitted.
OPEN SPACE			

Conservation	OS-C	N/A	The preservation of open space areas and scenic resource preservation in perpetuity. Applies to land that is legally <u>dedicated for open space and conservation efforts</u> .
Parks and Recreation	OS-PR	N/A	Open space recreational uses, such as regional and local parks, trails, athletic fields, community gardens, and golf courses.
National Forest	OS-NF	N/A	Areas within the National Forest and managed by the National Forest Service.
Bureau of Land Management	OS-BLM	N/A	Areas that are managed by the Federal Bureau of Land Management.
Water	W	N/A	Bodies of water, such as lakes, reservoirs, natural waterways, and man-made infrastructure, such as drainage channels, floodways, and spillways. Includes active trail networks within or along drainage channels.
Military Land	ML	N/A	Military installations and land controlled by U.S. Department of Defense.
OVERLAYS			
Special Management Areas	SMA	N/A	Special Management Areas require additional development regulations due to the presence of natural resources, scenic resources, or identified hazards. Development regulations are necessary to prevent loss of life and property, and to protect the natural environment.
-- Agricultural Resource Areas	ARA	N/A	Agricultural Resource Areas consist of farmlands identified by the California Department of Conservation and farms that have received permits from the Los Angeles County Agricultural Commissioner/Weights and Measures. The County encourages the preservation and sustainable utilization of agricultural land, agricultural activities and compatible uses within these areas.
-- Mineral Resource Zones	MRZ	N/A	Mineral Resource Zones are commercially viable mineral or aggregate deposits, such as sand, gravel and other construction aggregate. The County's Mineral Resources consist of the California Geological Survey's identified deposits of regionally significant aggregate resources.
-- Significant Ecological Areas	SEA	N/A	Significant Ecological Areas are lands in the County that contain irreplaceable biological resources. Individual SEAs include undisturbed or lightly disturbed habitat supporting valuable and threatened species, linkages and corridors to promote species movement, and are sized to support sustainable populations of its component species. Note: the SEAs within the jurisdiction of cities are shown on the map for reference and visual continuity, and are intended to be used for informational purposes only.
Specific Plan	SP	N/A	Specific Plans contain precise guidance for land development, infrastructure, amenities and resource conservation. Specific plans must be consistent with the General Plan. Detailed policy and/or regulatory requirements are contained within each adopted Specific Plan document.

Irrespective of the residential densities specified for each land use category, existing prohibitions on further subdivision of previously subdivided lots shall apply and be strictly enforced.

IV. Additional Considerations

Special Management Areas

Special Management Areas, identified in the Countywide General Plan, are environmental features found throughout rural town areas and rural preserve areas. Goals and Policies regarding these Special Management Areas are provided in the other Elements of this Area Plan, as follows:

- Agricultural Resource Areas – Conservation and Open Space Element (Goal COS 6 and related policies, Goal COS 7 and related policies)
- Flood Zones – Public Safety, Services and Facilities Element (Goal PS 7 and related policies)
- Hillside Management Areas – Land Use Element (Goal LU 3 and related policies), Conservation and Open Space Element (Goal COS 5 and related policies, Goal COS 16 and related policies, Goal COS 19 and related policies), Public Safety, Services and Facilities Element (Goal PS 6 and related policies)
- Landslide Zones – Public Safety, Services and Facilities Element (Goal PS 6 and related policies)
- Liquefaction Zones – Public Safety, Services, and Facilities Element (Goal PS 6 and related policies)
- Mineral Resource Zones – Conservation and Open Space Element (Goal COS 8 and related policies)
- Scenic Resource Areas – Conservation and Open Space Element (Goal COS 5 and related policies, Goal COS 15 and related policies)
- Seismic Zones – Public Safety, Services and Facilities Element (Goal PS 6 and related policies)
- Significant Ecological Areas – Land Use Element (Goal LU 2 and related policies), Conservation and Open Space Element (Goal COS 4 and related policies, Goal COS 16 and related policies, Goal COS 18 and related policies, Goal COS 19 and related policies)
- Very High Fire Hazard Severity Zones – Conservation and Open Space Element (Goal COS 5 and related policies, Goal COS 16 and related policies), Public Safety, Services and Facilities Element (Goal PS 7 and related policies)

Major Planned Infrastructure Projects

There are two major infrastructure projects in the Antelope Valley that are in varying stages of planning and environmental review. These are the High Desert Corridor (HDC) and the Northwest 138 Corridor Improvement Project (NW138), which are both joint projects of Metro and Caltrans.

The HDC is a proposed new multi-purpose transportation link between State Route 14 in Los Angeles County and State Route 18 in San Bernardino County. This project is envisioned to connect some of the fastest growing residential, commercial and industrial areas in Southern California, including the cities of Palmdale, Lancaster, Adelanto, Victorville, and the Town of Apple Valley.

The NW138 is a proposed substantial upgrade of the existing State Route 138 segment from Interstate 5 to State Route 14. This corridor currently serves as a bypass for people and goods movement, which provides critical mobility to, from and within the western portion of the Antelope Valley.

Development of the HDC and the NW138 projects would significantly impact the land use pattern in the unincorporated Antelope Valley. Together, these two projects will connect the Antelope Valley to major economic centers in Northern and Southern California, Nevada and beyond. In some areas, these future projects could support commercial and industrial development, providing additional local employment opportunities and reducing the need for long-distance commuting.

As mentioned earlier, three EOAs have been identified along the proposed routes of these projects, where increased residential, commercial and industrial uses are encouraged. As more details of these infrastructure projects are finalized in the coming years (i.e. route alignments, location of on-off ramps, number of lanes etc.), a comprehensive study of each of these EOAs should be undertaken in order to make any necessary adjustments to the Area Plan to fit the final design of these projects. This will be undertaken through a community planning process that should carefully consider potential changes to the Area Plan, including the Land Use Policy Map, balancing the need for economic development and local employment with rural preservation and environmental priorities.

Utility-Scale Renewable Energy Production Facilities

Utility-scale renewable energy production facilities may be allowed in Rural Land designations without a Plan Amendment. However, applications for such facilities may require discretionary approval and shall be subject to the California Environmental Quality Act and the County's environmental review and public hearing procedures. Applications for such facilities must be carefully considered and must be consistent with the relevant Goals and Policies of the Area Plan, especially Goal COS 10 and related policies, Goal COS 13 and related policies, and Goal COS 14 and related policies. (For more information, see Chapter 4: Conservation and Open Space Element)

Palmdale Regional Airport

Los Angeles World Airports owns a number of parcels in the central portion of the Antelope Valley that are currently in unincorporated territory but are surrounded by the City of Palmdale. These parcels have been designated as Public and Semi-Public Facilities (P) to acknowledge the existing Palmdale Regional Airport, which will be significantly expanded to become a regional commercial airport. Policies in the Mobility Element, and the Public Safety, Services and Facilities Element support the development of Palmdale Regional Airport, and that is the primary vision for these parcels. However, at the time of this Area Plan's adoption, the airport is inactive and no commercial air service is offered. Until such time that the airport is expanded, this Area Plan recommends that commercial and industrial uses be allowed on these parcels without a Plan Amendment, as such development will offer opportunities for employment and economic growth. However, these uses must be compatible with airport operations and must not restrict or prohibit future expansion of the airport.

Amendments to the Land Use Policy Map

After the Area Plan is adopted, property owners may request amendments to the Land Use Policy Map. These applications will be subject to the County's environmental review and public hearing procedures for Plan Amendments.

Amendments to the Land Use Policy Map requested by property owners must be carefully considered and may be approved through a public hearing and recommendation by the Regional Planning Commission and subsequent public hearing and adoption by the Los Angeles County Board of Supervisors, subject to the following findings:

- The Plan Amendment is necessary to realize an unmet community need;
- The Plan Amendment will allow development that maintains and enhances rural character, protects environmental resources, minimizes threats from hazards, helps implement economic opportunity areas, and promotes the efficient use of existing infrastructure and public facilities in a manner that is equal or superior to the development allowed by the existing land use designation;
- The Plan Amendment is consistent with the relevant Goals and Policies of the various Elements of the Area Plan; and
- The Plan Amendment meets the applicable findings required by the Countywide General Plan.

Chapter 3

Chapter 3: Mobility Element

Table of Contents

I.	Background.....	M-2
	Purpose	
	Issues	
	Vision and Strategy	
II.	Goals and Policies.....	M-2
	Travel Demand Management	
	Highways and Streets	
	Truck Traffic	
	Regional Transportation	
	Local Transit	
	Bikeways and Bicycle Routes	
	Trails	
	Pedestrian Access	

I. Background

Purpose

Mobility is the movement of people and goods. The Mobility Element outlines the improvements needed to ensure current and future mobility between land uses. The role of this Element is to identify missing linkages and alternative modes of transportation, then collaborate with government partners to implement solutions. This Element creates the framework for a balanced, multi-modal transportation system across the Antelope Valley through Goals and Policies that address three topics: regional movement of services and goods, local transportation meeting the needs of residents, and the balance required to meet the demands of both.

Issues

Within the State of California and across the country, attitudes have changed about the nature of the responsibilities governments have in assisting with overall mobility. Effective transportation systems are increasingly being seen as those that can offer diverse options for movement. The current expectation is that future citizens should gain greater access to a wider range of transportation choices to fit their needs, allowing them to be a pedestrian, equestrian, cyclist, bus or rail rider, motorist, or air passenger. In addition, this Mobility Element aims to improve the economy of the region by developing a framework where efficient modes of transit move goods and services freely through the Antelope Valley. These wider choices for both people and goods will have the added benefit of increasing the overall efficiency of regional movement, which could reduce greenhouse gas emissions.

Vision and Strategy

Upholding the Area Plan's Vision Statement, this Element will improve future mobility in the Antelope Valley by connecting local populations to activity areas and by accommodating regional pressures and demands without compromising the comfort and access of local transportation. In order to achieve the Area Plan's Rural Preservation Strategy, travel links will be provided from the Valley's rural preserve areas and rural town areas to local-serving businesses and rural town center areas, as well as identified economic opportunity areas. While the communities are currently automobile-dependent due to their largely rural character, this Element will increase access to alternative modes of travel, such as trails, bikeways, and bicycle routes.

II. Goals and Policies

Travel Demand Management

Goal M 1: Land use patterns that promote alternatives to automobile travel.

- Policy M 1.1: Direct the majority of the unincorporated Antelope Valley's future growth to rural town centers and economic opportunity areas, to minimize travel time and reduce the number of vehicle trips, as indicated in the Land Use designations shown on the Land Use Policy Map (Map 2.1) of this Area Plan.

- Policy M 1.2: Encourage the continued development of rural town center areas that provide for the daily needs of local residents, reducing the number of vehicle trips and providing local employment opportunities.
- Policy M 1.3: Encourage new parks, recreation areas, and public facilities to locate in rural town center areas, rural town areas, and economic opportunity areas.
- Policy M 1.4: Ensure that new developments have a balanced mix of residential uses and employment opportunities as well as park, recreation areas and public facilities within close proximity of each other.
- Policy M 1.5: Promote alternatives to automobile travel in rural town center areas and rural town areas by linking these areas through pedestrian walkways, trails, and bicycle routes.

Goal M 2: Reduction of vehicle trips and emissions through effective management of travel demand, transportation systems, and parking.

- Policy M 2.1: Encourage the reduction of home-to-work trips through the promotion of home-based businesses, live-work units, and telecommuting.
- Policy M 2.2: Encourage trip reduction through promotion of carpools, vanpools, shuttles, and public transit.
- Policy M 2.3: In evaluating new development proposals, require trip reduction measures to relieve congestion and reduce air pollution from vehicle emissions.
- Policy M 2.4: Develop multi-modal transportation systems that offer alternatives to automobile travel by implementing the policies regarding regional transportation, local transit, bicycle routes, trails, and pedestrian access contained in this Mobility Element.
- Policy M 2.5: As residential development occurs in communities, require transportation routes, including alternatives to automotive transit, to link to important local destination points such as shopping, services, employment, and recreation.
- Policy M 2.6: Within rural town center areas, explore flexible parking regulations such as allowing residential and commercial development to meet parking requirements through a combination of on-site and off-site parking, where appropriate, or encouraging the provision of different types of parking spaces.

Highways and Streets

Goal M 3: An efficient network of major, secondary, and limited secondary highways to serve the Antelope Valley.

- Policy M 3.1: Implement the adopted Highway Plan for the Antelope Valley, in cooperation with the cities of Lancaster and Palmdale. Ensure adequate funding on an ongoing basis through financing programs, such as grants, congestion pricing, bonding, fair share cost assignments, etc.
- Policy M 3.2: In rural areas, require rural highway standards that minimize the width of paving and placement of curbs, gutters, sidewalks, street lighting, and traffic signals, as adopted by the Department of Public Works.

- Policy M 3.3: Implement highway improvements only when necessitated by increasing traffic or new development or for safety reasons.
- Policy M 3.4: Maintain existing highways to ensure safety, and require adequate street and house signage for emergency response vehicles.
- Policy M 3.5: As future land use changes occur, periodically review traffic counts and traffic projections and revise the Highway Plan accordingly.
- Policy M 3.6: Engage local communities and agencies in the planning and implementation of transportation improvements.

Goal M 4: A network of local streets that support the rural character of the unincorporated Antelope Valley without compromising public safety.

- Policy M 4.1: Require rural local street standards that minimize the width of paving and placement of curbs, gutters, sidewalks, street lighting, and traffic signals, as adopted by the Department of Public Works.
- Policy M 4.2: Maintain existing local streets to ensure safety, and require adequate signage for emergency response vehicles.
- Policy M 4.3: Encourage ongoing maintenance of private local streets to ensure public safety.

Truck Traffic

Goal M 5: Long-haul truck traffic is separated from local traffic, reducing the impacts of truck traffic on local streets and residential areas.

- Policy M 5.1: Support development of the High Desert Corridor and the Northwest 138 Corridor Improvement Project, to provide a route for truck traffic between Interstate 5, State Route 14, and Interstate 15.
- Policy M 5.2: Direct truck traffic to designated truck routes and prohibit truck traffic on designated scenic routes, to the greatest extent feasible.
- Policy M 5.3: Require that designated truck routes are designed and paved to accommodate truck traffic, preventing excessive pavement deterioration from truck use.
- Policy M 5.4: Add rest stops along designated truck routes to provide stopping locations away from residential uses.
- Policy M 5.5: Develop appropriate regulations for truck parking on local streets to avoid impacts to residential areas.

Regional Transportation

Goal M 6: A range of transportation options to connect the Antelope Valley to other regions.

- Policy M 6.1: Support the development of Palmdale Regional Airport and encourage a range of commercial air travel options.
- Policy M 6.2: Support the development of William J. Fox Airfield as a facility for general aviation, air cargo operations, and commuter air travel.
- Policy M 6.3: Support the development of the High Desert Corridor and the Northwest 138 Corridor Improvement Project between Interstate 5, State Route 14, and Interstate 15, and encourage the participation of private enterprise and capital.
- Policy M 6.4: Support increases in Metrolink commuter rail service, and support the expansion of commuter rail service on underutilized rail lines where appropriate.
- Policy M 6.5: Support the development of the California High Speed Rail System, with a station in Palmdale to provide links to Northern California and other portions of Southern California, and encourage the participation of private enterprise and capital.
- Policy M 6.6: Support the development of a high-speed rail system linking Palmdale to Victorville and Las Vegas, and encourage the participation of private enterprise and capital.
- Policy M 6.7: Establish a regional transportation hub in Palmdale with feeder transit service to the rural areas of the unincorporated Antelope Valley.
- Policy M 6.8: In planning for all regional transportation systems, consider and mitigate potential impacts to existing communities, and minimize land use conflicts.
- Policy M 6.9: Engage regional agencies, such as Caltrans, SCAG, Metro, and the California High Speed Rail Authority in the implementation of an effective and efficient integrated multi-modal regional transportation network. Ensure adequate funding on an ongoing basis through financing programs, such as grants, congestion pricing, bonding, fair share cost assignments, etc.

Local Transit

Goal M 7: Bus service is maintained and enhanced throughout the Antelope Valley.

- Policy M 7.1: Maintain and increase funding to the Antelope Valley Transit Authority for bus service.
- Policy M 7.2: Support increases in bus service to heavily traveled areas and public facilities, such as parks and libraries.
- Policy M 7.3: Support increases in bus service to rural communities, linking them to a regional transportation hub in Palmdale and shopping and employment centers in Lancaster and Palmdale.
- Policy M 7.4: Improve access for all people, including seniors, youth, and the disabled, by maintaining off-peak service and equipping transit services for wheelchairs and bicycles.
- Policy M 7.5: Encourage the use of advanced technologies in the planning and operation of the transit system.

Policy M 8: Alternative transit options in areas not reached by bus service.

- Policy M 8.1: Support the expansion of dial-a-ride services to rural communities, linking them to a regional transportation hub in Palmdale and shopping and employment centers in Lancaster and Palmdale.
- Policy M 8.2: Evaluate the feasibility of alternative transit options, such as community shuttle services and privately operated transit, to increase accessibility.

Bikeways and Bicycle Routes

Goal M 9: A unified and well-maintained bicycle transportation system throughout the Antelope Valley with safe and convenient routes for commuting, recreation, and daily travel.

- Policy M 9.1: Implement the adopted Bikeway Plan for the Antelope Valley in cooperation with the cities of Lancaster and Palmdale. Ensure adequate funding on an ongoing basis.
- Policy M 9.2: Along streets and highways in rural areas, add safe bicycle routes that link to public facilities, a regional transportation hub in Palmdale, and shopping and employment centers in Lancaster and Palmdale.
- Policy M 9.3: Ensure that bikeways and bicycle routes connect communities and offer alternative travel modes within communities.
- Policy M 9.4: Encourage provision of bicycle racks and other equipment and facilities to support the use of bicycles as an alternative means of travel.

Trails

Goal M 10: A unified and well-maintained multi-use (equestrian, hiking, and mountain bicycling) trail system that links destinations such as rural town centers and recreation areas throughout the Antelope Valley.

- Policy M 10.1: Implement the adopted Trails Plan for the Antelope Valley in cooperation with the cities of Lancaster and Palmdale. Ensure adequate funding on an ongoing basis.
- Policy M 10.2: Connect new development to existing population centers with trails, requiring trail dedication and construction through the development review and permitting process.
- Policy M 10.3: Maximize fair and reasonable opportunities to secure additional trail routes (dedicated multi-use trail easements) from willing property owners.
- Policy M 10.4: Ensure trail access by establishing trailheads with adequate parking and access to public transit, where appropriate and feasible.
- Policy M 10.5: Locate and design trail routes to minimize impacts to sensitive environmental resources and ecosystems.
- Policy M 10.6: Where trail connections are not fully implemented, collaboratively work to establish safe interim connections.
- Policy M 10.7: Ensure that existing trails and trailheads are properly maintained by the relevant agencies.

- Policy M 10.8: Solicit community input to ensure that trails are compatible with local needs and character.

Pedestrian Access

Goal M 11: A continuous, integrated system of safe and attractive pedestrian routes linking residents to rural town center areas, schools, services, transit, parks, and open space areas.

- Policy M 11.1: Improve existing pedestrian routes and create new pedestrian routes, where appropriate and feasible. If paving is deemed necessary, require permeable paving consistent with rural community character instead of concrete sidewalks.
- Policy M 11.2: Within rural town center areas, require that highways and streets provide pleasant pedestrian environments and implement traffic calming methods to increase public safety for pedestrians, bicyclists, and equestrian riders.
- Policy M 11.3: Within rural town center areas, promote pedestrian-oriented scale and design features, including public plazas, directional signage, and community bulletin boards.
- Policy M 11.4: Within rural town center areas, encourage parking to be located behind or beside structures, with primary building entries facing the street. Encourage also the provision of direct and clearly delineated pedestrian walkways from transit stops and parking areas to building entries.
- Policy M 11.5: Implement traffic calming methods in areas with high pedestrian usage, such as school zones.

Chapter 4

CONSERVATION AND OPEN SPACE ELEMENT

Chapter 4: Conservation and Open Space Element

Table of Contents

I.	Background.....	COS-2
	Purpose	
	Issues	
	Vision and Strategy	
II.	Goals and Policies.....	COS-3
	Water Resources	
	Biological Resources	
	Scenic Resources	
	Agricultural Resources	
	Mineral Resources	
	Air Quality	
	Energy	
	Dark Night Skies	
	Vegetation Conservation	
	Green Building	
	Open Space	

I. Background

Purpose

Conservation is the planned utilization and preservation of natural resources and landscapes in order to ensure their existence in the future. Many resources, including land, animals, plants, water, air, minerals, views, and energy, are fundamental components to the prosperity of the Valley. Conservation of these resources provides the most cost-effective strategy to assure a reliable supply of resources to meet current and future demands.

This Conservation and Open Space Element provides Goals and Policies to protect the Antelope Valley's environmentally significant undisturbed natural spaces, make use of natural resources, and provide open space areas for recreation and enjoyment. This Element identifies the resources and open spaces which may be developed, and gives guidance as to how sustainable development can be conducted in the future. In addition, this Element identifies areas which ought to be preserved from development, or are unsuitable for development due to hazards (see Map 4.1: Hazards and Environmental Constraints Model).

Issues

The Antelope Valley contains the largest remaining undisturbed natural and rural lands left in Los Angeles County. The Valley possesses a unique rural character that serves both residents and visitors alike, drawing from a wide range of resources, such as dark night skies, significant ridgelines, Joshua Trees, wild poppies, grazing lands, and cherry orchards. In the years to come, as the cities of Lancaster and Palmdale continue to grow, the potential lure of these rural areas in proximity to surrounding cities may create development patterns that would be incompatible with rural activities.

The natural areas of the Valley also contain valuable resources for the economic prosperity of the region. The Valley is home to most of the agricultural activities that are conducted in the County. To protect the future of the County's farming industry, it will be necessary for the County to support creative ideas and strategies that help farmers earn a livelihood. The mineral resources in the Valley help build regional roadways and construction sites and must be carefully managed and protected to ensure they remain available for future use. Alternative energy production is a growth industry and the Valley has favorable weather patterns and settings that may provide suitable sites for these activities, which will enhance the local economy. These, however, would need to be balanced with the preservation of the rural character and conservation of ecological resources in the area as utility-scale renewable energy development also present significant land use impacts on the surrounding rural areas and communities. As technologies and resources change, the Goals and Policies of this Element will be used to assist in the orderly, non-impactful and sustainable transition to reliance on renewable forms of energy, which will reduce greenhouse gas emissions.

Vision and Strategy

In order to serve the Area Plan's Vision Statement, the Antelope Valley will continue to include many open spaces that are undeveloped or developed with exceptionally low-intensity uses that respect natural environment landforms and are compatible with open space uses. When growth occurs, this Element will direct sustainable development to suitable locations in rural town areas, and rural town center areas and economic opportunity areas, with existing and/or planned infrastructure, protecting natural areas that provide sources of material and scenic value, as provided in the Area Plan's Rural Preservation Strategy. The future economic resiliency of the Antelope Valley requires careful stewardship of existing natural resources with a focus towards creative solutions, especially in regard to energy creation, minerals extraction, and agricultural pursuits.

II. Goals and Policies

Water Resources

Goal COS 1: Growth and development are guided by water supply constraints.

- Policy COS 1.1: Require that all new development proposals demonstrate a sufficient and sustainable water supply prior to approval.
- Policy COS 1.2: Limit the amount of potential development in areas that are not or not expected to be served by existing and/or planned public water infrastructure through appropriate land use designations with very low residential densities, as indicated in the Land Use Policy Map (Map 2.1) of this Area Plan.
- Policy COS 1.3: Limit the amount of potential development in groundwater recharge areas through appropriate land use designations with very low residential densities, as indicated in the Land Use Policy Map (Map 2.1) of this Area Plan.
- Policy COS 1.4: Promote the use of recycled water, where available, for agricultural and industrial uses and support efforts to expand recycled water infrastructure.

Goal COS 2: Effective conservation measures provide an adequate supply of clean water to meet the present and future needs of humans and natural ecosystems.

- Policy COS 2.1: Require new landscaping to comply with applicable water efficiency requirements in the County Code.
- Policy COS 2.2: Require low-flow plumbing fixtures in all new developments.
- Policy COS 2.3: Require onsite stormwater infiltration in all new developments through the use of appropriate measures, such as permeable surface coverage, permeable paving of parking and pedestrian areas, catch basins, and other low impact development strategies.
- Policy COS 2.4: Discourage water intensive recreational uses, such as golf courses, unless recycled water is used to sustain these uses.
- Policy COS 2.5: Discourage the use of potable water for washing outdoor surfaces.
- Policy COS 2.6: Support experiments in alternate forms of water provision and re-use, such as "air to water technology" and gray water systems.

- Policy COS 2.7: Limit use of groundwater sources to their safe yield limits.
- Policy COS 2.8: Coordinate with federal, state, regional and local agencies to develop and implement new technologies in water management.

Goal COS 3: A clean water supply untainted by natural and man-made pollutants and contaminants.

- Policy COS 3.1: Discourage the use of chemical fertilizers, herbicides and pesticides in landscaping to reduce water pollution.
- Policy COS 3.2: Restrict the use of septic systems in areas adjacent to aqueducts and waterways to prevent wastewater intrusion into the water supply.
- Policy COS 3.3: Require a public or private sewerage system for land use densities that would threaten nitrate pollution of groundwater if unsewered, or when otherwise required by County regulations.
- Policy COS 3.4: Support preservation, restoration and strategic acquisition of open space to preserve natural streams, drainage channels, wetlands, and rivers, which are necessary for the healthy functioning of ecosystems.
- Policy COS 3.5: Protect underground water supplies by enforcing controls on sources of pollutants.
- Policy COS 3.6: Support and encourage water banking facilities throughout the Antelope Valley, including within Significant Ecological Areas.

Biological Resources

Goal COS 4: Sensitive habitats and species are protected to promote biodiversity.

- Policy COS 4.1: Direct the majority of the unincorporated Antelope Valley's future growth to rural town centers and economic opportunity areas, minimizing the potential for habitat loss and negative impacts in Significant Ecological Areas.
- Policy COS 4.2: Limit the amount of potential development in Significant Ecological Areas, including the Joshua Tree Woodlands, wildlife corridors, and other sensitive habitat areas, through appropriate land use designations with very low residential densities, as indicated in the Land Use Policy Map (Map 2.1) of this Area Plan.
- Policy COS 4.3: Require new development in Significant Ecological Areas to comply with applicable Zoning Code requirements, ensuring that development occurs on the most environmentally suitable portions of the land.
- Policy COS 4.4: Require new development in Significant Ecological Areas, to consider the following in design of the project, to the greatest extent feasible:
 - Preservation of biologically valuable habitats, species, wildlife corridors and linkages;
 - Protection of sensitive resources on the site within open space;
 - Protection of water sources from hydromodification in order to maintain the ecological function of riparian habitats;

- Placement of development in the least biologically sensitive areas on the site, prioritizing the preservation or avoidance of the most sensitive biological resources onsite;
 - Design of required open spaces to retain contiguous undisturbed open space that preserves the most sensitive biological resources onsite and/or serves to maintain connectivity;
 - Maintenance of watershed connectivity by capturing, treating, retaining and/or infiltrating storm water flows on site; and
 - Consideration of the continuity of onsite open space with adjacent open space in project design.
- Policy COS 4.5: Subject to local, state or federal laws, require new development to provide adequate buffers from preserves, sanctuaries, habitat areas, wildlife corridors, State Parks, and National Forest lands, except within Economic Opportunity Areas.
 - Policy COS 4.6: Encourage connections between natural open space areas to allow for wildlife movement.
 - Policy COS 4.7: Restrict fencing in wildlife corridors. Where fencing is necessary for privacy or safety, require appropriate development standards that maximize opportunities for wildlife movement.
 - Policy COS 4.8: Ensure ongoing habitat preservation by coordinating with the California Department of Fish and Game to obtain the latest information regarding threatened and endangered species.
 - Policy COS 4.9: Ensure water bodies are well-maintained to protect habitat areas and provide water to local species.
 - Policy COS 4.10: Restrict development that would reduce the size of water bodies, minimizing the potential for loss of habitat and water supply.

Scenic Resources

Goal COS 5: The Antelope Valley's scenic resources, including scenic drives, water features, significant ridgelines, buttes, and Hillside Management Areas, are enjoyed by future generations.

- Policy COS 5.1: Identify and protect natural landforms and vistas with significant visual value, such as the California Poppy Preserve, by designating them as Scenic Resource Areas.
- Policy COS 5.2: Except within economic opportunity areas, limit the amount of potential development in Scenic Resource Areas through appropriate land use designations with very low densities in order to minimize negative impacts from future development.
- Policy COS 5.3: Require new development in Hillside Management Areas to comply with applicable Zoning Code requirements, ensuring that development occurs on the most environmentally suitable portions of the land.
- Policy COS 5.4: Require appropriate development standards in Hillside Management Areas that minimize grading and alteration of the land's natural contours, ensure that development pads

mimic natural contours, and ensure that individual structures are appropriately designed to minimize visual impacts.

- Policy COS 5.5: Require adequate erosion control measures for all development in Hillside Management Areas, both during and after construction.
- Policy COS 5.6: Restrict development on buttes and designated significant ridgelines by requiring appropriate buffer zones.
- Policy COS 5.7: Ensure that incompatible development is discouraged in designated Scenic Drives by developing and implementing development standards and guidelines for development within identified viewsheds of these routes (Map 4.2: Antelope Valley Scenic Drives).

Agricultural Resources

Goal COS 6: Farming is a viable profession for Antelope Valley residents, contributing to the Valley's rural character and economic strength.

- Policy COS 6.1: Limit the amount of potential residential development in Agricultural Resource Areas (Map 4.3: Agricultural Resource Areas) through appropriate land use designations with very low residential densities, as indicated in the Land Use Policy Map (Map 2.1) of this Area Plan, minimizing the potential for future land use conflicts.
- Policy COS 6.2: Limit incompatible non-agricultural uses in Agricultural Resource Areas. Where non-agricultural uses are necessary to meet regional or community needs, require buffering and appropriate development standards to minimize potential conflicts with adjacent agricultural uses.
- Policy COS 6.3: Ensure that agricultural activities are included within the Antelope Valley's economic development strategies and pursue funding to support rural economic development and agriculture.
- Policy COS 6.4: Encourage the establishment of community farms, community gardens, and similar agricultural operations to produce local food and demonstrate the history, importance, and value of agriculture in the Antelope Valley.
- Policy COS 6.5: Encourage the establishment of local farmer markets, roadside stands, wineries and tasting rooms, and other forms of "agricultural tourism" throughout the Antelope Valley to expand potential sources of farm income.
- Policy COS 6.6: Provide educational resources to farmers.
- Policy COS 6.7: Investigate the feasibility of financial and/or zoning incentive programs for farmers, such as Williamson Act contracts, conservation easements and flexible zoning provisions.
- Policy COS 6.8: Support innovative agricultural business practices, such as agricultural tourism and farmers' cooperatives, necessary for adapting to changing economic and environmental conditions by streamlining regulations.

Goal COS 7: Farming practices are sustainable, balancing economic benefits with water and biological resource management priorities, and minimize greenhouse gas emissions and water pollution.

- Policy COS 7.1: Promote agricultural uses which sequester carbon and fix nitrogen.
- Policy COS 7.2: Support the use of alternative and renewable energy systems in conjunction with agricultural activities.
- Policy COS 7.3: Encourage sustainable agricultural and water quality best management practices such as runoff detention basins, use of vegetation filter strips, and organic farming.
- Policy COS 7.4: Ensure that agricultural activity is managed to minimize soil erosion and the release of contaminants into surface and groundwater resources.

Mineral Resources

Goal COS 8: Mineral resources are responsibly extracted.

- Policy COS 8.1: Allow new mineral resource extraction activities only in designated Mineral Resource Areas.
- Policy COS 8.2: Where new mineral resource extraction activities are allowed, ensure that applications undergo full environmental review and public noticing. Require site remediation after completion of mineral resource extraction activities.
- Policy COS 8.3: Provide strict enforcement of illegal or unpermitted mineral extraction activities.
- Policy COS 8.4: Protect MRZ-2's and access to MRZ-2's in the Antelope Valley from incompatible development and discourage incompatible adjacent land uses.
- Policy COS 8.5: Work collaboratively with agencies to identify Mineral Resource Zones in the Antelope Valley and to prioritize mineral land use classifications in regional efforts.
- Policy COS 8.6: Manage mineral resources in the Antelope Valley in a manner that effectively plans for the access to, and the development and conservation of mineral resources for existing and future generations.

Air Quality

Goal COS 9: Improved air quality in the Antelope Valley.

- Policy COS 9.1: Implement land use patterns that reduce the number of vehicle trips, reducing potential air pollution, as directed in the policies of the Land Use Element.
- Policy COS 9.2: Develop multi-modal transportation systems that offer alternatives to automobile travel to reduce the number of vehicle trips, including regional transportation, local transit, bicycle routes, trails, and pedestrian networks, as directed in the policies of the Mobility Element.
- Policy COS 9.3: In evaluating new development proposals, consider requiring trip reduction measures to relieve congestion and reduce air pollution from vehicle emissions.
- Policy COS 9.4: Promote recycling and composting throughout the Antelope Valley to reduce air quality impacts from waste disposal activities and landfill operations.
- Policy COS 9.5: Encourage the use of alternative fuel vehicles throughout the Antelope Valley.
- Policy COS 9.6: Educate Antelope Valley industries about new, less polluting equipment, and promote incentives for industries to use such equipment.

- Policy COS 9.7: Encourage reforestation and the planting of trees to sequester greenhouse gas emissions.
- Policy COS 9.8: Coordinate with the Antelope Valley Air Quality Management District and other local, regional, state, and federal agencies to develop and implement regional air quality policies and programs.

Energy

Goal COS 10: Diverse energy systems that utilize existing renewable or waste resources to meet future energy demands.

- Policy COS 10.1: Encourage the use of non-hazardous materials in all individual renewable energy systems and all utility-scale renewable energy production facilities to prevent the leaching of potentially dangerous run-off materials into the soil and watershed.
- Policy COS 10.2: Ensure that all individual renewable energy systems and all utility-scale renewable energy production facilities do not interfere with commercial and military flight operations or communication facilities. Consult with Edwards Air Force Base and U.S. Air Force Plant 42 on all proposed renewable energy projects that require discretionary approval.
- Policy COS 10.3: Encourage the safe and orderly development of biomass conversion facilities as an alternative to burning agricultural wastes.
- Policy COS 10.4: Promote methane recapture at landfills for purpose of generating energy and reducing fugitive greenhouse gas emissions.
- Policy COS 10.5: Encourage the development of emerging energy technologies, such as “solar roads.”
- Policy COS 10.6: Encourage the development of Conversion Technologies such as anaerobic digestion and gasification for converting post recycled residual waste into renewable fuels and energy.

Goal COS 11: Energy systems for use in public facilities that reduce consumption of non-renewable resources while maintaining public safety.

- Policy COS 11.1: Promote energy retrofits of existing public facilities throughout the County to complement and reduce dependence upon utility-scale renewable energy production facilities.
- Policy COS 11.2: Promote the use of solar-powered lighting for highways, streets, and public facilities, including parks and trails.
- Policy COS 11.3: Promote the use of renewable energy systems in public facilities, such as hospitals, libraries, and schools, to ensure access to power in the case of major disasters.

Goal COS 12: Individual energy systems for onsite use that reduce consumption of non-renewable resources and dependence on utility-scale energy production facilities.

- Policy COS 12.1: Promote the use of individual renewable energy systems throughout the County to complement and reduce dependence upon utility-scale renewable energy facilities.

- Policy COS 12.2: Require appropriate development standards for individual renewable energy systems to minimize potential impacts to surrounding properties. Simplify the permitting process for individual renewable energy systems that meet these development standards.

Goal COS 13: Utility-scale energy production facilities for offsite use that reduce consumption of non-renewable resources while minimizing potential impacts on natural resources and existing communities.

- Policy COS 13.1: Direct utility-scale renewable energy production facilities, such as solar facilities, to locations where environmental, noise, and visual impacts will be minimized.
- Policy COS 13.2: Restrict development of utility-scale wind energy production facilities within the vicinity of Edwards Air Force Base to limit interference with military operations.
- Policy COS 13.3: Require all utility-scale renewable energy production facilities to develop and implement a decommissioning plan, with full and appropriate financial guarantee instruments that will restore the full site to its natural state upon complete discontinuance of operations and will restore non-operational portions of the site while the remainder continues operating.
- Policy COS 13.4: Promote the use of recycled water in utility-scale renewable energy production facilities to limit impacts on the available fresh water supply.
- Policy COS 13.5: Where development of utility-scale renewable energy production facilities cannot avoid sensitive biotic communities, require open space dedication within Significant Ecological Areas as a mitigation measure.
- Policy COS 13.6: Ensure that all utility-scale renewable energy production facilities, such as solar facilities, do not create land use conflicts with adjacent agricultural lands or existing residential areas in the vicinity. Require buffering and appropriate development standards to minimize potential conflicts.
- Policy COS 13.7: Limit the aesthetic impacts of utility-scale renewable energy production facilities to preserve rural character.
- Policy COS 13.8: Coordinate with other jurisdictions to plan for utility-scale renewable energy production facilities in order to minimize impacts to sensitive biotic communities and existing residential areas.
- Policy COS 13.9: Prohibit ground-mounted utility-scale renewable energy production facilities within Significant Ecological Areas and Economic Opportunity Areas.

Goal COS 14: Energy infrastructure that is sensitive to the scenic qualities of the Antelope Valley and minimizes potential environmental impacts.

- Policy COS 14.1: Require that new transmission lines be placed underground whenever physically feasible.
- Policy COS 14.2: If new transmission lines cannot feasibly be placed underground due to physical constraints, require that they be collocated with existing transmission lines, or along existing transmission corridors, whenever physically feasible.
- Policy COS 14.3: If new transmission lines cannot be feasibly placed underground or feasibly collocated with existing transmission lines or along existing transmission corridors due to

physical constraints, direct new transmission lines to locations where environmental and visual impacts will be minimized.

- Policy COS 14.4: Discourage the placement of new transmission lines on undisturbed lands containing sensitive biotic communities.
- Policy COS 14.5: Discourage the placement of new transmission lines through existing communities or through properties with existing residential uses.
- Policy COS 14.6: Review all proposed transmission line projects for conformity with the Goals and Policies of the Area Plan, including those listed above. When the California Public Utilities Commission is the decision-making authority for these projects, provide comments regarding conformity with the Goals and Policies of the Area Plan.
- Policy COS 14.7: Require that electrical power lines in new residential developments be placed underground.

Dark Night Skies

Goals COS 15: Humans and wildlife enjoy beautiful dark Antelope Valley skies unimpeded by light pollution.

- Policy COS 15.1: Ensure that outdoor lighting, including street lighting, is provided at the lowest possible level while maintaining safety.
- Policy COS 15.2: Prohibit continuous all-night outdoor lighting in rural areas, unless required for land uses with unique security concerns, such as fire stations, hospitals, and prisons.
- Policy COS 15.3: Replace outdated, obtrusive, and inefficient light fixtures with fixtures that meet dark sky and energy efficiency objectives.
- Policy 15.4: Require compliance with the provisions of the Rural Outdoor Lighting District throughout the unincorporated Antelope Valley.

Vegetation Conservation

Goal COS 16: Native vegetation thrives throughout the Antelope Valley, reducing erosion, flooding, and wind-borne dust and sand.

- Policy COS 16.1: Except within Economic Opportunity Areas, require new development to minimize removal of native vegetation. Discourage the clear-scraping of land and ensure that a large percentage of land is left in its natural state.
- Policy COS 16.2: Maximize the use of native vegetation in landscaped areas, provided that vegetation meets all applicable requirements of the Fire Department and the Department of Public Works.

Green Building

Goal COS 17: Buildings are sustainable, conserving energy, water, and other resources, and limiting greenhouse gas emissions.

- Policy COS 17.1: Promote green building techniques for the construction and operation of public and private buildings in the unincorporated Antelope Valley.
- Policy COS 17.2: Require that new buildings be sited and designed in a manner that maximizes efficient use of natural resources, such as air and light, to reduce energy consumption, heat profiles, and greenhouse gas emissions.
- Policy COS 17.3: Promote energy retrofits of existing buildings.
- Policy COS 17.4: Promote the use of individual renewable energy systems and require appropriate development standards for such systems to minimize potential impacts to surrounding properties. Simplify the permitting process for individual renewable energy systems that meet these development standards.
- Policy COS 17.5: Protect active and passive solar design elements and systems from shading by neighboring structures and trees through appropriate development standards.
- Policy COS 17.6: Require new landscaping to comply with applicable water efficiency requirements in the County Code.
- Policy COS 17.7: Require low-flow plumbing fixtures in all new developments.
- Policy COS 17.8: Require onsite stormwater infiltration in all new developments through use of appropriate measures, such as permeable surface coverage, permeable paving of parking and pedestrian areas, catch basins, and other low impact development strategies.
- Policy COS 17.9: Require reduction, reuse, and recycling of construction and demolition debris.

Open Space

Goal COS 18: Permanently preserved open space areas throughout the Antelope Valley.

- Policy COS 18.1: Encourage government agencies and conservancies to acquire mitigation lands in the following areas and preserve them as permanent open space:
 - Significant Ecological Areas, including Joshua Tree Woodlands, wildlife corridors, and other sensitive habitat areas;
 - Hillside Management Areas;
 - Scenic Resource Areas, including water features such as the privately owned portion of Elizabeth Lake, significant ridgelines, buttes, and other natural landforms;
 - Land adjoining preserves, sanctuaries, State Parks, and National Forests; and
 - Privately owned lands within the National Forest.
- Policy COS 18.2: Ensure that open space acquisition is conducted in a fair and equitable manner.
- Policy COS 18.3: Maintain permanently preserved open space areas to ensure attractiveness and safety.
- Policy COS 18.4: Pursue funding for open space acquisition and maintenance on an ongoing basis.
- Policy COS 18.5: Provide parks and recreational facilities, as directed in the policies of the Public Safety, Services, and Facilities Element.

Goal COS 19: New development meets open space objectives while maintaining rural character.

- Policy COS 19.1: When new development is required to preserve open space, require designs with large contiguous open space areas that maximize protection of environmental and scenic resources.
- Policy COS 19.2: Allow large contiguous open space areas to be distributed across individual lots so that new development preserves open space while maintaining large lot sizes that are consistent with a rural environment, provided that such open space areas are permanently restricted through deed restrictions.
- Policy COS 19.3: Pursue innovative strategies for open space acquisition and preservation through the land development process, such as Transfers of Development Rights, Land Banking, and Mitigation Banking, provided that such strategies preserve rural character.

Chapter 5

Chapter 5: Public Safety, Services and Facilities Element

Table of Contents

I.	Background.....	PS-2
	Purpose	
	Issues	
	Vision and Strategy	
II.	Goals and Policies.....	PS-3
	Fire Hazards	
	Geological Hazards	
	Flood Hazards	
	Law Enforcement	
	Disaster Preparedness and Emergency Response	
	Parks and Recreation	
	Schools	
	Libraries	
	Health Facilities	

I. Background

Purpose

Public services and facilities, such as fire protection, law enforcement, libraries, schools, and parks are amenities provided by the government to ensure the health, safety, and welfare of its residents. These services and facilities help to protect the population as a whole and contribute to community maintenance.

This Public Safety, Services and Facilities Element contains Goals and Policies outlining strategies to fulfill the overall mission of the County of Los Angeles: “to enrich lives through effective and caring service.” This Element identifies local hazards that include fire, geology, and floods, and then elaborates on community expectations for enhanced and efficient local services that include law enforcement, parks, schools, libraries, health facilities, and economic development.

Issues

Public services require long-range planning to account for anticipated population and environmental changes that necessitate modification of service levels. Fire and sheriff’s services must anticipate the extent and location of future needs to determine what enhancements can be offered. The provision of trails, parks, and roads requires coordination among multiple government agencies to achieve service goals. Schools, libraries and health services need to be accessible to the local residents they serve. A strong economic base ensures that all these public services and facilities can continue to be offered.

The level of public services and facilities are often dependent upon population numbers. Higher population numbers equate to higher demand, and thus larger communities receive greater quantities of service. The Antelope Valley is comprised of dispersed towns with smaller populations that correspond to relatively limited service availability, which underscores the necessity of long-range planning to ensure an adequate supply of life and safety services to maintain and enhance the quality of life.

Local environmental features, such as buttes, floodplains, and forests, make the Antelope Valley a uniquely rural setting in Los Angeles County but also give rise to many of the natural hazards that can compromise the safety of residents. Remote areas pose challenges to safety personnel trying to protect residents when responding to earthquake, flood and fire disasters. While many of these hazards are pre-existing and unpreventable, there are many actions that can be taken to reduce risks.

Vision and Strategy

The Area Plan’s Vision Statement requires this Element to provide quality social, education, and recreational services and facilities. To implement the Area Plan’s Rural Preservation Strategy, this Element will improve the quality of life and increase residents’ safety and well-being by guiding future development to rural town center areas, rural town areas, and economic opportunity areas where services are already provided or are being planned and which contain less hazardous portions of the

Antelope Valley. As changes occur in the future, Valley residents will continue to receive high-caliber public services that accommodate current and future needs.

II. Goals and Policies

Fire Hazards

Goal PS 1: Protection of the public through fire hazard planning and mitigation.

- Policy PS 1.1: Limit the amount of potential master-planned development in Very High Fire Hazard Severity Zones through appropriate land use designations with very low residential densities, as indicated in the Land Use Policy Map (Map 2.1) of this Area Plan.
- Policy PS 1.2: Require that all new developments provide sufficient access for emergency vehicles and sufficient evacuation routes for residents and animals.
- Policy PS 1.3: Promote fire prevention measures, such as brush clearance and the creation of defensible space, to reduce fire protection costs.
- Policy PS 1.4: Provide strict enforcement of the Fire Code and all Fire Department policies and regulations.

Geological Hazards

Goal PS 2: Protection of the public through geological hazard planning and mitigation.

- Policy PS 2.1: Limit the amount of potential development in Seismic Zones and along the San Andreas Fault and other fault traces, through appropriate land use designations with very low residential densities, as indicated in the Land Use Policy Map (Map 2.1) of this Area Plan.
- Policy PS 2.2: Limit the amount of development on steep slopes (Hillside Management Areas) and within landslide and liquefaction areas, through appropriate land use designations with very low residential densities, as indicated in the Land Use Policy Map (Map 2.1) of this Area Plan.
- Policy PS 2.3: Prohibit the construction of new structures on or across a fault trace.
- Policy PS 2.4: Ensure that new development does not cause or contribute to slope instability.

Flood Hazards

Goal PS 3: Protection of the public through flood hazard planning and mitigation.

- Policy PS 3.1: Limit the amount of potential development in Flood Zones designated by the Federal Emergency Management Agency through appropriate land use designations with very low residential densities, as indicated in the Land Use Policy Map (Map 2.1) of this Area Plan.
- Policy PS 3.2: Require onsite stormwater filtration in all new developments through use of appropriate measures, such as permeable surface coverage, permeable paving of parking and pedestrian areas, catch basins, and other low impact development strategies.
- Policy PS 3.3: Review the potential local and regional drainage impacts of all development proposals to minimize the need for new drainage structures.

- Policy PS 3.4: Ensure that new drainage structures are compatible with the surrounding environment by requiring materials and colors that are consistent with the natural landscape. Discourage concrete drainage structures.

Law Enforcement

Goal PS 4: Protection of public safety through law enforcement and crime prevention strategies.

- Policy PS 4.1: Support an increased law enforcement presence in every Antelope Valley community and explore new funding mechanisms to expand law enforcement services.
- Policy PS 4.2: Support a strong law enforcement presence on highways and streets to strictly enforce speed limits and other vehicle safety laws.
- Policy PS 4.3: Promote and support neighborhood watches to create more eyes and ears in the community.
- Policy PS 4.4: Educate the public on crime prevention programs and resources offered by the Sheriff's Department.

Goal PS 5: Protection of public health, safety, and welfare through code enforcement.

- Policy PS 5.1: Support neighborhood preservation programs, such as graffiti abatement, removal of abandoned or inoperable vehicles, and removal of trash and debris.
- Policy PS 5.2: Strictly enforce laws against illegal dumping and support the Antelope Valley Illegal Dumping Task Force.
- Policy PS 5.3: Educate the public on existing codes and the value of maintaining their property, encouraging voluntary compliance.
- Policy PS 5.4: Administer code enforcement activities in a fair, equitable, respectful, and cooperative manner.
- Policy PS 5.5: Create proactive code enforcement programs where desired by community residents.

Disaster Preparedness and Emergency Response

Goal PS 6: Government officials work with community members to promote community safety.

- Policy PS 6.1: Ensure safety information is available at local public areas.
- Policy PS 6.2: Encourage residents and business owners to create an evacuation plan and maintain emergency supplies.
- Policy PS 6.3: Promote the formation and coordination of Certified Emergency Response Teams.
- Policy PS 6.4: Provide assistance to local communities that wish to create a local emergency evacuation plan.
- Policy PS 6.5: Strengthen coordination and collaboration between citizens, public agencies, and non-profit groups to plan for disaster response.

- Policy PS 6.6: Develop an inclusive master emergency plan that designates evacuation routes, emergency relief centers, emergency animal keeping shelters, and information centers in every Antelope Valley community.

Goal PS 7: Emergency services that respond in a timely manner.

- Policy PS 7.1: Require visible addresses on buildings and at entrances to properties as required by the Fire Code.
- Policy PS 7.2: Ensure that Fire Stations are adequately staffed.
- Policy PS 7.3: Strive for a timely response to every call for service.

Parks and Recreation

Goal PS 8: Antelope Valley residents enjoy access to parks and recreational facilities.

- Policy PS 8.1: Maintain existing parks to ensure attractiveness and safety and make improvements as necessary. Ensure adequate funding on an ongoing basis.
- Policy PS 8.2: Provide recreational activities at parks that serve all segments of the population.
- Policy PS 8.3: Provide new parks as additional development occurs or as the population grows, with a goal of four acres of parkland for every 1,000 residents.
- Policy PS 8.4: Prioritize new parks for existing park deficient communities.
- Policy PS 8.5: Encourage the use of school playgrounds and sporting fields for community recreation (“joint use”) when school is not in session.
- Policy PS 8.6: Within rural town center areas, promote the inclusion of parks, recreational facilities, and other gathering places that allow neighbors to meet and socialize.
- Policy PS 8.7: Provide trails, bikeways, and bicycle routes for recreational purposes, as directed in the policies of the Mobility Element.
- Policy PS 8.8: Maintain existing facilities for public water recreation to ensure attractiveness and safety and make improvements as necessary. Ensure adequate funding on an ongoing basis.
- Policy PS 8.9: Provide new facilities for public water recreation in appropriate areas.

Goal PS 9: Safe spaces for the recreational use of off-road vehicles and other motorized sporting.

- Policy PS 9.1: Reduce illegal off-road vehicle use by providing off-road vehicle trails and parks in appropriate areas.
- Policy PS 9.2: Reduce illegal drag racing by providing appropriate locations for safe and properly monitored drag racing.
- Policy PS 9.3: Provide strict enforcement of illegal off-road vehicle use and illegal drag racing.

Schools

Goal PS 10: A wide range of educational opportunities for Antelope Valley residents.

- Policy PS 10.1: Coordinate with all Antelope Valley school districts to ensure that new schools are provided as additional development occurs or as the population grows.
- Policy PS 10.2: Encourage new schools to locate in rural town center areas, rural town areas, and economic opportunity areas, where they will be accessible by pedestrian walkways, trails, bikeways, and bicycle routes.
- Policy PS 10.3: Encourage new schools to locate near parks and recreational facilities.
- Policy PS 10.4: Encourage the use of school playgrounds and sporting fields for community recreation (“joint use”) when school is not in session.
- Policy PS 10.5: Promote the creation of a four-year public university in the Antelope Valley to provide opportunities for continuing education and workforce development.

Libraries

Goal PS 11: Antelope Valley residents enjoy easy access to public library services.

- Policy PS 11.1: Maintain existing public libraries and make improvements as necessary. Ensure adequate funding on an ongoing basis.
- Policy PS 11.2: Expand public library collections and services to meet community needs.
- Policy PS 11.3: Provide new public libraries as additional development occurs or as the population grows.
- Policy PS 11.4: Encourage new public libraries to locate in rural town center areas, rural town areas, and economic opportunity areas, where they will be accessible by pedestrian walkways, trails, bikeways, and bicycle routes.
- Policy PS 11.5: Provide bookmobile services in areas that are not served by permanent public libraries.
- Policy PS 11.6: Encourage the use of technology in library operations to increase efficiency and accessibility.

Health Facilities

Goal PS 12: A range of facilities and service that maintain the health and well-being of Antelope Valley residents at all ages and income levels.

- Policy PS 12.1: Provide preventative health services to reduce the need for emergency medical care.
- Policy PS 12.2: Support the development of regional health care facilities in Lancaster and Palmdale.
- Policy PS 12.3: Support existing community health care clinics in rural areas by preventing the encroachment of incompatible land uses. Allow expansion when required to meet community needs.

- Policy PS 12.4: Encourage the development of new community health care clinics where required to meet community needs. Encourage these clinics to locate in rural town center areas and economic opportunity areas, where they will be accessible by pedestrian walkways, trails, bikeways, and bicycle routes.
- Policy PS 12.5: Pursue funding to support daily operations at community health care clinics.

Chapter 6

Chapter 6: Economic Development Element

Table of Contents

I.	Background.....	ED-2
	Purpose	
	Issues	
	Vision and Strategy	
II.	Goals and Policies.....	ED-3
	High-Tech Manufacturing	
	Transportation and Logistics	
	Agriculture	
	Renewable Energy	
	Construction and Housing	
	Recreation, Tourism and Filmmaking	
	Regional Economic Development Strategies	

I. Background

Purpose

In a market-based and private sector-led system, the primary driver of overall development in a given area is its economy. This economy is affected by local, regional and to a certain extent, national and global factors. This Economic Development Element of the Area Plan contains Goals and Policies to anticipate and plan for these factors in order to ensure that sustainable economic development is achieved throughout the Antelope Valley in the years to come. This Element also aims to balance economic growth with the preservation of the unique rural character and rich environmental resources of the Antelope Valley.

Issues

The Antelope Valley has a number of competitive advantages that can help it become the premier destination for high tech manufacturing firms in aerospace and other cutting-edge industries. These include the abundance of large, flat and relatively less expensive land; availability of a variety of transportation options such as truck, rail and air; close proximity to renewable energy sources; and other such factors. One issue facing the Antelope Valley in terms of Economic Development is its physical distance from the major urban areas of Los Angeles County. Thus, people who live in the area but work elsewhere or vice versa, may have very long home-work commutes. An improved jobs-housing balance will provide a vibrant economy in the Antelope Valley.

Vision and Strategy

The Area Plan's Vision Statement requires this Element to address the growing population's need for employment opportunities. This Area Plan provides for a jobs-to-household ratio of approximately 1.3 jobs for every household in the unincorporated Antelope Valley, a far improvement from the ratio of approximately one job for every five households established by the previous 1986 Antelope Valley Areawide General Plan.

The primary strategy of this Area Plan is to identify more areas appropriate for light and heavy industrial uses. These are areas in close proximity to major transportation corridors; and/or provide renewable energy, raw materials such as those from surface mining, a high concentration of skilled labor force, or other such important components for a successful and sustainable economy.

II. Goals and Policies

Goal ED1: A healthy and balanced economic base in the Antelope Valley that attracts a wide range of industries and businesses and provides high-paying jobs for local residents.

High-tech Manufacturing

With the availability of land, easy access to transportation corridors and proximity to renewable energy resources, the Antelope Valley is a prime destination for high-tech manufacturing to relocate to as they are more and more crowded out of their current urban locations. One of the main drivers of economic development in the Antelope Valley will be the relocation of high-tech industries to appropriate locations in the unincorporated Antelope Valley

- Policy ED 1.1: Promote the continued development of regional commercial and industrial employment centers in economic opportunity areas in the Antelope Valley.
- Policy ED 1.2: Allow the development of commercial and industrial uses at the Palmdale Regional Airport site, provided that those uses are compatible with airport operations and do not restrict or prohibit future expansion of the airport.
- Policy ED 1.3: Support the growth of “high-tech” industries to employ the Antelope Valley population’s highly educated workforce.

Transportation and Logistics

As manufacturing and other industrial activities in the Antelope Valley increase, so will the demand for transportation and logistics services. With a wide expanse of relatively flat terrain and the availability of a variety of transport options such as by truck, rail or air, the Antelope Valley is poised to attract a number of companies specializing in logistics services.

- Policy ED 1.4: Support the development of the High Desert Corridor and the Northwest 138 Corridor Improvement projects to improve the east-west movement of goods, particularly between the Antelope Valley and the industrial areas of Kern and San Bernardino counties and beyond.
- Policy ED 1.5: Promote the development of an “Inland Port” in the Antelope Valley, providing additional employment in the trade and logistics sectors.
- Policy ED 1.6: Support the development of a range of travel options that better connect the Antelope Valley to existing regional trade and employment in other regions, including the High Desert Corridor and the Northwest 138 Corridor Improvement Projects.

Agriculture

The AV has vast expanses of land that are suitable for large-scale farming and other agricultural activities. The AV Area Plan will encourage and continuation and possible expansion of such activities in order to ensure that agriculture continues to be one of the main economic drivers of growth in the area.

- Policy ED 1.7: Promote farming and other agricultural activities that contribute to the Antelope Valley economy.
- Policy ED 1.8: Promote alternative sources of income for farmers, including commercial and industrial activities, to supplement their income during low production years and encourage them to continue farming in the Antelope Valley.

- Policy ED 1.9: Support water management projects, including the use of modern technology to increase available water supply in the area, in conjunction with the Integrated Regional Water Management Plan.

Renewable Energy

The demand for renewable energy in California is expected to dramatically increase in the near future. The AV has one of the most abundant sunshine in the country. This, along with the availability of undeveloped open spaces, gives the AV a lot of potential for solar energy development as well as other forms of renewable energy sources.

- Policy ED 1.10: Promote small-scale, household based renewable energy systems to enable Antelope Valley residents to become energy independent.
- Policy ED 1.11: Encourage the development of utility-scale renewable energy projects at appropriate locations and with appropriate standards to ensure that any negative impacts to local residents are sufficiently mitigated.
- Policy ED 1.12: Adopt regulations that ensure that local residents receive a fair share of the benefits of utility-scale renewable energy projects that are commensurate to their impacts.
- Policy ED 1.13: Ensure early discussions with Edwards Air Force Base and U.S. Air Force Plant 42 regarding new industries, such as utility-scale renewable energy production facilities, to limit potential impacts on mission capabilities.

Construction and Housing

The growth of the cities of Palmdale and Lancaster, as well as the increase in economic activity in the AV as a whole, will spur demand for new housing and other construction projects. The Antelope Valley Area Plan identifies the appropriate areas for this residential growth to occur and promote a variety of different types of residential development to occur there.

- Policy ED 1.14: Promote appropriate types of residential development in the vicinity of existing communities and town centers that are in reach of existing infrastructure and utilities.
- Policy ED 1.15: Where appropriate, promote residential development as part of a wider mixed-use strategy in communities that desire such uses in their areas and where plans for major infrastructure and facilities are currently underway. These areas have been identified as economic opportunity areas as shown in the Land Use Policy Map (Map 2.1) of this Area Plan.

Recreation, Tourism and Filmmaking

The vast open spaces, unique landscape and natural resources of the AV make it an ideal destination for recreational activities, tourism, filming and other industries that put a premium on preservation of the natural environment. The Antelope Valley Area Plan aims to protect and preserve these resources, while promoting compatible activities that allow landowners to derive economic benefit from their properties.

- Policy ED 1.16: Preserve the scenic resources of the Antelope Valley, including Scenic Drives, Significant Ridgelines and Significant Ecological Areas, in such a way that can contribute to the economic activities in the area.
- Policy ED 1.17: Promote uses and activities that rely on the natural state of the environment to take advantage of the vast areas of relatively undisturbed natural areas in the Antelope Valley. These include recreational, tourism and film-making uses.

Regional Economic Development Strategies

The Antelope Valley is the largest Planning Area in Los Angeles County. Thus, there is a need to develop comprehensive and long-term economic development plans, not just at the local, but also the regional level. This will help ensure the orderly and sustainable economic development of the area in the long-term.

- Policy ED 1.18: Coordinate with the Los Angeles County Economic Development Corporation, the Greater Antelope Valley Economic Alliance, and other organizations to create and implement regional economic development strategies.
- Policy ED 1.19: Promote the creation of a four-year public university in the Antelope Valley to provide opportunities for continuing education and workforce development.
- Policy ED 1.20: Support the development of a range of travel options that better connect the Antelope Valley to existing regional trade and employment centers in other regions, including the High Desert Corridor and the Northwest 138 Corridor Improvement Project, as directed in the policies of the Mobility Element.
- Policy ED 1.21: Ensure early discussions with Edwards Air Force Base and U.S. Air Force Plant 42 regarding new industries, such as utility-scale renewable energy production facilities, to limit potential impacts on mission capabilities.

Chapter 7

COMMUNITY-SPECIFIC LAND USE CONCEPTS

Chapter 7: Community-Specific Land Use Concepts Element

Table of Contents

I.	Background.....	COMM-2
	Purpose	
	Vision and Strategy	
	Community Standards Districts	
II.	Land Use Concepts.....	COMM-3
	Acton	
	Antelope Acres	
	Crystalaire	
	El Dorado and White Fence Farms	
	Elizabeth Lake and Lake Hughes (The Lakes)	
	Fairmont	
	Gorman	
	Green Valley	
	Juniper Hills	
	Lake Los Angeles	
	Lakeview	
	Leona Valley	
	Littlerock and Sun Village (Southeast Antelope Valley)	
	Llano	
	Neenach	
	Pearblossom	
	Quartz Hill	
	Roosevelt	
	Three Points	

I. Background

Purpose

The previous Chapters of this Area Plan set forth general goals and policies that may be applied throughout the unincorporated Antelope Valley. However, each community varies in its nature, form, and character. The Community-Specific Land Use Concepts contained in this Chapter describe in greater detail how this Area Plan, particularly the Land Use Element, is to be implemented in each community within the unincorporated Antelope Valley.

The Land Use Concepts (Concepts) attempt to provide expectations for how each rural community may change and grow throughout the life of this Area Plan. The Concepts specify the desired land uses for each area and identify potentially incompatible land uses that would not be desirable. Residents, stakeholders, and decision-makers should refer to the Concepts to familiarize themselves with the setting and character of each community and should use this information when considering the appropriateness of land use development projects, infrastructure improvements, and consideration efforts.

The following communities are addressed in this Chapter:

- Acton
- Antelope Acres
- Crystallaire
- El Dorado and White Fence Farms
- Elizabeth Lake and Lake Hughes (The Lakes)
- Fairmont
- Gorman
- Green Valley
- Juniper Hills
- Lake Los Angeles
- Lakeview
- Leona Valley
- Littlerock and Sun Village (Southeast Antelope Valley)
- Llano
- Neenach
- Pearblossom
- Quartz Hill
- Roosevelt
- Three Points

Vision and Strategy

The Area Plan's Vision Statement acknowledges that the unincorporated Antelope Valley "is a mosaic of unique small towns" and the Community-Specific Land Use Concepts are intended to reflect each community's unique nature, form, and character, as well as each community's unique vision of the future. The Area Plan's Rural Preservation Strategy seeks to achieve the Area Plan's Vision Statement

through a framework of rural town centers, rural town areas, rural preserve areas, and economic opportunity areas. The Community-Specific Land Use Concepts describe how this framework has been applied to each community and refines the framework in a manner that addresses each community's individual needs. Overall, this Chapter ensures that the Area Plan will serve as a living document that will shape future implementation efforts in a manner that is both complementary of the overall Vision Statement and Rural Preservation Strategy and relevant to, and appropriate for, each community within the unincorporated Antelope Valley.

Community Standards Districts

Some of the communities described in this Chapter are within Community Standards Districts (CSD's). CSD's are overlays in the Zoning Code that provide specific development standards with unique land use issues that are not adequately addressed by the County's Subdivision and Zoning Codes. CSD's, as well as other applicable County Code requirements, should be consulted when projects are being considered in a community.

II. Land Use Concepts

Acton

The community of Acton is located in the southwestern portion of the Antelope Valley, south of the City of Palmdale along State Route 14. The community is adjacent to the National Forest, and natural hillsides and significant ridgelines separate the community from the City of Palmdale and the remainder of the Antelope Valley. Community residents are concerned about urbanization of the area and wish to remain an unincorporated rural community with a unique identity. Some portions of the community are partially developed with a variety of agricultural uses and single-family homes on large lots. Other portions are largely undeveloped, are generally not served by existing infrastructure, contain environmental resources, such as Significant Ecological Areas and Hillside Management Areas, and are subject to safety constraints, such as Very High Hazard Severity Zones.

The community has a rural town center area along Crown Valley Road between Gillespie Avenue and Soledad Canyon Road. The rural town center area has been designated as Rural Commercial (CR) to serve the daily needs of residents and provide local employment opportunities. New buildings in the rural town center area shall be limited to two stories in height and shall include Old West design elements with earth tone colors at a pedestrian-oriented scale, with primary building entries facing Crown Valley Road or adjacent local streets. New development in the rural town center that would require the installation of urban infrastructure, such as concrete curbs and gutters, street lights, and traffic signals, shall be strongly discouraged as this does not fit with the community's unique rural character and identity.

The rural town centers shall continue to be the focal point of the community and shall be linked to the surrounding rural town area through trails and pedestrian routes. Pedestrian routes shall have permeable paving, consistent with rural community character, instead of concrete sidewalks. Public amenities, such as plazas and community bulletin boards, are encouraged in this area.

Some areas outside the rural town center area have also been designated as Rural Commercial (CR) to acknowledge existing uses and to provide additional commercial services and local employment opportunities. The intent of these designations is to allow low-intensity local commercial uses that

serve community residents and to prohibit high-intensity regional commercial uses that serve travelers along State Route 14. Moving west to east through the community, areas with this designation include:

- Two parcels along Sierra Highway, generally between Sand Creek Drive and Wanstead Drive, north of State Route 14;
- A parcel along Sierra Highway, east of Red Rover Mine Road and north of State Route 14;
- Several parcels surrounding the intersection of Crown Valley Road and Sierra Highway and of Crown Valley Road and Antelope Woods Road, both of which are adjacent to State Route 14;
- A parcel at the northeast corner of Soledad Canyon Road and Santiago Road;
- Several parcels at the northwest and northeast corners of the intersection of Sierra Highway and Santiago Road, north of State Route 14;
- Several parcels along the south side of Sierra Highway between San Gabriel Avenue and State Route 14; and
- Several parcels along the north side of Sierra Highway, west of State Route 14.

New buildings in these CR designations shall also be limited to two stories in height, shall include Old West design elements with earth tone colors at a pedestrian-oriented scale, and shall be linked to surrounding rural town areas through trails and pedestrian routes. Pedestrian routes shall have permeable paving, consistent with rural community character, instead of concrete sidewalks. Development in these CR designations that would require the installation of urban infrastructure, such as concrete curbs and gutters, street lights and traffic signals, shall be discouraged as this does not fit with the community's unique rural character and identity. New commercial uses outside of these CR designations, or outside the CR designation within a rural town center area, are also strongly discouraged, as they are not compatible with the community character.

Some areas within the community have been designated as Light Industrial (IL) to acknowledge existing uses and to provide additional local employment opportunities. Moving west to east through the community, areas with this designation include:

- Several parcels at the northeast and southeast corners of Sierra Highway and Red Rover Mine Road;
- Several parcels along Soledad Canyon Road, south of the Crown Valley Road intersection and the rural town center area;
- Several parcels along Soledad Canyon Road, northeast of the Crown Valley Road intersection, and also along Syracuse Avenue and Gillespie Avenue, all east of the rural town center area;
- Several parcels along the south side of Soledad Canyon Road between Santiago Road and Malinta Avenue; and

- Several parcels along Sierra Highway, west and north of the Vincent Grade/Acton Metrolink Station.

New buildings in these IL designations shall be limited to two stories in height, shall include Old West design elements with earth tone colors at a pedestrian-oriented scale, and shall be linked to surrounding rural town areas through trails and pedestrian routes. Pedestrian routes shall have permeable paving, consistent with rural community character, instead of concrete sidewalks. Development in these IL designations that would require the installation of urban infrastructure, such as concrete curbs and gutters, street lights and traffic signals shall be strongly discouraged as this does not fit with the community's unique rural character and identity. New industrial uses outside of these IL designations are also strongly discouraged, as they are not compatible with the community character.

All advertising signs shall be limited to no more than 35 feet. More restrictions on the allowed Floor Area Ratio (FAR), drive-through services and other such regulations may be adopted by the community through their Community Standards District. Please see Chapter 8 (Plan Implementation) of this Area Plan for more details.

Most of the community is considered to be a rural town area. The rural town area has been designated as Rural Land 5 (RL5), with a maximum density of 1 residential unit for each 5 gross acres of land, Rural Land 2 (RL2), with a maximum density of 1 residential unit for each 2 gross acres of land, and Rural Land 1 (RL1), with a maximum density of 1 residential unit for each 1 gross acre of land. Small portions of the rural town area have other designations, as follows:

- The area generally bounded by Syracuse Avenue to the north, Bartlett Street and 1st Street to the west, Cory Avenue and 9th Street to the south, and 3rd Street to the east has been designated as Residential 5 (H5), with a maximum density of 5 residential units for each 1 net acre of land. In addition, a few parcels between Syracuse Avenue and Gillespie Avenue, east of Crown Valley Road, have been designated as H5; and
- The area surrounding the H5 designation, generally bounded by Sacramento Avenue to the north, 41st Street West and 40th Street West to the west, 9th Street and Spring Avenue to the south, and Crown Valley Road to the east, has been designated as Residential 2 (H2), with a maximum density of 2 residential units for each 1 net acre of land.
- The RL5, RL2, RL1, H2, and H5 designations are intended to reflect the existing densities within various parts of the rural town area, which are developed or partially developed as the result of previous land divisions. The RL5, RL2, RL1, H2, and H5 designations are not intended to promote further land divisions. New land divisions in the rural town area shall maintain a large minimum lot size to ensure consistency with the desired community character.

The majority of new residential development in Acton shall be directed to the rural town area instead of the surrounding rural preserve area, provided that such development is consistent with existing community character. New land divisions shall maintain a large minimum lot size. Various types of agriculture, equestrian, and animal-keeping uses should be allowed through the rural town area, provided that lots meet Zoning Code requirements for those uses. Home-based occupations may also be permitted throughout the rural town area, provided that they meet Zoning Code requirements.

The remainder of the community is considered to be a rural preserve area and has been designated as Rural Land 10 (RL10), with a maximum density of 1 residential unit per 10 gross acres of land, or Rural Land 20 (RL20), with a maximum density of 1 residential unit per 20 gross acres of land. These very low densities reflect the underlying infrastructure constraints, environmental resources, and safety constraints. Development in the rural preserve area shall be limited to single-family homes on very large lots, light and heavy agriculture, equestrian and animal-keeping uses, and other uses where appropriate.

Antelope Acres

The community of Antelope Acres is located in the northwestern portion of Antelope Valley, west of the City of Lancaster. Community residents are concerned about urbanization of the area and wish to remain an unincorporated rural community with a unique identity. Some portions of the community are partially developed with light agricultural uses and single-family homes on large lots, while other portions are largely undeveloped and contain environmental resources, such as Significant Ecological Areas and Agricultural Resource Areas.

The community has a rural town center area located along 90th Street West between Avenue E-4 and Avenue E-12. The rural town center area has been designated as Rural Commercial (CR) to serve the daily needs of residents and provide local employment opportunities. New buildings in the rural town center area should be limited to one story in height and should include Old West design elements at a pedestrian-oriented scale, with primary building entries facing 90th Street West. No other portions of the community have been designated for commercial or industrial use, and new commercial and industrial uses outside the rural town center area are strongly discouraged, as they are incompatible with the community character.

Over time, the rural town center areas should become the focal point of the Antelope Acres community and should be linked to surrounding rural town areas through trails and pedestrian routes. Pedestrian routes should have permeable paving, consistent with rural community character, instead of concrete sidewalks. Public amenities, such as plazas and community bulletin boards, are encouraged in this area.

The community includes rural town areas that surround the rural town center area and are generally bounded by Avenue E and Avenue C to the north, 80th Street West to the east, Avenue F and Avenue F-8 to the south, and 95th Street West and 90th Street West to the west. These areas have been designated as Rural Land 2 (RL2), with a maximum density of 1 residential unit per 2 gross acres of land. This designation is intended to reflect the existing density of the rural town areas and is not intended to promote further land divisions. New land divisions in the rural town areas shall maintain a large minimum lot size to ensure consistency with the existing community character.

The majority of new residential development in Antelope Acres should be directed to the rural town areas instead of the surrounding rural preserve areas, provided that such development is consistent with the existing community character and allows for light agriculture, equestrian, and animal-keeping uses should be allowed through the rural town area, provided that lots meet Zoning Code requirements for those uses. Heavy agriculture uses should be discouraged in the rural town areas because of potential impacts on existing residents. Home-based occupations are also appropriate in the rural town areas, provided that they meet Zoning Code requirements.

The remainder of the community is considered to be a rural preserve area and has been designated as Rural Land 10 (RL10), with a maximum density of 1 residential unit for each 10 gross acres of land, or Rural Land 20 (RL20), with a maximum density of 1 residential unit for each 20 gross acres of land. These very low densities reflect the underlying infrastructure constraints and environmental resources. Development in the rural preserve area should be limited to single-family homes on very large lots, light and heavy agriculture, equestrian and animal-keeping uses, and other uses where appropriate.

Crystalalre

The community of Crystalalre is located in the southeastern portion of the Antelope Valley, south of Llano, and includes a golf course and a small airport which are described in more detail below. Some portions of the community are developed with single-family homes on large lots. Other portions are largely undeveloped and contain environmental resources, such as Significant Ecological Areas, and are subject to safety hazards, such as Flood Zones, particularly along Big Rock Creek and Big Rock Wash..

The community currently does not have a rural town center area but a stretch of 165th Street East between East Avenue W-12 and East Avenue X, in front of Crystalalre Airport has been designated Mixed Use – Rural (MU-R) in anticipation of a future town center to develop in this area. New commercial uses outside of this MU-R designation are strongly discouraged, as they are not compatible with the community character.

The community includes a rural town area that includes the existing subdivision near the Crystalalre Country Club and adjacent lands that are generally bounded by 165th Street East to the east and Avenue Y-4 to the south. This area has been designated as Residential 2 (H2), with a maximum density of 2 residential units for each 1 net acre of land. This designation is intended to reflect the existing density of the rural town area. New land divisions in this area shall have large lot sizes that are consistent with the existing subdivision near the Crystalalre Country Club.

The majority of new residential development in Crystalalre should be directed to the rural town area instead of the surrounding rural preserve areas, provided that such development is consistent with existing community character and allows for light agriculture, equestrian, and animal-keeping uses, provided that lots meet Zoning Code requirements for those uses. Heavy agriculture uses should be prohibited because of potential impacts on existing residents. Home-based occupations may also be permitted in this area, provided that they meet Zoning Code requirements.

The remainder of the community is considered to be a rural preserve area and has been designated as Rural Land 10 (RL10), with a maximum density of 1 residential unit for each 10 gross acres of land, or Rural Land 20 (RL20), with a maximum density of 1 residential unit for each 20 gross acres of land. These very low densities reflect the underlying infrastructure constraints, environmental resources, and safety constraints. Development in the rural preserve area should be limited to single-family homes on very large lots, light and heavy agriculture, equestrian and animal-keeping uses, and other uses where appropriate.

Crystalalre Airport

The Crystalalre Airport is a privately owned and operated aviation facility that occupies several parcels. These parcels have been designated as Public and Semi-Public (P) to acknowledge the existing airport use and to allow for its continued operation. However, the Area Plan acknowledges that these parcels

also contain commercial and industrial uses and are an appropriate location for such uses given its proximity to the communities of Crystallaire and Llano. Accordingly, at the time of this Area Plan's adoption, the parcels were zoned Rural Commercial – Mixed Use (MXD-RU) and Light Industrial (M-1). This Area Plan allows commercial mixed-use and industrial uses on these parcels without a Plan Amendment, provided that these are compatible with airport operations and that these do not restrict or prohibit the operations of the airport.

Crystallaire Golf Course

The Crystallaire Golf Course is a privately owned golf facility that occupies several parcels. These parcels have been designated as Open Space – Parks (OS-PR) and zoned Commercial – Recreation (C-R) to acknowledge the existing residential recreational use and its open space character on the property, and to allow for its continued operation. The Area Plan also acknowledges that some limited residential uses may be appropriate as accessory to the primary use as a golf course. Thus the Area Plan allows some limited residential uses on these parcels without a Plan Amendment, provided that the golf course is in continued operation and that the residential uses occupy not more than 10 percent of the total area. All requirements of the base zone shall apply, including but not limited to, an approved conditional use permit.

El Dorado and White Fence Farms

The communities of El Dorado and White Fence Farms are located in the central portion of the Antelope Valley and are surrounded by the cities of Lancaster and Palmdale. Although these communities are adjacent to urbanized areas, such as the Rancho Vista community and the Antelope Valley Mall, they have a distinctly rural character. The communities are partially developed with light agricultural uses and single-family homes on large lots.

These communities do not have a rural town center area, but they are served by the rural town center area in Quartz Hill and by commercial centers in the adjacent cities. Two parcels on 10th Street West and one parcel on Avenue N have been designated as Rural Commercial (CR) in recognition of existing commercial uses. No other portions of the communities have been designated for commercial or industrial use, and new commercial uses outside of these CR designations and new industrial uses are strongly discouraged, as they are not compatible with the communities' character.

The communities are considered to be a rural town area and have been designated as Rural Land 2 (RL2), with a maximum density of 1 residential unit for each 2 gross acres of land. This designation is intended to reflect the communities' existing density and is not intended to promote further land divisions. New land divisions shall maintain a large minimum lot size to ensure consistency with the existing character of the communities.

Light agriculture, equestrian, and animal-keeping uses are appropriate in these communities, but heavy agriculture uses should be discouraged because of potential impacts on existing residents. Home-based businesses are also appropriate in these communities, provided that they meet Zoning Code requirements.

Elizabeth Lake and Lake Hughes (The Lakes)

The communities of Elizabeth Lake and Lake Hughes are located in the southwestern portion of the Antelope Valley, northwest of Leona Valley, and are partially within the National Forest. Some portions of the community are developed or partially developed with single-family homes, light agricultural uses, and a limited amount of commercial and industrial uses. Other portions are largely undeveloped, are generally not served by existing infrastructure, contain environmental resources, such as Significant Ecological Areas and Hillside Management Areas, and are subject to safety constraints, such as the San Andreas Fault and Very High Fire Hazard Severity Zones.

The communities share one rural town center area in Lake Hughes, located along Elizabeth Lake Road between Trail I and Mountain View Road, west of the Lake Hughes Community Center. The rural town center area has been designated as Rural Commercial (CR) and Light Industrial (IL) to serve the daily needs of residents and provide local employment opportunities. New buildings in the rural town center area should be limited to two stories in height and should be designed at a pedestrian-oriented scale, with primary building entries facing Elizabeth Lake Road or adjacent local streets.

The rural town center area should continue to be the focal point of the communities and should be linked to surrounding rural town areas through trails and pedestrian routes. Pedestrian routes should have permeable paving, consistent with rural community character, instead of concrete sidewalks. Public amenities, such as plazas and community bulletin boards, are encouraged in this area.

Some areas outside the rural town center area have been designated as Rural Commercial (CR) to acknowledge existing uses and to provide additional commercial services and local employment opportunities. Moving west to east through the communities, areas with this designation include:

- Several parcels along Lake Hughes Road between Elizabeth Lake Road and Desswood Road (Lake Hughes); and
- Two parcels at the southwest corner of Elizabeth Lake Road and Johnson Road (Elizabeth Lake).

New buildings in these CR designations should also be limited to two stories in height, should be designed at a pedestrian-oriented scale, and should be linked to surrounding rural town areas through trails and pedestrian routes. Pedestrian routes should have permeable paving, consistent with rural community character, instead of concrete sidewalks. New commercial uses outside of these CR designations, or outside the CR designations within the rural town center area, are strongly discouraged, as they are not compatible with the communities' character.

Several parcels at the southwest corner of Elizabeth Lake Road and Lake Hughes Road have been designated as Light Industrial (IL) to acknowledge an existing use. New industrial uses outside of this IL designation, or outside the IL designation within the rural town center area, are strongly discouraged, as they are not compatible with the communities' character.

The community of Elizabeth Lake includes rural town areas. The primary rural town area surrounds the Elizabeth Lake water body. North of Elizabeth Lake Road, the primary rural town area is generally bounded by Hawk Drive, Gist Drive, and hillsides to the north, Munz Ranch Road to the west, and Pekaboo Road and hillsides to the east. South of Elizabeth Lake Road, the primary rural town area is generally bounded by Sandrock Drive, Ranch Club Road, and Elizabeth Lake Road to the north, the

National Forest boundary to the west, the National Forest boundary, Ranch Club Road, and Kiptree Drive to the south, and Elizabeth Lake Road to the east. The primary rural town area has been designated as Residential 5 (H5), with a maximum density of 5 residential units for each 1 net acre of land. A few parcels north of Elizabeth Lake Road have been designated as Rural Land 2 (RL2), with a maximum density of 1 residential unit for each 2 gross acres of land. The H5 and RL2 designations are intended to reflect the existing densities within the primary rural town area, which resulted from previous land division activities. The H5 and RL2 designations are not intended to promote further land divisions. The privately owned portion of Elizabeth Lake water body is considered to be one of the communities' rural preserve areas, which are discussed below.

A secondary rural town area in Elizabeth Lake is located north of Johnson Road between Leadhill Drive and Limeridge Drive and is partially developed as the result of previous land division activities. The secondary rural town area has been designated as Residential 9 (H9), with a maximum density of 9 residential units for each 1 net acre of land. The H9 designation is intended to reflect the existing density of this area and is not intended to promote further land divisions.

The community of Lake Hughes also includes a rural town area. The rural town area extends west from the rural town center area and is generally bounded by Elizabeth Lake Road, Elderberry Street, High Trail, Lone Pine Trail, and hillsides to the north, Muir Drive and a line approximately 1,500 feet west of Lake Hughes Road to the west, Desswood Road, New View Drive, and South Shore Drive to the south, and Mountain View Road to the east. The rural town area has been designated as Residential 5 (H5), with a maximum density of 5 residential units for each 1 net acre of land. A few parcels west of Lake Hughes Road have been designated as Rural Land 5 (RL5), with a maximum density of 1 residential unit for each 5 gross acres of land. The H5 and RL5 designations are intended to reflect the existing densities within the rural town area, which resulted from previous land division activities. The H5 and RL5 designations are not intended to promote further land divisions.

The majority of new residential development in Elizabeth Lake and Lake Hughes (collectively known as The Lakes) should be directed to the rural town areas instead of the surrounding rural preserve areas, provided that such development is consistent with existing community character. New land divisions in the rural town area shall maintain a large minimum lot size to ensure consistency with the desired community character. Light agriculture, equestrian, and animal-keeping uses should be allowed throughout the rural town areas, provided that lots meet Zoning Code requirements for those uses. Heavy agriculture uses should be prohibited throughout the rural town areas because of potential impacts on existing residents. Home-based businesses may be permitted throughout the rural town areas, provided that they meet Zoning Code requirements.

The remaining lands in the communities are considered to be rural preserve areas and have been designated as Rural Land 20 (RL20), with a maximum density of 1 residential unit for each 20 gross acres of land. This very low density reflects the underlying infrastructure constraints, environmental resources, and safety constraints. Development in rural preserve areas should be limited to single-family homes on very large lots, light and heavy agriculture, equestrian and animal-keeping uses, and other uses where appropriate. The privately owned portion of the Elizabeth Lake water body has been designated as RL20 and the Area Plan supports efforts to acquire this area and preserve it as open space (see Conservation and Open Space Element, Policy COS 18.1).

Fairmont

The community of Fairmont is located in the northwestern portion of the Antelope Valley, west of Antelope Acres and near the Antelope Valley California Poppy Reserve. The community is largely undeveloped and is generally not served by existing infrastructure and public facilities, but it does contain some single-family homes on large lots and some agricultural uses. The community includes environmental resources, such as Significant Ecological Areas, and is subject to safety hazards, such as fault zones.

The community does not have a rural town center area. No portion of the community has been designated for commercial or industrial use, except for a parcel along Avenue D to reflect an existing use. New commercial or industrial uses are strongly discouraged, as they are not compatible with the community character.

The entire community is considered to be a rural preserve area and has been designated as Rural Land 10 (RL10), with a maximum density of 1 residential unit for each 10 gross acres of land, or Rural Land 20 (RL20), with a maximum density of 1 residential unit for each 20 gross acres of land. These very low densities reflect the underlying infrastructure constraints, environmental resources, and safety constraints. Development in the rural preserve area should be limited to single-family homes on very large lots, light and heavy agriculture, equestrian and animal-keeping uses, and other uses where appropriate.

Gorman

The community of Gorman is located in the far northwestern portion of Antelope Valley along the Golden State Freeway (Interstate 5). A portion of the community is partially developed with commercial uses that primarily serve travelers along the Freeway, along with some single-family homes and light agricultural uses. The remainder of the community is largely undeveloped, is generally not served by existing infrastructure, and contains environmental resources such as Hillside Management Areas and Significant Ecological Areas.

The community has a rural town center area surrounding the Golden State Freeway interchanges at Gorman School Road. The rural town center area has been designated as Major Commercial (CM) to serve the daily needs of residents and interstate travelers.

Some areas outside the rural town center area have also been designated Rural Commercial (CR) in recognition of existing commercial uses and future opportunities to serve interstate travelers. The existing Flying J Travel Plaza on Frazier Park Road and two parcels east of it also have been designated as Rural Commercial (CR). Several parcels surrounding Smokey Bear Road have been designated as Rural Commercial. No other portions of the community have been designated for commercial or industrial use, and new commercial uses outside these CR and CM designations and new industrial uses are strongly discouraged, as they are incompatible with the community character.

The remainder of the community is considered to be a rural preserve area and has been designated as Rural Land 20 (RL20), with a maximum density of 1 residential unit for each 20 gross acres of land. This very low density reflects the underlying infrastructure constraints and environmental resources. Development in the rural preserve area should be limited to single-family homes on very large lots, light and heavy agriculture, equestrian and animal-keeping uses, and other uses where appropriate.

Green Valley

The community of Green Valley is located in the southwestern portion of the Antelope Valley, south of Elizabeth Lake, and is completely within the National Forest. A large portion of the community is developed with single-family homes and commercial uses, while the remaining portion is largely undeveloped and contains scenic hillsides that are located in a Very High Fire Hazard Severity Zone.

The community does not have a rural town center area but is served by the rural town center areas in Lake Hughes Road and Leona Valley. Two areas, generally located at the intersections of Spunky Canyon Road and San Francisquito Canyon Road and of Spunky Canyon Road and Calle Olivera, have been designated as Rural Commercial (CR), recognizing existing uses that serve the daily needs of residents and provide local employment opportunities. New buildings in these areas should be limited to one story in height and should be designed at a pedestrian-oriented scale. No other portions of the community have been designated for commercial or industrial use, and new commercial uses outside these CR designations and new industrial uses are strongly discouraged, as they are incompatible with the community character.

The community includes rural town areas which are developed or partially developed as the result of previous land division activities. These areas generally extend southeast from San Francisquito Canyon Road and generally extend both north and south from Spunky Canyon Road, and are bounded by hillsides. These areas have been designated as Residential 9 (H9), with a maximum density of 9 residential units for each 1 net acre of land. The H9 designation is intended to reflect these areas' existing densities and development pattern, and is not intended to promote further land divisions.

The majority of new residential development in Green Valley should be directed to the rural town areas instead of the surrounding rural preserve area, provided that such development is consistent with existing community character. Light agriculture, equestrian and animal-keeping uses should be allowed in these areas, provided that lots meet Zoning Code requirements for those uses. Heavy agriculture uses should be prohibited in these areas because of potential impacts on existing residents. Home-based occupations may also be permitted in these areas, provided that they meet Zoning Code requirements.

The remainder of the privately-owned land in the community is considered to be a rural preserve area and has been designated as Rural Land 20 (RL20), with a maximum density of 1 residential unit for each 20 gross acres of land. This very low density reflects the underlying infrastructure constraints, environmental resources, and safety constraints. Development in the rural preserve area should be limited to single-family homes on very large lots, light and heavy agriculture, equestrian and animal-keeping uses, and other uses where appropriate.

Juniper Hills

The community of Juniper Hills is located in the southern portion of the Antelope Valley, south of Littlerock and Pearblossom. The community is largely developed and is generally not served by existing infrastructure and public facilities, but it does contain many single-family homes on large lots and some agricultural uses. The community is adjacent to the National Forest, includes scenic hillside areas, and is subject to several safety hazards, including the San Andreas Fault and Very High Fire Hazard Severity Zones.

The community does not have a rural town center area but is served by the rural town center areas in Littlerock and Pearblossom. The Juniper Hills Community Center on 106th Street East serves as a community meeting place, in lieu of a rural town center area, and residents have expressed a desire for a Post Office. No portion of the community has been designated for commercial or industrial use, and new commercial or industrial uses are strongly discouraged, as they are not compatible with the community character.

The entire community is considered to be a rural town area and has been designated as Rural Land 5 (RL5), with a maximum density of 1 residential unit for each 5 gross acres of land. This very low density reflects the underlying infrastructure constraints, environmental resources, and safety constraints. Development in the rural town area should be limited to single-family homes on large lots, light agriculture, equestrian and animal-keeping uses, and other uses where appropriate.

Lake Los Angeles

The community of Lake Los Angeles is in the eastern portion of the Antelope Valley. As of the 2000 Census, it had the largest population of any unincorporated community in the Valley. Many portions of the community are developed or partially developed with a wide range of uses and a distinctly rural character. The remaining portions are largely undeveloped and generally not served by existing infrastructure, include environmental resources, such as buttes and Significant Ecological Areas, and are subject to safety hazards, such as Flood Zones.

The community has a rural center area along Avenue O between 167th Street East and 172nd Street East, and along 170th Street East between Avenue O and Glenfall Avenue. The rural town center area has been designated as Rural Commercial (CR) to serve the daily needs of residents and provide local employment opportunities. New buildings in the rural town center area should be limited to two stories in height and include Old West or Southwestern design elements at a pedestrian-scale, with primary building entries facing Avenue O or 170th Street East. New development in the rural town center area should not require the installation of urban infrastructure, such as concrete curbs and gutters and traffic signals.

The rural town center area should continue to be the focal point of the community and should be linked to surrounding rural town areas through trails and pedestrian routes. Pedestrian routes should have permeable paving, consistent with rural community character, instead of concrete sidewalks. Streetscape improvements are recommended for Avenue O and 170th Street East, including native landscaping, "Old West" style street lights that meet dark sky objectives (only where necessary for public safety), and coordinated street furniture, such as benches, bus shelters, and bicycle racks. Other public amenities, such as plazas and community bulletin boards, are also encouraged in this area.

Some areas outside of the rural town center area have also been designated as Rural Commercial (CR) to provide additional commercial services, such as feed and tack stores. These areas include the intersection of Avenue P and 170th Street East and the northwest and northeast corners of the intersection of Avenue) and 175th Street East. New buildings in these areas should also be limited to two stories in height and include Old West or Southwestern design elements at a pedestrian-oriented scale with transportation links to surrounding rural town areas. No other portions of the community have been designated for commercial or industrial use, and new commercial uses outside these CR

designations and new industrial uses are strongly discouraged, as they are incompatible with the community character.

The community includes several rural town areas. One area is generally bounded by Avenue Q to the north, 150th Street East to the west, Palmdale Boulevard to the south, and 160th Street East to the east. This area has been designated as Rural Land 1 (RL1), with a maximum density of 1 residential unit per 1 gross acre of land. This designation is intended to reflect the area's existing density and is not intended to promote further land divisions. Another similar area is generally bounded by Avenue M-8, Penfield Avenue, and Avenue N to the north, 155th Street East, 150th Street East, and 152nd Street East to the west, Avenue N and Avenue O to the south, and 160th Street East and 165th Street East to the east. This area has also been designated as RL1, and this designation is also intended to reflect the area's existing density and is not intended to promote further land divisions.

Another rural town area is generally bounded by Avenue M, Avenue M-4, and Avenue M-12 to the north, 160th Street East to the west, Avenue N to the south, and 170th Street East, 175th Street East, and 180th Street East to the east. This area has been designated as Rural Land 5 (RL5), with a maximum density of 1 residential unit per 5 gross acres of land. This designation is intended to reflect the area's existing density and is not intended to promote further land divisions. The final rural town area is generally bounded by Avenue O and Avenue N to the north, 165th Street East and 160th Street East to the west, Avenue Q, Avenue P-12, Rawhide Avenue, and Avenue P to the south, and 165th Street East, 170th Street East, 175th Street East, and 180th Street East to the east. This area has been designated as Residential 2 (H2), with a maximum density of 2 residential units per 1 net acre of land. This designation is intended to reflect the area's existing density and is not intended to promote further land divisions. However, the buttes east of 170th Street East have been designated as RL5, acknowledging the need to limit development in scenic resource areas. The buttes west of 170th Street East, which are in a Significant Ecological Area, are considered to be in the rural preserve area, which is discussed below.

The majority of new residential development in Lake Los Angeles should be directed to the rural town areas instead of the surrounding rural preserve area, provided that such development is consistent with existing community character and allows for light agriculture, equestrian, and animal-keeping uses, provided that lots meet Zoning Code requirements for those uses. Heavy agriculture uses should be prohibited because of potential impacts on existing residents. Home-based businesses may also be permitted in the rural town areas, provided that they meet Zoning Code requirements. New land divisions in the rural town areas shall maintain a large minimum lot size to ensure consistency with the existing community character.

The remainder of the community is considered to be a rural preserve area and has been designated as Rural Land 10 (RL10), with a maximum density of 1 residential unit for each 10 gross acres of land or Rural Land 20 (RL20), with a maximum density of 1 residential unit for each 20 gross acres of land. These very low densities reflect the underlying infrastructure and safety constraints. Development in the rural preserve area should be limited to single-family homes on very large lots, light and heavy agriculture, equestrian and animal-keeping uses, and other uses where appropriate.

Lakeview

The community of Lakeview is located in the southern central portion of the Antelope Valley, adjoining the City of Palmdale to the north and east, and includes Lake Palmdale. Although this community is adjacent to urbanized areas, it has a distinctly rural character. Some portions of the community are

partially developed with light agricultural uses and single-family homes on large lots. Other portions are largely undeveloped and generally not served by existing infrastructure, include environmental resources such as Hillside Management Areas, and are subject to safety hazards, such as Very High Fire Hazard Severity Zones.

The community does not have a rural town center area but is served by commercial centers in the adjacent City of Palmdale. A few parcels at the intersection of the State Route 14 and Avenue S, and two parcels along Sierra Highway between Pearblossom Highway and Barrel Springs Road, have been designated as Rural Commercial (CR). In addition, several parcels at the intersection of Pearblossom Highway and Sierra Highway, and a parcel on Avenue S west of State Route 14 have been designated as Light Industrial (IL). These designations recognize existing uses and opportunities for additional local services and employments. No other portions of the community have been designated for commercial or industrial use, and new commercial or industrial uses outside of these CR and IL designations are strongly discouraged, as they are not compatible with the community character.

The community includes a rural town area that is generally bounded by the City of Palmdale boundary to the north, the City of Palmdale boundary, Farnborough Avenue and Tovey Avenue to the west, a line approximately 1,300 feet south of Lakeview Drive and Barrel Springs Road to the south, and the City of Palmdale boundary to the east. North of Avenue S, this area has been designated as Rural Land 2 (RL2), with a maximum density of 1 residential unit for each 2 gross acres of land. South of Avenue S, this area has been designated as Rural Land 1 (RL1), with a maximum density of 1 residential unit for each 1 gross acre of land, with the following exceptions:

- West of Tovey Avenue – RL2; and
- South of Lakeview Drive and west of El Camino Drive – RL2.

The RL1 and RL2 designations are intended to reflect this area's existing densities. New land divisions in this area shall maintain large lot sizes that are compatible with the community character.

The majority of new residential development in Lakeview should be directed to the rural town area instead of the surrounding rural preserve area, provided that such development is consistent with existing community character and allows for light agriculture, equestrian, and animal-keeping uses, provided that lots meet Zoning Code requirements for those uses. Heavy agriculture uses should be prohibited because of potential impacts on existing residents. Home-based businesses may also be permitted in this area, provided that they meet Zoning Code requirements.

The remainder of the community is considered to be a rural preserve area and has been designated as Rural Land 10 (RL10), with a maximum density of 1 residential unit for each 10 gross acres of land, or Rural Land 20 (RL20), with a maximum density of 1 residential unit for each 20 gross acres of land. This very low density reflects the underlying infrastructure constraints, environmental resources, and safety hazards. Development in the rural preserve area should be limited to single-family homes on very large lots, light and heavy agriculture, equestrian and animal-keeping uses, and other uses where appropriate.

Leona Valley

The community of Leona Valley is located in the southwestern portion of the Antelope Valley, adjacent to the National Forest, and is bounded by the City of Palmdale to the north and east. Community residents are concerned about urbanization of the area and wish to remain in an unincorporated rural

community with a unique identity. Some portions of the community are partially developed with light agricultural uses and single-family homes on large lots. Other portions are largely undeveloped, are generally not served by existing infrastructure, contain environmental resources, such as Significant Ecological Areas and Hillside Management Areas, and are subject to safety constraints, such as the San Andreas Fault and Very High Fire Hazard Severity Zones.

The community has a rural town center located at the intersection of Elizabeth Lake Road and 90th Street West. The rural town center area has been designated as Rural Commercial (CR) to serve the daily needs of residents and provide local employment opportunities. New buildings in the rural town center area should be limited to one story in height and should be designed at a pedestrian-oriented scale, with primary building entries facing Elizabeth Lake Road or 90th Street West. No other portions of the community have been designated for commercial or industrial use, and new commercial uses outside of this CR designation and new industrial uses are strongly discouraged, as they are incompatible with community character.

The rural town center area should continue to be the focal point of the community and should be linked to surrounding rural town areas through trails and pedestrian routes. Pedestrian routes should have permeable paving, consistent with rural community character, instead of concrete sidewalks. Public amenities, such as community bulletin boards, are encouraged in this area.

The community includes a rural town area that surrounds the rural town center. North of Elizabeth Lake Road, the rural town area is generally bounded by North Side Drive, Babia Street, and Penhaven Lane to the north, 100th Street West to the west, Elizabeth Lake Road to the south, and 86th Street West to the east. South of Elizabeth Lake Road, the rural town area is generally bounded by Leona Avenue and Elizabeth Lake Road to the north, 107th Street West, 98th Street West, and 92nd Street West to the west, hillsides and Odd Road to the south, and 86th Street West to the east. The rural town area has been designated as Rural Land 2 (RL2), with a maximum density of 1 residential unit for each 2 gross acres of land. This designation is intended to reflect the existing density of the rural town area and is not intended to promote further land divisions.

The majority of new residential development in Leona Valley should be directed to the rural town area instead of the surrounding rural preserve area, provided that such development is consistent with existing community character. New land divisions shall maintain a large minimum lot size to ensure compatibility with the community character. Each new home should have a unique architectural design. Light agriculture, equestrian, and animal-keeping uses should be allowed throughout the rural town area, provided that lots meet Zoning Code requirements for those uses. Heavy agriculture should be prohibited throughout the rural town area because of potential impacts on existing residents. Home-based businesses may also be permitted throughout the rural town area, provided that they meet Zoning Code requirements.

The remainder of the community is considered to be a rural preserve area and has been designated as Rural Land 20 (RL20), with a maximum density of 1 residential unit for each 20 gross acres of land. This very low density reflects the underlying infrastructure constraints, environmental resources, and safety constraints. Development in the rural preserve area should be limited to single-family homes on very large lots (2.5 net acres or greater), light and heavy agriculture, equestrian and animal-keeping uses, and other uses where appropriate.

Littlerock and Sun Village (Southeast Antelope Valley)

The communities of Littlerock and Sun Village are located in the southeastern portion of the Antelope Valley, east of the City of Palmdale. Residents of the communities are concerned about urbanization of the area and wish to remain as unincorporated rural communities with unique identities. Many portions of the communities are developed or partially developed with a wide range of uses and a distinctly rural character. The remaining portions are largely undeveloped and generally not served by existing infrastructure, include environmental resources such as Significant Ecological Areas, and are subject to safety hazards, such as Flood Zones.

Each community has a rural town center area. The Littlerock rural town center area is located along Pearblossom Highway between Little Rock Wash and 90th Street East. This rural town center area has been designated as Rural Commercial (CR), and Light Industrial (IL) to serve the daily needs of residents and provide local employment opportunities. This rural town center area also serves travelers along Pearblossom Highway. A possible expansion of the town center has also been identified further to the east where additional parcels have been designated Rural Commercial (CR) and Light Industrial (IL). New buildings in this rural town center area should be limited to two stories in height and include Old West or Southwestern design elements with earth tone colors at a pedestrian-oriented scale, with primary building entries facing Pearblossom Highway. The industrial designations in this rural town center have been expanded to accommodate light industrial uses appropriate for rural areas, such as truck storage facilities.

The Sun Village rural town center area is located along Palmdale Boulevard between Little Rock Wash and 95th Street East, and along 90th Street East between Palmdale Boulevard and Avenue Q-14. This rural town center area has been designated as Rural Commercial (CR) to serve the daily needs of residents and provide local employment opportunities. New buildings in this rural town center area should be limited to three stories in height and include Southwestern, Spanish Mission, or Mediterranean design elements with earth tone colors at a pedestrian-oriented scale, with primary building entries facing Palmdale Boulevard or 90th Street East.

The two rural town center areas should continue to be the focal point of their respective communities and should be linked to surrounding rural town areas through trails and pedestrian routes. Pedestrian routes should have permeable paving, consistent with rural community character, instead of concrete sidewalks. Streetscape improvements are recommended for Palmdale Boulevard and 90th Street East in the Sun Village rural town center area, including native landscaping, "Southwestern" style street lights that meet dark sky objectives (only where necessary for public safety), and coordinated street furniture, such as benches, bus shelters, and bicycle racks. If Pearblossom Highway is relinquished by the State of California (Caltrans), similar streetscape improvements are recommended in the Littlerock rural town center area. Other public amenities, such as plazas and community bulletin boards, are encouraged in both rural town center areas.

Some areas outside the two town center areas have also been designated as Rural Commercial (CR) to provide additional commercial services and local employment. These areas include the intersection of Avenue T and 87th Street East and the northeast corner of Avenue S and 90th Street East. New buildings in these areas should also be limited to two stories in height and include Old West or Southwestern design elements with a pedestrian-oriented scale and transportation links to surrounding rural town areas. New commercial uses outside of these CR designations, are strongly discouraged, as they are not compatible with the communities' character.

Several parcels near the intersection of Avenue R-8 and 90th Street East and a parcel at the northwest corner of Avenue T-8 and 80th Street East have been designated as Heavy Industrial (IH), recognizing existing uses appropriate for rural areas, such as truck storage facilities. New industrial uses outside of these IH designations, or outside the IL designations within the Littlerock rural town center area, are strongly discouraged, as they are not compatible with the communities' character.

The community includes several rural town areas. The first rural town area surrounds the Littlerock rural town center area and is generally bounded by Avenue U to the north, the Little Rock Wash to the west, the California Aqueduct and Avenue U-4 to the south, and 89th Street East and 94th Street East to the east. This area has been designated as Rural Land 5 (RL5), with a maximum density of 1 residential unit for each 5 gross acres of land, with the following exceptions:

- The area generally bounded by Avenue U to the north, the Littlerock Wash to the west, Pearblossom Highway to the south, and 75th Street East to the east, has been designated as Residential 5 (H5), with a maximum density of 5 residential units for each 1 net acre of land.

A second rural town area surrounds the Sun Village rural town center area and is generally bounded by Avenue Q to the north, the Little Rock Wash to the west, Avenue R to the south, and 115th Street East to the east. This rural town area has been designated as Rural Land 1 (RL1), with a maximum density of 1 residential unit for each 1 gross acre of land; and Rural Land 2 (RL2), with a maximum density of 1 residential unit for each 2 gross acres of land.

A third rural town area is generally bounded by Avenue R to the north, the Little Rock Wash and 87th Street East to the west, Avenue U to the south, and 106th Street East, 116th Street East and 120th Street East to the east. This rural town area has been designated as RL1-and RL2.

The RL1, RL2, RL5 and H5 designations are intended to reflect the rural town area's existing densities and are not intended to promote further land divisions. All future land divisions must comply with any minimum lot sizes as set forth in the Southeast Antelope Valley Community Standards District.

The majority of new residential development in Littlerock and Sun Village (collectively known as Southeast Antelope Valley) should be directed to rural town areas instead of the surrounding rural preserve area, provided that such development is consistent with existing community character and allows for light agriculture, equestrian, and animal-keeping uses, provided that lots meet Zoning Code requirements for those uses. Heavy agriculture uses should be prohibited in the rural town areas because of potential impacts on existing residents. Home-based businesses may also be permitted in the rural town areas, provided that they meet Zoning Code requirements. New land divisions in the rural town areas shall maintain a large minimum lot size to ensure consistency with the desired community character.

The remainder of the communities is considered to be a rural preserve area and has been designated as Rural Land 10 (RL10), with a maximum density of 1 residential unit for each 10 gross acres of land or Rural Land 20 (RL20), with a maximum density of 1 residential unit for each 20 gross acres of land. These very low densities reflect the underlying infrastructure constraints, environmental resources, and safety constraints. Development in the rural preserve area should be limited to single-family homes on very large lots, light and heavy agriculture, equestrian and animal-keeping uses, and other uses where appropriate.

Llano

The community of Llano is located in the southeastern portion of the Antelope Valley, along Pearblossom Highway (State Route 138). Some portions of the community are partially developed with light agricultural uses and single-family homes on large lots, while other portions are largely undeveloped, generally not served by existing infrastructure, and contain environmental resources, such as Significant Ecological Areas.

The community does not have a rural town center area but is served by the rural town center area in Pearblossom. A few parcels along Pearblossom Highway have been designated as Rural Commercial (CR) or Light Industrial (IL), recognizing existing uses and opportunities for additional local services and employment. No other portions of the community have been designated for commercial or industrial use, and new commercial or industrial uses outside these CR and IL designations are strongly discouraged, as they are not compatible with the community character.

The community includes a rural town area that is generally bounded by Pearblossom Highway to the north, 170th Street East and 172nd Street East to the west, Avenue W-14 to the south, and 175th Street East on the east. This area has been designated as Rural Land 5 (RL5), with a maximum density of 1 residential unit for each 5 gross acres of land. This designation is intended to reflect the existing density of the rural town area and is not intended to promote further land divisions.

The majority of new residential development in Llano should be directed to the rural town area instead of the surrounding rural preserve area, provided that such development is consistent with existing community character and allows for light agriculture, equestrian, and animal-keeping uses. Heavy agriculture uses should be prohibited in this area because of potential impacts on existing residents. Home-based businesses may also be permitted in this area, provided that they meet Zoning Code requirements.

The remainder of the community is considered to be a rural preserve area and has been designated as Rural Land 10 (RL10), with a maximum density of 1 residential unit for each 10 gross acres of land, or Rural Land 20 (RL20), with a maximum density of 1 residential unit for each 20 gross acres of land. These very low densities reflect the underlying infrastructure constraints and environmental resources. Development in the rural preserve area should be limited to single-family homes on very large lots, light and heavy agriculture, equestrian and animal-keeping uses, and other uses where appropriate.

Neenach

The community of Neenach is located in the far western portion of the Antelope Valley, along Avenue D (State Route 138). Some portions of the community are partially developed with light agricultural uses and single-family homes on large lots, while other portions are largely undeveloped and contain environmental resources, such as Significant Ecological Areas and Agricultural Resource Areas.

The community does not have a rural town center area but is served by the rural town center areas in Antelope Acres and Lake Hughes. A few parcels on Avenue D have been designated as Rural Commercial (CR) or Light Industrial (IL) in recognition of existing and/or planned commercial and industrial uses. No other portions of the community have been designated for commercial or industrial use, and new

commercial and industrial uses outside of these CR and IL designations are strongly discouraged, as they may not be compatible with the community character.

The community includes rural town areas that are generally bounded by Avenue B to the north, 270th Street West and 260th Street West to the west, Avenue D to the south, and 250th Street West on the east. These areas have been designated as Rural Land 5 (RL5), with a maximum density of 1 residential unit for each 5 gross acres of land. This designation is intended to reflect the existing density of the rural town areas and is not intended to promote further land divisions.

The majority of new residential development in Neenach should be directed to the rural town areas instead of the surrounding rural preserve areas, provided that such development is consistent with existing community character and allows for light agriculture, equestrian, and animal-keeping uses. Heavy agriculture uses should be prohibited in rural town areas because of potential impacts on existing residents. Home-based businesses are also appropriate in the rural town areas, provided that they meet Zoning Code requirements.

The remainder of the community is considered to be a rural preserve area and has been designated as Rural Land 10 (RL10), with a maximum density of 1 residential unit for each 10 gross acres of land, or Rural Land 20 (RL20), with a maximum density of 1 residential unit for each 20 gross acres of land. These very low densities reflect the underlying infrastructure constraints and environmental resources. Development in the rural preserve area should be limited to single-family homes on very large lots, light and heavy agriculture, equestrian and animal-keeping uses, and other uses where appropriate.

Pearblossom

The community of Pearblossom is located in the southeastern portion of the Antelope Valley, along Pearblossom Highway between Littlerock and Llano. Some portions of the community are developed with a wide range of uses and a distinctly rural character, while other portions are largely undeveloped, generally not served by existing infrastructure, and subject to safety hazards, such as Seismic Zones and Flood Zones.

The community has a rural town center area along Pearblossom Highway between 121st Street East and 133rd Street East. The rural town center area has been designated as Rural Commercial (CR) or Light Industrial (IL) to serve the daily needs of the residents and provide local employment opportunities. New buildings in the rural town center area should be limited to two stories in height and include Old West or Southwestern design elements at a pedestrian-oriented scale, with primary building entries facing Pearblossom Highway. No other portions of the community have been designated for commercial or industrial use, and new commercial and industrial uses outside of the rural town center area are strongly discouraged, as they are incompatible with the community character.

The rural town center area should continue to be the focal point of the communities and should be linked to surrounding rural town areas through trails and pedestrian routes. Pedestrian routes should have permeable paving, consistent with rural community character, instead of concrete sidewalks. Public amenities, such as plazas and community bulletin boards, are encouraged in this area.

The community includes rural town areas that are generally bounded by Pearblossom Highway to the north, 121st Street East to the west, Avenue W, the California Aqueduct, and Avenue W-11 to the south, and 135th Street East on the east. North of Avenue W, these areas have been designated as Residential

2 (H2), with a maximum density of 2 residential units for each 1 net acre of land or Residential 18 (H18), with a maximum density of 18 residential units for each 1 net acres of land. South of Avenue W and west of 128th Street East, these areas have been designated as Rural Land 5 (RL5), with a maximum density of 1 residential unit for each 5 gross acres of land. South of Avenue WE and east of 128th Street East, these areas have been designated as Rural Land 1 (RL1), with a maximum density of 1 residential unit for each 1 gross acre of land. These designations are intended to reflect existing densities of the area and are not intended to promote further land divisions.

The majority of new residential development in Pearblossom should be directed to the rural town areas instead of the surrounding rural preserve area, provided that such development is consistent with existing community character and allows for light agriculture, equestrian, and animal-keeping uses. Heavy agriculture uses should be prohibited in these areas because of potential impacts on existing residents. Home-based businesses may also be permitted in these areas, provided that they meet Zoning Code requirements.

The remainder of the community is considered to be a rural preserve area and has been designated as Rural Land 10 (RL10), with a maximum density of 1 residential unit for each 10 gross acres of land, or Rural Land 20 (RL20), with a maximum density of 1 residential unit for each 20 gross acres of land. These very low densities reflect the underlying infrastructure and safety resources. Development in the rural preserve area should be limited to single-family homes on very large lots, light and heavy agriculture, equestrian and animal-keeping uses, and other uses where appropriate.

Quartz Hill

The community of Quartz Hill is located in the central portion of the Antelope Valley and is surrounded by the cities of Lancaster and Palmdale. The community is adjacent to urbanized areas and is largely developed with a wide range of uses, but it retains a semi-rural character and residents wish to keep it an unincorporated community with a unique identity.

The community has a rural town center area along 50th Street West between Avenue L-6 and Avenue M-2. The town center area has been designated as Mixed Use – Rural (MU-R) and Light Industrial (IL) to serve the daily needs of residents and provide local employment opportunities. No other portions of the community have been designated for industrial use, and new industrial uses outside of the rural town center area are strongly discouraged, as they are incompatible with the community character. New buildings in the rural town center area should be limited to two stories in height, include Old West or Southwestern design elements with earth tone colors, and should be designed at a pedestrian-oriented scale, with primary building entries facing 50th Street West. In the MU-R designation, a vertical mix of commercial and residential uses is encouraged – for example, a building with commercial uses on the first floor and residential or office uses on the second floor. A horizontal mix of commercial and residential uses may also be appropriate – for example, a commercial building facing 50th Street West, with a residential building located towards the rear of the same lot.

The rural town center area should continue to be the focal point of the community and should be linked to surrounding rural town areas through trails and pedestrian routes. Pedestrian routes should have permeable paving, consistent with rural community character, instead of concrete sidewalks. Streetscape improvements are recommended for 50th Street West, including native landscaping, “Western” street lights that meet dark sky objectives, and coordinated street furniture, such as benches,

bus shelters, and bicycle racks. Other public amenities, such as plazas and community bulletin boards, are also encouraged in this area.

Some areas outside the rural town center area have also been designated as MU-R to provide additional commercial services and housing opportunities. These areas include the northwest corner of Avenue N and 50th Street West and the Avenue L corridor between 42nd Street West and 50th Street West. New buildings in these areas should also be limited to two stories in height, include Old West or Southwestern design elements with earth tone colors, and should be designed at a pedestrian-oriented scale with transportation links to surrounding rural town areas. A vertical or horizontal mix of commercial and residential uses may be appropriate in these areas. No other portions of the community have been designated for commercial use, and new commercial uses outside these MU-R designations, or outside the MU-R within the rural town center area, are strongly discouraged, as they are incompatible with the community character.

As the Avenue L corridor between 42nd Street West and 50th Street West develops over time, it will become a secondary rural town center area and should be linked to surrounding rural town areas through trails and pedestrian routes. Pedestrian routes should have permeable paving, consistent with rural community character, instead of concrete sidewalks. Streetscape improvements are recommended for the Avenue L corridor between 42nd Street West and 50th Street West, including native landscaping, “Western” street lights that meet dark sky, and coordinated street furniture, such as benches, bus shelters, and bicycle racks. Other public amenities, such as plazas and community bulletin boards, are also encouraged in this corridor.

The remainder of the community is considered to be a rural town area. Two properties along Avenue M have been designated as Residential 30 (H30), with a maximum density of 30 residential units for each 1 net acre of land, in recognition of existing multi-family uses. Several parcels adjoining the rural town center area between Avenue L-8 and Columbia Way have been designated as Residential 18 (H18), with a maximum density of 18 residential units for each 1 net acre of land, recognizing existing multi-family units and providing additional housing opportunities. In addition, a property at the northwest corner of Avenue M and 70th Street West, and several parcels on the south side of Avenue L near 40th Street West, has been designated as H18. New multi-family buildings in the H18 designation should be limited to two stories in height and should be designed in a manner that is compatible with nearby single-family homes.

South of Avenue L, the remaining rural town area has been designated as Residential 5 (H5), with a maximum density of 5 residential units for each 1 net acre of land, or Residential 2 (H2), with a maximum density of 2 residential units for each 1 net acre of land. These designations are intended to reflect the area’s existing density and are not intended to promote further land divisions, although properties along Columbia Way between 40th Street West and 45th Street West present some land division opportunities. Light agriculture, equestrian, and animal-keeping uses may be permitted in these areas, provided that lots meet Zoning Code requirements for those uses. Home-based businesses may also be permitted in these areas, provided that they meet Zoning Code requirements.

North of Avenue L, the remaining rural town area has been designated as Rural Land 1 (RL1), with a maximum density of 1 residential unit for each 1 gross acre of land. This designation is intended to reflect the area’s existing density and is not intended to promote further land divisions. Light agriculture, equestrian, and animal-keeping uses are appropriate in this area, but heavy agriculture uses

should be prohibited because of potential impacts to existing residents. Home-based businesses are also appropriate in this area, provided that they meet Zoning Code requirements.

Roosevelt

The community of Roosevelt is located in the northeastern portion of the Antelope Valley, north of the City of Lancaster. Community residents are concerned about the urbanization of the area and wish to remain an unincorporated rural community with a unique agricultural identity. Some portions of the community are partially developed with light agricultural uses and single-family homes on large lots, while some portions are in Agricultural Resource Areas and are partially undeveloped with farms and heavy agricultural uses. The remaining portions are largely undeveloped and contain environmental resources, such as Significant Ecological Areas.

The community has a rural town center area located at the intersection of Avenue J and 90th Street East. The rural town center area has been designated as Rural Commercial (CR) to serve the daily needs of the residents and provide local employment opportunities. New buildings in the rural town center area should be limited to one story in height and should be designed at a pedestrian-oriented scale, with primary building entries facing Avenue J or 90th Street East.

The rural town center area should continue to be the focal point of the communities and should be linked to the surrounding rural town area through trails and pedestrian routes. Pedestrian routes should have permeable paving, consistent with rural community character, instead of concrete sidewalks. Public amenities, such as community bulletin boards, are encouraged in this area.

Two parcels on 90th Street East have been designated as CR and Light Industrial (IL) in recognition of existing commercial and industrial uses. No other portions of the community have been designated for commercial or industrial use, and new commercial uses outside of this IL designation are strongly discouraged, as they are not compatible with the community character.

The community includes rural town areas that are generally bounded by Lancaster Boulevard to the north, 85th Street East to the west, Avenue J-12 and Avenue J to the south, and 90th Street East on the east. These areas have been designated as Rural Land 5 (RL5), with a maximum density of 1 residential unit for each 5 gross acres of land. This designation is intended to reflect the existing density of the rural town areas and is not intended to promote further land divisions. New land divisions in the rural town areas shall maintain a large minimum lot size to ensure consistency with the existing community character.

The majority of new residential development in Roosevelt should be directed to the rural town areas instead of the surrounding rural preserve area, provided that such development is consistent with existing community character and allows for light agriculture, equestrian, and animal-keeping uses. Heavy agriculture uses should be prohibited in these areas because of potential impacts on existing residents. Home-based businesses may also be permitted in these areas, provided that they meet Zoning Code requirements.

The remainder of the community is considered to be a rural preserve area and has been designated as Rural Land 10 (RL10), with a maximum density of 1 residential unit for each 10 gross acres of land, and Rural Land 20 (RL20), with a maximum density of 1 residential unit for each 20 gross acres of land. These very low densities reflect the underlying infrastructure constraints and environmental resources.

Development in the rural preserve area should be limited to single-family homes on very large lots, light and heavy agriculture, equestrian and animal-keeping uses, and other uses where appropriate. Agricultural uses in Agricultural Resource Areas will be protected and promoted, as directed in the policies of the Conservation and Open Space Element.

Three Points

The community of Three Points is located in the far western portion of the Antelope Valley, south of Neenach and northwest of Lake Hughes. The community is largely undeveloped and is generally not served by existing infrastructure and public facilities, but it does contain some single-family homes on large lots and some agricultural uses. The community is adjacent to the National Forest, includes environmental resources, such as scenic hillsides and Significant Ecological Areas, and is subject to several safety hazards, including the San Andreas Fault and Very High Fire Hazard Severity Zones.

The community does not have a rural town center area but is served by the rural town center area in Lake Hughes. A parcel at the southwest corner of Three Points Road and Pine Canyon Road has been designated as Rural Commercial (CR) in recognition of an existing commercial use. No other portions of the community have been designated for commercial or industrial use, and new commercial uses outside of this CR designation and new industrial uses are strongly discouraged, as they are not compatible with the community character.

The entire community is considered to be a rural preserve area and has been designated as Rural Land 20 (RL20), with a maximum density of 1 residential unit for each 20 gross acres of land. This very low density reflects the underlying infrastructure constraints, environmental resources, and safety constraints. Development in the rural preserve area should be limited to single-family homes on very large lots, light and heavy agriculture, equestrian and animal-keeping uses, and other uses where appropriate.

Chapter 8

Chapter 8: Plan Implementation

Table of Contents

I.	Introduction.....	IMP-2
II.	Implementation Programs.....	IMP-2
	Significant Ecological Areas (SEA) Program	
	Agricultural Resource Areas Program	
	Economic Opportunity Areas	
	Transfer of Development Rights Program	
	Scenic Drives Program	
	Antelope Valley Community Standards Districts	

I. Introduction

The California Government Code Section 65400 requires that upon adoption of a general plan, a planning agency shall “investigate and make recommendations to the legislative body regarding reasonable and practical means for the implementing the general plan or element of the general plan, so that it will serve as an effective guide for orderly growth and development, preservation and conservation of open-space land and natural resources, and the efficient expenditure of public funds relating to the subjects addressed in the general plan”. The Antelope Valley Area Plan (Area Plan) is part of the General Plan and the two documents must be consistent with each other. The Area Plan refines countywide goals and policies in the General Plan by addressing issues specific to the Antelope Valley. This Chapter describes the intent of the Area Plan with regards to the specific implementation programs that are to be enacted after the adoption of the Area Plan, as well as provide clear guidelines as to how these programs will be designed and implemented.

II. Implementation Programs

A. Significant Ecological Areas

The Significant Ecological Areas (SEAs) in this Area Plan are based on conservation biology principles that seek to conserve habitats of unique and threatened species, and retain linkages and wildlife movement across important ecological areas. The SEA Program recognizes that many of the properties within the SEAs are privately owned. The SEA Program, as detailed in this implementation program, alongside the goals and policies of this Area Plan is created to conserve the biological resources in the SEAs while recognizing these private property rights, facilitating development compatible with the SEAs, and incentivizing conservation and preservation of these important ecological areas. The SEA Program within this Area Plan is intended to complement and where appropriate, further refine aspects of the General Plan SEA Program, and will be consistent with it.

The SEAs established in this Area Plan are intended to change gradually over time. Development and conservation within and around the SEAs will affect the ecological value and biological resources they contain. Additionally, the location or value of biological resources in the Antelope Valley may change. It is anticipated that the future will include new forms of development and new techniques in conservation planning. In order to respect the diverse ecological values of areas within the SEAs, the SEA Program must retain a flexible regulatory approach that connects levels of review to the potential impacts of individual development projects. The SEA Program is intended to change and adapt alongside the SEAs. In order to ensure the Antelope Valley SEA Program continues to remain relevant and appropriately located, the County will review the performance of the SEA Program periodically.

This implementation program may be subsumed by a more comprehensive, countywide program as part of a General Plan update and/or Zoning Ordinance amendment

Incentives for Conservation and Mitigation

As SEAs provide value as important habitat, privately owned land within SEAs can be important sources for conservation and mitigation land required for development within the Antelope Valley. Projects in the Antelope Valley that require mitigation land shall meet their mitigation requirements from land within the SEAs identified in this Area Plan, to the greatest extent feasible.

B. Agricultural Resource Areas Program

In order to encourage the continued operation of local farms in the Antelope Valley, it is the intent of this Area Plan to develop a program allowing greater flexibility for local farms to establish and operate additional compatible uses as incidental or accessory to their primary farming operation. This would allow property owners to explore and develop additional sources of income to augment their primary farming use. This program may consist of developing more flexible zoning regulations for parcels used for farming purposes ; allowing the transfer of development rights from agricultural lands with the option of retaining agricultural easements on the property; creating a more streamlined process for permits on identified farmlands; and other such incentives for continuing their farming operations on their properties.

C. Economic Opportunity Areas (EOAs)

As more details are finalized with the High Desert Corridor and the Northwest 138 Corridor Improvement projects (i.e. route alignments, location of on-ramps, number of lanes etc.), further planning activities may be necessary for each EOA to ensure that the Area Plan's Goals and Policies, as well as Land Use Policy and zoning are consistent with the final design of the two projects. Future planning activities may involve the preparation of a Community Plan or Specific Plan, with associated land use and zoning changes as well as specific goals, policies and implementing strategies that would ensure that the economic opportunities presented by these infrastructure projects are balanced with preserving the rural character and ecological value of the surrounding areas and communities. In addition, any development within the Antelope Valley Area Plan boundaries shall be required to further analyze infrastructure impacts at a project level. This may require additional feasibility engineering studies so that infrastructure development requirements can be established to the satisfaction of the County Department of Public Works (DPW).

1. East EOA

The East EOA is located in the eastern part of the Antelope Valley, along the proposed route of the High Desert Corridor. It includes the communities of Lake Los Angeles, Sun Village, Littlerock, Pearblossom, Llano and Crystallaire, as previously described in Chapter 7 (Community-Specific Land Use Concepts). Further planning activities for the East EOA may be pursued with the development of the High Desert Corridor Project.

2. Central EOA

The Central EOA is located in the general vicinity of the intersection of Avenue D and State Route 14, north of William J. Fox Air Field. It includes areas just outside the eastern border of Antelope Acres, as well as a concentration of light and heavy industrial uses in the vicinity of the Lancaster Landfill. It also encompasses the Lancaster Water Reclamation Plant, which provides the area with potential access to recycled water that can help support the residential, commercial and industrial uses being proposed for the area. Further planning activities for the Central EOA may be pursued with the development of the Northwest 138 Corridor Improvement Project.

3. West EOA

The West EOA is located in the northwestern part of the Antelope Valley along the proposed route of the Northwest 138 Corridor Improvement Project. The area includes large contiguous landholdings that have been proposed for master-planned developments, as well as the western portion of Neenach. Due to its proximity to Interstate 5, new retail and housing in Kern County to the north, and to ensure orderly development in the area, any master-planned community within the West EOA will require further planning activities in addition to this Area Plan.

With the number and size of contiguous parcels owned by two property owners (Tejon Ranch Company and Bruce Burrows), a Specific Plan or similar planning activity will be required for more specific master-planning activities for these specific parcels. This is necessary to ensure that development in the area occurs in an orderly and sustainable way, and that the required infrastructure and public utilities are in place at a master-planned level before these new developments are established. Thus, this Area Plan specifically requires the preparation and adoption of a Specific Plan or similar planning document for these parcels before any development of five or more residential dwelling units, any commercial use, any industrial use, or any combination thereof, can be approved. In order to allow for more flexibility in the future detailed site design of specific neighborhoods in this area, a Specific Plan for a project in the West EOA may be allowed to convert the areas designated as Residential 5 (H5) to General Commercial (CG) or Public and Semi-public (P) designations without amending this Area Plan, so long as the resulting residential densities do not exceed those provided for by this Area Plan and no change in unmitigated significant impacts occurs. The Specific Plan may also include provisions for the conversion of residential to commercial areas, provided the amount of planned commercial building square footage does not result in any new unmitigated significant impacts. The Specific Plan shall also stipulate that these provisions (i.e. converting residential to commercial or other designations) are subject to a traffic study that confirms that no new unmitigated significant traffic impacts will occur.

Overall, land use adjustments within designations are permitted as part of a Specific Plan provided that the adjustments: 1) do not increase the total number of developable acres, dwelling units or square footage; 2) increase the total amount of open space and do not decrease the total amount of natural open space; and 3) do not result in new unmitigated significant impacts.

If a complete application for a Specific Plan or similar planning document is not submitted within five years of the effective date of this Area Plan, the Department of Regional Planning may initiate a Community Plan for the West EOA.

D. Transfer of Development Rights Program

This Area Plan recognizes that increasing or limiting residential densities through Land Use designations can only go so far in terms of either encouraging development or protecting the environment, respectively, in the areas where they are appropriate. Thus, it is the intent of this Area Plan to develop a Transfer of Development Rights (TDR) Program for the Antelope Valley in order to fully realize the potential development in the EOAs and encourage preservation of SEA lands.

1. Sending Areas

Sending Areas shall be lands designated or identified as SEAs or Seismic Zones or are otherwise located in the Rural Preserve Areas, with land use designations of Rural Land 10 (RL10) or Rural Land 20 (RL20). The Department of Regional Planning shall explore ways to give property owners incentives to take advantage of the program, such as, but not limited to, density bonuses in transferring development rights. For example, while development proposed in these areas are subject to a maximum density of 1 dwelling unit for each 10 or 20 acres of land, the development rights in these areas may be transferrable to receiving areas at densities as high as 1 dwelling unit for each two acres of land.

2. Receiving Areas

Receiving Areas should be those areas identified as EOAs. Depending on the specific circumstances within each EOAs, development rights transferred into these areas may either be part off or in addition to those densities established by the Land Use Policy Map (Map 2.1) of this Area Plan. This shall be determined through further analysis in a comprehensive, Antelope Valley-wide TDR Program.

E. Antelope Valley Scenic Drives Program

This Area Plan has identified a number of Scenic Drives in the Antelope Valley (Map 4.2) that should be preserved to ensure that their scenic value is maintained in the years to come. Thus, it is the

intent of this Area Plan to develop and implement a program for future review of proposed developments within viewsheds of these Scenic Drives, which may include:

- Required Visual Impact Assessment for proposed development within the viewsheds of identified Scenic Drives;
- Required finding for discretionary entitlements that the proposed development is compatible with the scenic character of the route; or
- Applicable development standards for development along a Scenic Drive.

F. Antelope Valley Community Standards Districts

As indicated in Title 22 (Zoning Code) Chapter 22.44.090, the “Community Standards Districts (CSDs) are established as supplemental districts to provide a means of implementing special development standards contained in adopted neighborhood, community, area, specific and local coastal plans within the unincorporated areas, or to provide a means of addressing special problems which are unique to certain geographic areas within the unincorporated areas of Los Angeles County.”

There are currently five adopted CSDs in the Antelope Valley: in the rural communities of Acton, the Lakes (Elizabeth Lake and Lake Hughes), Juniper Hills, Leona Valley, and Southeast Antelope Valley (Littlerock and Sun Village). In addition to these, the Department of Regional Planning has received proposal for six new CSDs: for the rural communities of Antelope Acres, Fairmont, Green Valley, Lake Los Angeles, Quartz Hill, and Roosevelt as well proposed amendments to the CSDs of Leona Valley and Southeast Antelope Valley (Littlerock and Sun Village).

This Area Plan is the foundational planning document for the development of the Antelope Valley for the next 20 to 30 years. As part of its implementation, this Plan shall require a comprehensive review of all the existing CSDs in the Antelope Valley. This review may also include a program to prepare and adopt any proposed new CSDs or amendments to existing CSDs in the next several years after the adoption of the Area Plan. When a comprehensive review has been conducted, and new and/or updated CSDs have been adopted, these CSDs may specify whether a variance shall be granted only under extraordinary circumstances.

Appendix A: Conservation and Open Space Element Resources

I. Open Space and Natural Areas in the Antelope Valley

Los Angeles County offers a wide variety of open space and natural areas. The following open space and natural areas are managed by the County or are located primarily within the unincorporated areas:

Angeles National Forest

The Angeles National Forest was established by Executive Order in 1892 and is managed by the U.S. Forest Service. The Forest covers over 650,000 acres. The Angeles National Forest manages the watersheds within its boundaries to provide water to Southern California and to protect surrounding communities from catastrophic floods. The land within the Angeles National Forest is diverse in appearance and terrain, and provides many opportunities for recreational and scenic enjoyment. Much of the Angeles National Forest is covered with dense chaparral, pine and fir covered slopes as elevations in the Angeles National Forest range from 1,200 to 10,064 feet.

Devil's Punchbowl Natural Area

Devil's Punchbowl is a 1,310-acre natural area that consists of rugged wilderness rock formations along the San Andreas Fault on the northern slope of the San Gabriel Mountains. The terrain climbs from 4,200 feet to 6,500 feet in elevation, with natural plant and animal communities ranging from desert scrub to pine forests. A seasonal stream runs through the natural area.

High Desert Wildlife and Wild Flower Sanctuaries

The County currently operates eight wildlife sanctuaries and one wildflower sanctuary in the high desert of Antelope Valley. Ranging from 2,500 to over 3,600 feet in elevation and encompassing more than 2,000 acres, the sanctuaries offer opportunities for spring wildflower viewing, bird watching, hiking and horseback riding. Wildlife seen on the preserves vary from horned lizards, chuckwallas and rattlesnakes, to prairie falcons and golden eagles. Insect life is most abundant during the warmer months, and in spring, the Joshua tree and other large shrubs provide nesting sites for a variety of songbirds. Other protected animals are the kit fox, desert tortoise and Mojave ground squirrel.

Michael D. Antonovich Open Space Preserve

The Michael D. Antonovich Open Space Preserve offers 500 acres of dedicated open space in the Santa Susana Mountains and is managed by the Mountains Recreation and Conservation Authority (MRCA). Located on the northern border of Los Angeles, this open space preserve contains a diversity of flora and fauna, from big cone Douglas fir, California walnut and oak trees to black bears, deer and mountain lions. The Preserve also provides important habitat connections through its numerous wilderness trails in the Rim of the Valley corridor of the Santa Clarita Woodlands Park.

II. Conservancies

The County works with various conservancies to maintain and protect open space land in Los Angeles County. Land conservancies are private, nonprofit organizations and public agencies that share a

common goal: to conserve land for the benefit of people and nature. Land conservancies are generally started by community residents who wish to preserve a certain area or piece of open space land on a local or regional scale. Land conservancies have the flexibility to acquire, hold and manage land in the public interest, and also to preserve open space through voluntary conservation agreements with landowners, which permanently protect the land from development, while the title remains with the landowner. Most conservancies work in partnership with local governments and provide various levels of educational programs and land restoration and/or land enhancement projects. In the Antelope Valley, the primary conservancy group in operation is the Antelope Valley Conservancy.

Antelope Valley Conservancy

The Antelope Valley Conservancy is a local land trust conservancy that obtains and stewards lands that are important to the community for quality of life, scenic beauty, and plant and animal habitat. AVC focuses on Joshua tree woodlands, the keystone species of the Mojave Desert, which supports a wide variety of native species. Most of the Conservancy's targeted preservation lands are in the County's designated Significant Ecological Areas. (<http://www.avconservancy.org/>)

III. Regional Habitat Linkages

Habitat linkages are defined as area within the overall range of a species or suite of species that possess sufficient cover, food, forage, water and other essential elements to serve as a movement pathway, or between two or more larger areas of habitat. Depending on the species, linkages vary in size. For example, a belt of coastal sage scrub traversing a golf course, connecting sage scrub habitat areas on either side, providing a safe passage zone for smaller, slower-moving species (such as lizards and rodents) to maintain population connectivity between the two sides of the golf course is one form of habitat linkage.

Wildlife corridors, which are areas of open space of sufficient width to permit larger, mobile species (such as foxes, bobcats and coyote) to pass between larger areas of open space, or to disperse from one major open space region to another, are another type of habitat linkage. Such areas are generally several hundred feet wide, unobstructed, and usually possess cover, food and water. The upland margins of a creek channel, open ridgelines, open valleys or the bottoms of drainages often serve as major corridors locally, as do riparian alignments.

Biological resources are important in a regional context, serving to connect resources in adjacent local jurisdictions. Critical biological resources are maintained through habitat connectivity, which sustains population genetic diversity, and provides refuge for migrant species. Regional habitat linkages are identified in the Conservation and Natural Resources Element. The Antelope Valley, Puente Hills, San Andreas, Santa Clara River, Santa Felicia, Santa Monica Mountains, and Santa Susana Mountains and Simi Hills SEAs serve as important regional habitat linkages. More details about linkages between and within each of these SEAs are provided below:

Antelope Valley SEA

The SEA extends from the Angeles National Forest to the playa lakes within Edwards Air Force Base, encompassing most of the two largest drainages exiting the northern slope of the San Gabriel Mountain range. The geographical features of the SEA serve as a major habitat linkage and movement corridor for all wildlife species within its vicinity and, in an intergenerational sense, many of the plant species. Ecologically generalist species (such as mountain lion, bobcat, coyote, gray fox,) have the ability to move

across such vast areas and through changing habitat types. For such species, the SEA may serve as an important system for long-term and genetic exchange among populations. For smaller or less-mobile species or taxa, which are narrowly restricted in their habitat needs, the SEA can serve as a broad linkage zone, in which individual movement can take place during seasonal population dispersal or over generations. This provides essential genetic exchange within and between metapopulations. The two drainages, combined with the upland terrestrial Desert-Montane transect portion of the SEA, ensure linkage and direct movement areas for all of the wildlife species present within the County portion of the Antelope Valley.

San Andreas SEA

The SEA includes several important linkages for wildlife movement. The foothills in the western-most part of the SEA are an important linkage between the San Gabriel Mountains, the Tehachapi Mountains, and the Coastal Ranges. The linkage to the Tehachapi Mountains is important because the Tehachapis connect to the southern-most extent of the Sierra Nevada Mountains. The Tehachapi Mountains represent the only mountain linkage from the Transverse Ranges and the Coast Ranges to the Sierra Nevada Range. This feature may be an important topographic reference for migrating birds, and provides high elevation foraging grounds along the migratory route. The several ranges that meet at the western end of the SEA provide a valuable link for gene flow between divergent subspecies, varieties, and populations of many species. The SEA includes numerous drainages that extend onto the Antelope Valley floor towards resources such as the Fairmont and Antelope buttes. These washes provide an important linkage for animals traveling between the Valley floor, the buttes and the western part of the San Gabriel Mountains. In addition, Anaverde Creek, Amargosa Creek, and Pine Canyon facilitate east-west wildlife movement through the mountains, Portal Ridge, and Ritter Ridge. Tributary drainages from the Santa Clara River, such as Elizabeth Lake Canyon and San Francisquito Canyon, connect coastal drainages and the coastal ecoregion to the San Andreas Fault and interior watersheds. The frequency of valuable riparian communities along this travel route, which is located within an otherwise arid climate, further contributes to the SEA's importance for wildlife and habitat linkages in the region.

Santa Clara River SEA

Historically (and prehistorically) the riparian corridor along the Santa Clara River has served as the primary east-west linkage between the Pacific coastline, Coast Ranges, interior ranges, high desert and southern Sierra (via the Tehachapi Range). Animals moving through the Santa Clara River at one time had unobstructed passage along the river and within its tributaries. The present configuration of the tributary drainages has reduced connectivity from the Santa Clarita Valley to the north, but the Santa Clara River remains relatively intact and open. The SEA embraces the river corridor and the linkage zones that are considered essential to ensuring connectivity and resource values within the historic movement zones for all of the wildlife species present within the County portion of the Santa Clara River.

IV. Significant Ecological Areas

History of the SEA Program

Los Angeles County's Significant Ecological Areas (SEAs) Program has schematic roots in an initial General Plan guiding document, the 1970 Environmental Development Guide, which was adopted as a preliminary General Plan for the County. The Open Space Concept Plan and 1990 Open Space Policy Map depict greenbelt areas and rural lands that reasonably correspond to the current SEA map.

The original Significant Ecological Area Report was prepared in 1972 by scientists from the University of California, Los Angeles, the Los Angeles County Museum of Natural History and other local academic institutions, at the request of the Los Angeles County Department of Regional Planning (DRP). The DRP asked the report authors to identify “significant ecological areas,” which due to their high biological resource value, should receive special consideration during the formulation of the 1973 General Plan. In the final report, 81 such areas were mapped and brief descriptions of the value of each were given. The 81 areas were then included on the Vegetation and Wildlife Map in the Conservation Element of the 1973 General Plan.

In 1976, following the 1975 court decision requiring the preparation of a revised General Plan, the DRP and the Environmental Systems Research Institute commissioned the Los Angeles County Significant Ecological Area Study (1976 SEA Study), from the environmental consulting firm, England and Nelson. After excluding the Channel Islands and national forest lands from the study area, the 1976 SEA Study reviewed the data and criteria used to establish the original significant ecological area list, analyzed new information, developed a set of eight criteria to be used to select and prioritize significant ecological areas and concluded with individual maps and descriptions for each. From an initial list of 115 sites, 62 areas met the criteria and were recommended for adoption by the study. In 1980, 61 of these biologically significant areas were adopted as part of the Conservation and Open Space Element of the Los Angeles County General Plan on the Special Management Areas Policy Map and through individual descriptions of the SEAs in Technical Supplement E of the 1980 General Plan.

In 1991, supplemental studies further assessing the biological resources within seven SEAs were conducted. The Phase I Studies, conducted by Michael Brandman Associates, assessed the following SEA areas: Cold Creek Significant Ecological Area No.9, San Franciscuito Canyon Significant Ecological Area No.19, Dudleya Densiflora Population Significant Ecological Area No.45, Kentucky Springs Significant Ecological Area No.61, Las Virgenes Significant Ecological Area No.6, Tonner Canyon and Chino Hills SEA No. 15, and Tuna Canyon SEA No. 10. The studies looked at current ownership patterns, existing resources, development pressures and made recommendations into the future management of the SEAs. All of the Phase I studies found either that the SEA boundaries were adequate in size or recommended the expansion of the boundaries to better encompass and protect biotic resources.

In 2000, the DRP commissioned the Los Angeles County Significant Ecological Area Update Study (2000 Update Study) prepared by PCR Services Corporation, Frank Hovore & Associates and Forma Systems. The 2000 Update Study included an Executive Summary, Background Report and twelve biological resources assessments for the Proposed Antelope Valley SEA, Proposed Cruzan Mesa Vernal Pools SEA, Proposed East San Gabriel Valley SEA, Proposed Joshua Tree Woodlands SEA, Proposed Puente Hills SEA, Proposed San Andreas SEA, Proposed San Dimas Canyon and San Antonio Wash SEA, Proposed San Gabriel Canyon SEA, Proposed Santa Catalina Island SEA, Proposed Santa Clara River SEA, Proposed Santa Monica Mountains SEA, and the Proposed Santa Susana Mountains and Simi Hills SEA. These twelve biological resource assessment areas consolidated the 1980 unincorporated area SEAs into larger areas for study and proposed inclusion as SEAs.

The 2000 Update Study also examined the assumptions of the original eight SEA designation criteria from the 1976 SEA Study, modifying one criterion and deleting two. The modification of Class 1 changed the language from “the habitat of rare, endangered, and threatened plant and animal species,” to specify “the habitat of *core populations* of rare, endangered and threatened plant and animal species.” Class 6: “areas important as game species habitat or as fisheries” was removed due to the questionable contribution of these areas towards maintaining biotic diversity. Class 8: “special areas” was deleted due to the vague nature of that designation. The six SEA criteria are contained within this Appendix E, and

each SEA description lists which criteria it meets.

From 2001 to 2011, the DRP conducted public outreach, solicited additional recommendations on the SEA boundaries and checked the SEA boundaries with an expert panel of biologists convened in 2010.

SEA Designation Principles

Previously, areas were assigned SEA designations in an attempt to slow or modify the type of development within their boundaries. However, as the County underwent a period of unanticipated growth, many of the SEAs experienced a reduction and/or degradation of their biotic diversity. Appendix E uses the definition of biotic or biological diversity provided by the 1990 U.S. Congressional Biodiversity Act, HR1268, which is defined as a full range of variety and variability within and among living organisms and the ecological complexes in which they occur.

Currently, the design of the SEAs is based on scientifically-grounded concepts regarding size and connectivity. Where feasible, SEAs form linkages between core habitats, which are large blocks of habitat generally conforming to a significant topographical feature, such as a watershed, major river, butte, etc., in order to ensure regional species movement.

Most SEA designations do not focus on a single resource or habitat type and, over time, conservation plans have come to employ a fluid approach to conserving an ever-increasing list of sensitive resources (e.g., endangered species, habitats of limited distribution, and "patchy" habitats such as coastal sage scrub). The SEA designations rely on two primary conservation principles: namely that species extinction rates are lower on larger "islands," or blocks of land, than smaller islands; and that isolated habitat areas have less opportunity to regain species by re-colonization from other areas.

Many wildlife species, particularly carnivores and other wide ranging species, require large areas of suitable habitat for genetically and demographically viable populations. In addition, large islands are more likely to encompass diverse habitat types and are more easily buffered against potential impacts from surrounding developed lands. The SEAs are designed to provide habitat linkages between related habitat types (such as the Antelope Valley buttes, or the San Andreas Rift Zone wetlands), by encompassing areas of sufficient width to function as wildlife movement routes between these open space areas.

The current SEA designations provide local resources (such as sensitive species) and their habitats, as well as the seasonal support habitats for those resources, with connections to essential sustaining resource areas (such as corridor areas and hydrological systems). For example, zones of lower intensity human impacts that exist between essential habitat resources have been included in the current SEA designations, thereby helping to maintain the biotic diversity in the County. The designation of Coastal Resource Area (CRA) is given to those SEAs located with the California Coastal Zone.

SEA Selection Criteria

All of the County's SEAs and CRAs must satisfy at least one of the six SEA selection criteria:

A. The habitat of core populations of endangered or threatened plant or animal species.

Intent of Criterion A: These areas are important in maintaining viable plant and/or animal populations for those species recognized by state and or federal resource agencies as being extremely low in numbers or having a very limited amount of suitable habitat available. The terms "endangered" and

"threatened" have precise meanings defined in both state and federal law. The identification of "core population" will be determined by the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Wildlife (CDFW). The term "core population" as used here is a general biological term referring to a known and/or a viable population. Other locations of endangered or threatened plant or animal species may also occur in the County, which are not within an SEA. It should also be noted that the concept of core populations is consistent with current thinking of the USFWS and the CDFW.

This criterion is not meant to constitute a recovery program for listed species, but one element of a more comprehensive conservation effort for the long term sustainment of listed species within the County. At the local level, recovery programs of both the CDFW and the USFWS have measures in place that can impose severe penalties for the "take" of listed species or their habitat.

- Federally Endangered: "any species which is in danger of extinction throughout all or a significant portion of its range...."
- Federally Threatened: "any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range."
- State Endangered: "...a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease."
- State Threatened: "...a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts required by this chapter." [California Code of Regulations, Title 1, Sec 670.5]

B. On a regional basis, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.

Intent of Criterion B: The purpose of this criterion is to identify biotic resources that are uncommon on a regional basis. The geographical region considered could be as small as the Southern California coastal plains, the Transverse Mountain Ranges, the Mojave Desert, the Southern California coastline, etc. The geographical region could also be as large as Southern California, the Pacific coast, all of California, the western United States, or even larger. The community, association, or habitat is either unique or restricted in distribution in an area larger than the political boundaries of the County (i.e., coastal sage scrub, native grasslands, or vernal pools). Resources that are limited in distribution in the region being considered, but common elsewhere, are also included under this category.

C. Within the County, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.

Intent of Criterion C: The purpose of this criterion is to identify biotic resources that are uncommon within the political boundaries of the County, regardless of their availability elsewhere. The County has a high diversity of biological components. The County and San Diego County are the only counties in the U.S. that possess coastal, montane, and desert subregions within their boundaries. It is a rich heritage that few local governments have an opportunity to preserve.

Many biotic communities that were once common in the County have been severely reduced due to urban and agricultural development. This is especially true south of the San Gabriel Mountains, and among the agricultural fields of the North County. Other biotic features have never been common.

D. Habitat that at some point in the life cycle of a species or group of species, serves as concentrated breeding, feeding, resting, migrating grounds and is limited in availability either regionally or in the County.

Intent of Criterion D: Species or groups of species, at various points in their life cycles, tend to congregate in certain areas. These areas possess resources that are essential to the maintenance of specific wildlife species. This criterion is intended to identify those areas that are limited in distribution either regionally or in the County, and not the primary habitat of common species or groups of species.

E. Biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or represent unusual variation in a population or community.

Intent of Criterion E: Oftentimes scientists learn the most about a biological phenomenon by studying it at an extreme in its distribution. This frequently reveals the biological and ecological parameters under which it can survive. In addition, isolated populations and communities often are relicts of what was present in an area at some previous time, and may show genetic traits not found elsewhere in the species. These biological and ecological parameters may be useful in determining taxonomic relationships.

F. Areas that would provide for the preservation of relatively undisturbed examples of the original natural biotic communities in the County.

Intent of Criterion F: The intent of this criterion was to identify examples of the primary biotic resources in the County. At least one example (e.g., native grassland, valley oak savannah) of each vegetation type will be selected from the various geographical regions in the County in order to preserve basic biogeographic diversity.

SEA Descriptions

The following descriptions of the 21 SEAs include descriptions of the boundaries, resources, wildlife movement, and designation criteria for each. More detailed information about the specific plant and animal species of interest for each SEA is contained within the SEA Program Guide, which is maintained by the Department of Regional Planning. The SEA descriptions, followed by the CRA descriptions, are listed in alphabetical order.

Altadena Foothills and Arroyos SEA

Boundary and Resources Description

The Altadena Foothills and Arroyos SEA is located in the westernmost portion of the San Gabriel Valley. This SEA includes incorporated and unincorporated areas. The SEA represents the lower elevation/urban interface portions of Millard, Alzada, Chiquita, Las Flores, Rubio, and Eaton canyons from the urban edge, to undeveloped wildland areas of the lower elevations of the Angeles National Forest.

The SEA is located within the Mount Wilson and Pasadena United States Geological Survey (USGS) 7.5' California Quadrangles.

On the west side of the Altadena Foothills and Arroyos, the western and southwestern boundaries track along the urban-wildland interface in the undeveloped areas of the Arroyo Seco, Fern, and El Prieto canyons, and the boundary pulls back around a small area of development at the northern-eastern edge of La Cañada-Flintridge. A developed area northeast of the junction of Millard Canyon and El Prieto is excluded. The SEA designation includes the undeveloped portions of sub-watersheds of the Arroyo Seco, and also encompasses undeveloped parts of drainages, including Alzada and Chiquita, which flow into the Devils Gate Reservoir of the Arroyo Seco. The Arroyo Seco is within the Los Angeles River watershed. This SEA includes portions of the cities of Pasadena and La Cañada-Flintridge, the unincorporated community of Altadena, and the Angeles National Forest. The eastern side of the southern boundary encompasses undeveloped areas of the sub-watersheds of Las Flores, Rubio and Eaton canyons, which are tributary to the Rio Hondo and historically to the San Gabriel River. Much, but not all, of the Rio Hondo catchment is diverted via flood-control channels to the Los Angeles River. The southern boundary of the SEA is bordered by developed properties. The southern boundary moves east along the urban-wildland interface to include undeveloped parts of watersheds, which closely follow the perimeter of Devil's Gate Reservoir, in the Hahamongna Park in Pasadena. From Hahamongna Park, the SEA boundary continues east along the edge of development into the San Gabriel River watershed. The eastern border of the SEA is the eastern ridge of Eaton Canyon near the canyon mouth. A finger of the SEA extends downstream along Eaton Wash to include the Eaton Debris Basin and Reservoir. The northern boundary is formed along ridgelines within the Angeles National Forest that define the catchment of the local canyons. Within the Angeles National Forest, development is much less dense, in the form of in-holdings and Angeles National Forest leases, and is often naturally landscaped, albeit disturbed.

The chief attribute of this SEA is a high diversity of species, which is due to the SEA's position between the mountain biome and the valley biome, caused by an abrupt change of slope formed by the thrust fault complex that borders the San Gabriel Mountains. Furthermore, the SEA has as its center the dividing ridge between the two principal rivers of the Los Angeles Basin, the Los Angeles River and the San Gabriel River.

The wide range of elevation, topography, aspect, and geology represent a diverse array of physical habitats within this SEA. In general, the topography of the SEA is moderately steep to very steep, which results in a number of very narrow corridors with elevations ranging from a high of approximately 2,400 feet above mean sea level (MSL) to a low of approximately 1,200 feet above MSL. Consequently, a variety of plant communities exist, including riparian and upland shrublands and woodlands. Within these major community types, there are many vegetation series that vary according to plant species dominance.

Of particular note for this SEA is its potential to accommodate lower elevation east-west linkages. This is significant because of the constraints of development at lower elevations, the very steep terrain, and seasonal snow storms above the SEA, beginning at about 3000 feet—all of which limit potential movement for many species. There is also potential for north-south wildlife movement between the Angeles National Forest and the Verdugo Mountains via the Arroyo Seco and the San Rafael Hills. The Arroyo Seco is the eastern limit of this link and creates a potential movement corridor from the Angeles National Forest, over and under the Interstate-210. Across the Interstate-210, the linkage enters the San Rafael Hills, where blocks of habitat remain in the cities. Some are conserved in natural open space, such as the Cherry Canyon Park and Open Space Preserve of the City of La Cañada-Flintridge, just south of the County Descanso Gardens. These open spaces are interspersed with residential development and are not part of the SEA. From the San Rafael Hills, linkage potential may be traced to the west across State Route-2 and Verdugo Wash, past enclaves of residential development to access the Verdugo Mountains.

Wildlife Movement

Wildlife movement within the SEA takes on two major forms. First, due to the extremely steep intervening topography, considerable movement of wildlife up and down the drainages, which course through this SEA to connect the forest interior with foothill areas, is expected. Consequently, this type of movement occurs on a seasonal basis, particularly for large mobile mammals that typically meet their full range of habitat needs over broad areas.

The second major type of movement occurs across the flanks of the foothills in an east-west direction. Particularly for riparian-obligate and riparian-favoring migratory birds, the corridor linking lower elevation riparian habitats in the SEA are of high importance and heavily utilized.

Regional Biological Value

The SEA meets important SEA designation criteria and supports many regional biological values. Each criterion and how it is met is described below.

CRITERIA ANALYSIS OF THE ALTADENA FOOTHILLS AND ARROYOS SEA

	Criterion	Status	Justification
A)	The habitat of core populations of endangered or threatened plant or animal species.	Not Met	None within this SEA.
B)	On a regional basis, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.	Met	The SEA is designating one of the principle ecotones of the Southern California coastal areas: the area where the sediment of the coastal alluvial fans from the mountain streams and drainages is exiting the abrupt upthrust rock of the mountains. Here one finds the biotic communities of the mountains meeting the communities of the coastal plain areas, combining with the organisms that are only found at the junction. The natural habitats of this kind of biological area are fast dwindling as urban communities expand to the limits of easily buildable space.
C)	Within the County, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.	Met	The SEA is designating one of the principle ecotone areas of the County coastal exposure: the area where the sediment of the alluvial fans from the mountain streams and drainages is adding to the mile-deep sediments of the Los Angeles Basin, as the watercourses exit the abrupt upthrust rock of the San Gabriel Mountains. It is an area where one can often encounter flora that is characteristic of the Peninsular Ranges to the south and flora of the coastal ranges and

	Criterion	Status	Justification
			Sierra Nevada to the north, among typical flora of the Transverse Ranges. The SEA contains prime examples of coastal sage scrub and other kinds of chaparral, riparian oaks, woodlands of the canyon oak of the mountains, woodlands of the coast live oak, which occurs both in the lower mountains and the valleys, good stands of the San Gabriel endemic oak (<i>Quercus dumosa</i> var. <i>gabrielensis</i>), diverse and beautiful flora characteristic of the continually changing beds of the mountain streams, both perennial and intermittent, and the wildlife that reside in these various habitats.
D)	Habitat that at some point in the life cycle of a species or group of species, serves as concentrated breeding, feeding, resting, or migrating grounds and is limited in availability either regionally or in the County.	Met	The SEA provides a low-elevation constrained corridor. The SEA serves as the only corridor to provide interacting component habitat areas for species to feed, rest, and migrate from low basin and foothill elevations to the sub-alpine elevations of the high San Gabriel Mountains.
E)	Biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or represent unusual variation in a population or community.	Not met	None within this SEA.
F)	Areas that would provide for the preservation of relatively undisturbed examples of the original natural biotic communities in the County.	Met	Areas encompassed within the SEA represent the only remaining stands of low-elevation foothill scrub, chaparral, and canyon woodland communities within the north San Gabriel Valley. These communities once extended throughout what are now the communities of the north San Gabriel Valley, bridging the transition between high chaparral on the southern slope of the San Gabriel Mountains to the alluvial fans extending beneath the mountains to the coastal basin.

In conclusion, the area is an SEA because it contains (B - C) a good example of the biotic communities typical of the area where the abrupt upthrust of the mountains meets the alluvial fans of the valleys, a natural habitat that is limited in availability in the County and the coastal Southern California region; (D) it has a constrained connective corridor area near the Devil's Gate Dam where the freeway underpasses provide access between the San Rafael Hills and the San Gabriel Mountains; and (F) it supports intact remnant stands of low-elevation chaparral and scrub communities that were once more widespread within the region.

Antelope Valley SEA

Boundary and Resources Description

The Antelope Valley SEA is located in the central portion of the Antelope Valley, primarily east of the cities of Palmdale and Lancaster, within a predominantly unincorporated area of the County. The SEA is focused on the principal watercourses of the area: Little Rock Wash and Big Rock Wash and tributaries, such as Mescal Creek. Audubon California recognizes the area of Edwards Air Force Base as a Globally Important Bird Area (IBA), which is visited by tens of thousands of migrant birds during the spring and fall migratory seasons, and supports the breeding of rare and endangered birds during the spring and summer months.

The SEA is located, at least partially, in each of the following United States Geological Survey (USGS) 7.5' California Quadrangles: Rosamond, Rosamond Lake, Redman, Rogers Lake South, Jackrabbit Hill, Lancaster East, Alpine Butte, Hi Vista, Adobe Mountain, Palmdale, Littlerock, Lovejoy Buttes, El Mirage, Pacifico Mountain, Juniper Hills, Valyermo, and Mescal Creek.

Watercourses and water features, such as dry lakes and springs, are the focus for desert wildlife and central to connectivity and biodiversity in this region. The SEA was delineated to emphasize the importance of the Little Rock Wash and Big Rock Wash watersheds to the surface and subsurface hydrology of the Antelope Valley and to the dry lakes. The western portion of the SEA extends along the margin of the Little Rock Wash and floodplain zone, while the eastern margin follows a tributary of Big Rock Wash, which is Mescal Creek Wash and its tributaries. The origins of the watercourses in the Angeles National Forest are an important aspect of their diversity and connectivity, and the importance of the diverse forest vegetation of this SEA is discussed below. The SEA includes several major buttes and numerous minor ones, which have highly diverse biota along with diverse desert habitats, which range from sand dunes formed from the wind-blown dust that the buttes collect, to rocky crags, which are home to various raptors. The SEA includes the County's portion of the watershed basin for dry lakes, which are the destination for the watercourses. There are three dry lakes and their adjacent plains (protected as part of Edwards Air Force Base) included in the SEA: Rosamond Dry Lake with the adjacent Piute Ponds, Buckhorn Lake, and Rogers Lake. These lakes and ponds are often flooded during the rainy winter-spring seasons, and are the principal resting areas in the region on the Pacific Flyway. The northeastern portion of the SEA encompasses some agricultural cropland (portions of which are fallow) and dispersed rural residential uses; however, the underlying hydrology of the washes remains intact throughout the entire SEA.

Three main watercourse segments originate in the San Gabriel Mountains and flow through the Antelope Valley to dry lakes near the northern County boundary: 1) Little Rock Wash; 2) Big Rock Wash; and 3) Desert-Montane. Desert-Montane centers on Mescal Creek and includes adjacent drainages. The flows of all three drainages are subsurface for much of the year and may be on the surface during rain and snowmelt.

The Little Rock Wash segment (the westernmost segment), goes north from Little Rock-Palmdale Dam as its southern barrier. Upstream from the reservoir is critical habitat for the endangered arroyo toad (*Anaxyrus californicus* FE, SSC). The toad could occur from time to time in the downstream area of the SEA. Heading north to Mount Emma Road, the boundaries follow the flood zone of the Little Rock Wash and also incorporate some of the vegetated slopes that drain to the wash. North from Mount Emma Road, the boundaries generally follow Federal Emergency Management Agency (FEMA) boundaries. On the west side, south of Edwards Air Force Base and north of Avenue F, the SEA boundary follows the

Economic Opportunity Area boundary.

All of Edwards Air Force Base that is in the County is included in the SEA because the restricted entry and use protect the dry lakes and their neighboring areas. Many desert plants and wildlife species once found broadly across the Antelope Valley are now found only or primarily within Edwards Air Force Base. The ponds and dry lakes have distributed habitat of marshy alkali grassland, alkali flats, and cattail and bulrush marsh augmented by wastewater treatment facilities that have additional ponds. Some of the nesting rare and uncommon birds include white-faced ibis (*Plegadis chihi*), tricolored blackbird (*Agelaius tricolor*), redhead (*Aythya americana*), gadwall (*Anas strepera*), yellow-headed blackbird (*Xanthocephalus xanthocephalus*), least bittern (*Ixobrychus exilis*), and federally-threatened western snowy plover (*Charadrius alexandrinus nivosus*).

The Big Rock Wash area has western and eastern segments in the SEA. The western arm of the Big Rock Wash segment begins near the northern boundary of the Angeles National Forest, heads north out of the Forest along Pallett Creek. The SEA includes parts of Cruthers and Holmes creeks near their junctions with Pallett Creek. SEA boundaries follow the braided stream channel toward the confluence with Big Rock Wash. From the aqueduct at Big Rock Wash to Edwards Air Force Base, the western boundary line follows recently active braids of Big Rock Wash, encompassing Alpine Butte, and joining to the Little Rock Wash segment within Edwards Air Force Base. On the eastern arm of the Big Rock Wash segment, the SEA boundaries head north from the Angeles National Forest headwaters of Dorr Canyon (a Big Rock Wash tributary) and the headwater area of Big Rock Wash near State Route-2. The boundaries travel through the Angeles National Forest and follow the wash area of the streams toward their confluence with Pallett Creek. The Angeles National Forest floodplain of the widened area of South Fork of Big Rock Wash is included in the SEA.

South Fork of Big Rock Wash is part of the federally-designated critical habitat of the mountain yellow-legged frog (*Rana muscosa*, FE, SE). This frog is known in the County from only a few high-mountain streams in the San Gabriel Mountains. A fungal pathogen is principally responsible for its decline; however, climate change, air pollution and non-native predators are also likely contributing factors.

Another broad area of the San Andreas Fault Zone near the Valyermo Ranch follows the FEMA boundaries and includes a nesting area for gray vireos near Bobs Gap. Between the Angeles National Forest and the aqueduct, the SEA boundaries follow FEMA boundaries. The eastern boundary generally follows the FEMA boundary and recently active braids along the main course of Big Rock Wash to the vicinity of Avenue Q East, at which point it projects east to encompass Lovejoy Buttes. At Avenue O, the eastern boundary rejoins the main active portion of Big Rock Wash, continuing northeastward to skirt development in Lake Los Angeles. In the vicinity of Avenue M, the boundary projects eastward from about 156th Street East to 180th Street East) to encompass Rocky, Piute, and Saddleback Buttes, and connect with the Desert-Montane transect segment.

The Desert-Montane Transect segment begins in the Angeles National Forest along the ridge of Table Mountain at the San Bernardino-Los Angeles County line. Table Mountain is known for its diverse flora, which includes desert and mountain elements, and some unusual limestone-obligate species. The SEA southern boundary along the ridgeline meets the western boundary as it skirts the camp developments along the southern base of Table Mountain. The boundary turns north along the western ridge of the Mescal Creek drainage, crossing the California Aqueduct with the State Route-138. From the aqueduct to Avenue R, the western boundary buffers the westernmost portion of the drainage by 200 feet, protecting the braided area of the watercourse. This part of the SEA includes Black Butte and the Three Sisters Buttes, and many smaller unnamed buttes, as well as Mescal and Theodore Payne County wildlife

sanctuaries. The east side of the transect is the San Bernardino-Los Angeles County line. At about Avenue U East, the eastern boundary veers off the San Bernardino-Los Angeles County line to the north-northwest, buffering the Puzzle Creek watercourse by about 200 feet, protecting the braiding of the easternmost drainages. Near Avenue R, the boundary trends north, and goes north-northwest near Avenue P to include Moody Butte, lesser unnamed rises, and Blue Rock Butte.

The Desert-Montane segment largely avoids drainages that flow into and out of the Lake Los Angeles community, but the transect includes diffuse watercourses on the south side of Saddleback Butte, Saddleback Butte and the surrounding Saddleback Butte State Park, the Antelope Valley Indian Museum State Park at the base of Piute Butte, and Piute Butte. At about Avenue H and 170th Street East, the boundary turns to the northeast following natural vegetation to the County boundary near Avenue C. Here the boundary turns north along the line to where San Bernardino, Kern and Los Angeles counties meet. This northeastern part of the SEA has WEMO conservation areas for the threatened desert tortoise and state-threatened Mojave ground squirrel. The northeastern area has some BLM land and the County Phacelia Wildlife Sanctuary, which is also County Wildflower Preserve A. The SEA includes large parts of County Wildflower Preserve F.

On Edwards Air Force Base, north to south between Avenues B and E East, and west to east between 140th Street East and the San Bernardino-Los Angeles County line, there is federally-designated critical habitat for the state and federally-threatened desert tortoise (*Gopherus agassizii*). At 190th Street, the critical habitat widens to extend north beyond the County and the SEA into Kern County. At 200th Street, the critical habitat widens to the south to extend to Avenue H and then goes east across the San Bernardino-Los Angeles County line. The desert tortoise critical habitat area on Edwards Air Force Base is included in the SEA, and much of the SEA area north of Avenue H in the eastern drainages of the SEA is designated critical habitat for the tortoise.

The SEA traverses the Antelope Valley from the foothills of the San Gabriel Mountains, to the low elevations of the dry lake basins, and its expanse and considerable topographical relief is reflected in its relatively high floral and faunal diversity. The SEA includes playa lake, alkali marsh, alluvial fan scrub, a mosaic of xeric desert scrubs, Joshua tree woodland, desert riparian woodlands, juniper scrub, pinyon pine, chaparral and mixed conifer, oak, and riparian communities of higher elevations. Transitional zones (ecotones) between these communities often contain unusual species compositions, such as pinyon pine, juniper and Joshua trees together, or Joshua trees adjacent to cottonwood forest.

Edwards Air Force Base has the only good stands of mesquite (*Prosopis glandulosa*) remaining in the County. It has areas of Mojave spineflower (*Chorizanthe spinosa*), creosote bush scrub, alkali sink, and the transition vegetation between the two. Rosamond Lake has the best example of the shadscale scrub and alkali sink biotic communities in the County. Shadscale scrub needs heavy soil with underlying hardpan between 3000-6000 feet elevation, which is unusual in the County, and more common in the north Mojave Desert and Owens Valley. In addition, the playa has the southernmost extension of the Great Basin kangaroo rat (*Dipodomys microps*), which is an isolated geographic population of scientific interest.

The southernmost portions of the three “legs” of the SEA lie within the Angeles National Forest, and include the upper tributary watersheds and streams for Little Rock Wash, Big Rock Wash, and Mescal Creek. These areas support multi-species oak and conifer woodlands that are common to the middle-elevation zones on the north face of the San Gabriel Mountains. The creeks are higher energy systems at those elevations, as they collect water from the surrounding terrain, and are typically lined with woodlands of alder, willow, sycamore and cottonwood, with varying densities and with various

compositions of species.

As the creeks drop north of the pressure ridges of the San Andreas Fault Zone, they lose gradient and widen, and most of the flow becomes sub-surface, except during high energy storms or in the spring (depending upon rainfall totals in the watersheds). The vegetation becomes sparser and less evenly distributed along the channel margins. Crossing the lowlands of the Antelope Valley, the channels support a variety of desert scrub vegetation within the alluvial plains. Where the alluvial plains are wide and shallow, cottonwood-willow woodland and sycamore woodland vegetation communities often occur within the overall floodplain on stable terraces; around oxbow flow zones in the Antelope Valley; or where the groundwater table is replaced or augmented by agricultural runoff. The surrounding upland habitats are primarily desert scrubs, including creosote and chenopod scrubs, sand sheets (chiefly around the buttes), and Joshua tree woodland. Intact Joshua tree woodland, with native understories present, supports a relatively high diversity of annual wildflowers, reptiles and mammals. The Joshua trees also provide nest sites for many resident and migratory bird species.

Lovejoy, Alpine, Piute, Black and Saddleback buttes, along with other, smaller unnamed buttes, form most of the topographical relief within the SEA. These areas offer different ecological conditions that are associated with rock shelter, perching sites, nesting sites, denning areas, wind protection and sand sheet accumulation areas. Local and migratory bat species roost and reproduce in the caves and crevices of the butte formations. The higher buttes provide local nesting sites for owls and other birds of prey.

Alpine Butte is the least disturbed butte in the County, with excellent stands of Joshua tree woodland and creosote bush scrub, and impressive wildflower displays when rainfall creates appropriate conditions. Lovejoy Butte has Joshua tree woodland and creosote bush scrub, with a central wind-blown sand community for a good mixture of rock and sand habitats. In addition, the close proximity of Lovejoy Butte to Big Rock Wash increases the diversity of habitats in the area. Nevertheless, it also suffers from impact from the Lake Los Angeles community, which borders the butte on three sides. The clustering of buttes in the SEA may be important to the abundant, diverse wildlife that inhabits the various vegetation communities around and in the buttes. Saddleback Butte and Piute Butte together are protected as a state park, but Saddleback Butte is also subject to development for campsites and hiking trails. Piute Butte has a prehistoric site that may protect it from much future recreational development. All of the buttes harbor diverse wildlife and flora. Most of them are critical habitat for the state and federally-threatened desert tortoise. Some buttes within the desert tortoise's critical habitat are not included in the SEA.

The active and fallow open agricultural lands support a diversity of wildlife species, which essentially regard the fields and ditches as irrigated desert. Birds of prey frequently hunt over the open agricultural areas, including fallow fields; wide-ranging predators also find excellent hunting conditions in and around agricultural areas. A spectrum of local and migratory bat species feed over the irrigated fields in the spring and summer, when insect numbers are the highest, and at least one sensitive bat species, the pallid bat, forages in open scrub or ruderal desert habitats.

The northern portion of the SEA contains several unique habitat types, including mesquite bosque (threatened locally by lowering water tables and harvest for firewood), clay pan pools, vernal pools, alkali grasslands, alkali and freshwater marshes, and permanent ponds. Hundreds of bird species have been recorded from the pond and marsh habitats around the dry lakes and ponds, and numerous species nest on the playa margins or in the associated riparian habitats. The open creosote scrub and other xeric habitats on the slopes surrounding the lake playas serve as important wintering areas for many raptor species, as well as large numbers of songbirds.

Wildlife Movement

The SEA extends from the Angeles National Forest to the playa lakes within Edwards Air Force Base, encompassing most of the two largest drainages exiting the northern slope of the San Gabriel Mountain range. The geographical features of the SEA serve as a major habitat linkage and movement corridor for all wildlife species within its vicinity and in an intergenerational sense, many of the plant species. Ecologically generalist species (mountain lion, bobcat, coyote, gray fox, etc.) have the ability to move across such vast areas and through changing habitat types. For such species, the SEA may serve as an important system for long-term and genetic exchange among populations. For smaller or less-mobile species or taxa, which are narrowly restricted in their habitat needs, the SEA can serve as a broad linkage zone, in which individual movement can take place during seasonal population dispersal or over generations. This provides essential genetic exchange within and between metapopulations. The two drainages, combined with the upland terrestrial Desert-Montane transect portion of the SEA, ensure linkage and direct movement areas for all of the wildlife species present within the County portion of the Antelope Valley.

Regional Biological Value

The SEA meets several SEA designation criteria and supports many regional biological values. Each criterion and how it is met described below.

CRITERIA ANALYSIS OF THE ANTELOPE VALLEY SEA

	Criterion	Status	Justification
A)	The habitat of core populations of endangered or threatened plant or animal species.	Met	Critical habitat for the only known Antelope Valley population of the federally-endangered arroyo toad is adjacent to Little Rock Reservoir, upstream in Little Rock Creek, and some may still be found downstream of the dam in the SEA. The SEA encompasses much of the County ranges of the federally-threatened California desert tortoise, including much of the County critical habitat for the tortoise. The state-threatened Mohave ground squirrel occurs throughout much of the SEA. The SEA includes some of the critical habitat of mountain yellow-legged frog in the South Fork of Big Rock Creek. It includes habitat designated in the Western Mojave Plan (WEMO) for the alkali mariposa lily, which is a rare lily of the desert floor.
B)	On a regional basis, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.	Met	The mesquite bosque, sand sheet, rocky butte, desert riparian woodland, and alluvial fan sage scrub habitats are unique and regionally restricted biotic communities encompassed by the SEA. Desert species not, or rarely, found elsewhere in the County, such as verdin, black-throated sparrow, Mojave rattlesnake, desert banded gecko, Leech’s prionid borer, and mesquite borer, occur within these habitats. Additionally, the

	Criterion	Status	Justification
			ponds and other riparian and wetland systems in the northern portion of the SEA support numerous water birds and raptors not found elsewhere in the County.
C)	Within the County, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.	Met	The desert alluvial fan sage scrub, Joshua tree woodland, desert riparian woodland, mesquite bosque, alkali meadow/marsh, desert freshwater marsh, playa lake and seasonal pool habitats are located within, are unique to, or best represented within, the SEA.
D)	Habitat that at some point in the life cycle of a species or group of species, serves as concentrated breeding, feeding, resting, migrating grounds and is limited in availability either regionally or in the County.	Met	The freshwater habitats within and around Rosamond, Buckhorn and Rogers dry lake basins have large concentrations of migratory and resident waterfowl and birds of prey, providing them with essential seasonal and permanent resources. The rocky desert buttes are unique roosting, sheltering, perching and nesting sites for birds of prey and bats. This SEA is centered on migratory routes for both plants and animals along principal desert washes and buttes that connect the mountains to freshwater playas.
E)	Biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or represent unusual variation in a population or community.	Met	The mesquite bosque that is located within the SEA is clearly at an extreme of its geographical range, along with its associated biota, such as the mesquite borer. Edge populations usually represent an unusual genetic variation in a population or community, and therefore meet the criterion of scientific interest as well as the criterion of a population at the extreme physical/geographical limit of its range.
F)	Areas that would provide for the preservation of relatively undisturbed examples of the original natural biotic communities in the County.	Met	The SEA encompasses some of the most biotically intact acreages of Joshua tree woodland, desert riparian woodland, and desert alluvial fan sage scrub remaining in the County. Mesquite was formerly widely distributed in the Antelope Valley, but due to harvesting and drawdown of groundwater, is now limited to a few protected areas, such as the Edwards Air Force Base.

In conclusion, the area described is an SEA because it contains: A) the habitat of core populations of endangered and threatened plant and animal species; B-C) biotic communities, vegetative associations, and habitat of plant and animal species that are either unique or are restricted in distribution in the County and regionally; D) concentrated breeding, feeding, resting, or migrating grounds, which are limited in availability in the County; E) populations of scientific interest at the edge of their range including the desert tortoise, the mesquite bosque, and the Mojave ground squirrel; and F) areas that provide for the preservation of relatively undisturbed examples of original natural biotic communities in

the County.

Joshua Tree Woodlands SEA

Boundary and Resources Description

The Joshua Tree Woodlands SEA is located in the western portion of the Antelope Valley west and northwest of the Antelope Valley California Poppy Reserve in an unincorporated area of the County. This SEA encompasses many of the remaining old-growth stands of Joshua trees (*Yucca brevifolia*) on the west side of the Antelope Valley. Joshua tree woodland is a complex biological community of the gradual slopes of higher elevation desert area as that once covered much of this part of the Antelope Valley around the Antelope Wash. Joshua trees only occur within the Mojave Desert, and Los Angeles County populations are at the western limit of the species' range.

Because Joshua trees live in areas that are easily developed for residences and agriculture, this habitat has become very fragmented in the County. The SEA consists of eight separate units, seven of which are in close proximity to each other between the Kern-Los Angeles County line to the north, and the California Aqueduct and Fairmont Butte to the south. The eighth unit is in an arroyo on the north side of the principal western ridgeline of Liebre Mountain, which is near the furthest western extent of Joshua tree woodland in Southern California. This woodland is located partially within the Angeles National Forest, and east and adjacent to the Interstate-5. The eighth unit is bordered on three sides by the San Andreas SEA.

All of the SEA except Unit 8 is within an area designated as the Antelope Valley Globally Important Bird Area (IBA) by Audubon California. This part of the Antelope Valley is very important as a resource area that supports spring and fall migration of birds, from the small passerines to the larger raptors, such as the state-threatened Swainson's hawk (*Buteo swainsoni*) and turkey vultures (*Cathartes aura*). The Joshua tree woodland is a very important resource to these migrations by supplying perches and food for these animals on their journeys. The SEA is near the San Andreas SEA, the Antelope Valley California Poppy Reserve, the Arthur B. Ripley Desert Woodland State Park, and the County George F. Bones Desert Pines Wildlife Reserve State Natural Reserve; however, many of these areas are not contiguous with one another nor with the SEA. Unit 2 of the SEA includes much of the Arthur B. Ripley Desert Woodland State Park. Unit 8 of the SEA is contiguous with the San Andreas SEA.

Fragmentation is a concern because the Joshua trees depend on a small moth for reproduction. Only two species of moth can successfully pollinate Joshua trees, and in the SEA, there is only the yucca moth (*Tegeticula synthetica*). The moth may have limited dispersal abilities, and the Joshua trees cannot reproduce from seeds without pollination from this particular moth. Cross pollination is regarded as essential to a species' genetic diversity, which is essential to adaptation to environmental change.

The Joshua trees in the seven units have the growth form of the lower elevation woodlands of the flatter areas, and somewhat spaced from one another and less clumped. The Joshua trees in the eighth unit have a growth form that is more common in the hilly areas, where the individuals sprout from connected rhizomes and are clumped. Many times, these clumps are clones, with individuals all sharing the same genetic identity.

The SEA is located at least partially in each of the following United States Geological Survey (USGS) 7.5' California Quadrangles: Neenach School, Fairmont Butte, Black Mountain, and Lebec.

The SEA is composed of eight units. The overall boundaries are as follows: The western boundary for

units 1-7 terminates at 220th Street West (the border between Ranges 15W and 16W). The eastern boundary is 145th Street West. The northern boundary is on Avenue A at the Kern-Los Angeles Countyline. The southern boundary straddles the California Aqueduct, touches the Los Angeles Aqueduct, and is approximately on Avenue F. The southernmost area is located close to the foothills of the western San Gabriel Mountains.

Unit 1: The northernmost unit is bounded by Avenue A on the Kern-Los Angeles County line on the north between 200th Street West and approximately on 218th Street West. It extends irregularly to the south along a desert wash contour, about a 0.7 mile at its greatest extent. The current southern boundary is determined by agricultural clearing. This unit has a Joshua tree woodland with many shrub components of the biological community intact, including a floor covered by the wildflower slender goldfields (*Lasthenia gracilis*) in the spring.

Unit 2: Another unit is located between Avenue C to the north and Avenue F to the south (straddling part of State Route-138 on Avenue D and part of Lancaster Road on Avenue E), and east to west from about 200th Street to about 220th Street West. Vegetation clearance in various parcel units accounts for this unit's irregular shape. Agricultural clearing on both sides of the Antelope Wash has separated this unit from Unit 1 to the north. The intervening area is a broad wash plain with rich alluvial soils. The former agricultural fields may now become fields of photovoltaic panels to generate renewable energy. This unit has a southern square mile that straddles the California Aqueduct and touches the Los Angeles Aqueduct at the base of the San Gabriel Mountains. In the northern area, this unit has old-growth Joshua tree woodlands on a rocky ridge that grades into stands of Joshua trees and woodland that includes California junipers (*Juniperus californica*) in flatter areas toward the south. The southern and eastern parts of this unit overlap with much of the Arthur B. Ripley Desert Woodland State Park. The California Aqueduct is open in this area and is an important resource for bird migration along the desert slopes of the western San Gabriel Mountains, particularly waterfowl. The Los Angeles Aqueduct is generally in concrete pipe for most of its extent, and in this area, is covered by a berm and road. A colony of burrowing owls (*Athene cunicularia*), which is a state species of special concern, was discovered during surveys for an adjacent photovoltaic panel development, and probably other colonies or individuals of the owl live within this unit.

Unit 3: Another unit is located between Avenue D to the north and Avenue E to the south, and between 190th Street and 195th Street West. It is on the broad outwash alluvial area of Kings Canyon and adjacent drainages. This outwash area is somewhat blocked by the aqueducts, but both aqueducts are provided with underpass channels for outflow of the canyons onto the desert floor. The SEA includes a central cleared area that is regenerating the Joshua tree woodland and a residence with less than 40 acres cleared. The area next to Avenue D that has been cleared of Joshua trees is not included.

Unit 4: The square mile between Avenue C and Avenue D, and between 180th Street and 190th Street West has a good stand of Joshua tree and juniper woodland. This is also in the Kings Canyon alluvial wash area. There is a known area of Joshua tree regeneration to the east that is not included in the SEA.

Unit 5: The quarter square mile between Avenue C-5 and Avenue E, and between 180th Street and 185th Street West, is also on the Kings Canyon alluvial wash area and has a good stand of Joshua tree and juniper woodland.

Units 6: An area of a little over one-eighth square mile is located at the corners of both units 4 and 5. It is between Avenues D and E and between 180th Street and what would be 174th Street West. This is also in the Kings Canyon alluvial wash area and has a good stand of Joshua tree and juniper woodland.

Unit 7: A large irregular unit is located roughly between Avenue B, Avenue C5, 145th Street and 180th Street West. It has an extensive area of Joshua tree-juniper woodland that grades into stands of Joshua trees towards the east. There is a known area of Joshua tree regeneration in former agricultural fields between 160th Street West and 170th Street West that is not included in the SEA. The alluvial wash in the SEA is a combined area of outflow from Kings Canyon, unnamed canyons, and Broad Canyon.

Unit 8: The eighth unit is in an arroyo on the north side of the principal western ridgeline of Liebre Mountain, which is near the furthest western extent of Joshua tree woodland in Southern California. This woodland is located partially within the Angeles National Forest. It is east and adjacent to the Interstate-5. The eighth unit is bordered on three sides by the San Andreas SEA. This woodland has the clonal growth that is typical of Joshua trees in hilly areas.

The SEA is located primarily on the western Antelope Valley floor between the Tehachapi Mountains and the western San Gabriel Mountains. The topography of the SEA is extremely flat with the land sloping less than 200 feet in approximately five miles. The location and orientation of the SEA represents a matrix of remnant stands of Joshua tree woodland among a patchwork of disturbed areas. Nearly all of the land within the SEA is undisturbed and vegetated. Most of the land surrounding the SEA is disturbed by agricultural use, and also has some scattered rural residences. The SEA is entirely within the unincorporated area of the County.

Wildlife Movement

Wildlife movement within the SEA is possibly limited to local movement, but large-scale movement across the Antelope Valley floor is probably much facilitated by the Joshua tree habitat as island-like stepping stones. Typically in burned-over areas, animal paths tend to orient toward the Joshua tree habitat. Birds, and possibly bats, and other aerial organisms that use the habitat linkage along the desert side of the San Gabriel Mountains probably use the woodland in the SEA for resting and feeding. Animals foraging within the SEA are unlikely to occur in concentrated numbers due to the heterogeneity of the topography and habitat of the SEA. However, local movement to and from the different SEA areas, as well as to and from the San Gabriel Mountains and the Tehachapi Mountains may be restricted due to the disturbed nature of the Antelope Valley floor. Wildlife movement is likely to converge in areas where movement is still possible, which produces concentrated movement areas or “bottlenecks.”

Regional Biological Value

The SEA meets several SEA designation criteria and supports many regional biological values. Each criterion and how it is met described below.

CRITERIA ANALYSIS OF THE JOSHUA TREE WOODLANDS SEA

Criterion		Status	Justification
A)	The habitat of core populations of endangered or threatened plant or animal species.	Not Met	Although there are several listed species that occur within the SEA, this criterion is not met due to the lack of known core population areas.
B)	On a regional basis, biotic communities, vegetative associations, and habitat of plant or animal species that are either	Met	The SEA contains large patches of undisturbed Joshua tree woodland habitat, which has

	unique or are restricted in distribution.		become increasingly rare in the region.
C)	Within the County, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution	Met	As stated above, Joshua tree woodlands have become rare in the region, and are even more rare in the County.
D)	Habitat that at some point in the life cycle of a species or group of species, serves as concentrated breeding, feeding, resting, or migrating grounds and is limited in availability either regionally or in the County.	Met	The habitat within the SEA has been studied for how it may serve as a concentrated breeding, feeding, resting, or migrating ground for any species. Some cross-desert migratory routes depend, in part, on the cover and habitat of the Joshua tree woodland. The units 1-7 of the SEA on the Antelope Valley floor are in a globally IBA, known as a bird migration route. The Joshua tree woodland is an important component of resources that supports this migration.
E)	Biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or represent unusual variation in a population or community.	Met	Due to the scarcity of Joshua tree woodland, specimens of the quality found in the SEA are important to science and have become living laboratories. The SEA contains the most westerly extent of this habitat type.
F)	Areas that would provide for the preservation of relatively undisturbed examples of the original natural biotic communities in the County.	Met	The Joshua tree woodland contained within the SEA is an excellent example of this community type.

In conclusion, the area is an SEA because it contains: B-C) Joshua tree woodland, a rare community both regionally and within the County; D) habitat important to breeding, feeding, and migration; E) the geographic limit of Joshua tree woodland; and F) an excellent undisturbed example of Joshua tree woodland.

San Andreas SEA

Boundary and Resources Description

The San Andreas SEA is located in the western portion of the Antelope Valley in an unincorporated area of the County. The SEA is the second largest SEA and includes many diverse habitats. This is in large part due to the northwestern area being a meeting place for several diverse biomes and wildlife corridors. There are five ecoregions that meet in this area and have biological species that extend along the SEA and San Andreas Fault in the County. These ecoregions include California Coastal Mountains; California Central Valley; Tehachapi Mountains, which extend to the southern Sierra Nevada; San Gabriel Mountains, which extend to other ranges in the Transverse Ranges; and the Antelope Valley, which is the western limit of the Mojave Desert. Wildlife corridors extend along the courses of the mountain ranges, as well as along the San Andreas Fault and Garlock Fault, which provide a great variety of

habitats and frequent emergent water that is important for wildlife, plant movement and connectivity. The location and orientation of the SEA coincides with a segment of the San Andreas Fault Zone. The SEA includes a small portion of the western south-facing Tehachapi foothills, which are known for wildflower field displays in years of good rainfall. The SEA extends east and south across grasslands at the western tip of the Antelope Valley, and includes Quail Lake, a sag pond enhanced to receive water from the West Branch of the California Aqueduct. From Quail Lake, the SEA extends up the northern foothills of Liebre Mountain, Sawmill Mountain, and includes Portal Ridge; large portions of Leona Valley; Ritter Ridge, Fairmont and Antelope buttes; and portions of Anaverde Valley. It also includes a disjunct area that encompasses water bodies along the fault, Lake Palmdale, and Una Lake, with a terminus at Barrel Springs.

The Antelope Valley and adjacent desert slopes of the SEA are recognized by Audubon California as the Antelope Valley (Lancaster) Globally Important Bird Area (IBA). Near Lake Palmdale in the disjunct eastern section of the SEA is part of the Antelope Valley (Lancaster) IBA and near Barrel Springs is part of the Santa Clara River IBA.

The SEA is located at least partially in each of the following United States Geological Survey (USGS) 7.5' California Quadrangles: Frazier Mountain, Lebec, La Liebre Ranch, Neenach School, Fairmont Butte, Little Buttes, Black Mountain, Liebre Mountain, Burnt Peak, Lake Hughes, Del Sur, Lancaster West, Sleepy Valley, Ritter Ridge, and Palmdale.

The northwestern tip of the SEA encompasses south-facing foothills at the western end of the Tehachapi Mountains, in the northwest corner of the County, on the eastern side of Tejon Pass.

From the Tehachapi Foothills, the southern boundary goes south-southeast along Interstate-5, including much of Peace Valley in the Gorman area, which is the broad faulted area that includes Gorman Creek. The SEA boundary crosses the Western Branch of the California Aqueduct, which is south of the junction of Interstate-5 and State Route-138. The boundary continues south along Interstate-5 until the point where the Liebre Mountain ridgeline dips to the highway, and the SEA boundary turns eastward and follows the ridgeline along the northern side of Liebre Mountain.

Along this section of Interstate-5 are several large underpasses for stream courses that are extremely important for wildlife connectivity across Interstate-5. The Angeles National Forest boundary is just east of the highway, and south of the aqueduct. Just north of the Liebre Mountain ridgeline, the San Andreas SEA borders the north, east, and south sides of the eighth unit of the Joshua Tree Woodlands SEA. This woodland is in an unnamed arroyo, and contains a population of the clonal growth form that Joshua trees (*Yucca brevifolia*) exhibit in colder and more fire-prone areas, sometimes referred to as *Yucca brevifolia* var. *jaegeriana*. The woodland is located near the westernmost limit of the range of the species, with a small number of stands and individuals known west of the Interstate-5. The SEA includes the northern slope area of the Angeles National Forest with its diversity of chaparral, grasslands, and oak and conifer forests.

After turning east from Interstate-5 and climbing uphill on the northern slope of Liebre Mountain, the SEA boundary crosses the ridgeline to the south to incorporate natural pristine areas of headwaters for all the branches of Liebre Gulch, which are part of the headwaters for Piru Creek, the largest tributary of the Santa Clara River in Ventura County. The SEA boundary returns to the north face of Liebre Gulch in the vicinity of Sandberg. The boundary tracks the Sawmill Mountain-Maxwell Road, along the broad ridgeline of the mountains and generally trends in a southeasterly direction. This ridgeline is the headwaters of Castaic Creek, which is the largest tributary of the Santa Clara River in Los Angeles

County. Castaic Creek is above the Castaic Reservoir, which extends into Cienega Canyon and Fish Creek, which is federally-designated critical habitat for the endangered arroyo toad (*Anaxyrus californicus*). In addition, maintenance of clean water in the source areas is critical for the species.

The boundary turns northeast where it meets Lake Hughes Road. This is an extremely important area of connectivity as the canyon along the Lake Hughes Road (Elizabeth Lake Canyon) drains to Castaic Creek and the Santa Clara River, whereas the Amargosa Creek that goes east and west from the Lake Hughes Road in the fault valley drains to the Antelope Valley in both directions. The junction is topographically broad and well-vegetated though residential, which is excellent for wildlife connectivity in spite of a few houses.

The SEA boundary goes north at the junction with Lake Hughes Road and then skirts the Lake Hughes community's extension into Pine Canyon along the San Andreas Fault. In Pine Canyon, the boundary turns north and returns to its southeasterly direction, skirting the Lake Hughes development along the southern edge of Portal Ridge. Portal Ridge is entirely included in the SEA. A side extension of the southern boundary includes Lake Hughes, which is important for migrating waterfowl, with its sheltered position in the Fault valley. The boundary extends along the southern edge of Lake Hughes, Munz Lake, and Elizabeth Lake, and then trends southeast to go along the Leona Divide, including a large portion of Leona Valley.

The entire area along the San Andreas Fault is rich in wetlands and bogs, but Leona Valley has these in abundance, even in many yards. All of the wetlands in the San Andreas Fault valley and Portal Ridge are home to the greatest concentration of the tricolored blackbird in Southern California, many of which are year-round residents. This bird species has experienced great population declines in recent years and is proposed for listing at both state and federal levels. In the community of Leona Valley, the southern SEA boundary goes along Lost Valley Creek and then along Leona Road to exclude some of the denser residential area in this section. The included area in Leona Valley has many of the bogs that line the Fault and the less populated farm areas along Portal Ridge north of Leona Road.

North of the Bouquet Canyon watershed, the southern SEA boundary dips south around an expansive area of drainages and bogs used by the tricolored blackbird on the old Ritter Ranch. From Ritter Canyon to the east, the boundary follows the old Ritter Ranch high road along the Sierra Pelona, crosses from 40th Street to the California Aqueduct along vegetation in the Anaverde Valley (where the boundary transitions from the Amargosa Creek drainage to the Anaverde Creek drainage), and then follows the aqueduct to the area where Anaverde Creek exits from the Fault valley. At the Lancaster Landfill boundary, the SEA boundary goes north and becomes the north SEA boundary at Verde Point.

The northern boundary of the SEA begins at Tejon Pass next to Interstate-5 and follows the Kern-Los Angeles County line eastward to its intersection with the western branch of the California Aqueduct in the western Tehachapi Foothills. This area along the Kern-Los Angeles County line is coincident with the designated critical habitat for the federally-endangered California condor (*Gymnogyps californicus*), which is a bird that nearly went extinct and was saved by prodigious efforts in captive breeding. The boundary then generally follows the Tehachapi foothills southward to Quail Lake. Here the northern SEA boundary crosses Highway 138 to include the northern foothills of the liebre Mountains and fallow agricultural fields, which are important for raptor foraging. These fields are often oriented along the Los Angeles Aqueduct, which is a little south of the California Aqueduct in this area, or along the California Aqueduct itself.

The boundary eventually tracks along the northeast edge of Fairmont Reservoir (another breeding site

for the tricolored blackbird), and turns northeast to include a patchwork of farmed areas between the Fairmont and Antelope buttes, which are known to have tricolored blackbird feeding grounds. The boundary makes an inclusive path to encompass the Broad Canyon Wash, the Fairmont and Antelope buttes, and the Antelope Valley California Poppy Reserve State Natural Reserve. These desert buttes are concentrated wintering grounds for birds of prey, and provide roosting sites that are surrounded by cultivated fields that support a plentiful food supply of rodents, rabbits, and hares. They are the most westerly buttes in the Mojave Desert, and with their proximity to the San Gabriel Mountains, have unique ecological relationships of scientific interest. Near the southern area of the buttes, the boundary follows agricultural fields along 130th Street West and then 135th Street West south to Munz Ranch Road (Willow Springs Road on some maps). Along 135th Street West, the boundary crosses Myrick Canyon where it spreads out onto the plain of the desert floor. The upstream areas of Myrick Canyon are included in the SEA.

The boundary tracks along the northwest side of Munz Ranch Road and then crosses to include Willow Springs Canyon, where Willow Springs Canyon is in its most undisturbed state. Where Willow Springs Canyon crosses the California Aqueduct, the northern SEA boundary turns east along the California Aqueduct as it passes along the northern base of Portal Ridge. Following the southern edge of the California Aqueduct, the boundary continues in a southeasterly direction to the east side of Ritter Ridge to Leona Siphon. A development along Joshua Tree Ranch Road near the summit of Ritter Ridge is excluded from the SEA. The SEA northern boundary turns east for roughly one quarter mile along the southern edge of a tributary to Amargosa Creek. Where the Amargosa Creek terminates Ritter Ridge, the SEA boundary crosses the creek and ascends along the ridgeline of an unnamed ridge to where it meets the southern boundary at Verde Point.

East across the State Route-14 is a disjunct part of the SEA that incorporates Lake Palmdale and Una Lake and extends along the Fault to 37th Street East, including the ridgelines north and south of Barrel Springs Road, which includes the sag ponds or Barrel Springs. The Palmdale Ditch is included in this part of the SEA. Many migrant birds using the desert water features can be observed at these artificial lakes and the natural springs of this area during the spring and fall migration.

The gap between the two portions of the SEA includes the Antelope Valley Landfill, disturbed lots, and State Route-14.

The majority of land within the SEA lies within unincorporated area of the County. Other jurisdictions include the Angeles National Forest, the City of Palmdale, and the City of Lancaster.

Wildlife Movement

The SEA includes several important linkages for wildlife movement. The foothills in the western-most part of the SEA are an important linkage between the San Gabriel Mountains, the Tehachapi Mountains, and the Coastal Ranges. This linkage to the Tehachapi Mountains is important because they connect to the southern-most extent of the Sierra Nevada Mountains. The Tehachapi Mountains represent the only mountain linkage from the Transverse Ranges and the Coast Ranges to the Sierra Nevada Range. This feature may be an important topographic reference for migrating birds, as well as providing high elevation foraging grounds along the migratory route. The several ranges that meet at the western end of the SEA, provide a valuable link for gene flow between divergent subspecies, varieties, and populations of many species. The SEA includes numerous drainages that extend onto the Antelope Valley floor towards resources, such as the Fairmont and Antelope buttes. These washes provide an important linkage for animals traveling between the Valley floor, the buttes and the western part of the

San Gabriel Mountains. In addition, Anaverde Creek, Amargosa Creek, and Pine Canyon facilitate east-west wildlife movement through the mountains, Portal Ridge, and Ritter Ridge. Tributary drainages from the Santa Clara River, such as Elizabeth Lake Canyon and San Francisquito Canyon, connect coastal drainages and the coastal ecoregion to the Fault and interior watersheds. The frequency of valuable riparian communities along this travel route, which are located within an otherwise arid climate, further contributes to the SEA's importance for wildlife and habitat linkages in the region.

Regional Biological Value

The SEA meets several SEA designation criteria and supports many regional biological values. Each criterion and how it is met described below.

CRITERIA ANALYSIS OF THE SAN ANDREAS SEA

	Criterion	Status	Justification
A)	The habitat of core populations of endangered or threatened plant or animal species.	Not met Met in Future?	Although there are several listed species that occur within the SEA, this criterion is not met due to the lack of known core population areas. The far northwestern border with Kern County is the edge of critical habitat for the California condor. The tricolored blackbird may soon be listed and has its largest population in Southern California within the SEA.
B)	On a regional basis, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.	Met	The SEA encompasses a series of marshes and sinks concentrated along the San Andreas Fault Zone, which are both unique and restricted in distribution. The Fairmont and Antelope buttes represent a unique habitat due to their location, as the most westerly buttes of the Mojave Desert and their close proximity to several geographic regions. As the confluence of a number of major geographical areas, the Mojave Desert, the San Gabriel Mountains of the Transverse Ranges, the Coastal Ranges, and the Tehachapi Mountains produces a unique and regionally rare flora that represents a transition between desert, foothill, and several montane environments.
C)	Within the County, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.	Met	The confluence of five major geographical areas—the Mojave Desert, the San Gabriel Mountains, the Coastal Ranges, the Tehachapi Mountains, and the Central Valley—has produced the most unique and diverse flora found in the County, and represents a transition between desert, foothill, and montane environments. The SEA also includes the southern limit of the foothill woodland community, blue oak, gray or foothill pine,

	Criterion	Status	Justification
			and California buckeye, rare relic stands of Great Basin sagebrush scrub, and rare wildflower fields.
D)	Habitat that at some point in the life cycle of a species or group of species, serves as concentrated breeding, feeding, resting, or migrating grounds and is limited in availability either regionally or in the County.	Met	The Fairmont and Antelope buttes provide vital habitat to many wide ranging species, which forage in outlying habitat, but use the buttes for nesting, roosting, denning, and refuge. The buttes also serve as concentrated wintering grounds for birds of prey, which are rare in the County, and which forage on grassland and agricultural fields in the vicinity. Lakes and other wetland areas along the Fault and throughout the SEA provide breeding habitat for amphibians and feeding habitat for migrating birds that traverse the slopes adjacent to the Mojave Desert. The Fault is one of the principle wildlife corridors and connective areas for in the County. Major drainages (Santa Clara River, San Francisquito Canyon, and Lake Elizabeth Canyon) run from the coast through the San Gabriel Mountains and end at the Fault, which also has extensive riparian habitat that facilitates migration. The Fault provides the final westernmost linkage to the Mojave Desert (Antelope Valley). The tricolored blackbird is a year-round resident of the SEA.
E)	Biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or represent unusual variation in a population or community.	Met	The transition of several habitat types including: creosote bush scrub, Joshua tree/California juniper mixed woodland, and desert chaparral, makes the SEA valuable for educational and scientific reasons. The close proximity of the Fairmont and Antelope buttes to the San Gabriel Mountains renders them unique in their species composition and ecological relationships and, therefore, of interest to scientists. The concentrated diversity of vegetation types, particularly in the western half of the SEA, creates an outstanding opportunity for educational use. This area also harbors the southern limit of the foothill woodland community, blue oak, gray or foothill pine, and California buckeye, as well as rare relic stands of great basin sagebrush scrub.
F)	Areas that would provide for the preservation of relatively undisturbed examples of the	Met	The slopes of Ritter Ridge support one of the most pristine mixed stands of Joshua tree and California juniper in Los Angeles County. The location of the SEA

	Criterion	Status	Justification
	original natural biotic communities in the County.		at the confluence of five major geographical areas, the Mojave Desert, the Central Valley, the San Gabriel Mountains of the Transverse Ranges, the Coastal Ranges, and the Tehachapi Mountains has produced a community-rich area with desert, foothill, and montane environments. The SEA encompasses large, mostly undisturbed examples of all of these communities.

In conclusion, the area is an SEA because it contains: B-C) biotic communities, vegetative associations, and habitat of plant and animal species that are restricted in distribution in the County and regionally; D) concentrated breeding, feeding, resting, and migrating grounds, which are limited in availability in the County; E) biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or represent unusual variation in a population or community; and F) areas that provide for the preservation of relatively undisturbed examples of original natural biotic communities in the County.

San Dimas Canyon and San Antonio Wash SEA

Boundary and Resources Description

The San Dimas Canyon and San Antonio Wash SEA is located along the cismontane foothills of the eastern San Gabriel Mountains. Generally, the SEA is centered on the mouths of four major canyons, which flow from the mountains and interconnecting terrain. From east to west, these canyons include San Antonio Canyon above the City of Claremont as one component; and Live Oak, Marshall, and San Dimas canyons above the cities of La Verne and San Dimas as a second component. The SEA incorporates areas with diverse natural habitat ranging from high elevations to the foothill alluvial areas of two of the major drainages of the San Gabriel Mountains. San Dimas Canyon is a tributary of the San Gabriel River. San Antonio Wash is a tributary of the Santa Ana River.

The SEA is found within the Mount Baldy and Ontario U.S. Geological Survey (USGS) 7.5' California Quadrangles.

Over most of its boundaries, particularly to the north, east, and west of both the San Dimas Canyon and San Antonio Wash components, the SEA is bordered by open space within the Angeles National Forest. Generally to the south, however, the borders are mostly defined by the edge of urban development within the San Gabriel Valley. The San Dimas Canyon component covers approximately 5,500 acres and includes portions of Live Oak, Marshall, and San Dimas canyons. The smaller component, San Antonio Canyon, covers approximately 1,200 acres of the San Antonio Canyon alluvial outwash. In total, this SEA encompasses 6,727 acres.

In general, the topography of the SEA is severe, consisting of steep-walled canyons and narrow ridgelines. Elevations range from a high of approximately 3,000 feet above mean sea level (MSL) along the ridges of San Dimas Canyon, to a low of approximately 451 feet above MSL in San Antonio Wash. Several major drainages and numerous tributaries exit the San Gabriel Mountains through this

SEA.

The wide range of elevation, topography, slope aspect, and geology represent a wide array of physical habitats within this SEA. Consequently, a number of plant communities exist, including grasslands, riparian, shrublands, woodlands, and forests. Within these major community types, there are many sub-communities, which vary according to plant species dominance. This area contains the last remaining relatively well-developed lower montane riparian habitat in the eastern County. Dammed drainages have created significant reservoirs or flood control basins in the SEA. The SEA is within several jurisdictions including: the Angeles National Forest, the unincorporated area of the County, the City of Claremont, the City of Glendora, the City of La Verne, and the City of San Dimas.

The more westerly component of this SEA generally includes portions of the lower watersheds of San Dimas, Marshall, and Live Oak canyons, which is part of the San Dimas Canyon component. The San Dimas Canyon watershed is part of the Experimental Forest section of the Angeles National Forest. Experiments were conducted and data was collected here during the latter half of the 20th century to determine the relationships among rainfall, topography, vegetation, and runoff. Much of the work and results influenced flood control in the Los Angeles Basin and even other areas of the U.S. The area was carefully protected through very limited and monitored access. The terrain chiefly includes undisturbed natural habitats of rocky canyon walls and canyon forest, riparian areas of many vegetation types, coniferous and oak forest, chaparral, and grassland. A few slopes were altered with vegetation removal in order to experiment on the effect of vegetation, and some of these are still grassland.

This SEA area on the border of the granitic San Gabriel Mountains has unusual rock strata, such as the Glendora Volcanics. Much of the grassland is natural and has unusual vegetation, such as wildflowers that prefer clay substrates. Not too distant from this area are critical habitat areas for the endangered thread-leaved brodiaea (*Brodiaea filifolia*). Some of these brodiaea and other rare wildflowers could occur in appropriate habitat of the SEA in undiscovered populations.

Beginning at Johnstone Peak in the west, the western boundary follows the ridgeline separating Big Dalton Canyon and San Dimas Canyon. Just before this ridgeline is intersected by Big Dalton Canyon Road, the SEA boundary turns east. From the area of Big Dalton Canyon Road, the northern boundary follows and crosses over a series of ridgelines to include the upper portions of several tributary canyons. It continues in this fashion in a southeasterly direction eventually meeting and following the Sunset Ridge Fire Road (Sunset Peak Motorway), which separates Wolfskill and Marshall canyons. The tributaries San Dimas Canyon include Lodi, West Fork of San Dimas, and San Dimas from near the junction with Wolfskill Canyon. The lower section of Wolfskill Canyon with and below the Wolfskill Falls is included in the SEA. The upper section of Wolfskill is not included in the SEA, but much of Marshall Canyon watershed is included, along with watersheds of Live Oak and Webb canyons in the City of Claremont.

A large lobe of the SEA extends from the Sunset Ridge Fire Road on the dividing ridgeline, to include lush canyon forests and chaparral of the slopes above the City of La Verne and City of Claremont. Most of this lobe is in municipal or private ownership. The Angeles National Forest boundary is about a 0.1 mile south of the Sunset Ridge Fire Road. The eastern boundary leaves the fire road and travels south along a ridgeline, including Live Oak Canyon in the SEA, but separating out the more developed watersheds of Palmer, Cobal, Burbank, and Gail canyons in the City of Claremont. A finger of the SEA includes the lush riparian oak forest of Webb Canyon to the edge of a development. The lobe of the SEA excludes an area around the residences and equestrian areas that surround Live Oak Reservoir. Live Oak Canyon Reservoir and its riparian oak woodland is included as far south as Base Line Road. The ridges and dissected

canyons that border Live Oak Reservoir are included as far south as Base Line Road. However, the flat area of the ridge around Live Oak Reservoir and development in the periphery are excluded. The northwestern edge of the lobe includes the riparian area and slopes of Marshall Creek, but excludes developed areas, such as the Marshall Canyon Regional Park and Golf Course. The lobe boundary returns north into the Angeles National Forest at the Sunset Ridge Fire Road along the edge of Marshall Creek and the western ridge of Marshall Canyon.

From Sunset Ridge Fire Road, the southern boundary of the SEA is within the Angeles National Forest and follows the ridgeline that includes the watershed of San Dimas Canyon. The San Dimas Reservoir, with good habitat for waterfowl, is included in the SEA. The SEA extends a finger out of the Angeles National Forest along San Dimas Canyon road to include the riparian habitat along the watercourse, which is a rare example of the lowland riparian community. From the Angeles National Forest boundary and rocky cliffs above the west side of San Dimas Canyon, the SEA boundary follows the ridge of Lodi Canyon (tributary of San Dimas Canyon) to Johnstone Peak.

The eastern, disjunct segment of the SEA (San Antonio Wash) follows the San Bernardino-Los Angeles County line as its eastern boundary from about a 0.5 mile upstream of the San Antonio Dam through the San Antonio debris basin, past the San Antonio Dam, to the natural extent of alluvial fan vegetation south of the Interstate-210. This is at an area about a 0.1 mile north of Base Line Road. Downstream of the San Antonio Dam has the best example of arroyo or wash vegetation that remains in the County, and it extends onto the adjacent alluvial fan. The vegetation is a dry form of coastal sage scrub, with included desert plants that are adapted to coarse substrate. The vegetation is much more dense and stable than the alluvial fan in the arroyos behind Santa Fe Dam (San Gabriel Canyon SEA) and Hansen Dam (Tujunga Valley-Hansen Dam SEA). From its southern point, the SEA turns north to include the natural alluvial fan vegetation and border on the existing residential development on the alluvial fan. At the intersection of the San Antonio Wash with Mount Baldy Road, the SEA boundary follows the southeast side of Mount Baldy Road to the watershed of Chicken Canyon, which is a tributary of San Antonio Wash. The boundary crosses the road and includes the undeveloped part of Chicken Canyon. The boundary follows the minor ridgeline up to Potato Mountain, and goes along the south ridge of Evey Canyon back to cross Mount Baldy Road and return to the San Bernardino-Los Angeles County line in the San Antonio Debris Basin. Evey Canyon is outside the SEA, but is a preserve of the Claremont Colleges, and has excellent riparian canyon habitat. The SEA designation acknowledges the need to protect the Evey Canyon watershed. Small tributary watersheds of San Antonio Canyon with chaparral vegetation are included with the Chicken Canyon area.

Wildlife Movement

Wildlife movement within the SEA takes on two major forms. First, due to the extreme intervening topography, it is logical to expect considerable movement of wildlife up and down the many sizeable drainages, which course through this SEA and connect the forest interior with foothill areas. The larger the watershed of the drainages, the greater the volume of movement. Consequently, this type of movement occurs on a seasonal and more frequent basis, particularly for large mobile mammals, such as American black bear, mountain lion, coyote (*Canis latrans*), bobcat (*Lynx rufus*) and mule deer (*Odocoileus hemionus*), whose full range of habitat needs are typically met over broad areas.

The second major type of movement occurs across the flanks of the foothills and lower mountains, in an east-west direction. Particularly for riparian-favoring migratory birds, a corridor linking lower elevational riparian habitats in the SEA is expected to be of high use and importance. In addition to providing essential habitat for resident riparian birds, this SEA contains some of the best developed riparian

habitat for birds, which are seasonal visitors to the cismontane region of the County.

Regional Biological Value

The SEA meets several SEA designation criteria and supports many regional biological values. Each criterion and how it is met described below.

Criteria Analysis of the San Dimas Canyon and San Antonio Wash SEA

	Criterion	Status	Justification
A)	The habitat of core populations of endangered or threatened plant or animal species.	Not Met	Although the SEA contains rare plant populations, it does not contain a core population of a listed species and therefore does not meet this criterion. The lower slopes in and around San Dimas Canyon support one of the largest populations of the coastal cactus wren in the County, which is a subspecies that is very threatened throughout its range, although not officially recognized by listing.
B)	On a regional basis, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.	Met	The SEA contains habitat of the rare rock monardella. In addition, several plant communities within this SEA are CDFW highest priority communities due to their restricted distribution in the Southern California region, including: walnut woodland, oak riparian woodland, southern willow scrub, coastal sage scrub, and alluvial fan scrub.
C)	Within the County, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution	Met	All of the plant communities and habitats mentioned as being restricted in distribution on a regional basis, are also restricted in distribution within the County.
D)	Habitat that at some point in the life cycle of a species or group of species, serves as concentrated breeding, feeding, resting, or migrating grounds and is limited in availability either regionally or in the County.	Met	The major canyons within this SEA support well-developed and diverse riparian woodlands, as well as a source of perennial water. These represent important stopover and overwintering areas for a wide variety of migratory birds, as well as essential habitat for resident species of fauna and flora. These canyons also support seasonal and more frequent movement for wide-ranging mammals, which must move over large areas to fulfill their habitat requirements. The federally-threatened California gnatcatcher has been sighted (2010) in the Glendora foothills, and

			probably maintains a small population along the lowest slopes of the San Gabriel Mountains.
E)	Biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or represent unusual variation in a population or community.	Not Met	The SEA does not contain biotic resources that are clearly an extreme in physical/geographical limitations, or represent unusual variation in a population or community, and therefore does not meet this criterion. However, the extreme localization of several species of plants in the SEA may indicate geographical processes that are not well understood at this time that merit scientific inquiry.
F)	Areas that would provide for the preservation of relatively undisturbed examples of the original natural biotic communities in the County.	Met	Virtually all of the native biotic communities within this SEA are relatively undisturbed over most of their extent. Because urbanization throughout much of the County's foothill regions has removed large expanses of these communities, those in the SEA are particularly important to the County's natural heritage.

In conclusion, the area is an SEA because it contains: B-C) biotic communities, vegetative associations, and habitat of plant and animal species that are either unique or are restricted in distribution in the County and regionally; D) concentrated breeding, feeding, resting, or migrating grounds, which are limited in availability in the County; and F) areas that would provide for the preservation of relatively undisturbed examples of the original natural biotic communities in the County.

San Gabriel Canyon SEA

Boundary and Resources Description

The San Gabriel Canyon Significant Ecological Area (SEA) is located along the cismontane foothills of the eastern section of these mountains. Generally, the SEA is centered on the mouths of three major canyons, which flow from the mountains and interconnecting terrain. From west to east these include, Santa Anita, Monrovia and Sawpit, and San Gabriel canyons, which are located above the cities of Sierra Madre, Arcadia, Monrovia, Duarte, Bradbury, Irwindale, and Azusa. A substantial part of the eastern and southern part of the SEA along the San Gabriel River is in the California Audubon-designated State Important Bird Area (IBA) of the Los Angeles Flood Control Basin IBA. The San Gabriel River has largely been dammed and channelized, but with infrequent clearing of the detention basins and wash areas, substantial parts of the San Gabriel River have reverted to riparian habitat or the even more rare alluvial fan habitat, and this attracts many resident birds, as well as numerous spring and winter migrants.

The SEA is found within the, Mount Wilson, Azusa, San Dimas, and Glendora U.S. Geological Survey (USGS) 7.5' California Quadrangles.

Over most of its boundaries (north, east, and west), the SEA is bordered by open space within the Angeles National Forest. However, generally to the south, the borders are defined by the edge of urban development within the San Gabriel Valley. The SEA begins in the west at the peak of Mount Wilson within the Angeles National Forest. Traveling east, the northerly boundary follows a major east-west

trending ridgeline to Pine Mountain. This ridgeline defines the separation between the watershed of the San Gabriel River West Fork to the north, and the Santa Anita, Sawpit, and lower San Gabriel canyons to the south. These front-range canyons are tributaries of the San Gabriel River.

At Pine Mountain, the boundary turns south to follow the ridgeline that is the western border of the San Gabriel River, and turns east onto a secondary ridge, and descends towards the San Gabriel River near the Morris Reservoir Dam. This easterly boundary crosses the San Gabriel Canyon at Morris Dam and climbs the adjacent ridgeline to Glendora Ridge and the Glendora Ridge Motorway. The southerly boundary follows the motorway to the west, to the point near the mouth of the San Gabriel Canyon where the motorway leaves the ridgeline. The SEA boundary turns north towards the San Gabriel River, and descends to the opening of the San Gabriel Canyon into the Los Angeles Basin. This is between the Glendora Ridge and the mountains near Fish Canyon. The boundary turns along the southeast side of the San Gabriel River floodplain and follows the east side of the San Gabriel River flood control channel. A development near the mouth of Roberts Canyon that is just north of the river mouth has been excluded from the SEA.

In the mouth of the San Gabriel Canyon is a population of the San Gabriel Mountains live-forever (*Dudleya densiflora*), which is unusual in that it has multiple dense flower clusters, whereas other live-forevers have one or several flower stalks with spaced blooms. This live-forever is extremely limited in range and occurs only on the slopes of granitic rubble and canyon walls in the nearby south face of the San Gabriel Mountains. Another population is on private land about one mile upstream of the canyon mouth, on the north-side slope of the Glendora Ridge. Another live-forever population is upstream in nearby Fish Canyon, which is a little downstream of the Fish Canyon Falls. Collections have been made from Mystic Canyon to the east, and Van Tassel Canyon to the west.

The mouth of San Gabriel Canyon and nearby canyons are the principle area for the San Gabriel bedstraw (*Galium grande*), which is another local endemic. The only known populations of the bedstraw and the San Gabriel Mountains live-forever on the planet occur in the County in this small area of the San Gabriel Mountains.

The Los Angeles Flood Control Basin IBA covers all of the SEA in the San Gabriel River and downstream at the Santa Fe Dam Recreation Area. Furthermore, the IBA extends upstream beyond the SEA to the confluence area of the West, North, and East forks of the San Gabriel River in the Angeles National Forest, and it extends downstream beyond Santa Fe Dam to the Whittier Narrows Dam.

A finger of the SEA extends along the San Gabriel River, south of its confluence area with Fish and Van Tassel canyons to pass under the Interstate-210. The finger boundary enlarges around the Santa Fe Flood Control Basin and Recreation Area to include one of the last remaining natural alluvial fan habitats in the County. The Santa Fe Flood Control Basin is one of the most unusual vegetation habitats in the County, and has special sensitive species.

The main SEA boundary continues just west of the Van Tassel Canyon confluence along the north side of the Encanto Equestrian Center, along the northern extent of development in the City of Duarte. A lobe of the SEA encloses the natural habitat of the steep watershed areas of Spinks and Maddox canyons, extending to the edge of development in the City of Bradbury. The ridge bordering the southeast side of Bliss Canyon is the western edge of the lobe, and the boundary crosses Bliss Canyon at its upper end near the Van Tassel Truck Trail. At this point the boundary of the SEA has reentered the Angeles National Forest. After crossing Bliss Canyon, the boundary follows the southern ridgeline of Spanish Canyon westward to cross out of the Angeles National Forest, tracking around the northern arm of the

City of Monrovia. The Sawpit Debris Basin is included in the SEA as is the undeveloped part of Monrovia Canyon Park. To the west of Monrovia Canyon, a lobe of the SEA extends along the undeveloped ridges of the San Gabriel Mountains bordered by the urban edges of the City of Monrovia and City of Arcadia. These communities extend into the mountains where the cities have municipal water rights. The southern boundary skirts the edge of development in Santa Anita Canyon, but includes the Santa Anita Debris Basin, Arcadia Natural Park, Big Santa Anita Dam and Reservoir, and the Santa Anita Canyon stream course above the Dam, which has numerous lease-hold cabins north of the 1600 feet elevation contour. The boundary reenters the Angeles National Forest just north of Arcadia Natural Park.

The southern ridge of Sawpit Canyon, from its dam to about a 0.5 mile upstream has a population of the endangered San Gabriel bedstraw (*Galium grande*), which is an endemic species of highly restricted distribution. It occurs only on the south slopes of the western section of the San Gabriel Mountains.

Within the SEA, just to the south of Arcadia Natural Park is a Santa Anita Canyon tributary, Clamshell Canyon. On the south banks and ridge of Clamshell Canyon is critical habitat for the federally-endangered Braunton's milk-vetch (*Astragalus brauntonii*), which is a locoweed that prefers interbedded sandstone and carbonate substrate, probably deposited near the coastline of former oceans. Very limited areas of this substrate occur at the boundary of the San Gabriel Mountains in this area. Most of the rocks of the San Gabriel Mountains are igneous granites and metamorphic rocks.

Santa Anita Canyon has some stands of Pacific madrone (*Arbutus menziesii*), which is a plant known elsewhere from the Pacific coast north of Santa Barbara to British Columbia. The Santa Anita stands are isolated occurrences, which is one of the few places madrone is found between Santa Barbara and Baja California.

Near the confluence with Winter Creek in the vicinity of Chantry Flats, the southern boundary of the SEA turns west and climbs the southern ridgeline of Winter Creek, including Winter Creek watershed in the SEA and excluding San Olene Canyon on the south. The boundary follows the ridgeline, marking the southern limits of the Winter Creek watershed to Mount Harvard, and then travels along the Harvard ridgeline to Mount Wilson.

The SEA is comprised of three major canyons: San Gabriel, Sawpit, and Santa Anita. In general, the topography of the SEA is severe, consisting of steep-walled canyons and narrow ridgelines. Elevations range from a high of approximately 5,710 feet above mean sea level (MSL) at Mount Wilson, to a low of approximately 660 feet above MSL in San Gabriel Canyon. Numerous drainages and tributaries of the main canyons are included in the SEA and exit the San Gabriel Mountains into the Los Angeles Basin through this SEA.

The wide range of elevation, topography, slope aspect, and geology represent a wide array of physical habitats within this SEA. Consequently, a number of plant communities exist, including grasslands, riparian, shrublands, woodlands, and forests. Within these major community types, there are many sub-communities, which vary according to plant species dominance. Of particular note, this SEA contains the last remaining relatively well-developed lower montane riparian habitats in the eastern County and dammed drainages that have created significant reservoirs or flood control basins in Sawpit and Santa Anita canyons. Enclaves of sensitive plant species and vegetation habitats are found here. Other jurisdictions within the SEA include the unincorporated area of the County, the City of Arcadia, City of Monrovia, City of Bradbury, City of Irwindale, City of Duarte, City of Azusa, and the City of Glendora.

Wildlife Movement

Wildlife movement within the SEA takes on two major forms. First, due to the extreme intervening topography, it is logical to expect considerable movement of wildlife up and down the sizeable drainages, which course through this SEA to connect the forest interior with foothill areas. Consequently, this type of movement occurs on a seasonal and more frequent basis, particularly for large mobile mammals whose full range of habitat needs are typically met over broad areas, including American black bear, mountain lion, coyote (*Canis latrans*), mule deer (*Odocoileus hemionus*), gray fox (*Urocyon cinereoargenteus*) and other medium-sized mammals.

The second major type of movement occurs across the flanks of the foothills and lower mountains, in an east-west direction. Particularly for riparian-favoring migratory birds, a corridor linking lower elevation riparian habitats in the SEA is of high use and importance. In addition to providing essential habitat for resident riparian birds, this SEA contains some of the best developed riparian habitat for birds, which are seasonal visitors to the cismontane region of the County.

Regional Biological Value

The SEA meets several SEA designation criteria and supports many regional biological values. Each criterion and how it is met described below.

CRITERIA ANALYSIS OF THE SAN GABRIEL CANYON SEA

	Criterion	Status	Justification
A)	The habitat of core populations of endangered or threatened plant or animal species.	Met	The SEA contains a core habitat area for the endangered plant Branton’s milkvetch. The upper San Gabriel River is a core habitat of several native fishes, one of the last areas where three of five original natives occur together: federally-threatened Santa Ana sucker, and the arroyo chub and Santa Ana speckled dace, which is of state concern. All three live in the San Gabriel River in the SEA area. A local population of the speckled dace is known from the mouth of Fish Canyon. The very rare San Gabriel bedstraw and San Gabriel Mountains live-forever only occur in this area of the world.
B)	On a regional basis, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.	Met	The SEA contains habitat of extremely rare plants: San Gabriel bedstraw and the San Gabriel Mountains dudleya. In addition, several plant communities within this SEA are CDFW highest priority communities due to their restricted distribution in the Southern California region. These communities include walnut woodland, oak riparian woodland, southern willow scrub, coastal sage scrub, and alluvial fan scrub. The federally-endangered California gnatcatcher has been recently sighted in the Glendora foothills, and probably maintains a small population along the lowest slopes of the San Gabriel

	Criterion	Status	Justification
			Mountains.
C)	Within the County, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.	Met	All of the plant communities and habitats mentioned as being restricted in distribution on a regional basis, are also restricted in distribution within the County.
D)	Habitat that at some point in the life cycle of a species or group of species, serves as concentrated breeding, feeding, resting, or migrating grounds and is limited in availability either regionally or in the County.	Met	The three major canyons within this SEA support well-developed and diverse riparian woodlands, as well as year-round water sources. These represent important stopover and overwintering areas for a wide variety of migratory birds, as well as essential habitat for resident species. These canyons also support seasonal and more frequent movement for wide-ranging mammals, which must move over large areas to fulfill their habitat requirements.
E)	Biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or represent unusual variation in a population or community.	Met	The SEA contains biotic resources that are of scientific interest for their very restricted distributions: Braunton's milkvetch San Gabriel bedstraw, San Gabriel Mountains live-forever, and a local isolated population of Pacific madrone. The population of Santa Ana speckled dace in Fish Canyon may be the remaining extreme western extent of its population.
F)	Areas that would provide for the preservation of relatively undisturbed examples of the original natural biotic communities in the County.	Met	Virtually all of the native biotic communities within this SEA are relatively undisturbed over most of their extent. Because urbanization throughout much of the County's foothill regions has removed large expanses of these communities, those in the SEA are particularly important to the County's natural heritage.

In conclusion, the area is an SEA because it contains: A) the habitat of core populations of endangered and threatened plant and animal species; B-C) biotic communities, vegetative associations, and habitat of plant and animal species that are either unique or are restricted in distribution in the County and regionally; D) concentrated breeding, feeding, resting, and migrating grounds, which are limited in availability in the County; E) populations of scientific interest because of very restricted distributions and isolated populations; and F) areas that provide for the preservation of relatively undisturbed examples of original natural biotic communities in the County.

Santa Clara River SEA

Boundary and Resources Description

The Santa Clara River SEA extends along the entire County reach of the Santa Clara River, primarily within unincorporated areas of the County. The SEA encompasses a wide variety of topographic features and habitat types, as well as major tributaries—all of which contribute to this diversity. It is a major biotic corridor for the County (and Ventura County). The orientation and extent of the SEA depends upon the surface and subsurface hydrology of the Santa Clara River, from its headwaters, tributaries, and watershed basin, to the point at which it exits the County's jurisdiction. Nearly all of the SEA is designated by Audobon California as a Globally Important Bird Area (IBA). The Santa Clara River IBA extends beyond the SEA in both upstream and downstream directions (across Soledad Pass to the Barrel Springs area in the Antelope Valley and through Ventura County to the mouth of the River at the Pacific Ocean).

The SEA is located at least partially in each of the following United States Geological Survey (USGS) 7.5' California Quadrangles: Pacifico Mountain, Acton, Agua Dulce, Sunland, San Fernando, Mint Canyon, Oat Mountain, Newhall, and Val Verde.

The SEA covers a wide variety of topographic features and habitat types, including parts of the watershed tributaries. The biological and ecological functionality of the SEA is integrally linked to the Santa Clara River basin for its entire length. The bio-geographic limits of the SEA would extend downstream through Ventura-Los Angeles County line to its mouth at the Pacific Ocean, and encompass significant tributary drainages of Ventura County (Piru Creek, Sespe Creek, Santa Paula Creek, Wheeler Creek, etc.).

The eastern portion of the SEA follows natural contours at the headwaters of the watershed to incorporate much of upper watershed of Soledad Canyon (which becomes the Santa Clara River), the Kentucky Springs and the Aliso Canyon basins, and the downstream unnamed tributaries of the Santa Clara River to Arrastre Creek. This includes the watershed southern headwater areas within the Angeles National Forest. The headwaters of both Kentucky Springs and Aliso Canyon are in the Angeles National Forest, in semi-arid chaparral and desert scrub habitat; however, the drainages themselves support vegetation of desert and interior riparian habitat, which ranges from Great Basin sagebrush in Kentucky Springs Wash to dense, mature, willow-cottonwood-sycamore woodlands along permanent streams in Aliso Canyon. The surrounding uplands in the basins support pinyon-juniper woodlands, chamise, mountain mahogany, and manzanita-dominated chaparral, buckwheat scrub, and ruderal lands. The alluvial plain formed along the southern margin of the Santa Clara River basin below these canyons supports intact, high diversity xeric alluvial fan sage scrub. Alluvial terraces within both drainages have been extensively cultivated for orchard crops and dryland agriculture, and in more recent years, rural and urban-type residential developments have encroached on the watersheds. The Kentucky Springs basin has a large population of Parish's Great Basin sagebrush (*Artemisia tridentata* ssp. *parishii*), which is considered rare and sensitive in the County. A population of the federally-threatened red-legged frog (*Rana draytonii* FT, SC) is known to inhabit and breed in the Aliso Canyon watershed. Blum Ranch and another area on Aliso Canyon Road are disturbed, with farming development, but important to continuity of the SEA. The Santa Clara River IBA extends in a branch upstream to include Blum Ranch.

The boundary follows the Santa Clara River channel downstream through the Acton basin, paralleling Soledad Canyon Road on the north side, following the toe of the slope of the San Gabriel Mountains to the south. Boundaries continue along the channel margins to the southwest from Acton to Arrastre

Creek, where the southern boundary follows watershed contours to take in four upper tributary channels (Arrastre, Moody, and Bootleggers). Downstream from Acton, there are developed areas as along the Santa Clara River. From a little upstream of the Arrastre Creek confluence to a little downstream in the vicinity of the railroad stop of Lang (about 13 miles of river), the floodplain of the Santa Clara River is designated critical habitat for the federally-endangered arroyo toad (*Anaxyrus californicus*). Some of the confluence area of Mill Canyon is also critical habitat for the arroyo toad. Part of the area of critical habitat for the toad was also proposed as critical habitat for the state and federally-endangered unarmored threespine stickleback (*Gasterosteus aculeatus williamsoni*), which is a small three-inch fish that essentially only occurs in the County. It once was widespread throughout the Los Angeles Basin and beyond, but is now restricted to the upper Santa Clara River. The proposal for critical habitat was never approved, and this is now referred to as “essential habitat” for the fish. The type area for the fish is the Arrastre Creek, where it was first collected and described with a museum specimen.

The habitat along the Santa Clara River supports the largest community of riparian-obligate birds between Santa Ynez River in Santa Barbara County and the Prado Basin in Riverside County. In the Soledad Canyon stretch are breeding summer tanager (*Piranga rubra*) and other desert species, along with some instances of least Bell’s vireos (*Vireo bellii pusillus*), coastal cactus wrens (*Campylorhynchus brunneicapillus sandiegensis*), and southwestern willow flycatchers (*Empidonax traillii extimus*) from the coastal influence areas. The area is notable for having a combination of species that are characteristic of the desert and characteristic of coastal-influence.

Just west of the confluence with Arrastre Creek the northern boundary loops up to the slopes of Parker Mountain and the eastern watershed of Hughes Canyon around the basal contours of significant rock outcroppings above the river basin, and on the south side, around the Mill Canyon tributary basin. The rocky buttes on the north side of the river, while only a minor part of the watershed of the river, provide important nesting, roosting, and sheltering habitat values for bats, birds of prey, and other sensitive species foraging along the river corridor. The boundaries stay at the river margins west to the watersheds of two northern tributaries, Nellus and Bobcat canyons. These drainages were identified by the South Coast Wildlands Project as important to connectivity across the Santa Clara River between the western and eastern highland areas of the San Gabriel Mountains.

At the Agua Dulce Canyon drainage, the northern boundary loops around the watershed, including the Vasquez Rocks County Natural Area. Agua Dulce Canyon has a permanent stream and supports high quality riparian habitat from the confluence with the river to the intersection with State Route-14. The Santa Clara River IBA extends upstream to include about one mile of the Agua Dulce Canyon.

The Agua Dulce underpass of State Route-14 is an important crossing of the highway barrier for wildlife. From that point, north riparian areas exist where the creeks (Agua Dulce and Escondido) pass through Vasquez Rocks County Natural Area. The Agua Dulce Canyon extension was included in the SEA for its value as a wildlife corridor to provide connectivity across the Santa Clara River between the western and eastern highland areas of the San Gabriel Mountains. The extension includes the watershed of Bee Canyon, which is a downstream tributary of the Santa Clara River. Bee Canyon has an important population of the federally-endangered slender-horned spineflower (*Dodecahema leptoceras*) in its broad, floodplain area. In the Bee Canyon slopes of coastal sage chaparral, the federally-threatened coastal California gnatcatcher (*Polioptila californica californica*) is sometimes resident. The Bee Canyon area has some underpasses of the State Route-14 that could be used by smaller wildlife if maintained unclogged. The extension includes upper watersheds of Spring and Tick canyons to enhance the connective area. Beyond upper areas of Tick Canyon, the SEA boundaries cross Mint Canyon into the

Angeles National Forest and the watershed of Rowher Canyon. The SEA continues to the upper reaches of Rowher Canyon onto the main ridgeline of the Sierra Pelona. At the Mint Canyon crossing, just southwest of the community of Sleepy Valley, a lobe of the SEA extends along Mint Canyon to capture riparian woodlands of coast live oak, with a number of heritage trees (diameters greater than 36 inches). Residences are scattered and the natural communities of chaparral are intact on the canyon slopes.

The southern boundary of the SEA opposite the confluence with Agua Dulce Canyon includes the flood plain. The SEA dips southward into the lower portion of Bear Canyon (tributary of Santa Clara River) and includes undeveloped alluvial terrace slopes of the river downstream of Bear Canyon. The flood plain is a narrowed part of the SEA in the vicinity of Lang, which is a railroad stop on the transcontinental railroad line that runs the length of the Soledad Canyon. Downstream from Lang, the SEA expands to the southern slopes between Lang and Oak Spring Canyon, adjacent to the river channel. Downstream of Oak Canyon, the SEA narrows to the flood plain, passes Sand Canyon, and reaches the west ridge of Sand Canyon. A broad finger of the SEA goes south along the ridgeline of the Sand Canyon watershed, where the finger expands when it reaches the watershed of Placerita Canyon.

The alluvial fans of Oak Springs Canyon and Sand Canyon are important recharge grounds for the river aquifer. Surface flows from both canyons enter the Santa Clara River basin through natural, unconfined channels. Recognizing the importance of the Sand Canyon drainage, the SEA boundaries are drawn to encompass the entire upper Sand Canyon watershed, which is largely natural with scattered residences, as well as the Sand Canyon tributary, Bear Canyon. Most of the upper Sand Canyon and its Bear Canyon tributary are within the Angeles National Forest, and Sand Canyon originates on the peak of Magic Mountain. These canyons form a natural movement zone for wildlife traversing among the western end of the San Gabriel Mountains, the eastern end of the Santa Susana Mountains, and the Santa Clara River basin. Together, they encompass a spectrum of significant and unique habitat, vegetation and wildlife resources. The major habitat linkage zones and watersheds between the river basin and the Angeles National Forest, and the protected areas of the County (Placerita Canyon Natural Area), have also been included within the SEA boundary. Near the peak of Magic Mountain, the boundary contours to the southwest, and then proceeds west along the Santa Clara Divide to its intersection with the junction of Interstate-5 and State Route-14. Natural areas of the Sand Canyon watershed, along with the major topography of ridgelines, earthquake escarpments, grasslands, and canyon habitat features and watersheds of Bear, Placerita, Whitney, and Elsmere canyons are the important features of the wildlife linkage. Existing rural residential developments are excluded from the SEA, but the remaining natural highland areas of the western banks of the Sand Canyon watershed are included. These are integral parts of the river basin recharge system and functional ecosystem.

Parts of this area have coastal sage scrub and are critical habitat for the threatened coastal California gnatcatcher. The watershed of Placerita Canyon southeast of the State Route-14 is generally critical habitat for the federally-threatened coastal California gnatcatcher. An area of development surrounding the Placerita Creek near State Route-14 is excluded from the critical habitat. The critical habitat area for the gnatcatcher extends along the east side of State Route-14 beyond Placerita Creek and envelops watersheds into the Angeles National Forest along Whitney Canyon, Elsmere Canyon, and southward over the main ridge of the San Gabriel Mountains, into Grapevine Canyon in its upper natural watershed. Upper areas of these canyons with oaks and big-cone Douglas fir are habitat for the California spotted owl (*Strix occidentalis*)

The eastern half of the Los Piñetos undercrossing of State Route-14 on old oil development roads is included, and focuses on a major wildlife conduit connecting the Santa Susana Mountains to the San

Gabriel Mountains, and to the Santa Clara River. The adjacent part of the Santa Susana Mountains and Simi Hills SEA includes the west half of the Los Piñetos undercrossing of State Route-14, connecting through the natural oak woodlands and drainages adjacent to the San Fernando Pass. This area, once called "San Francisco" or "Newhall Wedge," is north and west of the junction of Interstate-5 and State Route-14 with The Old Road running through it. The Newhall Wedge area is nearly all critical habitat for the coastal California gnatcatcher. This critical habitat of the Newhall Wedge is adjacent to the gnatcatcher critical habitat across State Route-14 in the SEA, but is in the Santa Susana Mountains and Simi Hills SEA.

The SEA boundary borders State Route-14 from the north ridge of Grapevine Canyon and heads northeast from the Los Piñetos undercrossing, on the natural side of existing development east of State Route-14. The area around development along Running Horse Road off Placerita Canyon has been excluded from the SEA. The movie-shoot ranch at the junction of State Route-14 and Placerita Canyon has much area with development or staging excluded, but there is a connected finger of the SEA in Placerita Canyon that leads to the Placerita Canyon watercourse underpass. Much of the watercourse underpass is used by wildlife to transition between the natural areas of Placerita Canyon and the oil field area on the west side of State Route-14. The SEA narrows to the western hills of Sand Canyon beyond the movie-shoot ranch, to avoid developed areas, and continues back to the river margin at Humphreys railway stop, about a 0.4 mile west of its previous point of departure from the river channel. The boundary was drawn to avoid existing major development, but connect the uplands to the river basin. The narrow aperture for the linkage at the Santa Clara River reflects the remnant nature of the last unobstructed terrestrial passageway between the upland areas and the river.

West of Sand Canyon, the river has been intermittently armored to allow for development within flood hazard zones. From Sand Canyon westward through the residential neighborhoods of Santa Clarita, the SEA boundary continues on the margins of the flood plain to the confluence with San Francisquito Canyon. The segment of the Santa Clara River passing through the City of Santa Clarita is a dry channel, except during seasonal runoff flows. Some irregular extensions go north into tributaries that have remnant riparian habitat and probable outflows from irrigation runoff that flows into neighborhood storm drains. Regardless of the intermittent nature of water, the river bed elevated areas among braided channels support relatively intact stands of alluvial sage scrub, riparian woodland, and southern riparian scrub. The dry zones are essential to the continued genetic isolation and integrity of the unarmored three-spine stickleback population in the upper reaches of the Santa Clara River.

The boundary extends northward upstream into the reaches of San Francisquito Creek (formerly a separate SEA, but now included with the SEA), following the approved development setback limits, north into the Angeles National Forest (Santa Clara/Mojave Rivers District). The SEA continues nearly the length of the San Francisquito Creek to beyond the junction with South Portal Creek in the vicinity of the community of Green Valley. The Santa Clara River IBA extends in a branch upstream in close proximity to the crossing of Copper Hill Drive.

As the channel enters the Angeles National Forest, flows become less seasonal, and riparian resources expand and diversify. San Francisquito Creek supports dense and mature southern riparian scrub and riparian woodland formations, along with small areas of freshwater marsh, which provide essential wintering areas and resident habitat for waterfowl, wading birds, marshland birds, and a variety of other vertebrate species. The headwaters of San Francisquito Creek are on a low ridge that bounds the San Andreas Fault Zone, and this is an important connective element of the SEA, in that it completes the path from the Pacific Ocean through the mountains to the Mojave Desert. The sub-watershed and flood plain of the San Francisquito Creek perennial flow in the Angeles National Forest jurisdiction is

designated critical habitat for the federally-threatened red-legged frog, which extends from about the Angeles National Forest southern boundary to about one mile south of the junction with Bee Canyon. Much of the San Francisquito Creek is considered essential habitat (one of three areas) for the endangered unarmored threespine stickleback, although the fish has not been found in the San Francisquito Canyon in recent years.

The boundaries west of the confluence with San Francisquito Creek follow the river margins under the Interstate-5 to the Castaic Creek confluence, at which point the northern setback line has been drawn around the lower portion of Castaic Creek, which embraces the riparian habitat areas around and above the confluence. Castaic Creek is the tributary with the largest watershed for the Santa Clara River in the County. The SEA boundaries go upstream about four miles along the watercourse of Castaic Creek to the crossing of Lake Hughes Road, which is just downstream of Castaic Lagoon. The Santa Clara River IBA extends in a branch upstream into Castaic Creek for approximately one mile.

Relatively extensive areas of willow-cottonwood forest and southern riparian scrub occur west of San Francisquito Creek and within the junction zone of Castaic Creek and the Santa Clara River. These river forests support numerous sensitive species and provide multi-layered riparian habitat for a wide diversity of wildlife species, particularly birds of prey and riparian-obligate song birds, such as the federally-endangered least Bell's vireo (*Vireo bellii pusillus*) and the southwestern willow flycatcher (*Empidonax traillii extimus*).

Federally-designated critical habitat for the endangered arroyo toad extends from the east side of Interstate-5, from the junction of the Santa Clara River with San Francisquito Creek, under the Interstate-5, about 5.8 miles to the confluence, with an unnamed drainage just upstream of the confluence of the river with San Martinez Chiquito. The critical habitat area for the toad also includes the flood plain of Castaic Creek as far upstream as the Interstate-5 undercrossing (about 2.5 miles), and for about one mile upstream into the natural area of Hasley Canyon, a tributary of Castaic. Coincident with the critical habitat for the toad is critical habitat for the endangered least Bell's vireo (FE, SE). Critical habitat for the vireo extends along the floodplain from the Rye Canyon undercrossing of the river (west side of Interstate-5), over the Ventura-Los Angeles County line, to about a mile short of the confluence of the Santa Clara River with Piru Creek in Ventura County (about 9 miles). The river area from near Interstate-5 towards the Ventura-Los Angeles County line is "essential habitat" for the threespine stickleback. A disjunct SEA area is on a ridge south of the river bend at Castaic Junction (interchange of Interstate-5 and State Route-126). This area supports a population of the federal candidate and state-endangered San Fernando Valley Spineflower (*Chorizanthe parryi* var. *fernandina*, FC, SE), which is a diminutive, once-common flower of slopes within the San Fernando Valley and adjacent passes and mountain ranges. The plant became so rare that it was believed to be extinct until it was rediscovered during required surveys for development.

Beyond the confluence with Castaic Creek, the boundaries of the SEA follow the margins of the Santa Clara River channel to the Ventura-Los Angeles County line. The Santa Clara River IBA has a lobelike expansion opposite the confluence with San Martin Chiquito, extending south to cover diverse topography from river cliffs to confluence flood plains in the area around Potrero Canyon.

The Santa Clara River channel and its alluvial terraces and tributary creeks together form the single most important and natural wildlife movement zone through the County. Mobile species can enter the river basin anywhere along its length (outside of developed areas) and proceed in either direction without having to pass through narrow culverts or blind channels, with continuous vegetative cover and only short stretches of dry substrates. The overall drainage course provides a continuum of aquatic and

terrestrial movement opportunities, shelter, forage, and resident habitat from the mouth of the river at Ventura County and the Pacific Ocean, to the Antelope Valley. The drainage course connects to both districts of the Angeles National Forest, and links together three large public resource preserves (Vasquez Rocks and Placerita County Natural Areas and the Angeles National Forest).

Wildlife Movement

Historically (and prehistorically) the riparian corridor along the Santa Clara River has served as the primary east-west linkage between the Pacific coastline, coast ranges, interior ranges, high desert and southern Sierra (via the Tehachapi Range). Animals moving through the Santa Clara drainage had unobstructed passage along the river and within the riparian systems between the coastal lowlands of Ventura County and the Mojave Desert. The tributary routes extend south into the Santa Susana Mountains, south and north into the San Gabriel Mountains, northward via Castaic, Bouquet and San Francisquito tributaries (over the coastal ranges and San Gabriel Mountains of the Transverse Ranges and into the San Joaquin Valley), west into the central coast ranges, or east through the Tehachapi Mountains, and into the southern Sierra Nevada. The present configuration of the tributary drainages has impinged upon connectivity from the Santa Clarita Valley to the north, but the Santa Clara River remains relatively intact and open. The SEA embraces the river corridor and the linkage zones that are considered essential to ensuring connectivity and resource values within the historic movement zones for all of the wildlife species present within the County portion of the Santa Clara River, including mountain lion, coyote, bobcat, and several medium-sized mammals, as well as birds, reptiles, amphibians, and fishes.

Regional Biological Value

The SEA meets several SEA designation criteria and supports many regional biological values. Each criterion and how it is met described below.

CRITERIA ANALYSIS OF THE SANTA CLARA RIVER SEA

	Criterion	Status	Justification
A)	The habitat of core populations of endangered or threatened plant or animal species.	Met	The only existing natural population of the federally-endangered unarmored three-spine stickleback is within the Santa Clara River and its tributaries, and all of its essential habitat is in this SEA. The federally-threatened Santa Ana sucker occurs in the river, as does the state species of concern, the arroyo chub. The population of state and federally-endangered slender-horned spineflower in Bee Canyon is one of fewer than seven known occurrences for this species, one of only two known occurrences in the County, and one of its largest populations. San Francisquito Creek has a breeding area for the endangered red-legged frog. The San Fernando Valley spineflower (at Newhall Ranch in Interstate-5 vicinity) is found in only a few nearby places. Some of the critical

	Criterion	Status	Justification
			<p>habitat for the threatened California coastal gnatcatcher is included in this SEA. Western spadefoot, which is a species of concern, is extremely rare and local in the County away from this SEA. One of the largest, if not largest populations of least Bell's vireo in the County occurs along the river in the vicinity of the crossing of Interstate-5 near Newhall Ranch. Many RPR-listed rare plants occur within the SEA. Critical habitat occurs in the SEA for the listed arroyo toad, the red-legged frog, the coastal California gnatcatcher, and the least Bell's vireo.</p>
B)	<p>On a regional basis, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.</p>	Met	<p>The low-elevation bigcone Douglas fir-canyon oak forests above Placerita Canyon, the vernal pool in the Placerita Canyon-Sand Canyon divide, the native grassland on the Golden Valley Ranch (upper Placerita Canyon), and the alluvial fans with sage scrub in lower San Francisquito Canyon, Kentucky Springs and Acton are unique and regionally restricted biotic communities. Additionally, the riparian forests and woodlands along the Santa Clara River are among the most extensive, diverse and intact vegetative stands of this type in Southern California. Rare aquatic species, such as the unarmored three-spined stickleback, Santa Ana sucker, red-legged frog, least Bell's vireo, summer tanager, spineflower, and many others represented within the SEA are found nowhere else in the region.</p>
C)	<p>Within the County, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.</p>	Met	<p>The cottonwood-willow forests and woodlands, alluvial fan sage scrub, and coast live oak riparian forest are best represented in the County within the SEA. The lower elevation examples of bigcone Douglas fir-canyon oak forest communities where they mix with low-elevation biota are restricted to the edges of mountain habitat communities, which are regionally rare and also designated in this SEA.</p>
D)	<p>Habitat that at some point in the life cycle of a species or group of species, serves as concentrated breeding, feeding, resting, or migrating grounds and is limited in availability either regionally</p>	Met	<p>The Santa Clara River is simultaneously an oasis running through a dry landscape and an extension of coastal conditions into the dry interior. For this reason, it supports unique populations of aquatic and amphibious species, as well as aridlands species extending towards the coast and coastal species' extension inland. It is a principle migratory route for the County plants and animals and a center of diversity for the County. The Santa Clara River and its</p>

	Criterion	Status	Justification
	or in the County.		tributaries provide breeding opportunities for numerous species otherwise not known to breed within the County, including California red-legged frog, summer tanager, southwestern willow flycatcher, and the unarmored three-spined stickleback . The extensive riparian areas shelter dozens of migrant songbird species during winter, including high concentrations of white-crowned and golden-crowned sparrows, fox sparrow, yellow-rumped warbler, dark-eyed junco, and sharp-shinned hawk. The SEA embraces the river corridor and the linkage zones that are considered essential to ensuring connectivity and resource values for many of the wildlife species that are present within the County portion of the Santa Clara River.
E)	Biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or represent unusual variation in a population or community.	Met	The Santa Clara River represents a unique example of a drainage that stretches from the desert to the coast through the mountains. Its resources are, by definition, present at their geographic extremes. Plants such as western juniper, snake cholla, basin sagebrush, and birds, such as summer tanager are at the southwestern edges of their ranges along the river. Coastal taxa extend to the headwaters in the Acton area. High elevation species, such as bigcone Douglas fir, spotted owl, and Steller’s jay occur at fairly low elevations at the edges of Santa Clara River valley, on north facing slopes that remain cool all summer.
F)	Areas that would provide for the preservation of relatively undisturbed examples of the original natural biotic communities in the County.	Met	The SEA encompasses some of the highest quality, least disturbed and biotically intact acreage of bigcone Douglas-fir-canyon oak forest, riparian forest and woodland, coastal sage scrub, and alluvial fan sage scrub that remains in the County, and one of the three known vernal pools along the river. Vernal pools are rare everywhere in California.

In conclusion, the area is an SEA because it contains: A) the habitat of core populations of endangered and threatened plant and animal species; B-C) biotic communities, vegetative associations, and habitat of plant and animal species that are either unique or are restricted in distribution in the County and regionally; D) concentrated breeding, feeding, resting, or migrating grounds, which are limited in availability in the County; E) numerous examples of species at their habitat extremes as the coastal and desert influences meet; and F) areas that provide for the preservation of relatively undisturbed examples of original natural biotic communities in the County.

VI. Watersheds

Antelope Valley Watershed

The southern half of the Lahontan hydrologic region is located in the Antelope Valley. Unlike the coastal watersheds in Los Angeles County, it is a closed basin on the edge of the Mojave Desert, having no outlet to the ocean or major river system. Numerous streams drain the north-facing San Gabriel Mountains, carrying rainfall and snow melt from the Angeles National Forest into the Antelope Valley. Significant stream systems in the Antelope Valley are Amaroosa Creek, Big Rock Creek, and Little Rock Creek.

During most years, the rainfall in the Antelope Valley is scant, averaging less than eight inches per year. Every few years, major storms cause flooding, sending sheets of water flow across the eastern portion of the Antelope Valley to the dry lakebeds of Rosamond and Rodgers lakes in Kern County. Uninhibited by development, the sheet flow filters into the groundwater basin or evaporates on the lakebeds, leaving the surface smooth and flat. This natural runoff process is important for two reasons: 1) it benefits the local communities with groundwater recharge; and 2) it seasonally resurfaces the dry lake beds, which are used for aircraft landings at Edwards Air Force Base.

The Lahontan Regional Water Quality Control Board monitors the Antelope Valley watershed through its Basin Plan for the region. The Basin Plan calls for land use controls to help reduce pollutants in stormwater runoff. In particular, the Basin Plan advocates for limiting impervious surfaces, restoring natural vegetation and protecting the headwaters of stream channels and riparian areas.

Los Angeles River Watershed

The Los Angeles River watershed covers approximately 870 square miles, a small part of which extends into Ventura County. It includes the San Fernando Valley and is the largest watershed in the Los Angeles Basin. The river extends 51 stream miles, from the confluence of Bell Creek and Arroyo Calabasas, to the Pacific Ocean. The first 32 miles of the river flow through the cities of Los Angeles, Burbank, and Glendale, and then, subsequently, through Vernon, Commerce, Maywood, Bell, Bell Gardens, Lynwood, Compton, South Gate, Paramount, Cudahy, and Long Beach. Numerous tributaries feed the Los Angeles River, as it flows through the San Fernando Valley and the coastal plain to the Long Beach Harbor. These tributaries include Tujunga Wash, Verdugo Wash, Arroyo Seco, Rio Hondo, and Compton Creek. Several important biotic communities exist in the northern tributaries that feed the river, including freshwater marsh areas in Tujunga Canyon and the Hansen Flood Control Basin. The natural habitat in these tributaries provides a semi-protected corridor for wildlife between the Angeles National Forest, Santa Monica Mountains National Area, and the Los Angeles River.

By 1960, the Los Angeles River was lined with concrete along most of its length by the U.S. Army Corps of Engineers in order to prevent the loss of lives and property from flood damage. As a result, the Los Angeles River's sole purpose for years was efficient water conveyance—carrying stormwater from the land to the ocean as quickly as possible. Efforts continue under the auspices of the Los Angeles County Flood Control District to capture as much stormwater as possible and redirect it to regional groundwater recharge areas to replenish groundwater basins, saving thousands of acre-feet of water every year.

The volume of pollutants that enters the Los Angeles River is extremely high due to accumulated urban stormwater runoff from the hundreds of square miles of impervious land uses that flank the Los Angeles River. To address these problems, the County, the Flood Control District, local jurisdictions, a variety of stakeholders, and the Los Angeles Regional Water Quality Control Board are implementing

programs to reduce the number and concentration of pollutants that enter the Los Angeles River.

Over the past two decades, interest in the Los Angeles River's recreational and ecological functions has reemerged, culminating in a riverwide planning effort in the 1990s, which resulted in the adoption of the *Los Angeles River Master Plan* by the Board of Supervisors in 1996. The Plan was created through a cooperative effort by the County and many river stakeholder groups for the enhancement of aesthetic, recreational, flood protection and environmental functions of the Los Angeles River. The Plan seeks to do so by expanding bikeway, walking and equestrian trails to and along the Los Angeles River, enhancing existing trails and habitat with landscaping, and promoting economic development opportunities. Since the adoption of the Plan, an advisory committee has overseen many new projects, including bike trails, pocket parks, equestrian trail enhancements, art and signage. So much public interest in the river has been generated that many more improvements are anticipated in the future. The County's Bicycle Master Plan also prioritizes the Los Angeles River bike path.

The County is also working with various organizations and agencies that are involved in watershed-related planning activities, such as the San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy, the Council for Watershed Health, and the Flood Control District. The attention being paid to the watershed has resulted in a better understanding of its functions and generated an unprecedented network of residents, private organizations and government entities dedicated to watershed management. The County has also partnered with the City of Los Angeles on implementation of its 2007 Los Angeles River Revitalization Master Plan. Subsequently, the County Board of Supervisors and Los Angeles City Council adopted the Los Angeles River Memorandum of Understanding, which established the Los Angeles River Cooperation Committee to prioritize cooperative implementation of Los Angeles River projects. In addition, the County is a partner in the U.S. Army Corps of Engineers' Los Angeles River Ecosystem Restoration Feasibility Study (started in 2006 for which the City of Los Angeles is serving as primary local sponsor). The County is also a partner with the U.S. Bureau of Reclamation on the Los Angeles Basin Study to prioritize stormwater capture and infiltration that will result in watershed-wide conservation.

San Gabriel River Watershed

The San Gabriel River watershed encompasses part of the Angeles National Forest, the San Gabriel Valley, and large urban areas in southeast portion of Los Angeles County. It is bounded by the Los Angeles River on much of its western flank, and extends to San Bernardino and Orange counties. Totalling more than 640 square miles, the watershed has extensive areas of un-channeled tributaries, which support riparian and woodland habitats. Its northern reaches in the Angeles National Forest are dramatically different from the developed 167 square miles in the Los Angeles Basin. The U.S. Congress has preserved two wilderness areas within this watershed: the San Gabriel Wilderness Area, 36,215 acres along the west fork of the San Gabriel River, and Sheep Mountain Wilderness Area, 31,680 acres along the east fork of the San Gabriel River.

The main watercourse in this watershed is the San Gabriel River. The San Gabriel River extends 59 stream miles from the Angeles National Forest to the Pacific Ocean, draining 350 square miles of land. It also recharges groundwater tables in several basins. The major tributaries that feed the San Gabriel River include Coyote Creek, Walnut Creek, Puente Creek and San Jose Creek. The upper section of the San Gabriel River and its tributaries are still considered relatively pristine. However, intensive recreational use and erosion due to wildfires in this area may threaten water quality and wildlife that depend on the river. The middle section of the river has been extensively modified throughout the San Gabriel Valley to diminish flood damage and encourage groundwater recharge. The lower section,

similar to the Los Angeles River, is lined with concrete from Firestone Boulevard to the bay. In contrast to the upper and middle sections of the river, dry weatherflow in the lower section stems primarily from urban runoff and treated effluent from municipal wastewater treatment facilities.

A clear link exists between the health of this watershed and the quality of life for millions of Los Angeles County residents. The upper reaches of the San Gabriel River support wildlife, deliver drinking water and provide a myriad of recreational opportunities. To protect and enhance the multiple benefits of this resource a riverwide planning effort entitled *San Gabriel River Master Plan* was adopted in 2006. This effort, spearheaded by the County, brings together a dynamic group of stakeholders, including the 13 cities along the San Gabriel River, residents, environmental groups and many business and community leaders.

The County is working with stakeholders, such as the San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy, the Santa Monica Mountains Conservancy, and the Flood Control District. Together, stakeholders developed a watershed and open space plan in 2001 entitled *Common Ground: From the Mountains to the Sea* that provides general guidelines for improvement of the San Gabriel and Lower Los Angeles Rivers watersheds through community development, public awareness, preservation of open space and creation of recreational opportunities—particularly along the rivers.

Santa Clara River Watershed

The Santa Clara River watershed is an extensive hydrologic system that encompasses the western portion of the Angeles National Forest in Los Angeles County and the eastern portion of Los Padres National Forest in Ventura County. The Santa Clara River—an essential component of this watershed—recharges local groundwater, provides riparian habitat and supplies water to downstream agricultural lands in Ventura County. It is the largest relatively unaltered river system in Southern California, and the single most important natural wildlife corridor in Los Angeles County. The Santa Clara River and its tributaries provide drainage for approximately 654 square miles of the upper watershed within Los Angeles County. The Santa Clara River’s major tributaries include Soledad Canyon, Castaic Creek, San Francisquito Canyon Creek, Bouquet Canyon Creek, Sand Canyon Creek, Mint Canyon Creek and Santa Clara River South Fork. Several endangered species are found in this watershed, including the arroyo toad and the unarmored three-spine stickleback. Another important stretch of the Santa Clara River supports a variety of riparian-obligate songbirds and birds of prey between Castaic Junction and Blue Cut near the Ventura County line, where the groundwater basin thins and narrows, forcing groundwater toward the surface.

A link exists between the health of this watershed, particularly its tributaries, and development in the area. Urban expansion in the 1990s and early 2000s impacted the watershed on several levels, including a reduction in local water supplies and disappearing open space. Furthermore, the land use activities in this area have created many square miles of impervious surfaces, which have created more urban runoff and reduced the amount of water that would naturally percolate into groundwater basins. By employing watershed management techniques, the County aims to curb this trend.

VI. Agricultural Resources

Agricultural Resource Areas Methodology

Map 4.3 in the Conservation and Open Space Element shows the Agricultural Resource Areas (ARAs), where the County promotes the preservation of agricultural activities. The ARA boundaries were derived

from farmland identified by the State Department of Conservation, including Prime Farmland, Farmland of Statewide Importance, Farmland of Local Importance, and Unique Farmland. In addition, the ARAs include lands that received permits from the Los Angeles County Agricultural Commissioner/Weights and Measures.

To reflect changes in land uses and address environmental concerns, the following were excluded from the ARAs:

- Significant Ecological Areas (SEA) and Ecological Transition Areas (ETA);
- Approved specific plan areas;
- Approved large-scale renewable energy facilities;
- Lands outside of the Antelope Valley, where farming is concentrated; and
- Lands that are designated Public and Semi-Public (P).

Data from the U.S. Census of Agriculture

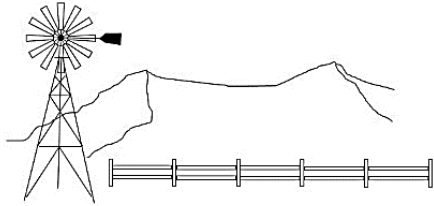
Table E.1: Change in Number and Acreage of Farms in Los Angeles County, 1987-2007

	1987	1992	1997	2002	2007
Farms (number)	2,035	1,446	1,226	1,543	1,734
Change from previous year	-	-589	-220	317	191
Percent change from previous year	-	-28.94%	-15.21%	25.86%	12.38%
Land in farms (acres)	280,156	183,569	130,838	111,458	108,463
Change from previous year	-	-96,587	-52,731	-19,380	-2,995
Percent change from previous year	-	-34.48%	-28.73%	-14.81%	-2.69%

Source: U.S. Census of Agriculture, 1987-2007.

ATTACHMENT 6

Comment Letter From Save Our Rural Town Pertaining to the Motion Adopted April 9, 2024 by the Board of Supervisors.



SAVE OUR RURAL TOWN

The Honorable Board of Supervisors
County of Los Angeles
383 Kenneth Hahn Hall of Administration
500 West Temple Street
Los Angeles, California 90012
Transmission of six (6) pages to
PublicComments@bos.lacounty.gov
And via <https://publiccomment.bos.lacounty.gov/>

April 8, 2024

Subject: Motion to "Accelerate Renewable Energy Development and Promoting Community Resiliency in Los Angeles County".

Reference: Supplemental Agenda Item 85-D for the April 9, 2024, Board of Supervisor's meeting.

Dear Supervisors:

Save Our Rural Town ("SORT") respectfully offers the following comments on Item 85D that was added to the Agenda for the April 9, 2024, Board of Supervisor's meeting which introduces a motion to accelerate "Renewable Energy Development" in Los Angeles County (referred to hereafter as "the motion"). SORT appreciates that the motion directs staff to look at all 5 supervisorial districts for developing utility scale renewable energy and we assume that this is intended to make the motion appear "equitable"; however, at its core, it appears that the primary motivation is to concentrate utility scale renewable energy development in the Antelope Valley. This premise that underlies our comments. Additionally, SORT has found a number of material inaccuracies in the motion; these inaccuracies should be considered and addressed before the motion moves forward. To address these concerns, SORT offers the following comments.

- Utility scale renewable generation is *not* more cost effective than rooftop solar; in fact, remote utility scale generation is actually far more expensive than either rooftop solar or other distributed generation resources because remote utility scale generation requires expensive transmission; when transmission costs are factored in, rooftop solar is comparatively cheap. Transmission charges are not always visible to the electrical customer because they are bundled into what Southern California Edison calls "delivery charges"; but, as the Clean Power

Alliance website shows, "delivery charges" are significantly higher than "generation charges" on standard residential electric bills¹. More importantly, these delivery charges are slated to substantially increase over the next 20 years if utility scale development is the preferred choice rather than rooftop solar because ratepayers will bear the \$30+ billion cost that California Independent System Operator ("CAISO" or "CalISO") estimates is needed to accommodate utility scale renewable generation. And, because CAISO estimates are typically understated by at least 30%², the actual price will be at least \$40 billion; this will cost each metered customers an average of about \$5,000. In contrast, a 4 kW rooftop solar system only costs about \$11,600³; with the federal tax credit, that drops to \$8,150. According to EnergySage, the payback period for rooftop solar for a home in Acton that has an average electrical bill of \$210 per month is only 5.4 years; furthermore, rooftop solar will become more cost effective over the next decade because electrical costs will continue to skyrocket (whereas the cost of rooftop solar has actually dropped since 2021 and is not likely to rise⁴).

- The motion suggests that the County's existing Renewable Energy Ordinance ("REO") should be revised because otherwise, local land use and permitting processes will be "usurped by the State" through operation of AB 205 which grants the California Energy Commission ("CEC") authority to process energy projects if applicants "opt-in" to the program. Nothing could be further from the truth. SORT has actively participated in the CEC's AB205 program and we note it is particularly robust and equitable; moreover, an energy developer can submit an AB 205 "opt in" application to the CEC at any time and regardless of any changes made to the REO. In other words, modifying or weakening the County's REO will not alter or affect any CEC jurisdictional issues. Furthermore, and frankly, SORT finds the CEC's AB 205 process to be far more efficacious than, and preferable to, the County's permitting process; therefore, nothing about AB 205 or the CEC's "opt in" program warrants revision to the County's REO. The motion is wrong to suggest otherwise.

¹ <https://files.cleanpoweralliance.org/uploads/2024/03/SCE-and-CPA-Joint-Rate-Comparison-January-2024-2018-Vintage.pdf>.

² Public Advocates Office's Response to The Joint Motion for Adoption of Phase 1 Settlement Agreement. [<http://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=520649596> Table 1].

³ <https://www.energysage.com/local-data/solar-panel-cost/ca/>.

⁴ <https://www.cnet.com/home/energy-and-utilities/why-the-cost-of-solar-panels-will-likely-keep-falling/>

- A centerpiece of the proposed "Climate Action Plan" that will be heard by the Board on April 16 is a requirement that rooftop solar be installed on all new residential development⁵. However, if the motion is correct and rooftop solar is not particularly cost effective, then it would be entirely irresponsible for the Board to adopt the Climate Action Plan as it is currently drafted because doing so would unnecessarily drive up the cost of new residential development that is so desperately needed in the county. Fortunately, rooftop solar is cost effective (particularly in comparison to utility scale renewable development); the motion is wrong to declare otherwise.
- The motion supposedly "builds on" an action taken by the Board on December 19 which directed staff to develop a new ordinance to address the widescale deployment of battery energy storage systems ("BESS")⁶; however, the motion completely ignores the most critical aspect of the December 19 action: namely, the importance of avoiding an "overconcentration" of energy development within a community. The failure of the motion to address overconcentration is very troubling, particularly since the motion appears to target the 5th Supervisor District in general and the Antelope Valley area in particular⁷; this suggests that the Antelope Valley will become the County's "dumping ground" for utility scale generation projects and the accompanying high voltage transmission lines that are needed to carry Antelope Valley generation to urban Los Angeles County. There is no "equity" in such a program. Moreover, 65,000 acres of open space and habitat in the Antelope Valley have already been replaced with renewable energy projects; thousands of Joshua trees have been destroyed, entire scenic vistas have been eliminated, and hundreds of miles of new, expensive, high voltage transmission lines have been constructed. And this is only the beginning. Decarbonizing Los Angeles County will require more than 750 square miles (or 480,000 acres) of solar panels⁸; this can be achieved efficiently and at a comparatively low cost through expanded rooftop solar coupled with distributed battery storage facilities that are deployed throughout Los Angeles County's urban areas or it can be achieved inefficiently and at significantly higher cost (in both dollars and environmental destruction) by pursuing remote utility scale

⁵ "Implementing Action ES3.1" states "Require rooftop solar PV for all new development".

⁶ Agenda Item 98A.

⁷ The motion explicitly states that utility scale renewable generation should be permitted in the "Economic Opportunity Areas" of the Antelope Valley.

⁸ *Assessment of The Land Area Required to Fully Decarbonize Los Angeles County Via Photovoltaic Solar Generation*. March 7, 2022. See Attachment 1.

generation projects and investing many tens of billions of dollars in new transmission facilities. Moreover, utilities and energy developers will accrue significant financial benefits if California's green energy goals are achieved via utility scale remote generation and they will earn little to nothing if California's green energy goals are achieved via rooftop solar and distributed generation and storage. Unfortunately, the motion irresponsibly advocates only for utility scale development and dismisses rooftop solar based on erroneous and inaccurate assumptions. Equally important, requiring the urban areas of Los Angeles County to become entirely dependent on energy that is delivered via a handful of high voltage power lines which are highly susceptible to damage by either terrorists or natural disaster is not a plan; it is a catastrophe waiting to happen.

- The motion directs staff to look at allowing utility scale energy projects in the "Economic Opportunity Areas" of the Antelope Valley; this runs afoul of another centerpiece objective in the Climate Action Plan which is to achieve a "job density" of 300 jobs per acre⁹. The Board is reminded that the Economic Opportunity Areas in the Antelope Valley were intentionally created by the Antelope Valley Area Plan expressly for the purpose of achieving an appropriate jobs/housing balance in rural and suburban Antelope Valley and thereby significantly reduce commuter VMT; this balance cannot be achieved if the Economic Opportunity Areas are reduced in size.
- SORT is particularly concerned that the motion may result in the elimination of "undergrounding" requirement for generation tie lines which connect generation to the transmission grid; if the County allows this, then every one of the hundreds of new individual energy farms that will be spread across hundreds of square miles in the Antelope Valley will be connected by a dedicated high voltage transmission power line. This will result in many hundreds of miles of new and expensive transmission lines cluttering virtually every highway in the Antelope Valley and destroying every scenic viewshed in every direction; it will be incredibly inefficient, incredibly expensive, and completely unnecessary. It is a myth that it is too expensive to underground power lines from renewable generation resources; for example, consider all the enormous wind farms in the Tehachapi area that are all interconnected *with minimal above ground high voltage transmission lines*. With proper planning and strategically located substations placed adjacent to existing Edison transmission facilities, expensive above ground high voltage transmission lines can be avoided.

⁹ See measure T2.

- To ameliorate the terrible devastation that will be wrought by this motion when rural protections in the REO are substantially eliminated, the motion proposes to create "energy resiliency" in these communities through the deployment of "community microgrids"; unfortunately, this proposal is misguided. The "energy resiliency" of a community refers to the ability of a community to run in "island mode" and operate independently from the CAISO transmission grid; thus, it is appropriate in remote areas that are served by tenuous or unreliable power generation facilities or transmission line sources. These circumstances do not exist in Los Angeles County because Southern California Edison has created a substantial and robust transmission system that is connected to the CAISO transmission grid at numerous locations. In fact, SORT is not aware of any communities in Los Angeles County that have unreliable transmission service. In contrast, there are *many* communities in Los Angeles County that have unreliable *distribution* service because Southern California Edison has a penchant for cutting power on its distribution network during moderate or high wind events (known as "public safety power shutoffs" or "PSPS" events); however, during PSPS events, "community microgrids" are **completely useless**. This is because "community microgrids" rely on the distribution network to deliver power to community residents; when a community's distribution network is shutoff during a PSPS event, power from the "community microgrid" cannot be delivered. In other words, and contrary to what the motion suggests, community microgrids will not augment "resiliency" in rural Los Angeles County communities *especially* during PSPS events. Furthermore, the rural communities that are most likely to be burdened with the new utility scale energy developments and transmission lines which will result from the motion do not experience PSPS events anyway¹⁰. The motion also offers to develop "property" renewable energy projects and rooftop solar plus battery facilities for "individual buildings"; this is very troubling. How is the County going to decide which lucky properties will be given the gift of free solar plus battery facilities and which properties will be left out in the cold? And how can such decisions ever be "equitable" anyway? Finally, it should be up to the community to decide what types of benefits it should receive as a result of the terrible burdens it will be compelled to endure as a result of this motion; limiting the spectrum of benefits to just a community microgrid or a few select group of residents who receive free rooftop solar and battery systems is simply unconscionable.

¹⁰ Virtually all the utility scale solar facilities constructed in unincorporated Los Angeles County are located within the flat areas of the Antelope Valley surrounding the rural communities of Antelope Acres, Neenach, Fairmount, Littlerock, Sun Village, Lake Los Angeles, etc; *none* of these communities have ever been subject to PSPS events.

The motion raises a myriad of issues and SORT has a number of other concerns with it; unfortunately, we have been unable to address these concerns here due to the shortness of the comment period. Additionally, the curious stance that the motion takes regarding rooftop solar and its false narrative that utility scale generation costs less than rooftop solar leads SORT to believe that the Board has received skewed and unreliable information from utilities, energy developers, and other special interest groups who all have a financial incentive to advance utility scale renewable generation at the expense of distributed generation. If the Board "buys into" this false narrative, then electric rates will continue to unnecessarily spiral upwards over the next two decades. Therefore, SORT respectfully requests that the County refrain from approving this motion until more thorough assessment has been prepared.

Sincerely;

/S/Jacqueline Ayer

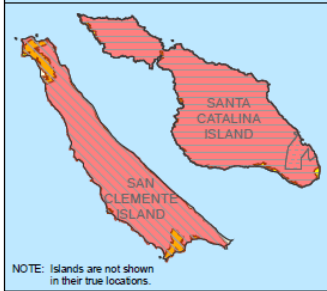
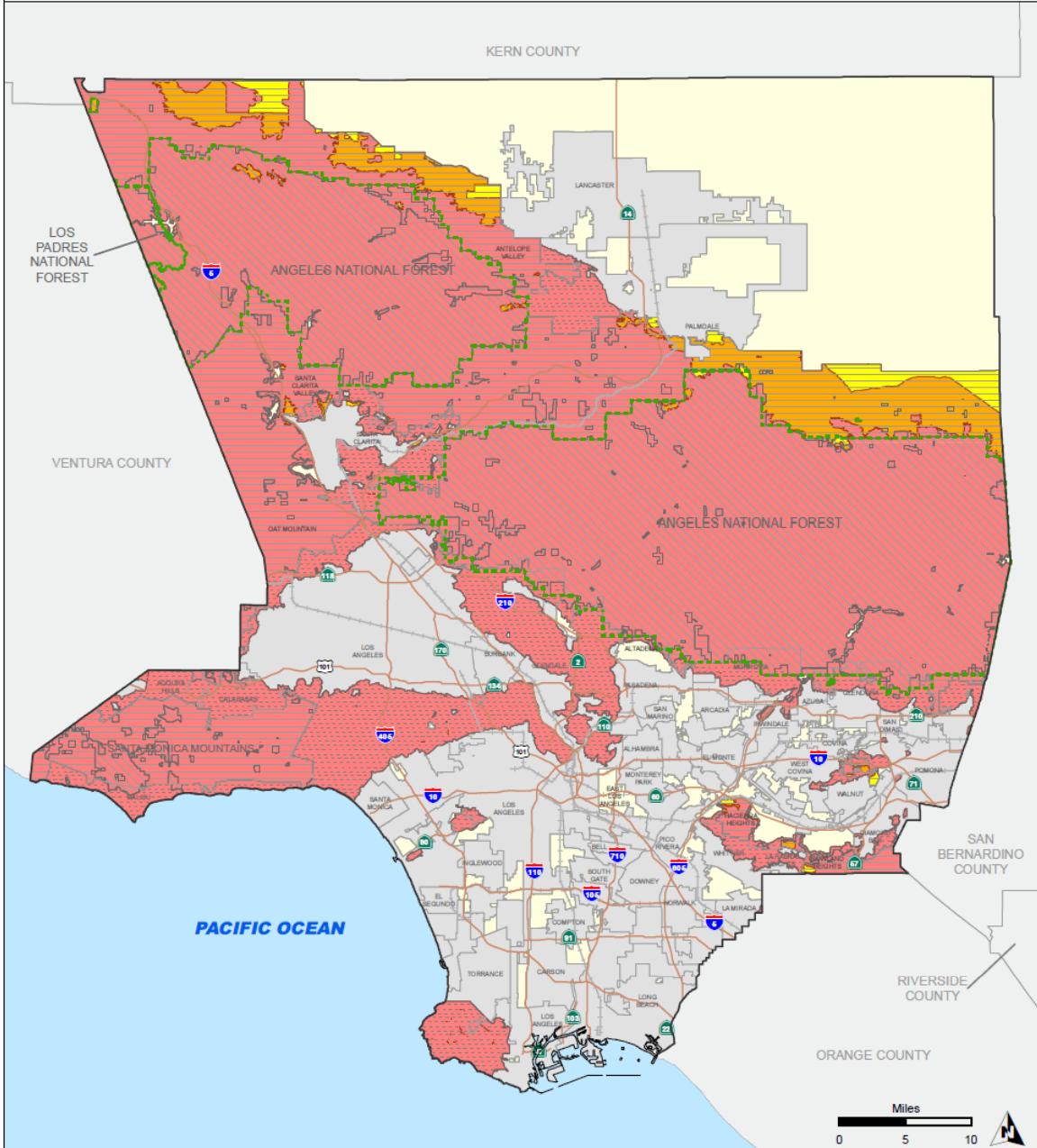
Jacqueline Ayer, Director
Save Our Rural Town

ATTACHMENT 7

Excerpt from the Safety Element of the County General Plan

Fire Hazard Severity Zones Policy Map

Figure 12.5



- Very High Fire Hazard
- High Fire Hazard
- Moderate Fire Hazard
- Unincorporated Areas
- Cities
- Federal Responsibility Area
- State Responsibility Area
- Local Responsibility Area

Source: Department of Regional Planning, Oct, 2021. Additional Sources: Fire Hazard Zones (CalFire), adopted 2007; Responsibility Areas (CalFire), current as of August, 2021.

ATTACHMENT 8

The Acton Community Standards District (Chapter 22.302 of the Los Angeles County Zoning Code).

22.302.010 - Purpose.

The Acton Community Standards District ("CSD") is established to protect and enhance the rural, equestrian, and agricultural character of the community and its sensitive features including significant ecological areas, floodplains, hillsides, National Forest, archaeological resources, multipurpose trail system, and Western heritage architectural theme. The standards are intended to ensure reasonable access to public riding and hiking trails, and to minimize the need for installation of infrastructure such as sewers, streetlights, concrete sidewalks, and concrete flood control systems that would alter the community's character, while providing for adequate drainage and other community safety features.

(Ord. 2019-0004 § 1, 2019.)

22.302.020 - Definitions.

(Reserved)

22.302.030 - District Map.

The boundaries of this CSD are shown on Figure 22.302-A: Acton CSD Boundary, at the end of this Chapter.

(Ord. 2019-0004 § 1, 2019.)

22.302.040 - Applicability.

This Chapter shall apply, as appropriate, to any land division, building permit for either a new structure or a specified addition to an existing structure, or grading permit.

(Ord. 2019-0004 § 1, 2019.)

22.302.050 - Application and Review Procedures.

A Ministerial Site Plan Review ([Chapter 22.186](#)) application shall be required for the determination of whether or not a proposed development complies with the provisions and development standards prescribed in this Chapter.

(Ord. 2019-0004 § 1, 2019.)

22.302.060 - Community Wide Development Standards.

Except where a more specific application is prescribed or prior to the approval of a new structure or addition to an existing structure where the cumulative area of all additions made after the adoption of this CSD adds at least 400 square feet to the footprint of either primary or accessory structures, an application in compliance with Section [22.302.050](#) (Application and Review Procedures) shall be submitted to assure compliance with the following development standards:

- A. Hillside Design Considerations. Hillside resources are among the most important features of the Acton community. Hillside regulations shall be enforced by a specific written analysis in each case, demonstrating conformance with the following objectives. Development plans shall comply with the following objectives:
 1. Preserve to the greatest extent possible existing natural contours and natural rock outcropping features. Structures and required provisions for access and public safety should be designed to minimize encroachment on such features by the use of such techniques as curvilinear street designs and landform grading designs which blend any manufactured slopes or required drainage benches into the natural topography;
 2. Preserve to the greatest extent possible the natural silhouette in significant ridgeline areas. Significant ridgelines are the ridgelines that surround or visually dominate the Acton landscape either through their size in relation to the hillside or mountain terrain of which they are a part, or through their visual dominance as characterized by a silhouetting appearance against the sky,

or through their visual dominance due to proximity and view from existing development, freeways and highways designated as Major, Secondary, or Limited Secondary on the Highway Plan;

3. While observing minimum lot area standards contained in this Chapter, cluster development where such technique can be demonstrated to substantially reduce grading alterations and contribute to the preservation of native vegetation and prominent landmark features;
 4. Blend buildings and structures into the terrain by sensitive use of building setbacks, structure heights, and architectural designs; and
 5. Minimize disruption of view corridors, scenic vistas, and adjacent property by the use of sensitive site design and grading techniques.
- B. Preservation of Native Vegetation. Development plans shall emphasize the protection of, and revegetation with, native vegetation, including the native plants, grasses, shrubs, and trees which intercept, hold, and more slowly release rainfall than bare earth surfaces. It is intended that equestrian uses such as stables and arenas which will result in vegetation removal be accommodated, provided the design of these uses does not create erosion or flooding potential that would create a safety hazard to structures or off-site property, as determined by Public Works. On any lot consisting of one acre or greater, the removal or destruction of native vegetation exceeding 10 percent of the lot area within any 12-month period shall require a Minor Conditional Use Permit ([Chapter 22.160](#)) application.
1. Application Required. A Minor Conditional Use Permit ([Chapter 22.160](#)) application is required for any application involving grading (including brushing or vegetation removal to accommodate equestrian uses). A site plan for review must be included as part of the application. This information may be submitted in conjunction with other site plan information that may be required for the project. Within hillside areas, such application must comply with [Chapter 22.104](#) (Hillside Management Area), which requires a Conditional Use Permit ([Chapter 22.158](#)) application for projects in hillside management areas. Such application shall not substitute for Oak Tree Permit ([Chapter 22.174](#)) application requirements. Material submitted shall include:
 - a. A description of the property, accompanied by a map showing the topography of the land and the location of any drainage courses; the location and extent of the proposed work and details of the precautionary measures or devices to be used to prevent erosion and flood hazards, including, if necessary, a drainage plan by a civil engineer showing routing of runoff, estimate of quantity and frequency of runoff, character of soils, and channel sections and gradients;
 - b. A landscaping plan supportive of this Subsection B showing existing and proposed landscaping, acceptable to the Department. Such plan shall specifically identify California junipers, manzanita, Great Basin sage, and Joshua trees and generally describe the type and condition of native vegetation. Soil types shall be specified to assess the feasibility of revegetation. Relandscaping of disturbed areas should emphasize the use of existing native, drought tolerant vegetation;
 - c. A long-term maintenance program for all landscaping in the proposed plan, both undisturbed and revegetated; the program shall focus on revegetated areas and shall cover a two-year period; funding provisions for the maintenance program shall be specified; and
 - d. Such other vegetation information as the Director may deem necessary to fulfill the purpose of protecting property and public safety and preserving the character of the Acton community.
 2. Issuance Conditions. The Review Authority shall approve the application, with appropriate conditions, relating to this Subsection B only, for all or a portion of the proposed work when satisfied:
 - a. That the performance of such work is consistent with the intent of this Subsection to preserve native vegetation;
 - b. That such work will not result in a flood or erosion hazard to this or other properties; and
 - c. That the proposed work conforms with the requirements of other laws or ordinances.
 3. For commercial agricultural uses, relief from the standards of this Subsection B pertaining to replacement with native vegetation may normally be granted through the provisions of Section [22.302.090](#) (Modification of Development Standards).
 4. Exceptions. The provisions of this Subsection B shall not apply to, and a Minor Conditional Use Permit is not required for:
 - a. The removal or reduction of vegetation for the purpose of complying with County regulations relating to brush clearance for fire safety. This exception includes not only required vegetation control around structures but also the creation and maintenance by a public agency of firebreaks used to control the spread of fire;
 - b.

The removal or destruction of vegetation on publicly owned rights-of-way for roads, highways, flood control projects, or other similar or related uses;

- c. The removal or destruction of vegetation by public utilities on rights-of-way or property owned by such utility, or on land providing access to such rights-of-way or property;
- d. Work performed under a permit issued for precautionary measures to control erosion and flood hazards; and
- e. The selective removal or destruction of noxious weeds or plants which pose a hazard to animals.

C. Architectural Style and Project Design Considerations.

1. All uses in commercial land classifications in the Antelope Valley Area Plan and all nonresidential uses within Residential and Rural Land classifications which are not accessory to residential structures shall:
 - a. Not exceed a height of 35 feet except for chimneys and pole antennas, which may not exceed a height of 45 feet;
 - b. Be designed in a "Western frontier village, circa 1890s style" in substantial conformance with the architectural style guidelines in Appendix I at the end of this Chapter and as maintained by the Department; and
 - c. Be designed to conceal from public view all external utilities, such as roof-mounted air conditioning or heating units, or other improvements not contributing to the Western architectural design, such as satellite dish antennas. Solar panels that are designed as part of a roof line and blend with the overall roof appearance need not be concealed. An exterior architectural rendering, with materials and colors indicated, shall be submitted with any application request for structural improvements.
2. Restricted access subdivisions are prohibited.

D. Drainage. The following provisions are intended to slow or reduce runoff from new development and protect and enhance the rural character of Acton. In addition to existing County standards for the control of runoff, the following standards shall be observed:

1. The maximum impervious finished surface area for residential and associated accessory uses shall not exceed 10 percent for lots three net acres or larger; not exceed 21 percent or 13,000 square feet, whichever is smaller, for lots between one and one-quarter net acres and three net acres; and not exceed 42 percent or 11,000 square feet, whichever is smaller, for lots smaller than one and one-quarter net acres;
2. Maximum impervious finished surface areas for nonresidential uses shall not exceed:
 - a. 65 percent for open storage and homes for the aged;
 - b. 74 percent for hospitals, cemeteries, mausoleums, and mortuaries;
 - c. 82 percent for churches and schools; or
 - d. 90 percent for stores, office buildings, warehousing, manufacturing, storage, shopping centers, restaurants, service stations, parking lots, motels/hotels, kennels, lumber yards, professional buildings, banks, and supermarkets;
3. Partially impervious surfaces, such as perforated concrete blocks that allow vegetation growth, may be used where public safety is not a consideration, such as private patios and driveways; credit shall be given for the portion of such surfaces that are not impervious. This provision shall not be used to modify standards for parking surfaces required by Section 22.112.080 (Parking Design).
4. All residential buildings with rain gutters shall collect and direct all roof runoff towards permeable surfaces, rather than towards impervious surfaces such as paved driveways;
5. This CSD discourages the use of concrete facilities to mitigate flood hazards; and
6. Flood hazard mitigation shall be consistent with floodplain management practices and existing drainage policies.

E. Billboards. This CSD shall be designated a Billboard Exclusion Zone (Chapter 22.50).

F. Signs.

1. Notwithstanding any other provision of this Title 22, all signs permitted by this Subsection F shall conform to the following:
 - a. Signage shall be unobtrusive and shall promote the style of the Western frontier architectural guidelines; and
 - b. Lighting shall be external, using fixtures designed to focus all light directly on the sign, and internal illumination shall be prohibited.
2. Except as specifically exempted by Section 22.114.030 (Exemptions), no sign, including those prohibited by Section 22.114.040 (Prohibited Signs Designated), shall be erected within this CSD except as provided for by this Subsection F.2:

- a. Wall business signs, as provided by Section 22.114.110 (Wall Business Signs), except that no wall business sign attached to a building, including the roof, shall be higher than the highest point of the building, excluding chimneys and antennas. The maximum area permitted of a wall sign is one and one-half square feet for each one linear foot of building frontage, not to exceed 100 square feet per tenant;
 - b. Freestanding business signs, typically monument style, as provided for in Section 22.114.120 (Roof and Freestanding Business Signs), except that roof business signs shall be prohibited, the height of such signs shall be limited to five feet measured from the natural grade at street level, and the maximum area of combined faces on such signs shall be limited to 100 square feet;
 - c. Residential ranch entrance signs, provided that only one span per lot shall be permitted for such signs, the top of each sign shall not exceed 20 feet from natural grade, and the surface areas of such signs shall not exceed 12 square feet; and
 - d. Temporary, directional, informational and special purpose signs, as provided for by Sections 22.114.170 (Temporary Real Estate Signs), 22.114.180 (Temporary Construction Signs), 22.114.190 (Directional and/or Informational Signs), 22.114.200 (Special—Purpose Signs), and 22.114.210 (Temporary Subdivisions and Real Estate Signs).
- G. Fence Design. In addition to standards provided in Section 22.110.070 (Fences and Walls) concerning the height of fences, the following fence design features shall apply to the construction of perimeter fencing:
1. Only split rail, open wood, wire, or wrought iron style or similar open-type perimeter fences shall be permitted, except on residential lots of less than 10,000 square feet, or unless view-obscuring fences are required for visual shielding by other provisions of this Title 22; and
 2. Except where otherwise required by this CSD, at least 70 percent of the entire fence area shall be non-view-obscuring; no slats or other view-obscuring materials may be inserted into or affixed to such fences. Any solid lineal sections must be primarily for structural purposes or provide minor architectural design features.
- H. Outdoor Lighting. Outdoor lighting shall be provided in accordance with the applicable provisions of Chapter 22.80 (Rural Outdoor Lighting District). Where outdoor lights are required, light fixtures in keeping with the Western frontier architectural style will be required.
- I. Street Improvements. Street improvements shall complement the rural character of the Acton community and street lights shall be provided in accordance with the applicable provisions of Chapter 22.80 (Rural Outdoor Lighting District):
1. All required local and highway streetlights shall utilize cut-off "Mission Bell" design fixtures, as specified by the local electric utility.
 2. Concrete sidewalks, curbs, and gutters will generally not be required on local streets. In all new land divisions, inverted shoulder cross-sections will be specified for local streets, unless an alternate design is necessary for public safety, as determined by Public Works. Curbs and gutters, or fencing with inverted shoulders, may be required where trail use is within the roadway easement.
- J. Trail Easements. In reviewing and establishing design conditions for any land division, the Review Authority shall consider community trails objectives and whether or not they may be promoted or benefited by such division. Alternative proposals for trail easements consistent with community goals shall be developed and considered in conjunction with each land division.
1. Unobstructed multipurpose pathways for both pedestrian and equestrian uses should be developed in each new land division to the satisfaction of both Parks and Recreation and Public Works. Although alignments that are not adjacent to roadways will generally be preferred, road easements may be used when the Review Authority determines that other locations are inappropriate.
 2. Any trail incorporated into a land division must contain a provision for participation in a community-wide trail maintenance financing district or other appropriate financing mechanism; the district or other financing mechanism must be established prior to the construction of the trail.
 3. Parks and Recreation will work with the community to establish an appropriate mechanism for financing trail maintenance.
- K. Home Occupations.
1. Application. Home occupations are permitted, subject to a Ministerial Site Plan Review (Chapter 22.186) application, to enable a resident to carry on an income-producing activity, which is incidental and subordinate to the principal use of residential property, when such activity will not be disruptive to the character of the Acton community.
 2. Additional Standards. Home occupation shall comply with the following standards:
 - a.

The home occupation shall occur on a lot used primarily as the permanent residence of the person or persons operating the home occupation, and be secondary and incidental to the principal use of the lot, and not change the residential character and appearance of the dwelling unit;

- b. Not more than two persons, other than resident occupants, shall be employed or volunteer their services on site;
- c. The number of off-street vehicle parking spaces shall comply with Chapter 22.112 (Parking), as well as provide one additional on-site vehicle parking space, either covered or uncovered, for each employee or volunteer;
- d. The combined floor area of the home occupation shall not occupy more than 20 percent of the total floor area of the residence (excluding accessory buildings) or 350 square feet, whichever is lesser;
- e. No noise or sound shall be created which exceeds the levels contained in Chapter 12.08 (Noise Control) of Title 12 (Environmental Protection) of the County Code;
- f. On-site signage or display in any form which advertises or indicates the home occupation is prohibited;
- g. No sale of goods shall occur at the premises where the home occupation is located;
- h. Business traffic shall occur only between the hours of 8:00 a.m. and 6:00 p.m. Home occupation related vehicle trips to the residence shall not exceed six per day; and
- i. Approval of a home occupation shall require a covenant and agreement, in compliance with Section 22.222.260 (Performance Guarantee and Covenant).

3. This Subsection K shall not modify the provisions for on-site display, signage, and sale in any Agricultural Zone of products lawfully produced on such lot.

L. Drive-Through Establishments. No new drive-through facility or service shall be permitted. For purposes of this Subsection L, the term "new drive-through facility or service" does not include those facilities or services which, prior to the effective date of this Subsection L, July 6, 2018, were: (1) lawfully established, in compliance with all applicable ordinances and laws; or (2) approved by the final decision maker, as set forth in Chapter 22.222 (Administrative Procedures).

(Ord. 2019-0073 § 1, 2019; Ord. 2019-0004 § 1, 2019.)

22.302.070 - Zone Specific Development Standards.

(Reserved)

22.302.080 - Area Specific Development Standards.

Except as provided in this Chapter, all residential lots shall comply with the area requirements and standards of the applicable zone. If any portion of a new lot, or an existing lot, as noted, is located within a Rural Land 1 (RL1), Rural Land 2 (RL2), Rural Land 10 (RL10), or Rural Land 20 (RL20) area, the following requirements apply:

A. RL2, RL10, or RL20 Area, Antelope Valley Area Plan Land Use Policy Map:

1. Minimum Lot Area. New residential lots shall contain a gross area of not less than two acres and a net area of not less than 40,000 square feet. Lot sizes may be clustered in accordance with the Antelope Valley Area Plan, provided that no lot contains less than one acre of gross area and 40,000 square feet of net area, and provided the average gross area of all lots in a project is not less than two acres.
2. Lot Width and Length for Regular Lots. Except as otherwise specified in Subsection A.3, below, new residential lots shall contain an area which is at least 165 feet in width and at least 165 feet in length (depth). This area shall begin no farther than 50 feet from the street right-of-way line and shall include the entire building pad.
3. Lot Width and Length for Irregular Lots. New flag and other irregularly shaped residential lots shall contain an area which has an average width of not less than 165 feet, including a minimum width of at least 165 feet through the area containing the building pad of the primary residential structure, and a minimum length (depth) of not less than 165 feet.
4. Lot Setbacks. New and existing residential lots of sufficient size shall have required front and rear yards of not less than 50 feet from the property line. Side yards shall be a minimum of 35 feet from the property line.

B. RL1 Area, Antelope Valley Area Plan Land Use Policy Map:

1. Minimum Lot Area. New residential lots shall contain a gross area of not less than one acre and a net area of not less than 40,000 square feet. No clustering of lot sizes is permitted which creates lots smaller than the minimum lot area.

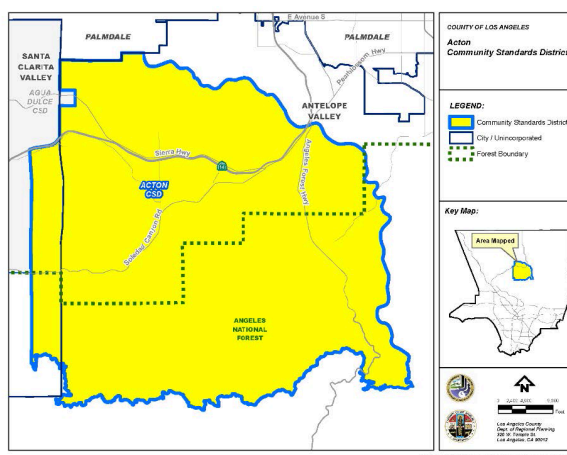
2. Lot Width and Length for Regular Lots. Except as otherwise specified in Subsection B.3, below, new residential lots shall contain an area which is at least 130 feet in width and at least 130 feet in length (depth). This area shall begin no farther than 35 feet from the street right-of-way line and shall include the entire building pad.
3. Lot Width and Length for Irregular Lots. New flag and other irregularly shaped residential lots shall contain an area which has an average width of not less than 130 feet, including a minimum width of at least 130 feet through the area containing the building pad of the primary residential structure, and a minimum length (depth) of not less than 130 feet.
4. Lot Setbacks. New and existing residential lots of sufficient size shall have required front and rear yards of not less than 35 feet from the property line. Side yards shall be a minimum of 25 feet from the property line.

(Ord. 2019-0004 § 1, 2019.)

22.302.090 - Modification of Development Standards.

Modifications to any standards in this Chapter are only available pursuant to the terms and conditions of a Conditional Use Permit ([Chapter 22.158](#)) application.

FIGURE 22.302-A: ACTON CSD BOUNDARY



(Ord. 2019-0004 § 1, 2019.)

APPENDIX I. - ACTON COMMUNITY STANDARDS DISTRICT ARCHITECTURAL STYLE GUIDELINES

I. Background

Acton is a rural community that began to develop in the 1800's as a center of gold and copper mining activity. By 1872, with the coming of the railroad and the development of large scale mining operations, Acton was a thriving community. In 1886 the Southern Pacific depot was established, bearing the name of Acton. For a short period of time, Acton with all its mines was an important town in the State of California. Several structures from this era remain. The 1878 school house now serves as a community church, and the 49er Saloon-remodeled and expanded, but retaining its "Western" look-remains a community fixture. Bricks from the 1890 Acton Hotel have been incorporated into a community monument.

As the mining activity decreased at the turn of the century, the area changed to predominantly ranching activities. It is in keeping with this rich frontier mining town heritage that these Architectural Style Guidelines for commercial areas have been established.

II. Objectives

Section 22.302.060.C (Architectural Style and Project Design Considerations) of the Acton Community Standards District ("CSD") provides for the application of Architectural Style Guidelines in Acton, primarily in commercial areas, as defined by the Land Use Policy Map for the Antelope Valley Area Plan. There are two distinct commercial areas: 1) "Old Town" south of the Freeway along Crown Valley Road and 2) the newly developing uses adjacent to the Freeway, particularly to the north. The objectives of the guidelines include:

- Identification and description of the qualities which give a "Western frontier village, circa 1890s style" character to much of the existing commercial area—particularly the older development in the vicinity of Crown Valley Road and Soledad Canyon Road.

- Assistance in guiding and promoting architectural rehabilitation throughout Acton that is consistent with its Western Heritage.
- Development of new commercial structures that promote and enhance the community's Western Heritage architectural character.

III. Guidelines

This entire CSD is intended to help preserve a Western desert community character. Vegetation, street improvements, trails, lighting, fencing, signage, building heights, setbacks, and other features of this CSD all complement the Western appearance. The Architectural Style Guidelines are intended to put the finishing touches on the exterior appearance of the commercial community. The following guidelines provisions are to be used in designing all exterior improvements:

- A. Facades
- B. Roof forms
- C. Sidewalk coverings
- D. Signs
- E. Colors
- F. Materials
- G. Landscaping
- H. Exterior features: lights, railings, street furniture, etc.
- A. Facades

Building exteriors, particularly storefronts, are the most visible elements of a commercial community. The surfaces, materials and colors that complement the overall architectural design create a visual statement as well as provide a framework for signage, landscaping, and street furnishings that can complete a desired appearance.

Lineal Design:

"Western" town commercial structures have strong horizontal lines; parapets, signs, railings, balconies, sidewalk coverings, transom windows, and kickplates are typical lineal features. Projecting or recessed horizontal architectural or decorative features help create dimension and interest on a plain facade. While diversity-e.g. Victorian design-among individual stores is encouraged, horizontal lines can help create a cohesive community and encourage one's eyes to scan the entire area.

Encourage

- A predominating horizontal line along the top of the building facade.
- Alignment of tops of windows and door openings.
- The clear division of two story structures between the first and second floors.
- Second floor balconies and railings; their strong horizontal structure adds depth and visual interest.
- Horizontal lines that carry from one store or structure to the next.

Discourage

- Horizontal elements that do not involve structural features; a painted horizontal stripe, for example, should not be used where wood trim would create dimension and texture.

Entries:

Stores along a "Western" street typically have recessed entries. This feature draws a shopper toward the sheltered door area, which is generally flanked with display windows. This architectural characteristic is in contrast to modern commercial designs which generally align all storefronts and entrances along a straight walkway.

Encourage

- Recessed storefront entries. Side and rear entries may be in line with exterior walls.
- Wood-appearing frame doors with glass panes-particularly in the upper half of the door-and suitable hardware (typically brass hinges and handles or push plates). Wood-frame screen doors can be used.

- Double entry doors, while not necessary, are particularly inviting.

Discourage

- Use of bright aluminum, tinted glass and other modern doorway materials.
- Frameless glass doors.
- Security doors and grates.

Windows:

Windows link the outside pedestrian with the inside business. They provide a showcase for the merchant and can do much to invite sidewalk shoppers to enter an establishment. Western Village-type windows would authentically be multi-pane, with wood frames. While this look is preferred, larger single-pane showcase windows may provide a better display format; as long as the window frame has an appearance that blends with the overall facade, window pane size will not be a judged factor.

Encourage

- Window designs that harmonize with those in adjacent structures.
- Kickplates that line the lower part of the storefront below the glass. Transom windows are a typical feature over the display windows.
- Use of clear glass or lightly tinted glass only; glass may contain suitable decorative etching.
- Use of shutters, louvers or interior blinds where privacy or restricted views are needed.

Discourage

- Design or alteration of window openings that are inconsistent with the architectural character of the building.
- Use of darkly tinted or reflective glass.
- Full length plate glass windows.
- Finished appearance that does not reflect intended architectural design. Aluminum used for window and door frames, for example, is a modern-appearing material that is inappropriate.

Side and Rear Facade Features:

Structures in the commercial areas of Acton are often visible on all sides. Some establishments may permit access from other than the front entry. It is important that these facades be attractively maintained in character with the Western architecture theme. Utilities, trash bins, and other such features of rear and side areas should be covered or disguised in the same architectural theme wherever possible.

B. ROOF FORMS

Unlike residences of the by-gone Western era with their pitched roofs, commercial buildings are known for their predominantly flat-roofed appearance. Where pitched roofs exist, they are generally hidden from street view by either a parapet-an upward extension of part of the front wall-or a false front (with the exception of Victorian-style structures). While top roof lines can carry a horizontal theme around the commercial area, individuality should be encouraged; multi-height parapets and false fronts add variety. Special roof lines, raised heights, or other distinctive treatments are appropriate over major building entry points or corner structures.

Encourage

- Predominantly flat roofs.
- Sloping roofs hidden from front view by parapets or false fronts with horizontal lines.
- "Accent" roof lines or other architectural features-higher than the surrounding roof lines-at corners and major entrances.
- Screening of roof mounted equipment (see Section 22.302.060.C (Architectural Style and Project Design Considerations) of this CSD).

Discourage

- Sloped or pitched roofs-particularly those visible from street view, unless of Victorian design.
- Decorative roof elements that do not focus on corner or entry areas.

C. SIDEWALK COVERINGS

Motion picture-created images of Western towns often portray hot, dusty main streets; a respite from the sun was found in the shade provided by coverings along the boardwalks. In Acton today, paved streets minimize the dust, and air conditioning provides ideal climate control. Sidewalk coverings, however, are still functional: in addition to reinforcing the Western architectural style, they provide an invitation to window shoppers, protect window displays and shield windows from the heat of the day, thereby conserving energy.

Sidewalk coverings are typically constructed of rough wood, supported by wooden posts. They may serve as second story balconies. Awnings can also be used, but should be of plain canvas-type material; rounded or scalloped edges, stripes or patterns are not appropriate. Where posts are used, wooden railings would complete the boardwalk area.

D. SIGNS

Signage controls can "make or break" the visual image of a commercial community. This feature of the Acton community is so important that Section 22.302.060.F (Signs) of this CSD contains specific regulations designed to prevent the use of modern signs.

The primary function of signs in Acton is to effectively identify business locations. Signs should not be used for advertising, unless based on verifiable authentic Western designs. Even then they must either conform to Section 22.302.060.F (Signs) or undergo appropriate variance approvals. The following signage features supplement the requirements of Section 22.302.060.F:

Encourage

- Flush-mounted signs, often within a recessed area on a parapet.
- Hanging signboards, either parallel or perpendicular to the building facade.
- Signs related in size, character, and placement to other building elements.
- Graphics and lettering styles that are appropriate to the western motif. Signs for most franchises and chain stores will require redesign.
- Icon signs that illustrate the type of merchandise or service.

Discourage

- Signs that obscure all or part of a significant architectural feature.
- Garish colors that may attract attention, but which detract from a harmonious community appearance.

E. COLORS

If there is a single "Western town" color, it would be earthtone. This color-or range of colors from beige to gray-is natural appearing in many of the materials used in constructing the old West. Brick, made from adobe clay, was often used in early Acton and is also an appropriate color. Brighter primary paint colors were available and were often used for signs and on metal surfaces to prevent rust. "Pastels" and "neons" are inappropriate colors in the Western palette.

Encourage

- Natural wood-look and brick tones as the predominant materials/colors of the commercial area. (Simulated wood appearing products may be used in place of real wood.)
- Colors that are coordinated with neighboring building colors and materials.
- Subtle colors on plain surfaces of large structures.

Discourage

- Changing colors along the main surface of a single building facade. A single color-generally natural wood-creates unity; individual stores can be differentiated by accent colors, parapets, signage, and other distinguishing features.

F. MATERIALS

Finished appearance is more important than the use of "genuine, authentic" materials. Available materials of the day (late 1800's) consisted primarily of wood, adobe, brick and stone. Modern materials are available that simulate these textures, and are generally acceptable in new or rehabilitation construction. Even concrete blocks can be used if faced with adobe-resembling stucco, for example, or covered entirely with vegetation. "Assembly" of these materials should reflect the building techniques and tools employed in the early West.

The chosen materials should be consistent with the structure; sidewalks, for example, would originally have been either boardwalk or stonewalk. Today, those materials would be welcome, although modern materials such as concrete may be used to replicate such appearances through special colorings and installation techniques.

Encourage

- Use of materials available in the old West, such as pine lumber, river rock, and adobe.
- The adaptation of modern materials such as plastic, concrete, and aluminum to resemble old West materials.

Discourage

- Modern materials that retain a contemporary appearance; painted metal "pipe" railings should be avoided in favor of wooden hand rails, for example.

G. LANDSCAPING

Vegetation can provide an attractive, inviting and unifying element to a commercial district. Trees provide welcome shade in a desert community such as Acton. Trees and shrubbery can cover vacant areas or unattractive features such as utility installations and rubbish disposal areas, and can soften the hard appearance of parking lots. Planter boxes along storefronts can be a very decorative feature.

Section 22.302.060.B (Preservation of Native Vegetation) of this CSD emphasizes the preservation and use of high desert native vegetation. A commercial landscape palette must conform to these requirements, which will ensure compatibility of the vegetation with the architectural theme.

H. EXTERIOR FEATURES

"Finishing touches" to the Western village architectural theme must consider all the exterior features, both functional and decorative. Lights and lamp posts, railings, trash receptacles, benches, and hitching posts would all be common to Acton commercial areas and in plain view. Sections 22.302.060.H (Exterior Lighting) and 22.302.060.I (Street Improvements) of this CSD establish general requirements for outdoor lighting. Modern lighting techniques which do not interfere with the Western motif may be used.

Utilities should be hidden from view wherever possible. Air conditioning units, for example, should ideally be roof-mounted. Room air conditioning units should never be installed in the front facade; the rear wall is generally preferable, with side walls acceptable.

Encourage

- Western style accessories such as sidewalk railings and hitching posts (which should be located to protect horses from motor vehicles). Cast iron-type benches and wood or woodenlooking trash "barrels" are appropriate and functional. Wagon wheels are a popular decorative item.
- Gas or gas-look lamps, where high visibility for safety is not a factor.
- The use of wood, wrought iron, ceramic, or other materials from the old West era.

Discourage

- Modern decorative materials such as neon and plastics.

(Ord. 2019-0004 § 1, 2019.)

USGBC CA

U.S. GREEN BUILDING COUNCIL CALIFORNIA

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Ben Stapleton, Executive Director

April 2024

The Honorable Chair Lindsey P. Horvath and Members of the Board
821 Kenneth Hahn Hall of Administration
500 West Temple Street
Los Angeles, CA 90012

Re: Support of the 2045 Los Angeles County Climate Action Plan

Dear Chair Horvath and Members of the Board,

On behalf of the U.S. Green Building Council - California (USGBC-CA), we would like to express our full support for the 2045 Los Angeles County Climate Action Plan (2045 CAP). We applaud the County's commitment towards reducing greenhouse gas emissions and taking tangible steps towards combating climate change.

USGBC-CA's deep bench of members are sustainability and green building professionals with a deep commitment to addressing climate change and other local, state, and international environmental issues. Our members are designers, engineers, public agency and utility staff, consultants, product manufacturers, and service providers. Our mission is to accelerate all aspects of sustainability in the built environment to create a more sustainable region for all.

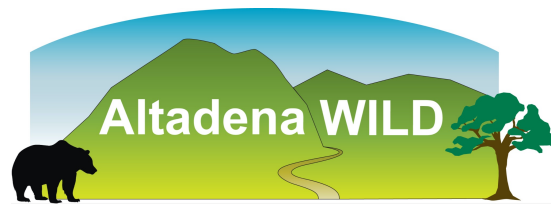
Action is needed now more than ever to improve air quality and decrease the impacts of greenhouse gas emissions. LA County remains one of the most polluted regions in the nation, negatively affecting the safety, public health, economy, and quality of life of all County residents. The Climate Action Plan would be a significant step towards reducing emissions in the unincorporated areas. The CAP identifies strategies, measures, and actions to reduce fossil fuel consumption in the following sectors: transportation, building energy and water, waste, agriculture, and energy supply. It has the potential to transform the direction of the County and build a more sustainable future for generations to come.

We therefore fully support the County's efforts to adopt the 2045 Los Angeles County Climate Action Plan and look forward to the Board's continued action as environmental leaders.

Sincerely,



Ben Stapleton,
Executive Director



AltadenaWILD Expresses Public Support for LA County's 2045 Climate Action Plan

AltadenaWILD (AW), is a 501(c)(3) non-profit formed in early 2023 to serve as an advocate for the precious Altadena foothills that are under threat by development of a proposed sports complex by Pasadena Polytechnic School. On May 15, 2023, AW submitted a public comment to DRP in support of the 2045 CAP, in particular Strategy 9 to Conserve and Connect Wildland and Working Lands as it aligns with our goals to conserve and protect 65 acres of land in Altadena and rewild or repurpose for community benefit the 13 acres in which Polytechnic School intends to build a sports complex.

Altadena has been affected by historically high environmental impacts due to wildfires and as a wildland-urban interface, will continue to do so into the future. Numerous wildfires have occurred recently in the surrounding areas, including the devastating 2009 Station fire.

According to the federal government's Climate and Economic Justice Screening Tool, Census Tract 4603.1 which includes the land that Polytechnic intends to buy and develop into a sports complex, is in the 98th percentile for wildfire risk and the 90th percentile for expected annual building loss rate. The area also suffers from poor air quality and is in the 91st percentile for PM2.5.

The proposed development in a State-designated Very High Fire Hazard Severity Zone -- even if constrained to the 13 acres of the current nursery -- will inalterably impact the remaining 65 acres of wildlands. AW believes such a development would be inconsistent with the 2045 CAP strategies to:

- A1 - Conserve agricultural and working lands, forest lands, and wildlands
- A1.2 - Employ vegetation management of wildlands to reduce wildfire risk and prevent carbon loss in forest lands

Instead of building a sports complex on the land, there is an opportunity to achieve three County strategies:

- A1.1 -Develop an open space conservation and land acquisition strategy to conserve lands for carbon sequestration
- A3 - Expand Unincorporated Los Angeles County's Tree Canopy and Green Spaces
- A3.1 - Create and implement an equitable Urban Forest Management Plan that prioritizes: (1) tree- and parks-poor communities; (2) climate- and watershed-appropriate and drought/pest-resistant vegetation; (3) appropriate watering, maintenance, and disposal practices; (4) provision of shade; and (5) biodiversity.

For these reasons, AW is in favor of the 2045 CAP and urges the Board of Supervisors to approve and adopt the Draft LA County 2045 CAP on April 16, 2024.

Sarah Wolf
Board Director, AltadenaWILD

April 13, 2024



Co-Chairs:

Governor Gray Davis (Ret.)
Jeffrey Jennison

April 14, 2024

Vice-Chairs:

Fran Inman
Supervisor Kathryn Barger

Hon. Lindsey P. Horvath, Chair, and Members of the Board of Supervisors
Los Angeles County Board of Supervisors
500 W. Temple Street, Room 822
Los Angeles CA 90012

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Trevor Mihalik
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Adan Ortega Jr.
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George Pla
Steve PonTell
Steven Powell
Thomas Priselac
Michael Ruane
Trey Thornton
Supervisor Nora Vargas
Raul Vargas
Mike Vomund
Supervisor Donald Wagner
Stephanie Wiggins
Steve Williams

RE: Los Angeles County Climate Action Plan – Request for Delay in Adoption and Specific Recommendations

Dear Supervisor Horvath and Members of the Board,

We recognize and support the potential benefits a well-conceived Climate Action Plan (CAP) can provide to the residents of Los Angeles County, and are appreciative of the time County staff has provided to the business community to discuss our concerns regarding the draft CAP. That said, we are writing today to express our grave concern about the profound negative consequences that will likely occur to the County of Los Angeles, its economy, and its residents if the proposed CAP is enacted as drafted. We therefore respectfully ask the Board of Supervisors to delay adoption of the CAP and intervene to ensure that the concerns of the business community are fully addressed before action is taken.

As we stated in our letter to the Board on November 10, 2023, a copy of which is attached (see Attachment A), the draft CAP poses many threats to our regional economy and to the County’s goals to address the current shortage of affordable housing for its residents, especially its working class and underserved communities. Instead of helping to resolve the housing crisis, or even being neutral as concerns the crisis, we believe the draft CAP would profoundly exacerbate it. Specifically, the CAP will impose dozens of new burdens not only on new housing, but on all new infrastructure and commercial development. Unless the “aspirational” character of the plan is explicitly defined within the document to be nonregulatory, as described further below, some of the most onerous and concerning aspects of the draft plan are:

- It could require new projects which will have employment opportunities to strive for an employment density of 300 employees per acre. This is not a credible goal, even if that goal is only aspirational, because none of the County’s Transportation Analysis Zones has an employment density that even approaches 100 employees per acre.
- It could require a full EIR for many affordable projects that might otherwise qualify for CEQA streamlining. This provision appears to eliminate the advantages of regulatory streamlining the state has created to spur the development of more

Executive Staff:

Mike Roos
President

Richard Lambros
Managing Director

affordable housing for working class Californians and would therefore contribute to the County's housing affordability crisis.

- It would limit offsite GHG mitigation measures to only within Los Angeles County. Requiring local mitigation would skyrocket demand for a limited and shrinking supply of allowable mitigation opportunities, driving up the cost of those opportunities, which would make housing and other developments less affordable.
- It would set water supply mandates for new development that likely cannot be met. Even if sufficient water supplies could be found to achieve net zero water, the cost of that water would impose an additional and likely severe economic burden on the residents and businesses served by those new development projects.

In our earlier letter, we expressed our concerns regarding these provisions and detailed their potential economic consequences, but we do not believe the final draft adequately addresses the issues we have raised. Staff has stated on multiple occasions that our concerns are unwarranted because the CAP is “aspirational,” but the draft fails to make the Plan’s aspirational nature clear, and without specific language defining the CAP as aspirational and not an enforceable element of the General Plan, or otherwise enforceable, the CAP will become another tool to be used by opponents of new developments to litigate, cause delays, and make new housing economically infeasible or out of reach of most County residents. This outcome must be avoided because absent such language, and without fair resolution of the concerns we outlined above, the CAP would severely curtail the construction of new development on unincorporated County land – the very areas that provide the greatest opportunities for the production of affordable, environmentally sensitive (Net Zero) new housing. These same concerns regarding the “aspirational” nature of the draft CAP extend to infrastructure projects and employment-generating commercial developments as well.

The Board of Supervisors is under no legal requirement to adopt a CAP at this time and has the authority to delay its adoption, so it can intervene and resolve the differences that exist between staff and key stakeholders. Such an action would be in the best interest of the regional economy and the many Los Angeles County residents who would be negatively impacted, as described above.

Considering the concerns outlined herein, we renew the request we made in our November 10 letter, when we strongly urged the Los Angeles County Board of Supervisors to require that an economic impact analysis of the proposed CAP be performed, and that sufficient time be allowed for the study's findings to be evaluated before the proposed CAP moves forward. If that is not feasible, then – at a minimum – we respectfully request that the County provide a 90-day continuance so the members of the Board of Supervisors can bring staff and stakeholders together to resolve the core areas of concern within the CAP. We believe that with the Board's involvement, these issues can be resolved expediently, which would result in a more effective CAP that better balances climate resilience with the great need for sustained economic and housing development. If time is not allowed for an economic analysis or a continuance, as recommended here, then unfortunately we must oppose the draft CAP unless it is amended so as to much more clearly underscore and define its aspirational nature. Considering that

staff has stated numerous times in public forums that the CAP is meant to be aspirational, not regulatory, our request for clarity in the final draft is more than reasonable.

As stated at the outset, this letter is not meant to oppose the Los Angeles County CAP in concept. We respect the utility a well-crafted CAP can have in furthering climate resiliency. Our concerns, however, are about specific aspects of the plan as drafted and our belief that these issues can be resolved with the direct involvement of the Board of Supervisors, if proper time and attention are allotted, as we have outlined above.

We thank you for your consideration of our position and look forward to working with you for a positive resolution of this matter.

Sincerely,



Governor Gray Davis (Ret.)
2024 Co-Chair
37th Governor of California



Governor Pete Wilson
2023 Co-Chair
36th Governor of California



Mike Roos
President

ATTACHMENT A



Co-Chairs:

Governor Pete Wilson
Thomas Priselac

November 10, 2023

Vice-Chairs:

Fran Inman
Jeff Jennison

Hon. Janice Hahn, Chair, and Members of the Board of Supervisors
Los Angeles County Board of Supervisors
500 W. Temple Street, Room 822
Los Angeles CA 90012

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Governor Arnold Schwarzenegger
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Ashwin Adarkar
William Ahmanson
Kome Ajise
Senate Pres. Pro Tem Toni Atkins
John Baackes
Supervisor Kathryn Barger
Mayor Karen Bass
Greg Bielli
Stephen Cheung
Dan Denham
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Chet Pipkin
George Pla
Steve PonTell
Steven Powell
Michael Ruane
Trey Thornton
Supervisor Nora Vargas
Raul Vargas
Mike Vomund
Supervisor Donald Wagner
Stephanie Wiggins
Steve Williams

RE: Los Angeles County Climate Action Plan; Need for Economic Impact Analysis

Dear Supervisor Hahn and Members of the Board,

We are writing to you to express our grave concerns regarding the potential negative economic impacts of the proposed Los Angeles County Climate Action Plan (“CAP”) on the County’s residents and its economy. In this letter, we are detailing only some of our concerns to highlight what we feel is an urgent need for the Board of Supervisors to commission an economic analysis of the Draft CAP, so that you can evaluate its potential negative impacts on jobs, the regional economy, the County’s under-served communities, and the aspirations of so many who hope for the social and economic benefits of home ownership. Because the draft CAP is currently scheduled to go before the Planning Commission for consideration on November 15th, we ask that the CAP’s review process be delayed until an economic impact study can be undertaken and made available to the Planning Commission, the Board of Supervisors, and members of the public.

The Southern California Leadership Council is a non-partisan, non-profit public policy partnership of business, government, and community leaders, which provides a common voice on major public policies that are critical to the economic vitality, job growth and quality of life in Southern California. Our Board Members include three former California governors, the leaders of many of the region’s largest corporations, and the executive directors or board chairs of major regional governmental agencies.

As currently proposed, the Draft CAP would impose scores of new land use limitations and burdens, new building standards, new process costs, and new green-houses gas (GHG) mitigation requirements on all discretionary projects that may be proposed and brought forward in unincorporated Los Angeles County. These new regulatory burdens, some of which we outline below, would even be imposed on future projects that are subparts of master planned communities that have already fully mitigated their overall GHG impacts at the larger master plan level, in compliance with existing laws.

As such, SCLC is concerned that the CAP’s passage as it is now drafted will make it impossible for the County to fulfill its RHNA obligations and its other commitments to address the social inequities, family hardships, and homelessness caused by the County’s housing shortage. Yet the CAP would impose more than 100 new regulatory measures, tests, and standards on new home construction. Among the more harmful of these new burdens that the CAP would place on the County’s efforts to increase its housing supply within the County’s unincorporated areas are:

Executive Staff:

Mike Roos
President

Richard Lambros
Managing Director

- **Requiring new projects which will have employment opportunities to strive for an employment density of 300 employees per acre.** During construction, this goal is, of course, not obtainable on most new developments because construction typically is phased, with a limited number of workers on a building site at any time. Post-construction, the 300-person per acre employment density goal is not in touch with the reality of the County's unincorporated areas. This can easily be proved by considering the actual employment density that presently exists anywhere within these areas. Of the 810 planning areas referred to as Transportation Analysis Zones (TAZs) within the unincorporated County, only nine have an employment density greater than 20 employees per acre, and none has an employment density that comes close to 100 employees per acre, let alone 300.

Economic impact of this provision: The unincorporated County offers some of the most affordable new housing and employment opportunities in the region, but building new communities there would become extremely difficult or even impossible under the employment density standard now proposed. For example, the typical strip mall, restaurant, business park, manufacturing facility or entertainment venue does not employ anywhere near 300 people per acre, and more likely would employ less than a tenth of that ratio. Any mandatory imposition of this provision would eliminate all or most new housing and job opportunities in some of the County's most affordable areas.

- **Requiring a full EIR for affordable projects that might otherwise qualify for CEQA streamlining.** Under the proposed CAP, if a project is not fully compliant with a very long list of new CAP requirements, it must undergo a full GHG analysis, which signals a requirement for an Environmental Impact Report – and this eliminates the opportunity for CEQA streamlining. Even then, the CAP states that going through the EIR process will not eliminate the need to comply with every single one of the scores of CAP provisions “to the extent feasible.”

Economic impact of this provision: This provision appears to eliminate the advantages of regulatory streamlining the state has created to spur the development of more affordable housing for working class Californians and would therefore contribute to the County's housing affordability crisis.

- **Limiting offsite GHG mitigation measures to only within Los Angeles County.** Requiring that a project's GHG offsite mitigations be achieved only within the County's jurisdictional limits is contrary to economic principles, unscientific, unreasonable, and will eliminate most large-scale developments that would otherwise have the economies of scale necessary to approach or achieve net zero energy, net zero water, and effective GHG mitigation. This requirement is unreasonable particularly because climate change presents a global challenge, not a sub-regional one. While we recognize the need for more work to address climate change in Los Angeles County, greater dollar-for-dollar benefits can be attained by creating more climate resiliency and minimizing GHG emissions in geographic areas that are not nearly as advanced in this regard as Southern California. It is also unreasonable because there are not enough *affordable* mitigation opportunities in Los Angeles County to allow for the amount of new housing needed to attain the County's housing goals.

Economic impact of this provision: By requiring local mitigation, this provision will skyrocket demand for a very limited and shrinking supply of allowable mitigation opportunities, driving up the cost of those opportunities – and hence, the cost and unaffordability of housing.

- **Setting water supply mandates that likely cannot be met.** In its current form, the CAP would have the County strive for a goal that no more than 10% of the unincorporated County's water supply may come from outside Los Angeles County (i.e., be "imported water"). The draft CAP also champions the idea that all new development in the unincorporated areas would be required to achieve net-zero water usage (i.e., developments must utilize only water supplies from local, in-County water sources; if not, the project would need to fund expensive mitigation). New housing and development projects cannot change the many local water agencies' long-established water supply agreements or the water rights and obligations that apply to nearly all local groundwater supplies in this arid region. New projects alone cannot possibly finance new ocean desalination or municipal wastewater recycling plants or get them approved by regulatory agencies; nor can rooftop rain capture on a multi-story residential building meet that building's water demand. These sorts of local water supply strategies work only with appropriately sized economies of scale, so imposing provisions that require those sorts of solutions for every individual project will render most new projects financially infeasible, in effect, imposing a ban on new development.

Economic impact of this provision: By reducing the amount of new development, this provision will drive up the cost of housing and other projects. Even if sufficient water supplies could be found to achieve net zero water, the cost of that water would likely impose a severe economic burden on the residents and businesses served by those new development projects.

As you can see, each of these provisions of the current draft of the CAP has the potential to impose a considerable economic impact on the residents of the unincorporated County – and these are just four of the CAP's many troubling provisions. But it is not only the roughly one million residents of the unincorporated County who will suffer economically if the Draft CAP is enacted in its current form because under this proposal, much of the County's 9.5-million-person population would suffer. Los Angeles County's approximately 2,653 square miles (1.7 million acres) of unincorporated land would no longer be "the land of housing opportunity" for all the residents in the County who desire to buy a home they can afford. SCLC is concerned that these negative economic impacts will fall most harshly on the residents of disadvantaged areas who aspire to attain the social and economic benefits of home ownership.

SCLC agrees that the climate crisis requires appropriate measures to address GHG emissions, but we strongly encourage you, as the Board of Supervisors, to ensure that you fully understand and evaluate the economic impacts of the CAP before imposing it on the people you serve. Therefore, on behalf of the members of SCLC, we strongly urge the Los Angeles County Board of Supervisors to require that an economic impact analysis of the proposed CAP be performed, and that sufficient time be allowed for the study's findings to be evaluated before a Draft CAP moves forward to the Planning Commission and Board of Supervisors for consideration.

Sincerely,



Mike Roos
President



Richard Lambros
Managing Director



April 15, 2024

Los Angeles County Board of Supervisors
500 West Temple Street
Los Angeles, CA 90012

Re: OPPOSE/Request Clarification on Aspirational Nature of the Los Angeles County Climate Action Plan

Dear LA County Supervisors,

On behalf of Rebuild SoCal Partnership and the Building Industry Association of Southern California (BIASC), two organizations that, while historically may have differed in our approaches to certain policies, are united in opposition to the current Los Angeles County Climate Action Plan (CAP) unless the Board can respectfully provide clarifying amendments confirming the CAP is a strictly aspirational vision to help prioritize future policies.

Our coalition acknowledges the critical importance of addressing the challenges posed by climate change. However, our opposition to the current draft of the Climate Action Plan is predicated on the concern that it will not be aspirational and instead will be fully enforceable under California's General Plan land use laws and CEQA. **This isn't a theoretical concern as we saw this very issue occur in the County of San Diego.**

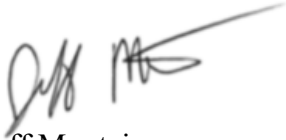
In San Diego County, Board members and other stakeholders were also initially advised that their CAP was merely "aspirational," but quickly found themselves mired in numerous lawsuits, preventing the County from approving long-planned housing and other projects (even those already allowed under the County's General Plan). Lawsuits even blocked the County from amending its own General Plan to later clarify its CAP as aspirational.

We support Los Angeles County's commitment to climate leadership but urge that the 2024 CAP not be referenced or included as a policy requirement in the County's General Plan as has been urged by staff. Like San Francisco and Santa Monica, the CAP can be adopted as an aspirational plan, as has been the case for the OurCounty Sustainability Plan and the Priority Climate Action Plan (PCAP) approved by County staff in less than two months ago.

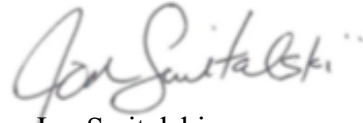
We appreciate your consideration of our request for clarification to ensure outcomes match intent.

Enclosed with this letter, you will find a list of board members from Rebuild SoCal and BIASC who share our concerns and are committed to collaborating with the County on this vital issue. Thank you for your attention to this matter. We await your response.

Sincerely,

A handwritten signature in black ink, appearing to read "Jeff Montejano". The signature is stylized with a long horizontal stroke extending to the right.

Jeff Montejano
Chief Executive Officer
BIASC

A handwritten signature in black ink, appearing to read "Jon Switalski". The signature is written in a cursive style.

Jon Switalski
Executive Director
Rebuild SoCal Partnership

BIASC Governing Board of Directors:

Nicole Murray
CHAIR, Shea Homes

Dave Bartlett
IMMEDIATE PAST CHAIRMAN, Brookfield Residential

Alan Boudreau
BIASC SECRETARY, Boudreau Pipeline Corporation

Mike Balsamo
RANCHO MISSION VIEJO

Dan Faina
WILLIAMS HOMES

Lisa Fjelstad
TAYLOR MORRISON

Tom Grable
TRI POINTE HOMES

Nathan Keith
TEJON RANCH

Wes Keusder
KEUSDER HOMES

Sunti Kumjim
JPI

Steve LaMotte
IRVINE COMPANY

Haggai Mazler
KB HOME

Greg McWilliams
FIVE POINT

Erren O'Leary
LEWIS OPERATING CORP.

Jeremy Parness
LENNAR

Greg Shaia
PULTE GROUP

Mike Taylor
TRI POINTE HOMES

Peter Vanek
INTEGRAL COMMUNITIES

Bill McReynolds
TOLL BROTHERS

Eric Nelson
TRUMARK HOMES

Aaron Talarico
MERITAGE HOMES

Tim Roberts
LGI HOMES

Michael Battaglia
THE NEW HOME COMPANY

Charles Gale
METROPOLITAN WATER DISTRICT

Randy Richards
RELIABLE WHOLESALE LUMBER

Mark Himmelstein
NEWMEYER DILLION

Jennifer Hernandez
HOLLAND & KNIGHT

Ali Sahabi
OPTIMUM GROUP

Rebuild SoCal Partnership Board of Trustees:

JAIMIE ANGUS
Associated General Contractors of California

JEFF MONTEJANO
Building Industry Association of Southern California, Inc.

JON PRECIADO
Southern California District Council of Laborers

JOSH RAPER
Western States Regional Council of Carpenters

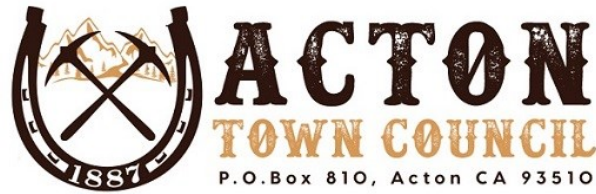
DAVID SIKORSKI
International Union of Operating Engineers Local 12

STEVE CLARK
United Contractors Association

MIKE SPAIN
Associated General Contractors of San Diego

DENISE COOPER
Southern California Contractors Association

DAVE SOREM
United Contractors Association



April 12, 2024

The Honorable Board of Supervisors
County of Los Angeles
383 Kenneth Hahn Hall of Administration
500 West Temple Street
Los Angeles, California 90012
Transmission of two (2) pages and 6 attachments to
PublicComments@bos.lacounty.gov
And via <https://publiccomment.bos.lacounty.gov/>

Subject: The Acton Town Council Comments on the Climate Action Plan

Reference: Los Angeles County Board of Supervisors Meeting April 16, 2024; Item 5.

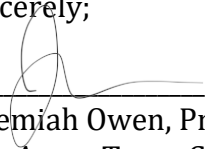
Dear Supervisors;

The Acton Town Council respectfully submits the following comments on the Climate Action Plan that will be considered by the Los Angeles County Board of Supervisors ("Board") on April 16, 2024.

The Acton Town Council remains concerned that the CAP will streamline and expedite approvals for Battery Energy Storage Systems (BESS) which pose very real and very significant risks to residents and communities (particularly those in high and very high fire hazard severity zones or "FHSZs"). We articulated these concerns in our scoping comments submitted in 2022 [Attachment 1 at 13] and in our comments on the Recirculated Draft Program Environmental Report ("RDEIR") submitted May 15, 2023 [Attachment 2 at 8]. In the time since these earlier comments were submitted, the Acton Town Council has learned much more about the wildfire and public safety hazards posed by BESS facilities; we have shared these concerns with both the County [Attachment 3] and the California Energy Commission [Attachment 4]. Nonetheless, the CAP PEIR asserts that the wildfire impacts resulting from BESS developments facilitated by the CAP are "less than significant"; equally alarming, the PEIR does not even consider the public hazards posed by toxic gas emissions released from BESS facilities (which can extend two miles or more as indicated in Attachments 3 and 4). Because of these failures to properly consider the significant environmental impacts resulting from substantial BESS wildfire and public hazard risks, the PEIR errs in declaring that these impacts are "less than significant". These errors must be corrected and the draft "Statement of Overriding Considerations" that is now pending before the Board pursuant to the CAP must be amended reflect the significant wildfire and public safety risks posed by the CAP.

Finally, the Acton Town Council again requests that the CAP be amended incorporate a new action calling for an ordinance which prohibits the development of new commercial gas/diesel fueling stations. We have repeatedly requested this addition [Attachments 5 and 6] because it is in line with Strategy 1 (which requires the phase out of oil and gas extraction) and Strategy 4 (which calls for all vehicles in unincorporated Los Angeles County to have zero carbon emissions) and it has never been explained to us why the County has persistently ignored this recommendation. Since the Board has already voted to prohibit new oil and gas extraction wells, the most logical "next step" would be to prohibit new gas/diesel fueling stations.

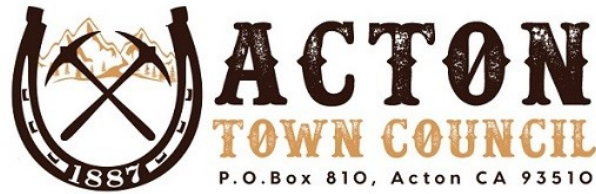
Sincerely;



Jeremiah Owen, President
The Acton Town Council

ATTACHMENT 1

**Scoping Comments Submitted by The
Acton Town Council on February 1, 2022
and Comments on the Draft Climate Action
Plan Submitted July 18, 2022.**



February 1, 2022

Thuy Hua
Supervising Regional Planner
Los Angeles County Department of Regional Planning
320 W. Temple Street, 13th Floor
Los Angeles, CA 90012
Electronic transmission of 42 pages to:
climate@planning.lacounty.gov and
THua@planning.lacounty.gov

Subject: Acton Town Council Scoping Comments Regarding the Climate Action Plan.

Reference: Solicitation of Public Input on the Scope Program Environmental Impact Report for the Climate Action Plan Initiated January 3, 2022.

Dear Ms. Hua;

The Acton Town Council ("ATC") appreciates this opportunity to provide scoping comments on the Climate Action Plan ("CAP"). These comments are submitted within the 30-day time limit established by the Department of Regional Planning ("DRP") for the Scoping Interval that began on January 3, 2022; therefore, they are deemed timely filed.

As a preliminary comment, the ATC is concerned that the scope of the CAP as described in the Initial Study ("IS") is vague and therefore troubling. For instance, in the "Community" and "Zoning Designation" sections on page 1, the IS states that the CAP is applicable only in unincorporated areas of the County and will be implemented only in unincorporated areas of the County. Yet, page 2 states that the CAP will provide Greenhouse Gas ("GHG") emission reductions for regional GHG Reduction Actions ("GRAs") and page 41 states that the CAP establishes County-wide GHG emission reduction targets to achieve carbon neutrality by 2045. Additionally, the IS relies heavily on the Sustainability Plan (which is a County-wide document) and even the first CAP "strategy" that is identified in the IS refers to "Lead by Example". All of this indicates that the CAP will serve as a County-wide benchmark and will have a "County-wide" focus rather than an "unincorporated" focus. This is of substantial concern because it means that CAP goals, policies, and strategies will **not** be geared toward the rural communities that must comply with them and which comprise most of the County's unincorporated area; rather, they will be tailored to the "urban form" and urban land uses that predominate within the cities of Los Angeles

"Our lives begin to end the day we become silent about things that matter" Martin Luther King, Jr.

County. We see this trend clearly on page 4 of the IS which identifies Strategy 5 and directs the "transition of existing buildings to all-electric." This may be a perfectly reasonable approach in urban areas where temperatures do not drop much below freezing in winter, however it is a dangerous proposition for rural mountain communities where snow and freezing temperatures are common and where electrical service is highly unreliable (particularly over the last few years)¹. Therefore, "transitioning" existing buildings in these areas to all-electric service **will** lead to catastrophic results particularly in winter.

This example demonstrates the importance of clearly establishing that the CAP is only applicable to unincorporated areas, thus its scope is limited to circumstances that pertain to unincorporated areas. In other words, county-wide GHG emission targets, and the emphasis on regional GRAs and the county-wide Sustainability Plan have no place in the CAP. This is critical, because the rural communities which comprise the largest unincorporated area and are most affected by the CAP have development profiles, environmental circumstances, and land use policies that have nothing in common with the rest of the County. In other words, CAP strategies that are appropriate for cities and urban populations are neither suitable for, nor transferable to, rural unincorporated areas within the County; accordingly, the CAP must be specifically tailored to unincorporated communities and not used as a tool to decarbonize the entire County. Unfortunately, none of this is reflected in the IS. In fact, the IS demonstrates that the CAP will not include policies that are appropriate to rural unincorporated areas because it clarifies that the County intends to use the CAP to "Lead by Example" and show urban cities how to force change regardless of extant circumstances. It seems that the County is singularly disinterested in tailoring CAP strategies to rural unincorporated areas or ensuring that CAP policies are appropriate for the unincorporated communities which they govern.

Another general concern with the IS is that it consistently minimizes and erroneously trivializes the significantly adverse environmental impacts that CAP implementation will create. The IS downplays every environmental factor that it addresses by stating that the CAP is merely a "policy document" and claiming that it will not directly result in any impacts because it merely supports development already approved under the General Plan and because projects that implement the CAP will undergo CEQA review in the future. It is clear from these statements that the County does not grasp the scope, purpose, or intent of CEQA. First, adopted County policies *always* create environmental impacts because they direct County activities, ordinances, and decisions, and thereby clearly mandate change;

¹ For example, many Acton residents were without electrical power throughout the recent Thanksgiving holiday. Southern California Edison cut power to Acton residents on the day before Thanksgiving and did not restore service for two days. There was no reason for it; meteorological data taken for the area demonstrate that wind speeds were quite low. Yet, SCE cut power to Acton residents for 48 hours anyway and ruined their Thanksgiving; SCE did not restore power until late Friday afternoon. For more information on this incident, please see the comments submitted by the ATC to the California Public Utilities Commission provided as Attachment A.

that is why General Plans, Climate Action Plans, and other plans are always required to undergo CEQA review. The IS errs in declaring that the CAP will not directly result in impacts because if that were true, then the CAP itself would serve no purpose and its policies and targets would be utterly meaningless. Clearly, this is not the case because the IS states the County intends to use the CAP to create substantial changes in the County and thus "lead by example". Accordingly, it is categorically incorrect for the IS to claim that, as a mere "policy document", the CAP will not directly result in any impacts. Second, the CAP does not support development already approved by the General Plan; in fact, it radically alters adopted General Plan policies by mandating full decarbonization of every sector within every element of the adopted General Plan. The current General Plan does not envision full decarbonization and it never contemplated the environmental impacts of full decarbonization, so the IS factually errs in stating that the CAP merely supports development already approved under the General Plan. Third, it is a multifold violation of CEQA for the County to sidestep its obligation to conduct environmental review of CAP policies simply because the projects that implement these policies will undergo CEQA review at a later date; specifically:

- CEQA requires environmental review of CAP policies and targets and it explicitly mandates that the County consider alternative targets that will reduce environmental impacts while still achieving broad project objectives. So, for example, CEQA requires the County to consider alternatives to the CAP's 100% decarbonization target which will reduce significant environmental impacts while still achieve important decarbonization objectives. Simply put, CEQA requires the County to address the environmental impacts of CAP policies and CAP targets and consider alternative policies and targets *before the CAP is adopted*. This requirement is not satisfied by merely conducting CEQA reviews of individual projects which are implemented in the future to achieve CAP targets.
- CEQA requires the County to consider the cumulative effects of implementing CAP policies, and it does not permit the County to "silo" its environmental impact analysis by individually considering CAP implementation projects on a stand-alone basis and thereby ignore the extent to which these impacts are cumulatively considerable.
- CEQA does not permit a Lead Agency to defer CEQA review, yet that is precisely the outcome that will result if the County fails to conduct an adequate CEQA review of CAP policies simply because the individual projects that will eventually implement these CAP policies will someday undergo environmental review.

Accordingly, the ATC respectfully disagrees with IS conclusions regarding potentially significant adverse environmental effects of the CAP. Contrary to what the IS asserts, the CAP has the potential to create many significant adverse environmental impacts, thus CAP strategies and targets warrant proper environmental review.

In the interest of brevity, the remaining ATC comments are provided below and arranged according to topic.

The CAP Environmental Review Must Consider Alternatives to Decarbonization Targets, Waste Diversion Rates, and Other Strategies.

The IS asserts that, though not required by law, the CAP will achieve "carbon neutrality" by 2045 (page 1) and that this target is "county-wide" (page 41). Additionally, the IS asserts that the CAP will incorporate waste diversion strategies, water conservation measures, etc. (though it does not appear to identify actual targets for any of these strategies). Among other things, CEQA requires that the County identify alternatives to each of these CAP strategies (including "no project" alternatives) and assess the environmental impacts of each alternative and the climate change benefits that each alternative provides. These CEQA-mandated alternative analyses are critically important because they identify opportunities for reducing project impacts while still achieving broad project objectives.

To ensure a legally sufficient CEQA review, the County will have to consider various GHG emission reduction strategies, including those that do not achieve carbon neutrality by 2045. The IS indicates that the CAP environmental review will consider ""high and low" emission scenarios, and it mentions a "business as usual" forecast, but these terms are vague and not defined. The GHG reduction target alternatives that the County must consider to ensure a legally sufficient CAP environmental review (aside from the 2045 carbon neutral target) include a "no project" alternative (which is perhaps what the IS means by "business as usual") as well as a GHG emission reduction target that complies with current regulations but goes no further. Another GHG reduction alternative that should be considered is one which establishes a 2045 target that is midway between carbon neutrality and whatever is mandated by law. And, for each GHG reduction alternative, the County must identify the potentially significant adverse environmental impacts that it will create (including an analysis of the total acreage of solar panels, energy storage facilities, and transmission infrastructure required to achieve it) as well as the climate change reduction potential that it will provide so that the County can meaningfully determine whether the climate change benefits achieved by each alternative truly outweigh the adverse environmental impacts that it creates.

In a similar manner, the County must consider various alternatives to the waste diversion strategy, the water conservation strategy, and all the other CAP strategies identified in the IS to ensure an adequate CEQA review. For example, the ATC understands that the County is required to meet minimum waste diversion requirements over the next few decades, so an alternative that the county must consider in the CAP environmental review is one which achieves these regulatory requirements but goes no further. Another alternative that should be addressed is one that achieves diversion rates that are midway between the

minimum required by law and the actual target established by the CAP (which the IS fails to identify). And, for each alternative, the County must identify the adverse environmental impacts that it will create (such as the extent and location of all the new facilities that will be required to achieve them) and quantify the climate change benefit that it will provide so that a meaningful determination can be made regarding whether the benefits of each alternative truly outweigh its impacts. This is the only way to ensure a legally sufficient CEQA review.

The IS Improperly Ignores the Environmental Impacts of Expanding Utility Scale Solar Facilities in Rural Communities to Achieve CAP Decarbonization Goals.

According to the IS, a centerpiece of the CAP will be the full decarbonization of energy usage within 23 years through the expansion of renewable energy (particularly solar energy). According to the IS, there is no regulatory driver for achieving 100% decarbonization; it is merely something that the County wishes to accomplish. It is estimated that at least 43,000 acres of solar panels will be required to fully decarbonize the unincorporated areas of Los Angeles County²; accordingly, and to ensure compliance with the California Environmental Quality Act ("CEQA"), the environmental document prepared for the CAP must, *at a minimum*, consider the impacts of this solar panel development as well as the energy storage and transmission facilities that they will require for feasible operation. However, the IS makes it clear that the GHG emission reduction targets established by the CAP will actually be "county-wide" because the County wants to "lead by example"; this means that the CAP itself will be the foundation upon which county-wide

² According to the California Energy Commission ("CEC"), Los Angeles County consumed 65649.87 GWhr of electricity in 2020 (<https://ecdms.energy.ca.gov/elecbycounty.aspx>). Since unincorporated residents comprise approximately 10% of the population in Los Angeles County, unincorporated electrical consumption is approximately 6565 GWh per year. Since 30% of this consumption is already renewable, 70% (or 4596 GWhr) will have to be served by new solar facilities just to decarbonize the existing energy use profile (i.e., it does not account for the electrification of all future buildings and all existing buildings) According to the National Renewable Energy Laboratory ("NREL"), utility scale solar requires 3.4 acres per GWhr·year (<https://www.nrel.gov/docs/fy13osti/56290.pdf>), which means that more than 15,624 acres of new solar facilities will be required just to de-carbonize existing electrical consumption in unincorporated Los Angeles County. To achieve other CAP decarbonization goals (transportation electrification, building electrification, electric cars, etc.) it is estimated that twice as much solar facilities will be required; this brings the total up to 31,250 acres. And, according to the Southern California Association of Governments ("SCAG"), population in the County will grow by 20% by 2045, (https://scag.ca.gov/sites/main/files/file-attachments/0903fconnectsocial_demographics-and-growth-forecast.pdf?1606001579) so the actual amount of new solar facilities required to achieve CAP goals in unincorporated Los Angeles County will be at least 37,500 acres. And, since "storage losses" of 10% and "transmission losses" of 5% are common, the actual number of acres required to fully decarbonize unincorporated Los Angeles County will be at least 43,000 acres.

decarbonization is achieved. As such, the environmental document prepared for the CAP must address the environmental impacts of achieving this county-wide decarbonization outcome. Specifically, CEQA demands that the CAP environmental document consider the impacts of developing more than 430,000 acres (or 672 square miles) of new solar panels as well as the energy storage and transmission facilities that these facilities will require to decarbonize all of Los Angeles County³. In other words, because the County will use the CAP as the primary tool for advancing decarbonization throughout the County, the CAP environmental review must consider the environmental impacts of achieving this county-wide decarbonization outcome.

Notably, the CAP's decarbonization goal can be achieved in one of two ways: either by directing renewable energy generation and storage to occur locally so that power is sustainably created where it is used (typically referred to as "distributed generation") or by directing renewable energy generation and storage to occur remotely in massive solar farms that are typically located in the desert and require the construction of extensive high voltage transmission lines through Very High Fire Hazard Severity Zones to deliver power to urban "load". It is certainly feasible to achieve the CAP's decarbonization goals via distributed generation because 1470 square miles of the County are already developed⁴ and can therefore easily accommodate 672 square miles of solar panels that are required to achieve CAP decarbonization goals county-wide.

Obviously, the environmental impacts of directing renewable energy generation and storage to occur locally will be relatively low because it will only affect the existing "built" environment (since it relies on existing roof tops using existing distribution lines and substations). Accordingly, a CAP that directs the expansion of distributed generation to achieve its renewable energy target can be reasonably deemed to create "less than

³ The CEC reports that Los Angeles County consumed 65649.87 GWhr of electricity in 2020 (<https://ecdms.energy.ca.gov/elecbycounty.aspx>). Assuming that 30% of this consumption is already renewable, 70% (or 45955 GWhr) will have to be served by new solar facilities just to decarbonize the County's existing energy use profile (i.e., it does not account for the electrification of all future buildings and all existing buildings). This will require more than 156,000 acres of new solar panels according to NREL data which reports that 3.4 acres of solar panels are required to produce a GWhr per year of solar energy (<https://www.nrel.gov/docs/fy13osti/56290.pdf>). This will double to more than 300,000 to accommodate all other CAP decarbonization goals (transportation electrification, elimination of natural gas for heating and cooking, electric vehicles, etc.). And, factoring the 20% population growth that SCAG projects for 2045 increases the number of acres of solar panels to achieve CAP goals county wide to more than 370,000. Factoring in the 10% storage loss and the 5% transmission loss that is always associated with renewable generation and transmission increases the total required solar panel area to more than 430,000 acres.

⁴ According to Page 90 of the Sustainability Plan, 64.4% of the County is classified as "natural area" which means that 35.6% is developed. And, according to page 15, Los Angeles County is 4,084 square miles in area. Together, these statistics demonstrate that more than 1,400 square miles of Los Angeles County is developed (.356 x 4084 = 1454).

significant" environmental impacts. However, if the CAP does not direct the development of distributed generation to achieve its decarbonization goals, then the environmental document will be required to consider the substantially adverse environmental impacts of developing more than 430,000 acres of remote utility scale generation and storage facilities in the pristine deserts of Southern California to achieve county-wide decarbonization as well as the new transmission facilities that will be required to serve these remote solar "farms". Under this circumstance, the impacts that will have to be addressed in the CAP environmental review are diverse, substantial, and they include (but are not limited to) aesthetics, transmission line wildfire ignitions, biological resource destruction⁵, farmland conversion, open space conversion, dust storms, valley fever, and increased asthma and respiratory insults in the rural communities of the Antelope Valley.

For example, the Audubon Society has clearly shown that utility-scale solar facilities in broad, open space areas that are rich with wildlife habitat (like the Antelope Valley) is particularly deadly to birds because they mistake the masses of solar panels as water bodies and the birds then collide with the panels when they try to land. Birds are also killed by the transmission lines that serve these utility scale facilities. That is why the Audubon Society supports "rooftop solar" over utility scale solar in open space areas as "ecologically ideal because it doesn't disrupt any habitat, but rather makes use of already-built space that would otherwise not go to productive use."⁶

The health impacts of the ambient dust generated by the construction and operation of utility scale solar farms are also of significant concern, particularly in the Antelope Valley where (according to health statistics compiled by Los Angeles County) the County's highest childhood asthma rates and COPD rates are found⁷ (actually, the incidence of these diseases in the Antelope Valley are among the highest in the nation). All of these existing health concerns will be substantially exacerbated by development of the additional utility scale solar facilities that will be required to achieve CAP decarbonization goals. CEQA does not permit the County to ignore these health impacts or any other adverse impacts posed by the 430,000 acres of solar panels that will be required to achieve CAP decarbonization goals county-wide.

⁵ The County is fully aware of the destruction to biological resources, habitat, and corridors that are created by remote solar farms in the Antelope Valley desert area. For example, solar project in the Antelope Valley have destroyed hundreds of Joshua Trees that are supposed to be "protected", and the Silverado project approved by the County destroyed large areas of burrowing owl habitat and relocated many burrowing owls with only limited success. Solar farms have fenced off tens of thousands of acres of desert lands, eliminated entire wildlife corridors, dislocated wildlife, and destroyed extensive habitats.

⁶ <https://www.audubon.org/news/solar-power-and-birds>

⁷ "Los Angeles County Indicators of Health" found here: http://publichealth.lacounty.gov/ha/docs/2015LACHS/KeyIndicator/PH-KIH_2017-sec%20UPDATED.pdf

The County seems to be at least dimly aware that CAP implementation could result in extensive new solar farms in the Antelope Valley. For instance, the IS affirms that the CAP will "incentivize" the development of solar facilities in rural areas (at 10, 15) and it specifically identifies the Antelope Valley as an area that will be targeted for such programs. (10, 12, 14, 15, 20). However, the CAP must avoid "incentivizing" the development of solar facilities in rural areas by directing the expansion of new solar facilities in developed areas only. If the CAP does not include such directives, then the County is *obligated* to address the environmental impacts of the 430,000 acres of remote utility scale solar facilities that will be required to achieve CAP decarbonization goals county wide.

Remarkably, the IS makes it clear that the County intends to *ignore* all the adverse environmental impacts posed by the 430,000 acres of solar panels that will result from CAP implementation because the IS only identifies Air Quality, Noise, Biological Resources, and Cultural Resources as environmental factors that will be considered in the CAP environmental review. Worse yet, the IS indicates that even these impacts will be given scant consideration. For example, neither the "Cultural Resources" section nor the "Tribal Cultural Resources" section give any consideration to the potential cultural resource impacts of the 430,000 acres of new solar panels that will result from CAP implementation county wide; these impacts are completely ignored. It is entirely implausible to presume that the installation of 430,000 acres of solar panels will not have any impacts on cultural or tribal cultural resources, yet that is precisely the premise adopted by the IS. The *only way* to ensure that CAP decarbonization goals do not impact cultural resources is for the CAP to direct new renewable resources toward developed areas; if the CAP does not include such directions, then the "Cultural Resources" section and the "Tribal Cultural Resources" section of the CAP environmental document must properly address the impacts of destroying 430,000 acres of land to achieve CAP decarbonization goals county wide. The "Air Quality" section of the IS is similarly deficient because it completely ignores the terrible dust storms and attendant valley fever concerns that will be created by expanding utility scale solar farms in the Antelope Valley to achieve CAP decarbonization goals. The IS section on "Biological Resources" is even worse: it indicates that the impacts of remote utility scale solar facilities will not be analyzed in the CAP environmental document at all because in the future, individual utility scale solar projects will "undergo site-specific review and CEQA analysis to analyze and mitigate potential significant impacts to candidate, sensitive, or special status species and their habitats". This approach violates CEQA in several ways. First, CEQA prohibits Lead Agencies from deferring analysis of potentially significant biological resource impacts, so the CEQA document prepared for the CAP must address "head on" the 430,000 acres of remote utility scale generation that will result from implementation of CAP decarbonization goals county wide if they are not met via distributed generation. Second, analyzing the environmental impacts of each utility scale solar project individually ignores the extent to which they pose cumulatively considerable impacts, thus it utterly violates CEQA.

The ATC cannot fathom why the IS completely ignores the environmental impacts of securing the renewable energy resources that will be required to achieve CAP decarbonization goals; perhaps the County is simply unaware of the enormous quantity of solar panels that these renewable energy resources will require. If this is the case, then this letter provides material factual evidence demonstrating that at least 43,000 acres of new solar panels will be required to achieve CAP decarbonization goals in unincorporated Los Angeles County, and at least 430,000 acres will be required to fully decarbonize Los Angeles County. Unless the CAP specifically directs these new solar facilities to be constructed in developed areas, they will cause significant adverse environmental impacts that must be addressed in the CAP environmental document. Anything less will constitute a gross violation of CEQA.

The IS Wrongly Eliminates Aesthetic Impacts from the List of Environmental Factors that Must be Considered in the CAP Environmental Analysis.

According to the IS, the County has concluded that CAP implementation will not result in any "Aesthetic Impacts" and thus does not intend to consider aesthetic impacts in the CAP environmental document. This is a mistake. The following paragraphs identify the errors noted in the IS, and demonstrate that aesthetic impacts must be fully addressed in the CAP environmental document.

Page 10 of the IS states "Other potential projects promoted by Draft 2045 CAP Strategies could include composting facilities, renewable energy generation facilities, or water recycling facilities which could be located in more rural areas of the County and, depending on the design and location, create a greater level of visual contrast compared with existing conditions." The ATC agrees that converting 430,000 acres in rural areas into solar farms and substantially expanding waste handling and composting facilities in rural areas will create a substantially "greater level of visual contrast in the rural areas where they will be constructed"; the waste facilities will also contribute significantly to odor problems as well. The Antelope Valley is already home to more than 50,000 acres of solar farms and two enormous dumps that serve the County of Los Angeles, so any incremental increase in such facilities in the Antelope Valley will be significant. Yet, and despite this clear acknowledgment that the CAP will pose significant aesthetic impacts in rural areas, the IS nonetheless declares that aesthetic impacts will be "less than significant" and it explicitly omits them from consideration in the CAP environmental document. This constitutes a grievous CEQA error which can only be rectified by ensuring that the CAP environmental review properly considers the significant adverse environmental impacts that CAP implementation will have in rural areas including (but not limited to) those pertaining to renewable energy generation and waste reduction.

Page 11 of the IS states "utility-scale solar energy generation projects would be required to comply with the Renewable Energy Ordinance (REO), which regulates ground-mounted solar projects to address community concerns and minimize environmental impacts. The REO requires that any ground-mounted solar project obtain a Minor Conditional Use Permit or Conditional Use Permit. Both permits require that ground-mounted solar be analyzed for negative visual impacts and the potential for the facility to impact the viewshed (LA County Office of the County Counsel, 2016). Compliance with the REO and the enforcement of conditions listed as part of the REO would ensure that the potential for small-scale and utility-scale solar energy generation projects to impact visual resources would be minimized." This statement is factually incorrect. The REO does **not** "ensure that the potential for utility scale solar energy projects to visual resources would be minimized" and County Counsel is flat out wrong to claim that it does. This is because the REO does not address impacts of utility scale renewable energy projects to visual resources; to the contrary, the REO only requires a "landscape buffer" in small areas which are never maintained so on the rare occasion when a few straggling bushes are planted, they quickly die and blow away. More importantly, the REO does not consider the cumulative aesthetic impacts of the 50,000+ acres of solar farms already in the Antelope Valley, and it will never address the cumulative aesthetic impacts of adding 430,000 acres of additional solar farms required to achieve CAP goals county-wide. Equally important, none of the CUPs issued for solar farms in the Antelope Valley have *ever* considered the cumulative impacts of the 50,000+ acres of solar farms that have already torn up the Antelope Valley, caused unbearable dust problems and turned entire sections of the desert into a sea of black glass. Therefore, the IS materially errs in declaring that the REO will adequately address the aesthetic impacts of all the new solar facilities required to achieve CAP decarbonization goals.

Page 12 of the IS states "The compliance of future projects with the General Plan and County Code would reduce the potential impact of future projects on scenic vistas." This statement is categorically false. Neither the General Plan nor the County Code ever contemplated 430,000 acres of new solar panels or even 43,000 acres of new solar panels because neither are founded on the full decarbonization profile that is established by the CAP. Because the CAP greatly expands decarbonization programs far beyond what was ever considered in the General Plan or is now contemplated by the County Code, it is a gross error for the County to declare that scenic vista impacts of new solar facilities developed to achieve CAP decarbonization goals will be reduced by merely complying with the General Plan and Zoning Code. Therefore, the IS materially errs in declaring that compliance with the General Plan and County Code is sufficient to protect scenic vistas from the massive solar farms that will result from CAP implementation.

Page 12 of the IS also states "some projects could result in more noticeable visual contrast and changes, especially if projects are located in more rural areas of the County such as solar projects proposed in the Antelope Valley" but "solar energy generation projects

would be required to comply with the REO, which includes conditions to reduce the visual impacts of solar projects". The extent to which this statement trivializes the conversion of at least 43,000 acres, and in reality, more than 430,000 acres of acres of desert land into solar farms is *stunning*, as is its vague and understated acknowledgement that these solar farms will create a "more noticeable visual contrast". The IS then compounds this grossly insupportable statement by wrongly declaring that the REO will reduce these visual impacts. Nothing could be further from the truth; the "landscape buffer" that the REO requires along small sections of a solar farm (which consists of a few straggling shrubs that provide no screening, are never maintained, and die within a few months anyway) does nothing to "reduce visual impacts of solar projects" and it will certainly not address the cumulative aesthetic impacts of the 43,000 - 430,000 additional acres of solar panels that will be required to meet CAP goals. Therefore, the IS materially errs in concluding that CAP implementation will not result in significant visual impacts.

Page 14 of the IS addresses whether the CAP will substantially degrade existing visual character because of the bulk or scale of the project, and the IS concludes that this concern will be less than significant because "The potential for utility-scale or other sized solar energy generation projects to be proposed in more rural areas such as the Antelope Valley would continue to be analyzed on a project-specific basis for purposes of CEQA." Notably, this statement does not support a finding of "less than significant" aesthetic impacts; in fact, it seems to suggest the opposite because it acknowledges that the CAP will result in new large utility scale solar projects in the Antelope Valley and that such projects warrant CEQA review (albeit in the future). On that basis alone, the County has a statutory obligation to conclude that the CAP poses potentially significant aesthetic impacts in the Antelope Valley. Worse yet, by declaring that the aesthetic impacts of solar projects in the Antelope Valley will be analyzed later on a "project specific basis", the County evinces a clear intent to improperly defer analysis of these potentially significant aesthetic impacts and improperly avoid addressing whether they are cumulatively considerable. The County is reminded that CEQA does not permit a Lead Agency to defer the analysis of potentially significant impacts to a later time and it certainly does not allow the Lead Agency to ignore cumulatively considerable impacts by separately analyzing individual projects in a "piecemeal" fashion.

In summary, the CAP GHG goals will require more than 43,000 acres of new solar panels just to decarbonize unincorporated areas and more than 430,000 acres to achieve county-wide decarbonization; if the CAP does not direct the expansion of these new solar facilities toward already developed areas, the CAP will cause devastating aesthetic impacts on remote rural areas. These aesthetic impacts, along with the associated aesthetic impacts of massive new transmission lines and energy storage facilities, must be addressed in the CAP environmental review because they will not be mitigated by merely complying with the General Plan (which never considered 43,000 acres of new solar farms let alone 430,000 acres) or complying with the REO (which fails to adequately address aesthetic concerns

and completely ignores cumulatively considerable aesthetic impacts). The ATC challenges the conclusion set forth in the IS that the aesthetic impacts of CAP implementation are "less than significant". We further assert that it is entirely unacceptable for the County to proceed with CAP development without a thorough examination of the significant aesthetic (and other) environmental impacts that CAP implementation will have on the rural residents of Los Angeles County as a result of the solar farms, transmission lines, storage facilities, and other accoutrement required to achieve compliance with CAP GHG targets.

The IS Ignores Many Environmental Impacts Because It Wrongly Asserts That Projects Implementing the CAP will be Located Within the Urban Environment.

The conclusions presented in the IS regarding potential environmental impacts are largely contingent on the assumption that projects implementing the CAP will occur in developed or "urban" areas⁸. However, this assumption is only valid if the CAP specifically directs that implementation of its policies occur in urban areas. Unfortunately, nothing in the IS states (or even suggests) that the CAP will direct the implementation of its policies to urban areas; in fact, the IS specifically identifies rural communities in the Antelope Valley as a likely location where solar development will occur to achieve CAP targets. In other words, there are significant contradictions in the assumptions which underlie the IS; as a result, IS conclusions regarding environmental factors that are based on these contradictory assumptions are completely erroneous. Accordingly, the CAP environmental review must address all the environmental factors that the IS wrongly removed from consideration because of erroneous assumptions including impacts that were eliminated based on the premise that projects implementing the CAP will occur in developed and "urban" areas".

Other Environmental Factors Wrongly Eliminated by the Initial Study.

According to page 8 of the IS, the following environmental factors are deemed to not be potentially significant impacts affected by CAP decarbonization goals: Energy, Geology/Soils, GHG Emissions, Hazards, Hydrology, Land Use, Minerals, Population and Housing, Public Services, Transportation, and Wildfire. The ATC disputes these conclusions for the reasons set forth below.

Energy: Achieving county-wide decarbonization in Los Angeles County will create profound changes in energy generation and delivery in the County, and these changes have the potential to create significant adverse impacts. The IS errs in concluding that, just because the CAP will not result in wasteful, inefficient, or unnecessary energy use or

⁸ For example, the IS analyses of aesthetic impacts, agriculture/forest impacts, biological resource impacts, population and housing impacts, and wildfire impacts all presume that projects implementing the CAP will be located within the urban environment.

conflict with a local plan, it poses no significant adverse energy impacts. For example, the CAP substantially increases our dependence on electrical energy; this will result in more blackouts and brown outs, particularly during the summer when peak loads cannot be met by available energy resources. This is not opinion, it is fact⁹. Additionally, the CAP strategy to decarbonize existing development by transitioning to all-electric facilities will substantially impact rural residents that do not have reliable electrical service and even expose them to life-threatening conditions (as discussed above). Furthermore, the existing distribution grid in Los Angeles County will likely require additional switchgear installations and other upgrades to accommodate the 430,000 acres of new rooftop solar that will be installed if the CAP directs county-wide decarbonization targets to be achieved via distributed generation. On the other hand, if the CAP directs its decarbonization targets to be met by remote utility scale generation facilities, then the existing transmission and subtransmission system that delivers power to the urban core of Los Angeles County will require substantial upgrades to accommodate remote generation from the 430,000 acres of new solar facilities that the targets require. In other words, the CAP's 2045 decarbonization target will require substantial alterations in the County's energy system and these alterations must be evaluated for their environmental impacts; thus, the IS errs substantially in eliminating energy as an environmental factor that must be addressed in the CAP environmental review.

Geology/Soils: The IS concludes that the CAP will not "Result in substantial soil erosion or the loss of topsoil" (page 37). This conclusion is incorrect. The installation of 430,000 acres of remote utility scale generation will result in extensive, permanent vegetation removal in fragile desert areas. This in turn will increase wind-blown dust and substantially alter topsoil profiles wherever solar farms are installed. This is a substantial concern in the Antelope Valley where soil stability is highly variable and where regulatory agencies including the AVAQMD and the Antelope Valley Resource Conservation District have struggled to address wind-blown dust from existing solar farms. The potentially significant topsoil impacts that will be created by the installation of 430,000 acres of new solar panels necessary to achieve CAP decarbonization targets must be addressed in the CAP environmental review; the only way the County can avoid addressing these impacts is if the CAP directs its decarbonization goals to be achieved through the expansion of distributed generation in already developed areas.

Hazards: The IS concludes that the CAP will not pose any significant hazard risk. The ATC disagrees. Achieving CAP decarbonization goals will require the addition of extensive new battery storage facilities to ensure power delivery when the sun is not shining and the wind is not blowing; it is estimated that thousands of megawatts of battery storage facilities will be required to decarbonize Los Angeles County. These battery storage facilities are prone

⁹ [https://www.nbcnews.com/news/us-news/california-warned-brace-another-summer-energy-blackouts-n1268879'](https://www.nbcnews.com/news/us-news/california-warned-brace-another-summer-energy-blackouts-n1268879)

to overheating, ignition and even explosion¹⁰, and once ignited, take days to burn out¹¹. Accordingly, they pose a significant hazard wherever they are located. The significant hazards posed by the extensive battery storage facilities that will be required to achieve the CAP's decarbonization target must be addressed in the CAP environmental review. Additionally, the development of 430,000 acres of solar farms in remote areas will substantially increase ambient dust levels and, by extension, increase the threat of Valley Fever and other respiratory insults to residents who will be exposed to the increased dust levels. These hazards must also be addressed in the CAP environmental review.

Hydrology: The IS concludes that CAP implementation will not substantially decrease groundwater supplies (page 49) or substantially alter existing drainage pattern (page 50). The ATC disagrees. If CAP decarbonization goals are achieved via remote utility scale generation, the 430,000 acres of solar farms that will be constructed will require significant quantities of water to wash and maintain the panels (panel washing must be done at least several times per year, particularly in desert areas where ambient dust degrades panel performance). Since these remote locations do not have access to recycled water resources, the solar farms will rely on groundwater resources. Washing 430,000 acres (or 672 square miles) of solar panels located in the desert several times a year will require significant quantities of groundwater, and the CAP environmental review must consider the impacts this will have on groundwater supplies. Additionally, utility-scale solar facilities require extensive grading to level the ground for optimum panel configuration; thus, installing the 630,000 acres of solar panels required to achieve CAP targets will result in significant grading and, by extension, significantly alter to drainage courses. Accordingly, the IS is wrong to conclude that the CAP will not alter existing drainage patterns.

Transportation: The IS concludes that CAP implementation will not substantially impact transportation. The ATC disagrees. CAP targets will de-carbonize all modes of transportation in Los Angeles County within 23 years and electrify all transit and vehicle facilities; this will expose the County's transportation system to new risks that have not heretofore been encountered. For example, events which affect the transmission grid will impede power deliveries to the County's urban areas and bring portions of the County's transportation network to a standstill. This is not hypothetical; in fact, a small fire at the Vincent transmission substation actually caused power flows on a major energy

¹⁰ <https://cleanenergynews.ihsmarket.com/research-analysis/vistra-battery-storage-facility-in-california-remains-shut-aft.html>
<https://www.genre.com/knowledge/publications/pmint21-3-en.html>
<https://www.insurancejournal.com/magazines/mag-features/2020/09/07/581175.htm>.

¹¹ <https://www.usatoday.com/story/money/cars/2021/08/02/tesla-megapack-battery-ignites-fire-australia-burns-4-days/5453874001/>

transmission corridor to be cut by more than 50%¹². The urban portions of Los Angeles County are served by only a handful of high voltage transmission substations; this makes Los Angeles County residents incredibly vulnerable to power disruptions. And, as the County's electrical dependence increases through implementation of the CAP, these vulnerabilities will become magnified, and they will become exponentially large if the CAP's decarbonization goals are met through expansion of remote utility scale renewable generation rather than local distributed generation. In other words, implementing the CAP via remote renewable generation will pose significant operational risks to the County's transportation infrastructure; these risks must be addressed in the CAP environmental review.

Wildfire: The IS concludes that CAP implementation will not pose significant wildfire risks and in particular the IS asserts that the CAP will not "exacerbate fire risk" (page 76) or require the construction of power lines or other utilities "that may exacerbate fire risk" (page 77). These conclusions are absurd. Implementation of CAP decarbonization targets will require massive increases in utility facilities that pose significant fire risks, including battery storage facilities (as discussed above). And, if the CAP does not direct new renewable energy facilities to be constructed in already developed areas, then achieving CAP decarbonization goals will require massive new transmission lines to deliver power from the 430,000 acres of new, remotely sited, utility scale solar facilities. These lines will be constructed within the Angeles Forest and in other mountainous areas that are designated as "Very High Fire Hazard Severity Zones" and as such will greatly increase wildfire risks. The IS wrongly concludes otherwise, and these risks must be addressed in the CAP environmental review.

Utilities: The IS concludes that CAP implementation will not result in the construction of new electric power facilities "the construction or relocation of which could cause significant environmental effects" (page 72). This conclusion is absurd. Implementation of the CAP's county-wide decarbonization targets will require the construction of more than 430,000 acres of new solar panels, thousands of megawatts of energy storage facilities, and extensive new grid facilities; accordingly, the construction and operation of these facilities will cause significant environmental effects. The environmental document prepared for the CAP must address the significant adverse environmental impacts of these facilities particularly if the CAP fails to direct new renewable energy development to occur in already developed areas.

¹² The Vincent substation connects the Los Angeles Basin to renewable resources located in the Antelope Valley and is a primary energy "node" serving Los Angeles County. It is also the southern terminus of the "Path 26" energy corridor connecting Southern and Northern California. A transformer fire at this facility caused Path 26 to be de-rated from 3000 MW to only 1400 MW. <http://www.caiso.com/Documents/DMAReportApril2003.pdf>

Specific Comments Regarding CAP Strategies, GHG Targets, and Other Matters Presented in the Initial Study.

The ATC offers the following specific comments pertaining to the various CAP strategies and GHG reduction measures identified in the IS.

- Strategy 2 identifies a Measure to "Develop Land Use Plans Addressing Jobs/Housing Balance & Increase Mixed Use". The problem is, the adopted County General Plan and the adopted Antelope Valley Area Plan already provide land use plans that address jobs/housing and establish appropriate "Mixed-Use" profiles. If different land use plans or new "mixed-use" profiles are established in the CAP, then the CAP itself will be in conflict with existing land use policies already adopted into the County General Plan and the Antelope Valley area Plan; this would violate the statutory purpose of the General Plan¹³. The ATC is particularly concerned by this measure because "mixed use" development is intrinsically contrary to the type of low density land uses that are established for the rural unincorporated areas which are subject to the CAP.
- Strategy 2 also asserts "Reduce single-occupancy vehicle trips". There is no justification for this strategy since the CAP GHG goals will be met by decarbonization. In other words, there is no need to deprive people of the freedom to drive where they wish and when they wish because they will be driving electric vehicles and therefore "single-occupancy vehicle trips" will not contribute to GHG emissions.
- Strategy 3 asserts "Expand Bicycle & Pedestrian Network to Serve Residential, Employment, & Recreational Trips". The ATC objects to the limitations that are placed on this strategy and the extent to which it ignores equestrian uses. It is unacceptable to limit the active transport policies established by the CAP to only address bicycle and pedestrian modes, particularly within Acton and in the other rural communities that will be subject to the CAP. This strategy must be expanded to address equestrian uses and secure an equestrian network to serve residential, employment, and recreational trips.
- Strategy 3 also asserts "Removal of Parking Minimums". This strategy will eliminate EV charging locations, reduce driving enjoyment, and it is not needed to achieve GHG reductions because GHG goals will be met through decarbonization. Therefore, there is no justification for "Removal of Parking Minimums".

¹³ "If a general plan is to fulfill its function as a 'constitution' guiding 'an effective planning process,' a general plan must be reasonably consistent and integrated on its face. A document that, on its face, displays substantial contradictions and inconsistencies cannot serve as an effective plan because those subject to the plan cannot tell what it says should happen or not happen." (*Concerned Citizens of Calaveras County v. Board of Supervisors* (1985) 166 Cal.App.3d 90, 97.)

- Strategy 5 includes " Transition Existing Buildings to All-Electric" and "Standardize All-Electric New Development". As indicated above, this strategy will not work in rural areas where electrical service is unreliable; it will result in casualties and even fatalities.
- Strategy 6 includes "Increase Renewable Energy Production". As indicated above, there are two ways to implement this strategy: either via distributed generation within already developed areas or via remote utility scale generation in rural and open space areas. Because the former poses relatively smaller environmental impacts, and the latter creates significant environmental impacts, it is essential that the CAP clearly articulate which of these two approaches will be incorporated in Strategy 6 implementation; it is also critical that the environmental document prepared for the CAP properly addresses the impacts corresponding to the Strategy 6 implementation program established by the CAP.
- Strategy 8 includes "Increase Use of Recycled Water and Gray Water Systems" and "Reduce Indoor and Outdoor Water Consumption". The IS provides no information regarding this strategy or the targets that it will establish for recycling water and reducing consumption, thus it is impossible for the public to provide meaningful scoping comments regarding this Strategy 8. And, without further information pertaining to this strategy or how it will be implemented, the public cannot comment on its implication or impacts. What is meant by "reduce indoor and outdoor water consumption"? Does the County plan to restrict water usage to meet the state goal of 50 gallons per person per day? If so, then the animal rescues, equestrian uses, and other uses in Acton will be eliminated by this strategy. Also, what does it mean to "Increase Use of Recycled Water and Gray Water Systems" particularly in unincorporated rural areas that do not have sewage facilities and are not supposed to have sewage facilities? The lack of detail provided by the County regarding Strategy 8 has prevented the ATC from providing substantive comments regarding its potential environmental impacts and thus thwarted the purpose and intent of CEQA scoping.
- Strategy 9 includes "Increase Organic Waste Diversion", "Maximize Countywide Diversion Rate", and "Institutionalize Sustainable Waste Systems & Practices". The IS provides no information regarding this strategy or the targets¹⁴ that it will establish for waste diversion and waste practices. As a result, the public cannot meaningfully comment on the implications or impacts of Strategy 9. Presumably, this strategy will increase the number of waste facilities in the County; it is also likely to increase trip rates because instead of having one trash pickup a week, residences will have three or more (organic waste, recyclable waste, and trash). If these facilities are located in remote areas, that will add to the transportation impacts of this strategy and it will

¹⁴ Page 74 of the IS states that Measure W3 includes a goal of "decreasing per capita waste by 35% by 2045" but this target is not described in the strategy details provided on pages 3-5 and it is not mentioned anywhere else in the IS, so it is not certain whether this is even an actual CAP target.

create adverse environmental impacts in the areas where they are located. Consideration must also be given to where the recycled/diverted waste will go. The ATC understands that the County is eager to increase mulch generation as a means of increasing diversion rates, but most mulch that is currently produced by facilities in Los Angeles County is contaminated with trash and it often has a terrible stench; this is because current standards allow a considerable amount of trash in organic material before it is mulched. Unfortunately, due to the lack of detail provided by the County regarding Strategy 9, the ATC is uncertain whether these comments are even relevant to the CAP scoping effort. In any event, we have been prevented from providing substantive comments regarding the potential environmental impacts of Strategy 9 in a manner that thwarts the purpose and intent of CEQA scoping.

- Page 2 of the IS states that the CAP will include revisions to address "locating new housing developments away from existing sources of air pollution". It is the ATC's understanding that matters pertaining to the location of new housing and the proximity of housing to air pollution sources lie within the purview of the General Plan Land Use Element, Air Pollution Element, and Safety Element (and perhaps the AVAQMD and SCAQMD); such matters do not belong in the CAP. The purpose of the CAP is to focus on climate action and not air pollution. If the CAP does include policies which locate new housing away from existing sources of air pollution, then the environmental document prepared for the CAP must address the displacement impacts that will be created by such policies. Additionally, any new CAP housing policies will have to be compared to policies already adopted in various General Plan and Area Plan elements to ensure they do not introduce any contradictions or pose increased environmental impacts beyond those considered when the elements were adopted.

Conclusion

The ATC respectfully requests that the County incorporate the comments offered above in the CEQA review that will be conducted for the CAP. If you have any questions or require additional information, please do not hesitate to contact us at atc@actontowncouncil.org.

Sincerely;



Jeremiah Owen, President
The Acton Town Council

Attachments



Thuy Hua
Supervising Regional Planner
Los Angeles County Department of Regional Planning
320 W. Temple Street, 13th Floor
Los Angeles, CA 90012
Electronic transmission of 21 pages to:
climate@planning.lacounty.gov and
THua@planning.lacounty.gov

July 18, 2022

Subject: Acton Town Council Comments on the Draft Climate Action Plan.

Reference: Solicitation of Public Comment on the Draft Climate Acton Plan Issued
April 25, 2022.
Extension Deadline for Public Comments on the Draft Climate Action Plan
Issued July 5, 2022

Dear Ms. Hua;

The Acton Town Council ("ATC") appreciates this opportunity to provide comments on the Draft Climate Action Plan ("DCAP"). These comments are submitted before the noon deadline on July 18, 2022 established by the Department of Regional Planning ("DRP"); therefore, they are timely filed.

The ATC has a number of concerns with the DCAP; some are general, others are specific. For the sake of simplicity, our general concerns are presented first, and our specific concerns are then generally arranged by Chapter.

GENERAL CONCERNS WITH THE DCAP.

The DCAP Fails to Address Unique Circumstances in Rural Areas that render Decarbonization and Electrification Measures Infeasible and Even Life Threatening:
On March 15, 2022, the Los Angeles County Board of Supervisors ("Board") adopted a motion directing the development of feasible building decarbonization policies and ordinances and code changes to phase out the use of natural gas equipment and appliances in all new construction and substantial renovations (referred to hereafter as the "Motion"). Importantly, the Motion included a clause stating that the policies, ordinances, and code changes that are developed must consider "the varying climate, geography, and infrastructure challenges that rural communities face"; this means that only policies, ordinances and code changes which account for the climate, geography, and infrastructure limitations in rural areas will be deemed "feasible". The plain and unambiguous language

of this motion makes it incontrovertibly clear that the Board intends that County decarbonization policies, ordinances, and code changes be sufficiently flexible to accommodate unique circumstances in rural areas pertaining to climate, geography, and infrastructure. These circumstances include:

- **Unreliable Electrical Infrastructure** – rural residents frequently lose electrical service throughout the year and often for days. Accordingly, rural residents who are forced to switch to “all electric” and are not permitted to operate gas-powered stoves will be unable to prepare meals for their families (because electrical stoves will not work). They will also have no heat (because electrical heaters will not work). Their only alternative would be to purchase a massive and expensive gasoline or diesel-powered generator to operate their “all electric” homes; however, this is not be a permanent solution because the CAP “aspires” to eliminate gasoline and diesel from the County altogether. Eventually, rural residents in “all electric” homes will have no means to heat their homes or prepare meals during the frequent power outages they experience. Rural residents already suffer substantially from the unreliable electrical service they receive because when the power is off, they have no water (electric pumps that provide water from their domestic wells do not work), they have no lights, they have no refrigeration, and they have no internet or cell phone service. Currently, many homes resort to using small, portable, fossil-fueled generators to supply some electricity. However, small generators are insufficient to meet heating and cooking needs in an “all electric” house. And, in any event, the CAP eliminates this solution anyway.
- **Mountainous Geography** – rural residents who live in mountainous areas experience weather events such as snow and heavy rains that often leave them isolated (because of road conditions) and without power (because of damaged electrical facilities). Under such circumstances, residents living under “all electric” conditions have no water, no heat, no power, and no ability to prepare food. These are precisely the circumstances that occurred in 2021 in the Pine Canyon area of Three Points where rural residents were both isolated and without power for 7 days because a snow storm damaged power lines and limited access to such an extent that SCE could not get in to make necessary repairs. One resident in an “all electric” home relied on a massive generator to survive; other residents were able to rely on their propane. Eventually, the CAP will eliminate all generator options, and if it eliminates propane too, rural mountain residents will be unable to heat their homes or feed their families during emergencies.
- **Climate:** Rural residents in high desert and mountain communities experience the hottest temperatures in the County and also experience the coldest temperatures in the County. These circumstances are already challenging enough, but they are exacerbated by the fact that rural high desert and mountain communities also experience the most unreliable electrical service in the State of California (for instance, between 2019 and 2022, the Communities of Acton and Agua Dulce experienced more and lengthier blackouts than any other communities in California and the local school district lost more than 4 weeks of classroom days). Under such circumstances, and as explained above, residents living under “all electric” conditions will have no water, no heat, and no cooling to help them cope with the extreme conditions they face during an emergency.

Notably, the decarbonization strategies, measures and actions set forth in the DCAP do not provide any of the flexibility required by the Motion and they certainly do not consider “the varying climate, geography, and infrastructure challenges that rural communities face”. For instance, the stated purpose of Measure E1 is to “electrify existing buildings”; this blanket statement is written in absolute terms, it captures all existing buildings (regardless of whether they are located in rural areas that have extreme climactic, geographical, or infrastructure conditions) and it provides *no* flexibility to consider “the varying climate, geography, and infrastructure challenges that rural communities face”. Additionally, Action E1.1 requires “buildings to retrofit natural gas water and space heating to electric water and space heating at the point of sale”; this action unequivocally mandates electrification of all residences regardless of location when title is transferred and it utterly fails to accommodate “the varying climate, geography, and infrastructure challenges that rural communities face”. Furthermore, Action E2.1 requires the County to adopt an ordinance requiring all new buildings to be fully electric with no gas hookups; this inflexible action also fails to accommodate “the varying climate, geography, and infrastructure challenges that rural communities face” because it unequivocally mandates electrification of all new residences throughout the County regardless of where they are located or what extreme climactic, geographical, or infrastructure challenges these locations face.

The inflexibility that is built into DCAP strategies, measures, and actions is highly problematic because the blanket, rigid, “one size fits all” decarbonization and electrification directives established by the DCAP will be incorporated into the County General Plan, and when that happens, these rigid strategies, measures, and actions will become binding and mandatory. Accordingly, all future County actions and all future County ordinances will have to strictly comply with the CAP’s inflexible decarbonization and electrification strategies, measures, and actions; they will not (and cannot) reflect the flexibility that lies at the core of the Board Motion adopted March 15, 2022. The only solution is to incorporate some flexibility into CAP decarbonization and electrification strategies, measures, and actions. This can be achieved by revising the “Implementing Actions” and “Performance Objectives” established by DCAP Measures E1 and E2; recommended revisions are provided below. These recommendations reflect the fact that there is a difference between a “Zero Net Energy” building and an “all electric” building; in fact, these categories are mutually exclusive because a home that is “Net Zero Energy” need only generate more energy than it uses regardless of the form that the energy takes¹. A home with a gas heater qualifies as a “Net Zero Energy” home if it produces as much renewable energy as the total energy (gas plus electricity) it uses. Importantly, without changes, the CAP cannot provide the flexibility demanded by the Board Motion adopted March 15, 2022.

¹ The DCAP adopts the Department of Energy (“DOE”) definition of a “Zero Net Energy” building as “An energy-efficient building where, on a source energy basis, the actual annual delivered energy is less than or equal to the on-site renewable exported energy.” DOE defines “delivered energy” to mean *all* energy used in a home (electricity, fuels, heating energy, cooling energy, etc.) <https://www.energy.gov/sites/prod/files/2015/09/f26/A%20Common%20Definition%20for%20Zero%20Energy%20Buildings.pdf> [page 6].

Recommended Modifications to Measure E1:

MEASURE E1: Transition Existing Buildings to All-Electric (Core)

IMPLEMENTING ACTIONS

E1.1—Adopt Building Performance Standards for existing buildings and reach code requirements for major retrofits and renovations that require electric water and space heating **taking into consideration the varying climate, geography, and infrastructure challenges that rural communities face**. Require buildings to retrofit natural gas water and space heating to electric water and space heating at the point of sale **taking into consideration the varying climate, geography, and infrastructure challenges that rural communities face**.

E1.2—Increase alternatives to natural gas uses, such as for cooking, in existing buildings. Establish carbon intensity limits for existing nonresidential and residential buildings over a certain size **taking into consideration the varying climate, geography, and infrastructure challenges that rural communities face**.

E1.3—Adopt a ZNE ordinance for building renovations, based on certain criteria (such as commercial facilities with 10,000 square feet of additions). Adopt ZNE Building Performance Standards for certain buildings not undergoing major renovations or retrofits.

E1.4—Create a plan for phased electrification of LA County facilities. Phase out gas-powered infrastructure and appliances as they need replacement **taking into consideration the varying climate, geography, and infrastructure challenges that rural communities face**.

E1.5—Create a comprehensive fund aggregation program to support energy efficiency, decarbonization, and resilience in new and existing affordable housing.

PERFORMANCE OBJECTIVES

Electrify **all** existing residential buildings:

- 25 percent by 2030
- 40 percent by 2035
- 70 percent by 2045

Electrify **all** existing nonresidential buildings:

- 15 percent by 2030
- 25 percent by 2035
- 40 percent by 2045

Require Zero Net Energy (ZNE)¹⁶ for all major renovations:

- 50 percent by 2030
- 75 percent by 2035

Recommended Modifications to Measure E2:

MEASURE E2: Standardize All-Electric New Development

IMPLEMENTING ACTIONS

E2.1—Adopt an ordinance requiring all new buildings to be fully electric with no natural gas hookups **which takes into consideration the varying climate, geography, and infrastructure challenges that rural communities face**. Include affordable housing considerations in these requirements, and develop supporting measures (financial support, technical assistance, or other incentives) to defray potential additional first costs in order to maintain housing affordability.

E2.2—Adopt a ZNE ordinance for all new residential buildings built after 2025 and all new nonresidential buildings built after 2030. Include renter protections for affordable housing. Provide affordable housing set-aside to offset first cost.

E2.3—Adopt CALGreen Code Tier 1 green building standards and identify which Tier 2 standards could be adopted as code amendments, **taking into consideration the varying climate, geography, and infrastructure challenges that rural communities face**.

PERFORMANCE OBJECTIVES

All Most new buildings will be all-electric beginning in 2025.

All new residential will be ZNE beginning in 2025 and all new nonresidential will be ZNE beginning in 2030.

The DCAP's "Aspirational Goal" is Meaningless in the Context of a General Plan:

The DCAP establishes an "aspirational goal to achieve carbon neutrality by 2045"; however, the "aspirational" aspect of this goal is meaningless in the context of the General Plan. Specifically, because the CAP will be incorporated within the County General Plan, CAP measures, strategies, actions, and objectives will direct all future land use and development decisions; this means that all future development projects must be consistent with, and ensure conformance with, achieving the 2045 "carbon neutrality goal" regardless of whether the County believes this goal to be merely "aspirational". In other words, General Plans do not, and cannot, include "aspirational" goals because the County is obligated to implement and achieve all goals expressed in the General Plan; the County cannot merely "aspire" to achieving any General Plan goal. To address this error, the "aspirational" carbon neutrality goal must be eliminated because it has no meaning within the statutory framework of a General Plan.

Several DCAP Elements are Either Nonsensical, Too Burdensome, or Simply Unachievable

Several of the DCAP Strategies, Measures, and Performance Objectives are exceedingly flawed: Some place significant requirements on existing homeowners and are so vaguely written that their fiscal implications are impossible to comprehend; this makes it impossible to provide meaningful comments. Some are either erroneous or just make no sense, while others are impossible to achieve. For instance:

Measure E5 Performance Objectives Cannot Be Achieved: Measure E5 establishes a generic and perfectly reasonable objective to "Increase Use of Recycled Water and Gray Water Systems". However, the ultimate Performance Objective for Measure E5 (which, according to the Draft Environmental Impact Report ("DEIR"), is to meet "Countywide water demand by recycled water, gray water, and/or direct potable reuse" – see page 3.17-14) is ill conceived, poorly explained, not properly thought out, and (frankly) impossible to achieve from an engineering perspective. First, CAP Measures are not supposed to be a "Countywide"; they are supposed to apply to unincorporated areas. Yet, the DEIR describes Measure E5 as a 'Countywide" measure because it establishes "Countywide" performance objectives. Second, it is impossible to achieve *any* gray water, recycled water, or potable reuse in the rural areas of unincorporated Los Angeles County because these areas are not served by any sewer facilities; all residential and commercial developments in these areas are on septic. In other words, meeting the DCAP objective of serving 50% of community water demand by 2035 through the use of recycled water, gray water, and/or direct potable reuse can never be achieved in rural unincorporated communities. Finally, it is impossible to supply 100% of County water demand by recycling sewage water, and/or direct potable reuse because the County water supply is not a "closed system" (there are always losses from leaks, evaporation, reject water from the treatment process², etc.). In

² For example, using "reverse osmosis" to clean up sewage streams will result in a certain amount of "reject water" that must be discarded because it contains all the contaminants that are removed by the cleanup process. The volume of reject water often exceeds 10%.

other words, the process required to clean up sewage streams does not achieve 100% water efficiency. The Performance Objectives for Measure E5 reveal a conspicuous lack of technical understanding of how water systems work and what wastewater cleanup systems require.

Action E5.1 is not demonstrably practical in rural areas: Action E5.1 will “Require dual waste piping to be installed in new residential developments to allow for future graywater irrigation systems.” While this action may be appropriate in areas that have sewer services, it is not demonstrably appropriate in rural areas that rely on septic. Specifically, segregating out grey water and diverting it from a septic system will significantly increase nitrate and acid concentrations in the septic system and in the leach field; it is not clear how well a septic system will function under these circumstances. If these concentrations cause a septic system to fail, then there are no alternatives. It is also not clear if the increased nitrate concentrations would adversely affect the environment surrounding the leach field. Also, segregating out gray water will significantly increase the solids content of the waste carried by the pipes leading to the septic system; this will result in significantly higher clogging rates and maintenance requirements. There are too many unknowns, too many potential environmental impacts, and too many potential system problems associated with this “Action”, thus it must be revised to clarify that it is only applicable in areas served by a sewer system.

Action E6.1 is Entirely Infeasible and Completely Unworkable in Rural areas: Action E6.1 will “Develop a net-zero water ordinance for new greenfield development.” There are several problems with this action. First, the DCAP does not define what “new greenfield development” is, so it is not clear what type of development will be subject to this “net-zero water ordinance”. However, “greenfield development” typically refers to new development that occurs on unused (vacant) land, which means that Action E6.1 would apply to new homes built in Acton. The DCAP defines “Net Zero Water” to mean a building or community that does not rely on off-site water sources and instead uses rainwater, treated wastewater and “reused” water. Unfortunately, no new home in Acton could ever meet this “net zero water” definition or comply with a “net zero water” ordinance because 1) There is not enough rainfall in Acton to sustain a household via stormwater capture from roof runoff; and 2) There are no sewer facilities in Acton; thus, wastewater recycling would only be possible if a homeowner could somehow find, install, and properly operate a very small (<500 gpd) “package system” equipped with tertiary treatment and reverse osmosis. Such systems do not appear to be commercially available insofar as can be determined. And, even if small “package systems” with tertiary treatment and reverse osmosis were available, the homeowner would have to receive engineering training to ensure that this “package system” always operates properly and fully treats the wastewater before it is recycled back into the house and flows out of the taps (drinking unclean water is not only dangerous, it is deadly). Moreover (and as explained above), operating this “package system” will result in a waste stream of highly concentrated contaminants that would (probably) be designated as a biohazard and thus require appropriate disposal; it is

doubtful that a septic system would be appropriate for such disposal purposes because of the high contaminant concentrations in the waste stream. Accordingly, the County would have to develop entirely new waste disposal methodologies to properly process these unique waste streams. And, because of the water “losses” incurred from the wastewater treatment process, some supplemental water would have to be provided to the home to “make up” for these losses. Finally, implementation of Action E6.1 in rural areas would require the Health Department to hire many new inspectors to properly and frequently check on all the residential “package systems” that are installed to comply with this “net zero water ordinance”. Frankly, the casual manner in which the DCAP just slaps down this “net-zero water ordinance” action is appalling; it indicates that staff have given absolutely no thought or consideration to what this ordinance would do, where it would be applied, who it would affect, or even how it would be implemented. Anyone with a basic understanding of sanitary system engineering knows that a home in the desert cannot subsist on just recycled waste water and stormwater capture from the roof. The lack of context and detail that this DCAP “Action” provides makes it impossible for the public to even understand its implications, let alone meaningfully comment on it. Worse yet, neither the DCAP nor the DEIR show any regard for the very real and very significant adverse health outcomes that will potentially arise from this “Action”. For example, even if 99% of the rural residences equipped with individual “packaged systems” are operated properly, the 1% that are not operated properly will result in illness and death. This “Action” must be completely rethought and rewritten.

Action E4.1 could cost individual property owners more than \$100,000: Among other things, “Action E4.1” will “Require all buildings to perform energy efficiency retrofits at the point of sale”. This “Action” is so vague, open ended, and lacking in direction that it is almost meaningless. And, depending on how it is construed, this “Action” could cost homeowners more than \$100 thousand to comply. All of this makes it impossible for the public to meaningfully comment on this “Action”. What are the “energy retrofits” that homeowners will be required to complete before selling their homes? And is there a limit to them? Will homeowners have to replace all of their dual glazed windows for triple glazed? Will they have to replace their roof with a “cool roof”? Will they have to install a heat pump in place of their existing heating system? Will they have to replace all their appliances with Energy star rated equipment? Will they have to replace all their existing insulation with insulation that achieves a higher “R-Value”? Such changes would cost more than \$100,000. And, what does “perform energy efficiency retrofits” even mean? It is clear that absolutely no thought went into this “Action”, and (frankly) its implications are too terrifying for any homeowner to contemplate. This “Action” must be rewritten to provide clearly delineated limits and clearly explain what is meant by “perform energy efficiency retrofits” so that homeowner stakeholders can provide meaningful comments.

Action E4.2 is so Vague and Ambiguous That It Has No Meaning: Action E4.2 will “Adopt an energy efficiency ordinance for existing buildings, requiring all buildings over 20,000 square feet to benchmark and report their energy use and demonstrate their pathway to

efficiency.” What is a “pathway to efficiency” and how will it be “demonstrated”? Will property owners be required to obtain an approved “Energy Efficiency Plan” from Regional Planning? If so, what “thresholds” will Regional Planning use to determine whether the “Energy Efficiency Plan” is adequate? How much efficiency improvement is required to be deemed on the “pathway to efficiency”? What energy efficiency measures will be required by this “Energy Efficiency Plan”? This issue is particularly important because energy efficiency measures can be very expensive (as discussed above). And, will Regional Planning establish a whole new bureaucracy of energy efficiency inspectors and planners to approve these “Energy Efficiency Plans” and make sure property owners comply? And what happens if they don’t comply? The trite vagueness of this “Action” and its “pathway to efficiency” makes it impossible for the public to meaningfully comment on it; accordingly, it should be completely redefined and property clarified.

Action E6.2 is Vague and Ambiguous: Action E6.2 will “Adopt a water efficiency ordinance for existing buildings, requiring all buildings over 20,000 square feet to benchmark and report their water use and demonstrate their pathway to efficiency”. Like Action E4.2, this “Action” is so vague and ambiguous that it is difficult to comment on it in any meaningful way. What is a “pathway to efficiency” and how will it be “demonstrated”? Will property owners be required to obtain an approved “Water Efficiency Plan” from Regional Planning? If so, what “thresholds” will Regional Planning use to determine whether the “Water Efficiency Plan” is adequate? How much efficiency improvement is required to be deemed on the “pathway to efficiency”? What water efficiency measures will be required by this “Energy Efficiency Plan”? Will there be a cost limit to them? Will Regional Planning establish a whole new bureaucracy of water efficiency inspectors and planners to approve these “Water Efficiency Plans” and make sure property owners comply? And what happens if they don’t comply? The trite vagueness of this “Action” and its “pathway to efficiency” is unacceptable; accordingly, it should be completely redefined and property clarified.

“Strategy 9” and “Measure A1” Are Substantially Flawed: “Strategy 9” is supposed to “Achieve a net gain in carbon storage in the County’s wildlands and working lands through management and restoration”, and its description states “Forests, chaparral shrublands, and wetlands serve as carbon sinks that can sequester carbon dioxide that result from human activity. When these natural and working lands are converted to residential and other urbanized uses, that stored carbon dioxide is released into the atmosphere”. These trite and overly simplistic statements are highly problematic. First: “forests, chaparral shrublands, and wetlands” *are not* “working lands”, so equating “working lands” with “natural lands” is erroneous. Second, in rural agricultural communities like Acton, “residential uses” *are not* “urbanized uses”; so, equating “residential” uses with “urbanized” uses is absurdly wrong. Third, residential uses in desert communities like Acton typically increase carbon sequestration because homeowners increase vegetation cover by installing drought tolerant landscaping. Accordingly, the description provided for Strategy 9 should be revised to read “Forests, chaparral shrublands, and wetlands serve as carbon sinks that can sequester carbon dioxide that result from human activity. When these natural ~~and~~

~~working~~ lands are converted ~~to residential and other~~ urbanized uses, that stored carbon dioxide is released into the atmosphere”. Furthermore, Measure A1 is supposed to “Conserve Agricultural and Working Lands, Forest Lands, and Wildlands”, but it does not include any conservation or preservation actions or objectives pertaining to “Agricultural and Working Lands”. To the contrary, the sole purpose of Measure A1 appears to be expanding “natural areas” and “open spaces”. To be clear, “agricultural lands” and “working lands” are not the same as “open spaces” or “natural lands”; in fact, they are diametrical opposites. Agricultural lands and working lands are lands that have been substantially modified and heavily used; they do not serve the public as “open space” or “natural areas”. There is nothing honest or forthright in the Measure A1 title or description provided by the DCAP. Accordingly, the title should be revised to read “MEASURE A1: Conserve ~~Agricultural and Working Lands~~, Forest Lands and Wildlands” and the description should be revised to read “Preserve, conserve, and restore ~~agricultural lands, working lands, rangelands~~, forest lands, wetlands, and other wildlands in unincorporated Los Angeles County”. Finally, Measure A1 establishes “Performance Objectives” that make no sense. Specifically, Measure A1 targets are to reduce the amount of natural land converted for urbanized uses by 25 percent by 2030, 50 percent by 2035, and 75 percent by 2045. These “Performance Objectives” are meaningless because they have no baseline and are not linked to any measurable factors. Reducing the amount of natural land converted for urbanized uses by 75% requires an understanding of what the 75% threshold value is tied to and what it even means; is the purpose of this objective to preserve 75% of the existing natural lands in the County? If so, then that is what the “Performance Objectives” should state. Or, is the purpose to ensure that the acreage of natural land which is converted to urban uses in future years is always reduced year over year? If so, then the “Performance Objectives” should state what that baseline is and thereby quantify the reductions that will be achieved. Equally troubling, how does the County plan on achieving these “Performance Objectives”? Does the County intend to pass an ordinance that prohibits urban development on land that the County deems to be “natural land”? And would such an ordinance apply to rural development? If so, then it would utterly controvert the entire purpose of “Rural Lands” that is set forth in the General Plan. It would also constitute an impermissible “taking” of private property. Strategy 9 and Measure A1 are substantially flawed and they require extensive revisions and corrections.

Action E6.3 Wrongly Concludes that Grasses are Not Water-Conserving Landscaping: Action E6.3 will “Incentivize residents to replace water-intensive landscaping, such as grasses, with water-conserving landscaping through a new ordinance along with education and incentive programs.” This “Action” wrongly presumes that grasses cannot be water conserving. Recent developments in water saving groundcovers (including new cultivars of buffalo grass created by U.C. Davis) reduce water demand by more than 75%³; these grasses only require watering once per month after they are established. This, coupled with the use of underground watering in place of sprinklers, will allow rural residents in

³ <https://ucverde.com/>

the high desert to maintain “cool” green spaces in their yard. Rural residents in the desert portions of the County will be far more affected by the heat effects of climate change than urban residents, so they should be allowed to have “cool” green spaces if doing so will only require a little water. This “Action” should be revised to not characterize grasses as “water intensive landscaping”.

CONCERNS NOTED IN CHAPTER 1.

Pages 1-8 and 1-9 wrongly designate each executive order issued by the Governor of California as a “Legislation/Regulation”. An Executive Order issued by a California Governor has no force or effect unless it invokes Emergency Powers, and it is neither “legislation” or “regulation”. The CAP substantially misrepresents EO B-48-15, EO N-79-20, EO S-3-05, EO B-30-15, and EO B-55-18 as “Legislation/Regulation”. In order for these Executive Orders to have the force and effect of legislation/regulation, the California Constitution would have to be abolished; additionally, the Office of “Governor of California” would have to be eliminated and replaced with something akin to the Office of “Dictator of California”.

Page 1-9 asserts that AB 32 “Codified EO S-3-05”. This statement is grossly inaccurate; EO S-3-05 included several components, but only one was “codified” by AB 32. Specifically, the only component of EO S-3-05 that was codified by AB32 was the directive to reduce GHG emissions in the State of California to 1990 levels by 2020. AB 32 did not “codify” any other GHG emission reduction targets identified in EO S-3-05.

Page 1-11 expresses an intent that “The 2045 CAP prioritizes equity, where every individual, regardless of race, income level, or neighborhood, has access to resources and opportunities to address climate change.” This intent appears to affirm that the resources and opportunities provided by CAP implementation will be available to all and not just some. However, the very next sentence contradicts this intent because it states “The development and implementation of policies and programs to address climate change is designed to be inclusive, accessible, and meaningful to frontline communities, or marginalized groups of people...”. This is troubling; CAP policy implementation should be inclusive, accessible, and meaningful to *all* communities, not just “frontline” communities or “marginalized groups of people”. The equity embraced in the first sentence is conspicuously lacking in the second. The County of Los Angeles does not categorize the rural communities of the Antelope Valley as either “frontline communities” or “marginalized groups of people” (even though the County has marginalized and ignored these communities in virtually every recent county action that has been taken⁴); perhaps that is why the DCAP does not have any policies or programs which address the unique

⁴ Rural communities were never consulted during development of the Sustainability Plan and were not even aware of the Sustainability Plan’s existence until after the draft plan was completed and just before it was adopted by the Board. The County does nothing to address the devastating cumulative impacts resulting from the more than 50,000 acres of utility scale solar farms developed in the Antelope Valley; to the contrary, the County approve such projects without (continued)

climate change circumstances present in the Antelope Valley. For instance (and as we have pointed out numerous times over the last several years), the Antelope Valley is the hottest part of the County and it will be more adversely affected by the heat impacts of climate change than any other place in the County; yet, Antelope Valley residents will not benefit from the heat mitigation programs offered in the Sustainability Plan and the CAP (such as “heat island” reduction and “urban canopy” programs) because these programs will only be implemented in urban and suburban communities. In fact, the DCAP’s definition of “heat island effect” is so constrained that it explicitly omits rural areas from consideration as potential places where “heat island effects” occur⁵. The DCAP ignores the “heat island effects” that persist in the vicinity of rural communities which are surrounded by thousands of acres of “black hardscape” that comprise the massive solar farms placed in the Antelope Valley. Worse yet, the DCAP refuses to acknowledge that its decarbonization and electrification policies will directly and significantly increase rural heat island effects in the Antelope Valley because they will drive the development of tens of thousands of acres of new “black hardscape” solar farms⁶. The CAP proposes no policies to address these concerns, and it includes no performance objectives that will eliminate these concerns. For example, the DCAP establishes a paltry 20% performance objective for installing rooftop solar on existing multifamily and commercial buildings and establishes no performance objectives for installing rooftop solar on existing single family residences. This is inexcusable. The only way to ensure that the many tens of thousands of acres of solar panels that will be required to implement CAP decarbonization and electrification objectives do not result in significant heat island effects or other adverse impacts in rural communities is to distribute these solar panels throughout the urban portions of the county; this will also avoid the need to construct massive battery storage facilities and new

(continued) giving any thought to their cumulatively considerable. Rural residents in North Los Angeles County persistently have ***the worst health outcomes in the County***, but nobody cares that our childhood asthma rates are the highest in the state or our COPD rates are among the highest in the nation. In fact, the County Health Department has not bothered to conduct any health assessments in North Los Angeles County since 2017. Most recently, the County omitted all rural communities from the recently adopted “Green Zones” Program that just went into effect.

⁵ Heat island effect is defined in the DCAP as “Measurable elevated temperatures in developed areas, as compared to more rural surroundings”.

⁶ Public comments that have been previously submitted pursuant to the CAP include quantitative, engineering evidence demonstrating that 795 square miles (509,000 acres) of new solar panels will have to be constructed to achieve the CAP’s 2045 “carbon neutral Los Angeles County” goal expressed on page 3-7. Unincorporated Los Angeles County comprises approximately 11% of the County population, and approximately 65% of the total County area, thus implementing CAP electrification and decarbonization strategies in just the unincorporated areas of the County will require at least 80 square miles (or 51,000 acres) of new solar panels. This is even more than the 43,000 acre estimate that the ATC provided in our scoping comments submitted on February 1, 2022. If the 51,000 acres of solar panels required to achieve CAP decarbonization and electrification targets are provided in the form of remote industrial-scale solar farms, then CAP implementation will unquestionably result in significantly rural heat island effects.

transmission lines through high fire hazard areas. Unfortunately, the DCAP does little to secure a robust distributed generation program; in fact, the DCAP's distributed generation targets are so anemic that they will have virtually no affect⁷. These and other concerns have been pointed out time and again to County Staff (including in CAP scoping comments) but they are not reflected anywhere in the DCAP and they continue to be ignored by the County. The DCAP gives no consideration to the massive expansion in industrial solar farms that will occur in the Antelope Valley to achieve CAP targets; in fact, the DCAP does not even bother to establish a baseline number/area of solar farms in the Antelope Valley or commit to tracking how that number/area increases as CAP implementation advances. Given the dismissive and arguably disdainful regard that DCAP policies show toward rural community concerns, the ATC disputes the claim made on page 1-11 that the CAP prioritizes equity; we also do not believe that its implementation will provide resources and opportunities to all individuals. Accordingly, the ATC recommends that this sentence be revised to read "The 2045 CAP prioritizes equity, where every individual living in urban and suburban communities, regardless of race, income level, or neighborhood, has access to resources and opportunities to address climate change. The equity priority embodied in the CAP does not extend to individuals living in the rural communities of North Los Angeles County."

Page 1-11 also states "To address the impacts of climate change equitably, the 2045 CAP ensures that all policies and programs result in the equitable distribution of benefits and burdens across all segments of a community." The ATC stridently disputes this claim. CAP implementation will result in the significant expansions of industrial renewable energy "farms" in the Antelope Valley which will significantly burden the rural residents who live there. The renewable energy benefits provided by these "farms" will accrue to the urban residents of greater Los Angeles. Nothing about the CAP's decarbonization and electrification policies result in equitable distribution of benefits and burdens: rural communities will take all the burdens and urban communities will take all the benefits. This imbalance could be rectified if the CAP were revised to include policies that meaningfully advance local renewable generation resources; we have repeatedly asked for such policies, but the County persistently refuses to incorporate them into the CAP. Worse yet, the DCAP does not provide one single policy or action that will assist rural desert residents to cope with heat impacts and adverse effects of CAP implementation. It is unequivocal that the CAP will result in the inequitable distribution of significant burdens on the rural communities in North Los Angeles County without providing any discernable benefits. Accordingly, the sentence should be revised to read: "To address the impacts of climate change, the 2045 CAP ensures that all policies and programs result in the equitable distribution of benefits across all segments of urban and suburban communities and it

⁷ The CAP's "performance objectives" for installing rooftop solar photovoltaic on existing buildings is only 10% by 2035 and only 20% by 2045. These objectives are absurdly low and they guarantee that distributed resources will not contribute significantly to the quantity of renewable energy generation that will be required to implement the CAP.

further ensures that the burdens associated with achieving CAP decarbonization and electrification strategies are allocated solely to rural communities.”

CONCERNS NOTED IN CHAPTER 2.

Page 2-5 of the DCAP refers to a “Business as Usual” forecast which assumes no GHG emission reduction programs are initiated and further assumes that there will be no implementation of any of the GHG emission reduction regulations that have already been adopted. This “Business as Usual” forecast presents a completely implausible scenario because it requires the County to ignore all the GHG emission reduction programs that it has already implemented; it also presumes the County will issue residential building permits without requiring solar panels and thereby violate the statewide “California Solar Mandate” requiring all new homes constructed after January 1, 2020 to be equipped with sufficient solar panels to meet the annual electricity usage of the building⁸. The “Business as Usual” scenario is non-sensical and incredibly unrealistic; it should be eliminated.

On pages 2-8 and 2-9, the DCAP conflates targets, goal, statutes, executive orders and sustainability “aspirations” and then twists them together to such an extent that the DCAP fails to distinguish between legislated targets (that the CAP should achieve for the County to assume its “fair share” of state GHG reduction goals) and weightless “aspirational” targets that are (frankly) entirely optional. And, in some instances, DCAP statements are completely incorrect. For instance:

- Page 2-8 states that there is a “statewide goal established by EO B-30-15 to achieve carbon neutrality by 2045”. This is incorrect. EO B-30-15 makes no reference to “carbon neutrality” and it certainly does not establish a goal to achieve carbon neutrality by 2045.
- Page 2-8 asserts that EO B-55-18 establishes a “target” that statewide carbon neutrality will be achieved by 2045. This is incorrect. EO B-55-18 merely expresses an aspiration toward carbon neutrality by 2045. This “aspiration” has never been codified, it has no force or effect, and it is not a “target”.
- Page 2-8 refers to the “OurCounty” Sustainability Plan GHG Emission Targets as if they were actionable; they are not. As County Counsel has repeatedly stated: 1) the Sustainability Plan commits the County to nothing; 2) There are no requirements for the County to achieve any Sustainability Plan targets; 3) Sustainability Plan targets are merely suggestions; and 4) The County has made no commitment to implement the Sustainability Plan⁹. In fact, in January of 2022, County Attorneys informed an Appellate Court judge that the County “hasn't come close” to implementing the

⁸ <https://news.energysage.com/an-overview-of-the-california-solar-mandate/#:~:text=The%20California%20solar%20mandate%20is,up%20to%20three%20stories%20high.>

⁹ Briefs filed by the County Counsel in Superior Court Case 20STCP00419 and Court of Appeal No. B294182/Superior Court No. BS166732; these briefs are incorporated herein by reference.

Sustainability Plan. Accordingly, the targets expressed in the Sustainability Plan are neither mandatory nor compelling; the DCAP is wrong to adopt them as if they were.

Following the confused and jumbled descriptions of statutes, executive orders, plans, targets, goals, deadlines and timeframes, the DCAP finally lands on fixed targets expressed on page 2-9 as:

- By 2030, reduce GHG emissions by 40 percent below 2015 levels in the County.
- By 2035, reduce GHG emissions by 50 percent below 2015 levels in the County.

Notably, these targets bear no relationship to any legislative action that has been taken or executive orders that have been issued to reduce GHG emissions: there are no legislative mandates to achieve any reduction threshold by 2035, and the only target that has been legislated for 2030 is to reduce GHG emissions 40% below 1990 levels, not 2015 levels. In fact (and as indicated in DCAP Figure 2-5), the DCAP target for 2030 is nearly 15% more aggressive than any legislative targets that have been adopted. In other words, the DCAP's GHG emission reduction targets lack basis and appear to merely reflect insubstantial suggestions made by the Sustainability Plan which are neither binding nor obligatory.

CONCERNS NOTED IN CHAPTER 3.

Page 3-7 of the DCAP states "EO B-55-18 mandates that by 2045, the State of California must achieve carbon neutrality". This is incorrect. Emergency Powers were not invoked when Executive Orders B-55-18 was issued; thus, EO B-55-18 does not "mandate" anything. Only the legislature has the power to "legislate" carbon neutrality; this has never happened, so the DCAP wrongly declares that carbon neutrality is mandatory or has a deadline.

On Page 3-11, the DCAP establishes three key elements of "decarbonizing the energy supply": procuring renewable energy resources, replacing the fossil fuels used in heating and cooking with electricity and "renewable fuels", and increasing energy efficiency to reduce energy use. A centerpiece of the DCAP strategy for "procuring renewable energy" resources is the Clean Power Alliance ("CPA") which (according to the DCAP) ensures "LA County will procure electricity that is generated by 100 percent renewable sources from CPA". This statement is misleading, given that "LA County" refers to the government of the County of Los Angeles and that most "LA County" facilities are not even served by CPA because they are located in cities and communities that are not part of CPA. For example, all the "LA County" facilities in the City of Los Angeles are served by Los Angeles Department of Water and Power, therefore they will not (and cannot) procure 100% renewable electricity from CPA. This sentence should be revised to state "LA County will procure electricity for LA County facilities under the CPA's 100% clean option, SCE's 100% Green Rate option, or other available 100% renewable electricity service options".

The last two paragraphs of Page 3-11 pledge "equitable access" to "local" energy sources and express broadly optimistic strategies for "community shared solar" and even "microgrids" in unincorporated areas to provide reliable electricity based on "energy

maps” that will “identify the geographic opportunities to deploy these distributed energy resources in an equitable manner”. However, *these pledges will ever be kept*. This is because these pledges require CPA to actively participate in the development of distributed generation resources, *but CPA has not, does not, and will not*, develop distributed generation resources. CPA only procures renewable electricity from industrial scale solar farms located in the desert; in fact, in the more than 5 years that have passed since its inception, CPA has never developed one single kilowatt-hour of distributed generation. In other words, the DCAP’s “energy maps”, “microgrids”, “distributed generation”, “equitable access to local energy sources”, and “community shared solar” programs are just meaningless words because *CPA is not inclined to pursue such projects*. The only way that these programs could ever come to fruition is if the County were to become an “electrical generator” by installing microgrids and distributed generation facilities and then selling the power to CPA or SCE. At a public meeting convened on June 14, 2022, County staff were asked whether the County was planning on becoming a “distributed renewable energy generator” to achieve the microgrid and distributed generation programs promised by the DCAP and thereby fill the gaping distributed generation “void” that CPA has created; the answer was not in the affirmative. Staff were then asked how, in light of CPA’s disinclination to develop distributed resources, the County plans to develop the “energy maps” and use them to develop the distributed generation resources promised in the DCAP; the answer indicated that the County has no such plans. It is unacceptable for the DCAP to make empty promises regarding the expansion of equitable distribution of local generation resources, microgrids, community solar, and other programs. Accordingly, the last two paragraphs on page 3-11 must be either eliminated or extensively revised to provide real insight on how the County will **ensure** that these programs are implemented.

Page 3-13 states “Starting in October 2022, customers in the unincorporated County will get 100 percent renewable energy—wind, solar, geothermal—from CPA, compared to the 50 percent clean energy they receive now”. This statement gives the impression that customers in unincorporated areas will be compelled to participate in CPA’s 100 percent clean (i.e., “green”) energy program; this is incorrect. First, only customers of CPA will be switched. Second, the switch is neither irreversible nor permanent; customers can switch back to the 50% clean energy program (or even the less than 50% clean energy program) if they wish. Third, it is likely that residents will switch out of the 100 percent clean energy program for a number of reasons. For instance, CPA’s 100 percent clean energy rates are quite high, and when the incremental cost to switch to 100% clean energy is added to the nearly 50% increase in electrical rates that unincorporated Los Angeles County residents have already absorbed over just the last five years, it is likely that many residents will switch back to the lower cost power. Another reason rural unincorporated residents may switch is because CPA’s 100% clean energy program is not based on clean, local distributed generation and instead relies entirely on remote “solar farm” industrial generation which creates terribly adverse impacts on both wildlife and rural residents in north Los Angeles County. In fact, CPA’s renewable energy procurement program has directly caused the utter destruction of more than ten thousand acres of pristine desert lands in the Antelope

Valley. For instance, consider CPA’s new, 6,000 acre “Edwards Sanborn” solar farm; according to the project website¹⁰, the site used to look like this:



Now, it looks like this:



¹⁰ <https://dudek.com/your-sector/energy-sector/edwards-sanborn-solar-storage-facility/>

CPA's 6,000 acre Edwards Sanborn project also drove extensive expansions of new electrical infrastructure, including transmission lines, substations, and other facilities. It also encroached into archeological sites and wildlife habitat, and it was entirely unnecessary because all the power that is now being generated by the Edwards Sanborn project could have been (and should have been) more reliably generated within CPA's customer load via distributed generation. The rural residents of Los Angeles County have tried diligently for years to convince CPA to stop destroying the desert and start producing reliable local generation. CPA dismisses these residents and ignores their comments.

The ATC points these things out to illustrate the substantial hypocrisies and environmental misconceptions that are embodied in the DCAP. For instance, and as the photos above demonstrate, the DCAP's decarbonization strategies will result in the conversion of more "natural areas" "open spaces" and thereby eliminate more "carbon sequestration" opportunities than any urban development ever could because these strategies require many tens of thousands of acres of new solar panels just to decarbonize the unincorporated areas of the County; many hundreds of thousands of acres will be required to achieve the DCAP's carbon neutrality goal countywide. Because the DCAP includes no provisions to ensure these solar panels are installed locally (specifically, in the urban and suburban areas where the power is used), and because both CPA and SCE only procure renewable power from industrial solar farms located in the desert, the DCAP's decarbonization and electrification strategies guarantee the destruction of enormous "natural areas" and "open spaces". In other words, the carbon sequestration protections that Strategy 9 claims to achieve by preserving, conserving, and restoring "agricultural lands", "working lands", and "wildlands" will be entirely defeated by DCAP decarbonization and electrification strategies which will eliminate hundreds of thousands of acres of "agricultural lands", "working lands", and "wildlands". And it is all unnecessary because DCAP decarbonization goals could easily be achieved via local distributed generation.

Page 3-15 of the DCAP establishes "Action ES2.2" which will "Complete enrollment of the community in CPA's 100% Green Power option or SCE's Green Rate option". The fact that CPA customers cannot be compelled to enroll in the 100% green power program and that they can de-enroll if they wish was already discussed above; however, Strategy ES2.2 also captures Southern California Edison ("SCE") customers, and it gives the erroneous impression that, pursuant to the DCAP, SCE customers will be enrolled in SCE's "Green Rate" option. This is troubling for several reasons. First, SCE suspended enrollment into its "Green Rate Plan" on June 2, 2022, and as of July 16, 2022, the suspension was still in effect. Though the suspension is expected to be temporary, nobody is able to enroll in the program at this point. Second, the "SCE Green Rate" is an optional program that was approved for SCE customers by the California Public Utilities Commission (CPUC); it is not a mandatory program and SCE customers cannot be forced into participating. Third, completing the enrollment of unincorporated residents into SCE's Green Rate option is not an "Action" that the County has any jurisdictional control over, therefore it cannot be included as an "Action" under the DCAP.

Page 3-16 establishes “Action ES3.1” to “Require rooftop solar PV for all new development.” If implemented as written, this action will result in an ordinance that will require all new development to include rooftop solar, and it will become effective within 30 days of adoption by the Board of Supervisors. According to Page 4 of Appendix E, this ordinance is slated for adoption by 2024, which means that, by 2025, 100% of all new development should have rooftop solar; it also means that this 100% compliance rate should persist from 2025 through 2045 and even beyond because it is a requirement over which the County has complete control. Yet, the 2030 “performance objectives” that the DCAP establishes for this action is only an 80% compliance rate for new multifamily residences and only 40% for new commercial buildings. This makes no sense; it suggests the County will allow 20% of new multifamily residences and 60% of new commercial developments to “sidestep” rooftop solar requirement. How can this be? Will the County exempt certain developments from the rooftop solar requirement? If so, the exemptions should be presented and discussed in the CAP, and the public should be given an opportunity to review and comment on them. Another oddity is that there is no “Performance Objective” for new single family residential development under Strategy ES3, yet Strategy E2 includes a “Performance Objective” that all new residential buildings will be “Zero Net Energy” by 2025 and all new non-residential buildings will be “Zero Net Energy” by 2030. Presumably, “Zero Net Energy” homes will have rooftop solar (because wind generation is less commonly installed); this indicates that the “Performance Objectives” for “Strategy E2” are not consistent with the “Performance Objectives” from “Strategy ES3”. The DCAP should be revised to ensure consistency between the various strategies and their “Performance Objective” timelines.

Page 3-16 establishes “Action ES3.2” to “Install rooftop solar PV at existing buildings” and it includes “Performance Objectives” pertaining to existing multifamily residential buildings and existing commercial buildings; these “Performance Objectives” are exceedingly low and will make little difference in reducing GHG emissions. Oddly, the DCAP includes no “Performance Objectives” for existing single family residences. It also provides no information on how these “Performance Objectives” are going to be achieved; for instance, is the County going to pass an ordinance that requires property owners to retrofit their existing homes to include solar? If so, then this should be clearly articulated in the DCAP along with projected cost requirements so that unincorporated residents will know what to expect regarding pending retrofits. And what of schools? Schools are often closed in the summer and when opened, they tend to operate during off-peak hours; this means that rooftop solar on schools can provide substantial green energy to the surrounding community during peak summer loads. However, schools are ineligible for tax credits and generation incentives, so it can be very difficult for school districts to install reasonably priced solar facilities. The County should work with CPA to develop a program to assist schools both financially and administratively to develop rooftop solar and thereby substantially expand distributed generation infrastructure.

Page 3-16 establishes “Action ES3.5” to “Require and incentivize renewable energy in multifamily housing for both new development and existing buildings.” This “Action” is somewhat repetitive because Action ES3.1 already requires rooftop solar for all new development and ES3.2 directs rooftop solar to be installed at existing buildings. This “Action” is also inequitable because it provides incentives only for multifamily housing and not other types of housing or development. Why should a developer who is constructing luxury condominiums or townhomes in an urban community be given incentives to develop renewable energy when a rural resident living in a modular in Lake Los Angeles (where temperatures frequently exceed 100 °F in the summer) receives no incentives at all? This “Action” is intrinsically inequitable; it must be revised to address the concerns identified above and also explain how giving incentives to only some property owners is in any way “equitable”.

Page 3-17 establishes “Measure ES4: Increase Energy Resilience” for the purpose of “expanding storage and microgrids”. The problem is, the “Performance Objective” established for Measure ES4 only addresses local storage capacity and ignores local generation capacity. Storage without generation provides no resilience, thus an “Energy Resiliency” measure which only secures local storage is ineffective. To achieve true energy resiliency, local storage must be coupled with local generation; there is no resilience without both. To correct this substantial deficiency, a second Performance Objectives for Measure ES4 should be added which states “Achieve community electricity generation capacity equal to the communitywide 24-hour average usage by 2035/2045”.

Page 3-17 of the DCAP establishes “Action ES4.4” to “Conduct feasibility studies to identify priority areas for solar and storage combined with building and community-scale microgrids and controls to support demand management and peak shaving to support grid resilience. Study implementation, costs, barriers, and obstacles. Adopt regulations that establish this use and standards for its development. Limiting peak energy demand can eliminate or reduce the use of high-carbon peaker plants. Require and incentivize renewable energy in multifamily housing for both new development and existing buildings.” This “Action” includes not only “planning” and “study” activities, but also “regulations that establish this [community-scale microgrids] use”; thus, it expresses a concrete intent to meaningfully expand distributed renewable generation within communities. This is very laudable; however, it raises several questions that must be addressed. For instance, who will be required to construct the community-scale microgrids under the ordinances that are adopted pursuant to Action ES4.4? Will these regulations require the County itself to develop the microgrids (in which case, the County will become an “electrical generator”)? Will the CPA or SCE be required to comply with the new regulations and construct the microgrids? If not, who will be required to comply? There is so little detail provided about “Action ES4.4” that it seems the County has no idea how it will be implemented or even whether it can be implemented at all. This gives the impression that the County is not actually serious about implementing “Action ES4.4”; this impression is amplified by the fact that the CAP does not even establish any “Performance

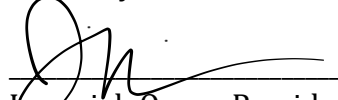
Objectives” for microgrid development - which means that the County isn’t really interested in any meaningful implementation of “Action ES4.4”.

Page 3-18 establishes “Measure ES5” which provides “GHG Requirements for New Development”; it also establishes a “Performance Objective” that “All new development that does not require a General Plan amendment *shall* be consistent with the 2045 CAP.” Pursuant to this Performance Objective, all development (even a single-family residential project) will have to operate “fossil fuel free” to comply with DCAP Measure 2; this is problematic for new residential development in rural communities where electrical service is completely unreliable (as discussed above). The CAP must address this problem by providing flexibility for rural communities to retain use of fossil fuel heating and cooking opportunities; this is not only a “quality of life” issue, it is an issue of “life” itself.

CONCLUSION

The ATC respectfully requests that the County incorporate the comments offered above in the CAP. If you have any questions or require additional information, please do not hesitate to contact us at atc@actontowncouncil.org.

Sincerely;


Jeremiah Owen, President
The Acton Town Council

cc: The Honorable Kathryn Barger, 5th District Supervisor [Kathryn@bos.lacounty.gov].
Anish Saraiya, 5th District Planning and Public Works Deputy [ASaraiya@bos.lacounty.gov].
Donna Termeer, 5th District Field Deputy [DTermeer@bos.lacounty.gov].
Chuck Bostwick, 5th District Assistant Field Deputy [CBostwick@bos.lacounty.gov].

ATTACHMENT 2

**Comments on the Recirculated Draft
Programmatic Environmental Impact
Report Submitted by The Acton Town
Council on May 15, 2023.**



Thuy Hua
Supervising Regional Planner
Los Angeles County Department of Regional Planning
320 W. Temple Street, 13th Floor
Los Angeles, CA 90012

May 15, 2023

Electronic transmission of twelve (12) pages to:

climate@planning.lacounty.gov and
THua@planning.lacounty.gov

Subject: Acton Town Council Comments on the Draft Climate Action Plan and the Recirculated Draft Program Environmental Impact Report.

Reference: Solicitation of Public Comment on the Draft Climate Acton Plan and the Recirculated Draft Environmental Impact Report Issued March 29, 2023.

Dear Ms. Hua;

The Acton Town Council appreciates this opportunity to provide comments on the Draft Climate Action Plan ("DCAP") and the Recirculated Draft Environmental Impact Report ("DEIR"). These comments are submitted before the 5:00 PM deadline on May 15, 2023 that was established by the Department of Regional Planning; therefore, they are timely filed.

Unfortunately, the Acton Town Council did not have sufficient time to conduct a proper review the 774 page DEIR or its 610 pages of appendices or the 150 page DCAP with its 234 pages of appendices. Nonetheless, we present the comments that we have been able to prepare over the following pages and respectfully request that they be taken into consideration as DRP moves forward with developing the CAP. For the sake of simplicity, our comments are offered in a list format. Additionally, and to the extent that they continue to be relevant, the ATC hereby incorporates by reference all previous comments that we submitted regarding the Climate Action Plan including, but not limited to, the comments submitted in January 2022 and April, 2022

Decarbonization and Electrification in Areas That Have Unreliable Electrical Service:

The ATC appreciates that the DCAP reflects the content of the motion adopted by the Los Angeles County Board of Supervisors ("Board") on March 15, 2022 which directs that new County policies, ordinances, and code changes pertaining to building decarbonization and electrification in unincorporated areas consider "the varying climate, geography, and

infrastructure challenges that rural communities face”; this motion was a critical step to ensuring that rural communities like Acton (which have unreliable electrical service and therefore depend on propane and natural gas for heating and cooking) are not harmed by the County’s march toward full electrification of all unincorporated areas. The motion is reflected in description of DCAP Measure E1 (which transitions existing buildings to “all electric” while taking into consideration the unique challenges that rural communities face) and DCAP Measure E2 (which standardizes electrification of all new development while taking into consideration the unique challenges that rural communities face).

The Acton Town Council is concerned that the criteria which ultimately be used to identify rural communities having “climate, geography, infrastructure, and sole-source dependency challenges” in the ordinances that will implement Measures E1 and E2 will not be sufficiently broad to properly capture the residential areas that will experience life-safety risks if they are required to fully decarbonize. Acton and other rural communities have, since 2019, experienced devastating electrical power shutoffs in the Fall and Winter that have lasted days. Additionally, the climate in Acton and other rural communities is significantly colder than many other regions in Los Angeles County, and we often experience harsh winters with temperatures plummeting below 20 degrees and heavy snowfall accumulations over 1 foot. A considerable amount of energy is required to maintain safe living conditions in such inclement weather which, incidentally, also causes additional electrical power shutoffs. As such, wood-burning and fossil fuel-powered heating systems are not mere conveniences in Acton; they are necessary survival tools which provide a reliable and independent source of warmth. These traditional heating methods are not contingent on the availability of electricity and they provide a lifeline during extended power outages. Accordingly, the ATC respectfully requests that the DCAP be revised to incorporate the following criteria for identifying the unincorporated communities that face climate, geography, and infrastructure challenges pursuant to Measures E1 and E2:

- Any rural community at an elevation of 1,800 feet or higher and which has
- experienced two or more “Public Safety Power Shutoff” events lasting more than 24 hours since October, 2019 or
 - experienced a loss in electrical service lasting more than 24 hours due to snow or other climate conditions.

The Acton Town Council believes these criteria will provide the flexibility that is called for in the Board motion while contemporaneously achieving the broad decarbonization and building electrification objectives established by the DCAP.

Modifications to Measure E5 are Greatly Appreciated, However the Measure E5 Performance Objectives Can Only Be Achieved in Urban Areas.

The Acton Town Council greatly appreciates the revisions that were made to the Performance Objectives established for Measure E5 which increase recycled graywater and

“potable reuse” in unincorporated areas; however, we are struggling to understand how this performance objective will be achieved in rural areas where recycled water does not exist. Moreover, in rural communities where septic systems are used, Action E5.1 (which segregates graywater streams from use in irrigation) will result in the discharge of very high concentrations of nitrified and acidified organic waste into residential septic systems because the graywater streams (which substantially dilute the nitrate and organic content of the blackwater streams) will be removed from the septic system. This in turn will substantially increase nitrate concentrations in the effluent released from the septic dispersal fields. Moreover, it is not clear that septic systems will function properly with high concentrations of nitrified and acidified organic waste; if these concentrated wastes cause a septic system to fail, then there are no alternatives and the resident must replace the entire system. Concerns with implementation of Measure E5 in rural areas were previously identified in the comments submitted by the Acton Town Council in 2022; a few of these concerns (though not all) still persist. A possible solution would be to limit the implementation of Acton E5.1 to only those areas that are served by a municipal sewer system.

A typographical Error noted in the Performance Objectives for Measure E2:

The ATC recommends the following revision:

PERFORMANCE OBJECTIVES

Require all applicable new buildings ~~will~~ to be all-electric. Provide affordable housing set-aside to offset first cost.

A typographical Error noted on page 1.13

The Acton Town Council recommends the following revision:

“The 2045 CAP is intended to be inclusive, accessible, and meaningful and prioritize ~~s~~ frontline”

The New Emphasis on Local Renewable Generation Reflected in the Revised DCAP is Appreciated; However, the DCAP Misrepresents CPA’s Utility Scale Renewable Resources and the DEIR Fails to Consider Alternatives in a Manner Consistent with CEQA.

The Acton Town Council has endeavored to inform policymakers, lawmakers, and government agencies that there are two ways to achieve California’s renewable energy goals: one way destroys thousands of square miles of unspoiled desert lands with endless seas of black glass, decimates pristine viewsheds with industrial wind turbines and high voltage transmission lines, blights entire rural communities with miles of concentrated, industrial, and dangerous battery storage facilities, reduces energy resiliency, and unnecessarily costs ratepayers billions of dollars; the other way enhances community resiliency, improves electrical reliability, protects the environment, and saves ratepayers billions of dollars. The former relies on the development of remote, utility scale solar “farms” and remote, utility scale battery “farms” to produce power that is then transmitted

via high voltage transmission lines over hundreds of miles to serve urban load pockets; and, because this alternative makes urban communities entirely reliant on a diffuse and fragile network of utility lines and energy nodes to meet all their energy needs, it is intrinsically non-resilient and arguably unreliable. The latter relies on the development of small scale generation and battery storage resources distributed throughout urban load pockets to supply local energy needs; and, because this alternative allows urban communities meet their own electrical demand without relying on remote generation and transmission facilities, it is intrinsically resilient and demonstrably reliable. Powerful utilities like Southern California Edison and powerful corporations like AES have a vested interest in substantially expanding utility-scale renewable generation and ensuring that distributed resources are both marginalized and minimized; as a result, their influence and their “voice” often overshadows our message. However, we are heartened because our message does appear to be “getting out”.

In particular, the Acton Town Council is grateful that the revised DCAP includes a number of new provisions which appears to reflect our message that distributed generation increases community resiliency. For instance, Measure ES4 adds new Performance Objectives that will achieve community electricity generation capacity equal to the communitywide 24 hour average and will install microgrids in unincorporated areas. However, what is lacking in the DCAP and the DEIR is an acknowledgement that distributed generation provides specific and intrinsic advantages such as reducing environmental impacts to desert resources, reducing wildfire risks by avoiding transmission lines, and preserving mountain vistas that would otherwise be marred by new transmission lines; furthermore, and frankly, distributed generation is also the ONLY path to achieving the community resiliency that the DCAP claims to support.

The Acton Town Council is also substantially concerned by revisions to the DCAP which incorrectly report the amount of utility scale solar renewable energy that “Clean Power Alliance” (“CPA”) supplies. Specifically, page 3-16 asserts that utility-scale solar is a relatively small portion of CPA’s renewable energy supply because CPA’s projected renewable electricity mix for 2035 is “30 percent utility-scale solar, 45 percent battery storage, 24 percent onshore wind, and 1 percent hydro”. What this statement fails to consider is that *the battery storage facilities included in these statistics are charged using energy that comes from utility scale solar farms*; this means that *all* of the renewable power that is supplied by CPA’s “45% battery storage” facilities *is actually generated by utility scale solar farms*. Claiming that 45% of CPA’s renewable energy comes from batteries is a gross misrepresentation; batteries do not supply renewable energy, they merely store whatever type of energy that is delivered to them and then release it at a later time. The *only* time that energy flowing from a battery farm is designated as “renewable energy” is when that battery farm is connected to a utility scale solar farm and is thereby charged solely with renewable energy. This *fact* is demonstrated in CPA’s 2022 Integrated Resource Plan (“IRP”) which establishes that only CPA battery facilities which are operated

in conjunction with utility-scale solar farms (known as “hybrids”) are deemed to provide renewable energy; CPA’s standalone battery facilities (which are directly connected to the transmission grid and not to a utility scale solar farm) are *not* deemed to provide renewable energy”¹. Furthermore, because of SB100, all energy deliveries will be carbon free by 2030 regardless of whether the energy is delivered to the end user or to battery storage; therefore, within a few short years, most of the energy that will be used to charge all the batteries that are assumed in CPA’s IRP will come from utility scale solar farms because the long term plan of all utilities (including CPA) is to rely heavily on utility scale solar facilities to meet their power delivery obligations². Additionally, even though the energy resources provided by CPA’s standalone battery storage projects are not deemed to be renewable, they are in fact supplied by utility scale solar farms³; accordingly, the statement in the DCAP which claim that CPA’s utility scale solar projects comprise a relatively small portion of CPA’s renewable electricity mix is patently false. The Acton Town Council would be happy to discuss these matters with staff; in the meantime, we recommend the following correction to page 31 of the DCAP:

~~According to CPA’s 2022 Integrated Resource Plan (a CPUC proceeding to evaluate long term grid resource needs), the projected 2030 renewable electricity mix is approximately 23 percent utility-scale solar, 53 percent battery storage, 21 percent onshore wind, and 2 percent hydro; the projected 2035 renewable electricity mix is 30 percent utility-scale solar, 45 percent battery storage, 24 percent onshore wind, and 1 percent hydro³¹. This demonstrates that utility-scale solar is a relatively small portion of CPA’s renewable energy supply mix through 2035. In addition, because of the large number of 100 percent Green Power customers, CPA expects to meet and exceed the State of California’s 30 million MTCO₂e GHG targets, even in its lowest renewables case. Note that these projections do not include behind-the-meter distributed energy generation like rooftop solar because DER electricity generation is not supplied by CPA.~~

The County’s strategy to shift to a renewables-based electricity supply must ensure equitable access to affordable, local, and reliable energy sources.....

¹ See page 14 of CPA’s 2022 Integrated Resource Plan Summary: https://cleanpoweralliance.org/wp-content/uploads/2022/11/cpasc_narrative_public.pdf.

² As shown on page 19 of CPA’s 2022 Integrated Resource Plan Summary, “Solar Resources” will be the primary renewable energy source for all utilities [Id at 19]. These “solar resources” are NOT distributed resources, they are utility scale solar resources.

³ CPA’s 100 MW “Luna” battery facility is located in a utility scale solar farm in the Antelope Valley and is charged by the utility scale solar farm that surrounds it [<https://www.youtube.com/watch?v=X-MBRhaFN4c>]. CPA’s 50 MW “High Desert” battery facility is located in a utility scale solar farm in the Antelope Valley and is charged by the surrounding utility scale solar farm [<https://cleanpoweralliance.org/2022/03/25/new-solar-plus-storage-clean-energy-facility-now-online/>]. CPA’s 100 MW “Sanborn” battery facility is located in a utility scale solar farm in the Antelope Valley and it is charged by the surrounding utility scale solar farm [<https://cleanpoweralliance.org/wp-content/uploads/2021/11/Sanborn-Release-Final-110821-1.pdf>]. Even CPA’s 75 MW “Desert Sands” project that was just approved will be charged by utility scale resources because it is connected to an SCE transmission substation (note: transmission substations and transmission lines *only* carry power from utility scale generation facilities).

The claim set forth in the DCAP and the DEIR that it is not possible to “quantify the renewable energy potentially facilitated by the 2045 CAP that would be provided by new utility-scale solar projects” is also incorrect. Information provided in CPA’s 2022 IRP, along with accessible data pertaining to CPA’s existing and pending “Power Purchase Agreements” (“PPAs”), provide a clear picture of the “mix” of renewable resources that CPA will use to serve its customers through at least 2035; so, the County can easily assess the portion of future CPA energy deliveries that will come from utility scale solar. The County also knows how much electrical energy is currently being used in unincorporated areas now and how much electrical energy will be used in unincorporated areas by 2035 and by 2045 once all of the CAP’s electrification and decarbonization measures are implemented. By reconciling this information, the County can easily “quantify the renewable energy potentially facilitated by the 2045 CAP that would be provided by new utility-scale solar projects”. Moreover, because the County *can* accurately quantify the renewable energy potentially facilitated by the 2045 CAP that would be provided by new utility-scale solar projects, the EIR that is certified for the DCAP *must* address the cumulative impacts of developing these utility scale solar projects and provide programwide mitigation measures. Such mitigation measures must address dust control (via mulch or gravel) as well as water supply impacts (water is needed to clean all the solar panels), wildlife impacts (hundreds of square miles of habitat will be destroyed and large numbers of migrating birds will be injured and killed when they crash into massive “seas of solar panels because they think they are landing on a lake), heat island impacts of hundreds of square miles of heat trapping surfaces (solar farms create just as much heat in rural urban areas as pavement creates in urban areas), and aesthetic impacts (resulting from the industrialization of hundreds of square miles of desert lands). In other words, the County does not have to know precisely the number utility scale solar farms that will result from CAP implementation in order to broadly assess their effects and develop programwide mitigation measures to address these effects; it does not even need to know precisely where these solar farms are located (although the California Energy Commission has already provided this information – see Attachment 1).

Unfortunately, the DEIR fails to address any of these impacts and it fails to offer any mitigation measures to address these impacts. Instead, it states (incorrectly) that “it would be speculative to quantify the amount of renewable energy that could be facilitated by the Draft 2045 CAP that would be provided by new utility-scale solar projects” [page 3.1-13]. The DEIR then trivializes concerns regarding these impacts by stating that the renewable energy demand that will result from the DCAP “could be met in a variety of additional ways, other than through new utility-scale solar projects”; CPA’s 2022 IRP reveals this statement to be false because it clearly and quantitatively demonstrates that CPA will not meet its renewable energy demand in a “variety of ways”. Specifically, CPA’s IRP shows that *utility scale solar will be **the** primary mechanism that CPA will use to secure 100% renewable energy until at least 2035 and that the “additional ways” CPA will use to achieve its renewable energy targets account for only 20% of CPA’s renewable portfolio.* The DEIR also

disingenuously postulates that “a substantial amount of solar energy generation would likely occur on rooftops within the County”; this prediction is patently false for several reasons. First, rooftop solar only provides a small portion of current electrical demand. Second, because of new “net metering” regulations that became effective in April 2023 and which were approved by the CPUC on behalf of the major utilities, there will be very little new rooftop solar development in future. These facts, combined with information from CPA’s IRP indicating that rooftop solar provides a negligible portion of CPA’s electrical supply, utterly refute the DEIR’s claim a substantial amount of solar energy would likely occur on rooftops within the County. For all these reasons, Section 3.1.3.6 of the DEIR must be entirely revised to provide correct information and properly address the new utility-scale solar projects that will be facilitated by the 2045 CAP.

Among other things, a Program EIR is *supposed to* “provide an occasion for a more exhaustive consideration of effects and alternatives than would be practical in an EIR on an individual action” and the Lead Agency is *supposed to* use a Program EIR to consider “broad policy alternatives and programwide mitigation measures at an early time when the agency has greater flexibility to deal with basic problems or cumulative impacts” [CEQA Guidelines 15168. (b)]. Notably, these characteristics are not found in the DEIR’s discussion of alternatives for achieving the DCAP’s renewable energy targets; instead, the DEIR patronizingly dismisses the concerns raised by the Acton Town Council and others regarding the significant expansion of utility scale solar farms that will result from achieving DCAP targets by declaring that “renewable energy demand could be met in a variety of additional ways, other than through new utility-scale solar projects”.

What the Acton Town Council is looking for in the DEIR is: 1) a broad discussion addressing the alternatives available to implement the DCAP’s renewable energy policies and achieve its renewable energy targets *and a comparison of their associated impacts*; and 2) a list of programwide mitigation measures that will minimize these effects. For instance, the DCAP recognizes that battery storage is critical to achieving its renewable energy objectives and it actively encourages the substantial expansion of battery storage systems by establishing Implementation Action ES3.6 to “Streamline and prioritize permitting for solar and battery storage projects”. Consistent with CEQA Guidelines 15168(b) the DEIR must consider the environmental implications of the battery storage expansion objectives advocated by the DCAP and in particular, address the Implementing Action that “streamlines and prioritizes” battery storage facilities; this is done by first broadly addressing the effects of, and alternatives for, implementing the DCAP’s battery storage expansion objectives and then formulating programwide mitigation measures to reduce these impacts. Specifically, what the DEIR *is supposed to do* is address the fact that there are two alternative strategies for expanding and streamlining battery storage: one alternative (distributed storage) is to distribute stored energy resources throughout the load pocket; this substantially increases community resiliency by delivering stored energy directly to load and it decreases transmission grid congestion because it does not put power on the transmission grid

during peak hours (which, incidentally, provides the added benefit of substantially reduces ratepayer costs). This alternative also minimizes aesthetic impacts and wildfire risks because the battery facilities are distributed over a wide area and not concentrated in a manner that will cause a catastrophic fire event. The other alternative (utility scale storage) concentrates the battery storage units in remote rural locations and requires high voltage transmission lines to deliver the stored electricity to load. This alternative substantially decreases community resiliency, increases grid congestion (and, by extension, ratepayer costs), results in significant aesthetic impacts (because it converts hundreds of acres of rural open space to industrial use), and poses a significant wildfire risk (particularly if such facilities are located in or adjacent to a Very High Fire Hazard Severity Zone). Based on the results of this alternatives analysis, the DEIR *is supposed to* develop programwide mitigation measures that address the environmental effects of the alternatives. For example, the DEIR *is supposed to* incorporate appropriate measures such as limiting the application of Action ES3.6 to only distributed battery storage projects because utility scale storage projects pose substantial risks and provide no community resiliency benefits and therefore should NEVER be streamlined (instead, they must be carefully evaluated through a discretionary review process). The DEIR is also *supposed to* adopt appropriate mitigation measures to reduce the significant effects posed by utility scale storage facilities such as “utility scale storage projects must be located outside of Very High Fire Hazard Severity Zones” and “utility scale storage projects must be located only in remote areas where there are no residences”. Furthermore, and in recognition of the significant community resiliency benefits and energy characteristics provided by distributed storage resources, the DCAP should include policies that prefer distributed storage resources and highly encourage them; it should also discourage utility scale storage unless it is located in remote, unpopulated areas outside VHFHSZs. The latter is particularly important because *environmental documents are supposed to inform and even shape the projects that they consider*; they are not supposed to merely analyze the project in isolation. Correspondingly, LCAP policies should reflect the results and conclusions set forth in the DEIR.

The analysis provided above illustrates the type of “effects and alternatives” that Program EIRs are supposed to consider as they develop “broad policy alternatives and programwide mitigation measures”; unfortunately, the DEIR appears to have “missed the boat” because none of these elements are reflected in the Draft Program EIR. To ensure consistency with CEQA, the DEIR must be revised to properly consider the “effects and alternatives” of key DCAP measures and actions (including, but not limited to, energy storage expansion and renewable resource generation); it must also develop “broad policy alternatives and programwide mitigation measures” to address these effects and alternatives.

Concerns with the DCAP’s “Aspirational Goal”

The Acton Town Council continues to be troubled by the DCAP’s “aspirational” goal. It is noted that the CAP will be incorporated within the County General Plan, and when that

happens, all CAP goals will become “binding” in that they will direct all future land use and development decisions; accordingly, all future County actions must ensure conformance with all CAP goals regardless of whether they are merely “aspirational” goals. The County is obligated to strive for achieving *all* goals expressed in the General Plan; thus, designating a goal as merely “aspirational” is meaningless in a General Plan context. Moreover, the intent of “goals” in a General Plan is to provide a general direction and express a “future end”; goals are not supposed to be quantified or time dependent⁴. In this sense, all General Plan goals are “aspirational”, thus designating one goal as “aspirational” makes little sense. Moreover, Figure ES-2 of the DCAP indicates that achieving “carbon neutrality” by 2045 is impossible, which suggests that the “aspirational goal” set forth in the DCAP cannot be, and will not be, achieved. This too is troubling because General Plan goals are supposed to be meaningful and achievable. Perhaps the DCAP’s 2045 Carbon Neutrality goal is designated as “aspirational” because it cannot be achieved in practice; if so, then this should be clarified in the DCAP.

Modifications to Measure E6 are Greatly Appreciated.

The Acton Town Council is very appreciative of the revisions that were made to the Implementing Actions established by Measure E6 for reducing indoor and outdoor water consumption. It is noted however that Implementing Acton E6.1 asserts that a future water conservation ordinance may include a net zero water requirement for new greenfield development. To address the problems that such a requirement would create if it were imposed in rural communities like Acton, the Acton Town Council herein incorporates by reference the comments provided on page 7 and elsewhere in the letter that we submitted to DRP on July 18, 2022 in response to the DCAP.

The Acton Town Council Remains Very Concerned About the Vagueness of Action E4.1.

Implementing Action E4.1 requires “all buildings to perform energy efficiency retrofits at the point of sale”. As we commented previously, this Implementing Action is very vague and the DCAP provides no information whatsoever regarding the scope and extent of the “energy efficiency retrofits” that are contemplated. The potential costs of this action are in the hundreds of thousands of dollars: Will homeowners have to replace all their windows with triple glazing and replace all their insulation with material that has a better R factor and replace their roof with “cool roof” materials and replace all their appliances with appliances having the highest energy star rating before they can sell their home? This action could mean all of these things, or it could mean none of them. Page xiii of the DCAP does state that “deep retrofits to existing buildings” will be necessary to achieve carbon neutrality; is that what is anticipated by Acton E4.1? And if so, what are “deep retrofits” anyway? Why isn’t there any transparency in this Implementing Action? Page 3-52 of the DCAP states that implementation details for Action E4.1 can be found in “Appendix E”, but

⁴ “General Plan Guidelines” issued by the Office of Planning and Research Page 381 [https://opr.ca.gov/docs/OPR_COMPLETE_7.31.17.pdf].

there are no implementation details in Appendix E. In fact, Appendix E adds to the confusion because it states that the “tracking metrics” for this Action are “Number of homes or businesses participating”; this suggests that property owners will be able to choose whether or not to “participate” in Implementing Action E4.1. This is in direct conflict with the plain language of Implementing Action E4.1 which clearly and unambiguously makes “participation” mandatory because it requires “all buildings to perform energy efficiency retrofits *at the point of sale*”. Equally troubling, Appendix E identifies various funding sources for Implementing Action E4.1; this gives a false impression that the compulsory retrofits mandated by Action E4.1 will be paid for by entities other than the property owner. This is incorrect. Because Implementing Action E4.1 is initiated at the “point of sale”, the funds required to comply with Action E4.1 will come solely from the property owner and not some benevolent government agency or non-profit group. The vagueness of, and the lack of transparency in, Implementing Action E4.1 makes it impossible for the Acton Town Council to provide any meaningful comment on its implications. The DCAP *must* be revised to explain what is meant by “energy efficiency retrofits” and identify the specific “energy efficiency retrofits” that are captured by Implementing Action E4.1. The Acton Town Council is confident that the County can provide this information; after all, the DCAP does estimate the GHG emission reductions that will be achieved through Implementing Action E4.1, thus the County has a reasonable knowledge of the various “energy efficiency retrofits” that are needed to achieve these GHG emission reductions.

Action E4.3 Will Result in Significant Impacts that Must be Addressed in the DCAP EIR.

Implementing Action E4.3 appears to require the County to replace *all* the heat-trapping surfaces it owns and operates with cool or green surfaces; this includes all roads and highways and parking lots and hardscapes. Thousands of miles of roadways are owned and operated by the County and according to Action E4.3, they will all have to be replaced. Moreover, various alternatives (each creating its own unique effects) are available to replace roadways with cool or green surfaces; the DEIR is supposed to broadly address these alternatives and their effects and offer appropriate programwide mitigation measures, but it does not. Instead, the DEIR simply sidesteps all of these requirements by simply declaring that the “The Draft 2045 CAP is a policy-level document that does not include any site-specific designs or Proposals”. All of this violates CEQA. Any Program EIR developed for any “policy document” which make specific actions mandatory must broadly address the effects of, and alternatives for, these specific mandatory actions and present programwide mitigation measures to address them. The DEIR must be revised to comply with this requirement by considering key mandatory actions like E4.3 that are established by the DCAP and which have the potential to result in significant environmental effects.

The Acton Town Council Remains Troubled by “Strategy 9”

Strategy 9 seeks to preserve agricultural lands from residential uses, but in Acton, residential uses and agricultural uses are one in the same, so the application of Strategy 9 in Acton is self-contradictory. Additionally, Strategy 9 improperly conflates “residential

uses” with “urbanized uses”. Residential uses in Acton do not constitute urbanized uses because the Acton CSD ensures that 90% of parcels in Acton remain untouched; the only exception is when a property owner wants to initiate an agricultural or equestrian operation (in which case, the property owner must obtain a conditional use permit). Strategy 9 should be revised to resolve these contradictions in a manner that makes it clear how Strategy 9 will be applied in rural communities like Acton; until this revision is processed, the Acton Town Council is unable to provide meaningful comments on “Strategy 9” and we are unable to support it.

Revisions to Implementation Acton 6.3 are Appreciated

The Acton Town Council greatly appreciates revisions made to Implementation Action 6.3.

Measure T6 Should Include a Prohibition on New Gasoline and Diesel Service Stations.

The purpose of Measure T6 is to “Increase ZEV Market Share and Reduce Gasoline and Diesel Fuel Sales” and according to the description provided by the DCAP, it is supposed to “Set targets for reducing total gasoline and diesel vehicle fuel sales”. However, Measure T6 does not include any Implementing Actions or Performance Objectives that address gasoline or diesel vehicle sales. Furthermore, it does not advocate for any process that addresses gasoline and diesel vehicle sales. One obvious Implementing Action that should be adopted by Measure T6 is to prohibit the development of any new commercial gasoline or diesel fueling stations (i.e., gas stations) in unincorporated Los Angeles County.

The Acton Town Council is Concerned that Measure T5 Will Apply to New Commercial Developments in Acton and Thus Substantially Increase Already Significant Traffic Hazards.

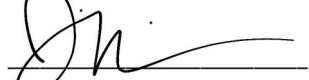
The stated purpose of Measure T5 is to “Limit and Remove Parking Minimums” to “help reduce Vehicle Miles Traveled (“VMT”)”. Measure T5 only identifies parking requirements for new residential development and does not mention new commercial development, but the Acton Town Council presumes that Measure T5 will not be limited to just new residential development and that it will eliminate parking minimums and establish parking maximums for new commercial development. If so, then Measure T5 will substantially exacerbate already existing traffic and safety hazards in the Community of Acton. Specifically, because the County has (unfortunately) already approved many freeway-serving businesses in the vicinity of Crown Valley in Acton, the elimination of parking minimums and the establishment of parking maximums for commercial businesses in Acton will force all the freeway customers who frequent these businesses to illegally park along both sides of Sierra Highway and even in the middle of Sierra Highway. Sierra Highway is a heavily used major highway on which travelers typically drive at speeds exceeding 60 mph; there is also a mapped “truck stop” at this location which causes even more safety problems because of the slow-moving trucks turning onto and off of Sierra Highway. The Department of Public Works has posted “no parking” signs along Sierra Highway, but trucks and cars park there anyway; this makes it very difficult for drivers to see oncoming traffic and it makes turning onto and off of Sierra Highway very dangerous.

If Measure T5 is implemented for new commercial businesses in Acton, then extant traffic and safety hazards will get even worse because it will cause even more freeway travelers to park on Sierra Highway (since they will not have anywhere else to park). Therefore, the Acton Town Council respectfully requests that Measure T5 be revised to clarify that it does not apply to new commercial businesses in rural areas that lack high quality transit.

CONCLUSION

The Acton Town Council regrets that we did not have more time to consider the DCAP and review the enormous Draft Environmental Impact Report; it has been very difficult to process all the information that these documents provide in the 45 day review period that was allocated. These difficulties were compounded by the fact that the County is currently processing many new projects and development proposals in Acton; such developments always require immediate attention so they took up time that we would rather have spent on reviewing the DCAP and DEIR. Nonetheless, we have managed to put together the enclosed comments, and we respectfully request that the County incorporate them into the DCAP and the DEIR. If you have any questions or require additional information, please do not hesitate to contact us at atc@actontowncouncil.org.

Sincerely;



Jeremiah Owen, President
The Acton Town Council

cc: The Honorable Kathryn Barger, 5th District Supervisor [Kathryn@bos.lacounty.gov].
Anish Saraiya, 5th District Planning and Public Works Deputy [ASaraiya@bos.lacounty.gov].
Donna Termeer, 5th District Field Deputy [DTermeer@bos.lacounty.gov].
Chuck Bostwick, 5th District Assistant Field Deputy [CBostwick@bos.lacounty.gov].

ATTACHMENT 3

**Acton Town Council Comment Letter with
Select Attachments Sent to the Los Angeles
County Board of Supervisors Regarding
the Dangers of Battery Electric Storage
Systems Submitted December 11, 2023.**



The Honorable Kathryn Barger
Supervisor, 5th District
The Los Angeles County Board of Supervisors
500 West Temple Street, Room 869
Los Angeles, CA 90012

December 11, 2023

Electronic transmission of 24 pages with 32 attachments to:

Kathryn@bos.lacounty.gov

Submittal to: <https://publiccomment.bos.lacounty.gov/>

Subject: Acton Town Council's Comments on the Appeal of the "Notice of Exemption" Issued for the Hecate Humidor Project.

Reference: Appeal of "Notice of Exemption" Filed August 25, 2023 Re the Humidor Battery Electrical Storage System ("BESS") Project [PRJ2022-002590]. Consent Item Slated for the December 19, 2023 Board of Supervisor's Meeting Re the Appeal of the "Notice of Exemption" Issued by Regional Planning for Hecate BESS Project No. PRJ2022-002590, RPPL2023000687, and RPAP2023000718. Report Filed by the Department of Regional Planning on September 27, 2023 in response to the June 6 Board Action Re Item No. 123-A.

Dear Supervisor Barger;

The Acton Town Council is aware that an Appeal of the "Notice of Exemption" ("NOE") issued for the referenced Humidor transmission BESS Project has been submitted and that the matter will be addressed by the Board of Supervisors on December 19; for the reasons set forth below, we support the Appeal. Additionally, we are very concerned that the Board's consideration of the Appeal may be influenced by the referenced report that was filed by the Department of Regional Planning in response to your June 6 motion which directed staff to identify approved and anticipated BESS projects in unincorporated Los Angeles County and address BESS siting issues "with an aim to avoid overconcentration of BESS projects" (referred to hereafter as the "BESS Report" or "Report"). We have found numerous deficiencies in this Report (including the fact that it substantially understates the size and capacity of approved and anticipated BESS projects in Acton) that render it to be a "less than credible" resource which should not carry significant weight. Accordingly, the Acton Town Council is taking this opportunity to explain our concerns regarding the Report's deficiencies so that it is not relied upon too heavily in deciding what action to take on the NOE.

1.0 SUMMARY OF THE ACTON TOWN COUNCIL COMMENTS

The Acton Town Council supports the NOE appeal for many reasons, not the least of which is that the deflagration-prone Humidor BESS poses significant public safety risks that *cannot be mitigated or avoided or eliminated*; it also poses significant and unavoidable environmental and economic risks to the Community of Acton. Accordingly, the Humidor BESS project is not exempt from the California Environmental Quality Act ("CEQA") and it should not have been ministerially approved without environmental review. We note that, *across the nation, Los Angeles County is uniquely alone in the opinion that all BESS facilities warrant ministerial approval regardless of size or location*; this shocking opinion is shamefully contrary to every fundamental tenet of "good governance". The County's disregard for the safety and environmental risks of BESS facilities is of particular concern to the Community of Acton where numerous large BESS projects are slated for development which, when constructed, will result in more than 2,285 megawatts ("MW") of deflagration-prone BESS facilities in east Acton. To put this generation capacity into perspective, consider that Acton's 2,285 MW of generation capacity is larger than the San Onofre nuclear generating station (which is only 2,254 MW) and the Diablo Canyon nuclear generating station (which is only 2,250 MW). The cumulative environmental and safety impacts of these combined BESS projects cannot be overstated, and they should have been considered before County approved Humidor as the first of these many BESS projects. All of these concerns are set forth in detail below, along with a technical analysis of the BESS Report that was submitted by Regional Planning on September 27 and which: is rife with errors and inaccuracies, presents an erroneous equity factor analysis, and incorrectly asserts that BESS impacts can be mitigated.

2.0 THE ACTON TOWN COUNCIL SUPPORTS THE NOE APPEAL

The Acton Town Council supports the Appeal of the NOE and we concur with the analysis presented in the Appeal that the Humidor BESS is not eligible for a categorical exemption from CEQA because the Humidor BESS (along with the other three BESS slated for development adjacent to Humidor) pose very real and very significant environmental and safety risks *which cannot be mitigated*. These risks are only just now beginning to capture the public's attention and, as the public becomes more aware of the risks, more communities are standing up in opposition; in other words, the Acton Town Council is not alone in opposing dangerous BESS projects and it is important that the Board of Supervisors understands this. Detailed and extensive evidence are set forth below pertaining to the environmental and safety risks that are posed by BESS facilities and which drive increased public opposition.

2.1 The Significant Safety Risks Posed by the Humidor BESS Render the Project Ineligible for Categorical Exemptions from CEQA.

The Humidor BESS is a large, 420 megawatt (MW) project that consists of 220 BESS "container modules" and will provide a minimum of 400 Megawatts ("MW") of full power over a 4-hour duration; its full discharge capacity will thus be more than

1,600 MW-hours ("MWh") or more than 7.6 MWh per container module¹. The project will use a Lithium ("Li") battery technology² which is highly susceptible to spontaneous deflagration due to "thermal runaway"; when such deflagration occurs, it releases a cloud of toxic gases and creates a fire that is impossible to put out with traditional methods. The Acton Town has attempted on numerous occasions to convey to the County our concerns regarding the safety risks that Li BESS pose to our community; however, these attempts have been ineffective and our concerns have been given no consideration. They certainly were not factored into the County's ministerial approval of the Humidor project as evidenced by the County's approval letter [Attachment 2]. To rectify this, we offer the following evidence of the environmental and public safety hazards posed by the Humidor BESS.

2.1.1 Deflagration in Utility Scale Li Battery Systems Release Toxic Gases that Endanger Surrounding Residents and Businesses.

When thermal runaway occurs in an Li BESS, substantial quantities of highly toxic gas including Hydrogen Fluoride (HF) and Hydrogen Chloride (HCL) are released into the atmosphere and are carried to surrounding residences and businesses; many such events have occurred and forced residents to either evacuate or "shelter in place". Consider the following:

- A study published by *Nature* reports that 20 - 200 mg of HF are released per watt-hour of battery discharge capacity in an Li+ battery [Attachment 3]; this is equivalent to 20-200 kilograms of HF per MWh. Reconciling this value with the 7.6 MWh capacity of each container module yields an HF release rate of 152-1,520 kg (334-3344 pounds) *per container module*³! According to the Environmental Protection Agency's air dispersion approximation model (known as the "Areal Locations of Hazardous Atmospheres"), a release of 152 kg in Acton would create a toxic HF cloud nearly one-half mile downwind of the facility and a

¹ According to the Large Generator Interconnection Agreement ("LGIA") executed by CAISO, Hecate, and Southern California Edison, the Humidor Project consists of 120 Power Electronics FP3000 inverters with a rated output of 3.5 MW @ $\leq 25^{\circ}\text{C}$ for a total capacity of 420 MW [Attachment 1]; because this output capacity will last a minimum of 4 hours, the total output capacity is 1,680 MW hours (420 MW x 4 hours = 1,680 MWh). Additionally, the Humidor Project site plan approved by Regional Planning shows the project involves 220 individual "container modules" that consist of one inverter and a "double block" of batteries; therefore, each "container module" has an output capacity of 7.6 MWh (1,680 MWh \div 220 = 7.6 MWh).

² At the community meeting that Hecate convened on May 23, 2023, the display materials stated that the Humidor project would use Lithium ion batteries ("Li+"). However, at the presentation that Hecate gave to the Community of Acton on January 9, 2023, Hecate's technical representatives stated that the Humidor BESS project would use Lithium Iron Phosphate ("LiFePO₄" or "LiFPO") batteries. Both are Lithium (or "Li") technologies.

³ One "Container Module" consists of an inverter and a double block of batteries.

release of 1,520 kg creates a toxic HF cloud more than 2 miles downwind of the facility [Attachment 4]. In other words, the deflagration of one container module at the Humidor BESS facility can result in an HF "cloud" that would be deadly to anyone who is outdoors and downwind of the facility within a mile and perhaps as far as 2 miles away; under such circumstances, "sheltering in place" provides dubious protection because there is no way to timely advise people that they must retreat indoors before the toxic cloud arrives. Note: these results only consider the effects of HF release from a single battery module; circumstances become even more grave when multiple container modules explode. Additionally, these results do not consider the combined effects of HF plus the other toxic gasses released when thermal runaway occurs.

- Science Direct published a study conducted by the "State Key Laboratory of Fire Science" in China on the thermal and toxic hazards of BESS LiFPO₄ facilities which showed that thermal runaway generates significant quantities of toxic gasses including Sulfur dioxide ("SO₂"), HF, and HCl [Attachment 5].
- A study by the National Institute for Occupational Safety and Health into the toxicity of aerosols produced by Li⁺ and LiFPO₄ battery explosions noted the emissions of highly toxic compounds resulting from such events which "underscored the need for the selection of low-toxicity battery materials due to potential exposures in the event of battery thermal runaway" [Attachment 6].
- A study by the Technical Research Institute of Sweden demonstrated that significant quantities of HF are released when Li⁺ batteries experience thermal runaway: just a single Li⁺ system on an electric vehicle will release more than a kilogram (2.2 pounds) of HF! Equally important, the study found that using water to "put out" an Li⁺ battery can significantly "shift" the chemistry to produce even more HF from POF₃ (Phosphoral Fluoride - noting that the toxicity of POF₃ is not known) [Attachment 7].

2.1.2 The Deflagration Risks Posed by BESS are Significant.

There is abundant evidence demonstrating the susceptibility of Li batteries to deflagration from thermal runaway. For instance, consider the following:

- A study conducted by physicists at Oxford University and the University of Kent demonstrated that overheating in a single faulty cell of an Li⁺ battery results in a thermal runaway event that propagates to neighbor cells and creates a substantial energy release (aka explosion). The study pointed out that, once initiated, thermal runaway is self-sustaining because it requires no oxygen to propagate and it is uncontrollable. The study assessed engineering standards relating to Li⁺ BESS and concluded that they are inadequate to address the known hazard of thermal runaway [Attachment 8].

- A report published by the International Code Council (which provides the codes that underly the State and County Fire Code) affirmed that BESS pose very real explosion risks and it offered no mitigation measures other than to "vent" the affected BESS unit (which of course releases toxic gas into the surrounding neighborhood). The report pointed out that "clean agent suppression methods" which have been used to mitigate BESS fires is "problematic" and that methods to "extinguish the visible flame" are all effectively useless. Ironically, the report downplays the risks posed by BESS fires by stating that they merely need to be "managed" however it fails to offer any suggestions on how to "manage" BESS fires other than to let them burn out (which can take days). In other words, *the International Code Council offers no concrete solution to prevent BESS explosions or mitigate BESS fire risks*; nonetheless they openly acknowledge that BESS facilities pose a higher risk of explosion and fire [ATTACHMENT 9].
- A publication by the National Fire Protection Association outlines 5 different failure modes that can result in BESS deflagration events [ATTACHMENT 10].
- BESS deflagration risks are magnified in Acton because the entire community is located in a "Very High Fire Hazard Severity Zone" ("VHFHSZ") meaning that, under "fire weather" conditions, a deflagration event at Humidor will quickly turn into a conflagration event that envelopes the entire community.
- The fact that BESS fires cannot be extinguished or "put out" is demonstrated in the figure below which shows an electric vehicle that is completely submerged in water and still continues to burn.



- The fact that BESS fires can be large and can result in a conflagration is demonstrated in the figure below.



2.2 The Humidor BESS Will Cause Significantly Adverse Environmental Impacts in Acton.

The Humidor BESS poses not only a significant health and safety risk to the Community of Acton; it also poses significant environmental risks. For instance, should a BESS fire be ignited, copious quantities of water will be used to limit the number of container modules affected in the hope of preventing deflagration spread. The project is located adjacent to, and upgradient of, the headwaters of the Santa Clara River (which is the last unchannelized "natural" river in the County); all waters discharged from Humidor flow directly into the Santa Clara River. Therefore, the millions of gallons of water used to prevent deflagration spread (which will be contaminated with heavy metals, hydrofluoric acid, hydrochloric acid, and other toxic constituents) will be discharged to the Santa Clara River. The County did not consider these impacts before approving Humidor BESS. Moreover, the Santa Clara River is designated as a critical natural resource that must be protected and the County has adopted a precisely mapped "Santa Clara River Significant Ecological Area" for the express purpose of protecting the Santa Clara River. Accordingly, the Humidor BESS is ineligible for a categorical exemption from CEQA through operation of CEQA Guidelines Section 15300.2 which states that a categorical exemption applies "except where the project may impact on an environmental resource of hazardous or critical concern where designated, precisely mapped, and officially adopted pursuant to law by federal, state, or local agencies".

It is further noted that the Community of Acton is located in the high desert area of Los Angeles County and it only has a limited amount of water resources. According to statistics provided by the local Waterworks District 37 ("WWD37"), Acton customers use 2,000-acre feet per year which is an average of 5.5-acre feet per day (or 1.8 million gallons per day); half the water comes from the State Water Project and half comes from local groundwater. It is known with certainty that millions of gallons of water will be used to put out BESS fires at the Humidor project; for instance, to fight the Carnegie Li BESS fire (which involved just one BESS container module), water was poured onto the BESS for 59 hours using two high volume pumps⁴. High volume pumps disperse water at 1,000 gallons per minute which means that putting out a single-module BESS fire requires at least 2.9 million gallons per day⁵ which is *60% more than all WWD 37 customers use on an average day!* The Acton Town Council understands that the project is served by a 12-inch water main (which should be sufficient to serve 2,000 gallons per minute); however, the capacity of the local infrastructure that supplies this water main is limited, so pulling 2,000 gallons per minute from WWD37 for days on end will overwhelm the local water system and compromise water service to the residents of Acton *for days*. The County never considered these impacts before approving the Humidor BESS.

BESS facilities are also significant sources of noise and vibration; they can generate cumulative source noise levels exceeding 97 dBA [see resources provided in Attachment 12]. Electric facility noise impacts present as a constant background 'hum' that is a substantial irritant but often goes unnoticed by people until they are away from it. A large BESS facility like Humidor is a significant noise source and its impacts must be addressed

The Humidor BESS will also result in socioeconomic impacts in Acton. Specifically, Acton residents (like other residents in VHFHSZs) are struggling to obtain fire insurance for their homes [Attachment 13] and many Acton residents have actually been dropped by their insurance carriers. Once the deflagration-prone Humidor Project is constructed, insurance rates in Acton will be further increased and even more Acton residents will lose their homeowner insurance coverage. CEQA Guidelines Section 15064(e) directs the County as lead agency to consider a physical change in the environment to be significant if the physical change causes adverse economic effects on people; these are precisely the circumstances presented by the Humidor BESS which will cause people to lose their homeowners insurance and, by extension, their homes.

⁴ The Significant Incident Report states "Defensive firefighting continued on site for a total of 59 hours, involving predominantly a 2-pump attendance" [page 8]; the report also explains that 2 "High Volume Pumps" were utilized (they are referred to as "Monitors") [page 15]. The Significant Incident Report, Fire Investigation Report, and others are in Attachment 11.

⁵ 1,000 gallons/minute per pump x 2 pumps x 60 minutes/hour x 24 hours/day = 2.88 million gallons per day.

2.3 The Cumulative Impact of the Large BESS Facilities Slated for Acton is Significant and Warrants Environmental Review Under CEQA.

There is no question that Li BESS facilities pose very real fire and explosion risks [Attachment 14]; in fact, the Electric Power Research Institute has developed an entire database to keep track of all the BESS deflagration events that have occurred [Attachment 15]. Because BESS explosions start with a thermal runaway event in a single Li battery cell, it is axiomatic that the probability of a thermal runaway event occurring in a community increases as the number of Li battery facilities in the community increase. In other words, the communities that have the highest concentration of Li battery storage facilities also have the highest safety risks. These risks are substantially magnified when the BESS facilities are located in wildfire prone areas like Acton because a deflagration event can quickly turn into a conflagration that consumes the community.

Thus far, four large Li BESS projects in close proximity to each other have been slated for development in East Acton: the 420 MW Humidor project (which has already been approved), the 1,415 MW Angeleno Project⁶ (pending), the >250 MW Maathai Project⁷ (pending), and the >200 MW Flea Flicker Project⁸ (pending). Together, these BESS projects have a generation capacity of 2,285 MW which is larger than any generation facility in California; for instance, Diablo Canyon is only 2,250 MW and San Onofre is only 2,254 MW. The Li BESS projects slated for development in Acton will power more than 1,750,000⁹ homes and serve millions. No community on the face of the earth is slated to have the amount of Li BESS facilities that are proposed in Acton, and the cumulative environmental, health, safety, and wildfire risks that these BESS pose to the Community are enormous and cannot be overstated. Yet, and incredibly, the County failed to consider any of this before ministerially approving the first of these BESS facilities (Humidor) without environmental review by declaring it to be categorically exempt from CEQA. This constitutes a gross violation of CEQA because all categorical exemptions are inapplicable when the cumulative impact of successive projects of the same type in the same place over time is significant [CEQA Guidelines 15300.2(b)].

⁶ Appendix C of the Large Generator Interconnection Agreement executed by CAISO, Avantus, and SCE states that the Angeleno Project consists of 337 Ninja5 4200 BESS inverters with a rated output of 4.2 MW $\leq 25^{\circ}\text{C}$ for a total capacity of 1,415.4 MW. Attachment 16.

⁷ Maathai is listed in the CAISO Queue at position 2091 [Attachment 17]; however, actual capacity will be higher than what CAISO reports because BESS are oversized by at least 25%.

⁸ Flea Flicker is listed in the CAISO Queue at position 2110 [Attachment 17]; however, actual capacity will be higher than what CAISO reports because BESS are oversized by at least 25%.

⁹ One MW powers more than 750 homes.

<https://www.aiso.com/about/Pages/OurBusiness/Understanding-electricity.aspx>

¹⁰ California has 2.91 individuals per household.

<https://data.census.gov/all?q=California+Families+and+Living+Arrangements>.

2.4 The NOE Appeal Must be Upheld Because Regional Planning's Ministerial Approval of the Humidor BESS Project was Improper.

Section 15268(c) of the CEQA Guidelines asserts that a public agency should make determinations of what is "ministerial" a part of its implementing regulations and that "Each public agency should, in its implementing regulations or ordinances, provide an identification or itemization of its projects and actions which are deemed ministerial under the applicable laws and ordinances". Regional Planning's "implementing regulations" include Title 22 of the County Code, and the Acton Town Council observes that Title 22 comports with Section 15268 because it does indeed identify "projects and actions which are deemed ministerial". The problem is, Regional Planning did not follow the "implementing regulations" in Title 22 when it determined that the Humidor BESS was a ministerial project; in fact, Regional Planning made up code provisions out of whole cloth to support its determination that Humidor is a ministerial project. For instance, (and as explained on pages 2-3 of the Appeal), Regional Planning claims that it is authorized by Title 22 to ministerially approve a use in the M1 zone that is not permitted under the Code by finding that it is similar to a use that is ministerially permitted in the M1 zone *when in fact no such authorization exists in Title 22*. Indeed, Title 22 expressly limits Regional Planning's use of such "similarity determinations" to only M1.5 and M2 zones; similarity determinations are expressly *not allowed* to be used to approve uses in the M1 zone. Accordingly, Regional Planning's ministerial approval of the Humidor BESS was improper and the NOE Appeal must be upheld.

Section 15002(i) of the CEQA Guidelines establishes that CEQA applies when an agency uses its judgment in deciding whether and how to approve a project. There is no question that Regional Planning used extensive judgement in deciding how to approve the Humidor BESS project; this fact is demonstrated by simply reviewing Regional Planning's "Interpretation No. 2021-03" [Attachment 18] and the Humidor approval letter [Attachment 2] which enumerate all the discretionary determinations that went into Regional Planning's decision on how Humidor would be approved. Accordingly, CEQA applies to the Humidor project and the NOE Appeal must be upheld.

Section 15002(i) also establishes that "Whether an agency has discretionary or ministerial controls over a project depends on the authority granted by the law providing the controls over the activity." As explained above, the County Code *does not* grant Regional Planning the authority to ministerially approve a use that is not permitted in the "light industrial" M1 zone by declaring that it is "similar" to a use that is permitted in the M1 zone; Accordingly, Section 15002(i) establishes that Regional Planning never had "ministerial control" over the Humidor BESS project and by extension, Regional Planning's ministerial approval of the Humidor BESS was improper. Therefore, the NOE Appeal must be upheld.

Finally, Section 15002(i) asserts that "Where the law requires a governmental agency to act on a project in a set way without allowing the agency to use its own

judgment, the project is called 'ministerial,' and CEQA does not apply"; application of this CEQA provision to the facts of the Humidor project further demonstrates that Regional Planning's ministerial approval of the Humidor BESS was improper. Specifically, Regional Planning relied heavily on "its own judgement" to act on the Humidor BESS project; in fact, the contorted assessment which led to Regional Planning's (erroneous) conclusion that the Humidor BESS is a "distribution substation" is so full of conjecture and uncorroborated claims that it is almost entirely speculative "judgement" [Attachments 2 and 18]. Moreover, Regional Planning did not proceed "in the set way" required by Title 22 when it approved the Humidor BESS because if it had followed the "set way" required by Title 22, Regional Planning would have realized that it was not authorized to ministerially approve the Humidor BESS in the M1 zone; therefore, Regional Planning would never have issued the NOE that is now under appeal. In short, Section 15002(i) renders Regional Planning's ministerial approval of the Humidor Project entirely improper; therefore, the Appeal must be upheld.

2.5 The Humidor BESS is inconsistent with Adopted County Plans

The Acton Town Council observes that the Humidor BESS project is inconsistent with adopted County plans. For instance, the County General Plan Land Use Element establishes Policy LU 3.2 to discourage "developments in areas with high environmental resources and/or severe safety hazards" (which includes development in VHFHSZs) and it establishes Policy LU 3.1 to encourage "the protection and conservation of areas with natural resources, and SEAs". Humidor thwarts both these policies by placing deflagration prone BESS facilities in a VHFHZ which threatens both residents and the Santa Clara River SEA. Furthermore, land use policy LU 5.9 preserves "key industrially designated land for intensive, employment-based uses"; Humidor thwarts this policy because it takes large industrially zoned parcels and devotes them to a "non-employment" use because Humidor BESS will operate unmanned. Policies LU 6.2 and LU 6.2 establish that only land uses which are "compatible with the natural environment and landscape" and are "low density and low intensity" and are "compatible with rural community character" should be established in rural communities like Acton; Humidor displays none of these characteristics.

The Humidor Project is also inconsistent with the Antelope Valley Area Plan ("AV Plan"). For instance, the AV Plan Land Use Element establishes that industrial lands in rural town areas are designated as "appropriate locations for future commercial and industrial uses to serve local residents" (page LU-7); the Humidor project does not serve local residents and instead of providing community benefits, it exposes the community to significant hazard risks. For Acton in particular, the AV Plan establishes that the intent of industrially zoned properties is to "acknowledge existing uses and to provide additional local employment opportunities"; the Humidor BESS project utterly contravenes this intent because it eliminates an existing use (a paintball facility that is used by the community and provides local employment opportunities) and replaces it with a use that provides no employment opportunities and poses considerable

environmental risk to the environment and safety risks to Acton residents. When the Board adopted the General plan and the AV Plan, it was with the express intent of relying on the policies they contain to guide development in the County; the Board should heed these policies and rescind the approval of the Humidor BESS by upholding the Appeal and revoking the NOE.

2.6 Safer and More Feasible Alternative Locations are Available for the Humidor BESS Project.

There is no need to place the Humidor BESS project in the rural residential community of Acton in order to connect it to the Vincent substation; in fact, Humidor could be placed in any number of uninhabited areas that are well outside of any fire hazard severity zones and still deliver power to Vincent. This can be achieved by interconnecting Humidor with one of the nine SCE transmission lines that terminate at Vincent substation from the north and east. The only reason for locating the Humidor BESS in Acton is expediency; that is not a good enough reason to endanger our community, our residents, and our environment.

2.7 Communities Across the Country Are Rejecting Li BESS Projects Because of Their Associated Safety, Environmental, and Fire Risks.

The Acton Town Council notes that we are not alone in our opposition to the placement of large, utility scale transmission Li BESS facilities in our community; across the Country, residents and elected officials are resoundingly opposing the placement of such facilities in their communities because of the public safety and hazard risks that they pose [Attachment 19]. What is astounding is that these communities and the decisionmakers whom they elect have actually taken the time to consider the significantly adverse health, safety, and environmental risks that utility-scale Li BESS facilities pose and they realized that, according to science, *these risks and impacts cannot be mitigated or eliminated or avoided or prevented*. In contrast, County "rubberstamped" the 420 MW transmission BESS project without any consideration of its environmental, health, and safety risks; in fact, the County declared that the project itself did not even warrant environmental review! The Acton Town Council cannot find one single instance where *any* government agency across the country has *ever* ministerially approved a utility-scale 420 MW transmission BESS facility in a residential community without *any* environmental review. Los Angeles County is *unique and entirely alone* in the opinion that utility-scale transmission BESS can be ministerially approved regardless of size or location; this shocking opinion is shamefully contrary to every tenet of "good governance" and it is certainly contrary to CEQA.

3.0 CONCLUSIONS REGARDING THE NOE.

For all the reasons set forth above, the Acton Town Council urges you and the Board as a whole to uphold the Appeal and remand the Humidor Project back to the Department of Regional Planning for a comprehensive and robust CEQA review.

4.0 DEFICIENCIES IN THE ACCURACY AND EFFICACY OF THE BESS REPORT RENDER IT UNRELIABLE AND INAPPROPRIATE FOR THE DEVELOPMENT OF FUTURE BESS POLICIES.

The Acton Town Council has a number of substantial concerns with the BESS Report (Attachment 20) that was prepared in response to your motion adopted by the Board on June 6 (referred to as the "Motion" and provided in Attachment 21). A principal aim of the motion was to *avoid* the overconcentration of BESS projects within communities (page 3) and to address this, the Motion directed staff to identify locations where BESS facilities have been approved and where there are "anticipated or known BESS pending applications". Unfortunately, the BESS Report does not accurately identify either the location or the capacity of all approved and "anticipated pending" BESS facilities. In fact, Tables 1 and 2 materially misrepresent the location of many BESS facilities (which are vaguely reported to be in the "Antelope Valley" when in fact they are located within Acton and Antelope Acres); they also substantially underreport the size and capacity of both approved BESS projects and anticipated BESS projects. Equally troubling, these tables list battery projects that are not even BESS facilities and they identify many BESS projects that are located in incorporated cities and will never be considered by the County. As a result of these inaccuracies, Tables 1 and 2 in the Report present a highly skewed and inaccurate "BESS picture" and they show that BESS overconcentration is not a problem when in fact it is a very serious problem (particularly in Acton and Antelope Acres); details in the deficiencies noted in these tables are provided below.

The motion also sought to address the "needs of our communities" while still "contributing to the realization of the state's vision for electrification", so it directed staff to provide an "analysis of key equity indicators" in areas where BESS projects are approved and pending; however, the "equity analysis" provided in Table 3 of the Report is skewed and erroneous because it is based on the inaccurate data presented in Tables 1 and 2 and because it ignores numerous anticipated BESS projects. Worse yet, Table 3 entirely sidesteps "equity" issues related to BESS overconcentration because it gives equal weight to all BESS projects and ignores their size and scope. Equally troubling, the data presented in Table 3 does not accurately reflect community needs or conditions because it does not consider the *communities* where approved and anticipated BESS are located; instead, it considers only the "census block group" where certain BESS projects are located. Census block groups are often arbitrarily drawn and do not accurately reflect the circumstances within the community "as a whole". For example, and as explained in more detail below, Table 3 reports that the median income of Florence Firestone is \$82,583 when in fact the actual median income in the Community of Florence Firestone is \$53,478 (according to 2020 census data).

Perhaps the greatest concern that the Acton Town Council has with the BESS Report is the "recommendations" that it offers; specifically, we are concerned that these recommendations fail to address the most important objective expressed in the Motion:

namely, to *AVOID* overconcentration of BESS facilities within communities. In addition to ignoring "BESS overconcentration" concerns, the recommendations that are set forth in the Report will, if implemented, result in significant BESS overconcentration in some communities because they advocate for ministerial approval for nearly all BESS facilities; the only exception is "primary use" BESS facilities that are deemed to be "large" (though the term "large" is neither defined nor clarified).

As explained in detail below, the BESS Report is rife with errors, it is inaccurate, it fails to properly address equity, its recommendations will result in BESS overconcentration, and it fails to achieve the primary aim of the motion; namely to *AVOID* BESS overconcentration.

4.1 Specific Errors and Deficiencies Noted in Tables 1 and 2 of the Report.

Tables 1 and 2 of the Report are supposed to identify all approved and anticipated BESS projects in unincorporated Los Angeles County; it is important that the data presented in Tables 1 and 2 are accurate because they provide the foundation for all of the Report's analyses and recommendations. However, numerous errors are noted in these tables:

- Tables 1 and 2 substantially misrepresent the size and capacity of large transmission BESS projects proposed in Acton including the Humidor BESS (which is actually 420 MW and not 200 MW) and the Angeleno BESS (which is actually 1,415 MW and not 1,150 MW). This deficiency is troubling, particularly in light of the fact that the Motion expressly sought to address BESS overconcentration within communities and it explicitly called out Acton; if the Board is not given proper information about the scope and scale of the BESS projects slated for development in Acton, then the Board cannot make informed or well-reasoned decisions regarding BESS project siting and approval policies and whether to uphold the Appeal of the Humidor NOE.
- Tables 1 and 2 improperly jumble together all battery projects (including "behind the meter" projects, distribution projects, subtransmission projects, and transmission projects) and merely classify them as either "primary use" (i.e. a "stand-alone" battery) or "accessory use" (i.e. a "hybrid" or other type of battery that is operated in conjunction with a use established on the property). There are numerous problems with this classification system not the least of which is that it fails to distinguish between distribution BESS (small facilities that serve local electrical needs and therefore benefit the communities in which they are located) and transmission BESS (large facilities and are connected to the transmission grid and therefore do not benefit the community in which they are located). Another problem with this classification system is that it fails to recognize that some of the battery projects identified in these tables *are not even BESS*. For instance, the County's description of the approved Magic Mountain battery facility indicates that it is a "behind the meter" battery ("BTM") and from the limited information available on the

Broadway facility, it also appears to be a BTM battery. BTM batteries are used to serve onsite load or for "peak shaving"; they do not inject power into the distribution system or the transmission grid¹¹ and thus are not BESS. BTM batteries are akin to residential batteries that serve on-site demand, not distribution or grid needs. BTM batteries are not BESS and they should not have been included in Tables 1 or 2.

- Table 1 identifies at least one BESS that will not be constructed and was not approved by the County. Specifically, and according to the County-approved site plan for the Estrella Project, no battery equipment was approved and no battery equipment will be installed [Attachment 22]. Therefore, the non-BESS Estrella project should not have been identified in Table 1.
- Tables 1 and 2 do not properly identify the communities in which the BESS projects are actually located; for instance, the El Campo BESS is located in Antelope Acres and so are all the "High Valley" BESS facilities. Similarly (and as we have told Regional Planning many times), the Maathai BESS and the Fleaflicker BESS are both located in Acton; yet, Table 2 vaguely identifies their location as being in "Antelope Valley". The County is aware of the errors reflected in these tables because the Report accurately maps the location of these BESS facilities in Section "1C"; however, and for reasons that are not clear, correct locations are not properly reported in Tables 1 and 2. This is very troubling: a primary aim of your Motion was to address BESS overconcentration; however, the Board cannot address BESS overconcentration concerns if it does not have accurate information regarding where BESS projects are concentrated. The errors in Tables 1 and 2 prevent the Board from making informed and well-reasoned decisions regarding what should be included in a future BESS ordinance; they also prevent the Board from properly considering BESS overconcentration concerns in unincorporated communities.
- Table 2 reports multiple "High Valley" projects when in fact it is one single project by one single developer at multiple locations; it is being developed contemporaneously in conjunction with the "Rangeland" project (Attachment 23). Therefore, Table 2 should have indicated "High Valley" is a single project and not 5 separate projects. Furthermore, the CAISO Queue reports that the project will have at least 100 MW of battery storage (not 80 MW) and that it will be connected at 230 kV rather than the 66 kV connection that the developer reported to the County (Attachment 17).

¹¹ The Report defines "BESS" as a battery facility that is connected to "the larger network for distributive purposes" and "receives energy from the grid to store within its on-site batteries and returns energy to the grid when needed". For a facility to be considered a BESS, it must put power into the distribution system or transmission grid. "Behind the meter batteries" ("BTMBs") store energy for onsite use and do not inject power onto a grid; that is why they are placed "behind" the electric meter that serves their location. BTMBs are *not* BESS.

- Table 2 identifies BESS facilities that are located in incorporated cities and therefore do not fall under County jurisdiction; for example, the Quercus transmission BESS is located in the City of Santa Clarita, the Coral Reef transmission BESS is located in the City of Hawthorne, the Marici transmission BESS is located in the City of Industry, and the Del Sur subtransmission BESS is located in the City of Lancaster. It may be reasonable to consider transmission BESS facilities in incorporated cities when they are located near an unincorporated community because they would arguably contribute to "overconcentration" within that community; however, the Report's failure to even address the issue of overconcentration renders the inclusion of incorporated BESS facilities in Table 2 unwarranted and unjustified.

Significant revisions to Table 1 and Table 2 are required to address these concerns; the Acton Town Council recommends that Tables 1 and 2 of the Report be revised as set forth below.

Corrected Table 1

Project Name	Project Type	Project Location	Capacity (MW)
Cald	Stand Alone/Subtransmission ^a (66 kV)	Florence-Firestone	100
Homestead	Stand Alone/Distribution (16 kV)	Castaic	15
Humidor	Stand Alone/Transmission (230 kV)	Acton	420
El Campo	Hybrid/Subtransmission ^a (66 kV)	Antelope Acres	108
Alpine ^b	Hybrid/Subtransmission ^a (66 kV)	NW Antelope Valley	80

^a These projects deliver power to subtransmission lines; they are not controlled by CAISO and are not identified in the CAISO Queue.

^b The 80 MW Alpine Solar Project was withdrawn from the CAISO Queue on December 20, 2022 (position 2073); therefore, Alpine delivers power to subtransmission lines that are not controlled by CAISO.

Corrected Table 2:

Project Name	Project Type	Project Location	Capacity (MW)
Ranger	Stand Alone/Subtransmission (66 kV)	Castaic	60
Rangeland/High Valley	Hybrid/Transmission (230 kV)	Antelope Acres	> 100 ^a
Angeleno	Stand Alone/Transmission (500 kV)	Acton	1,415
Maathai	Stand Alone/Transmission (230 kV)	Acton	>250 ^b
FleaFlicker	Stand Alone/Transmission (230 kV)	Acton	>200 ^c
Juniper	Hybrid/Transmission (230 kV)	Pearblossom	>150 ^d
Simon	Stand Alone/Transmission (230 kV)	Ladera Heights	>400 ^e

^a CAISO Queue 2080. Actual capacity is higher than CAISO value; BESS are oversized by at least 25%.

^b CAISO Queue 2091. Actual capacity is higher than CAISO value; BESS are oversized by at least 25%.

^c CAISO Queue 2110. Actual capacity is higher than CAISO value; BESS are oversized by at least 25%.

^d CAISO Queue 2061. Actual capacity is higher than CAISO value; BESS are oversized by at least 25%.

^e CAISO Queue 2115. Actual capacity is higher than CAISO value; BESS are oversized by at least 25%.

4.2 Errors and Deficiencies Noted in Table 3 and the Report's "Equity Indicator" Analysis.

The Acton Town Council has noted several deficiencies in Table 3 and the Report's "Equity Indicator" Analysis.

4.2.1 Table 3 ignores anticipated "pending" BESS projects.

Table 3 fails to identify the 1,415 MW Angeleno BESS as a "pending" project in Acton even though the developer (Avantus) has already presented the project to the community and despite the fact that we have discussed the project at length with Regional Planning staff and even provided staff with a copy of the Developer's sitemap showing precisely where the Angeleno Project will be located in (Attachment 24). The developer has informed the community that it has entered into purchase agreements for all the parcels identified in the sitemap and will purchase the land as soon as County has approved the project. Table 3 also ignores the Fleaflicker and Maathai projects even though the developer (Hecate) stated categorically at a community meeting in Acton that both these projects are slated for development in Acton and will be connected by the same 230 kV transmission line that will interconnect the Humidor Project. There is no question that Angeleno, Fleaflicker, and Maathai are all "anticipated" BESS projects and there is also no question that the motion directed staff to address both "anticipated" and "pending" BESS projects; therefore, all three of these projects should have been included in Table 3 and factored into the Regional Planning's "equity" analysis.

4.2.2 Table 3 Entirely Sidesteps "Equity" Issues Related to BESS Overconcentration.

Table 3 merely lists (some) pending BESS projects without regard for their size and scope and thus it gives equal weight to all BESS projects; this skews the "BESS Equity" perspective and completely sidesteps the issue of BESS overconcentration. For example, Table 3 identifies two BESS projects in the Community of Castaic and only one BESS project in the community of Acton; this suggests that Castaic is more heavily burdened by BESS facilities than Acton and that Acton is not carrying its "fair share" of BESS risks. Nothing could be further from the truth. As discussed above, BESS risks increase with increased BESS capacity; therefore, Acton is far more heavily burdened by BESS facilities than Castaic because the single Acton BESS project identified in Table 3 is enormous (it has a 420 MW capacity) whereas the two Castaic BESS facilities in Castaic are much smaller (they have a combined capacity of 75 MW). To compound this error, the Angeleno, Fleaflicker, and Maathai BESS projects are all omitted from Table 3 even though these projects are clearly "anticipated" in the Community of Acton.

Equally problematic is the fact that Table 3 does not even mention the Community of Antelope Acres which is burdened by two BESS projects (El Campo and High Valley) that have a combined discharge capacity of more than 200 MW. Regional Planning's classification of El Campo and High Valley as "accessory" BESS is irrelevant; it is a distinction without a difference because the potency of BESS risks depends on size and not whether it the BESS is an "accessory" or "primary" use. Accordingly, the 108 MW

"secondary use" El Campo BESS poses a greater risk than the 15 MW "primary use" Homestead BESS because it is larger and more likely to experience thermal runaway. Therefore, Table 3 should have included Antelope Acres as a community where potential BESS overconcentration exists and it should have identified both El Campo and High Valley as projects that are in Antelope Acres.

4.2.3 The Report Fails to Accurately Assess BESS Equity.

To address community concerns regarding BESS projects, the Motion directed staff to analyze equity indicators in BESS project areas; Regional Planning's equity assessment is based on the faulty data presented in Table 3 which erroneously omits both "accessory" BESS and "anticipated" BESS (as indicated above). Additionally, instead of addressing equity on a community basis, Table 3 merely reports "census block data" where some (but not all) BESS projects are anticipated; this renders most of the "equity data" in Table 3 to be inaccurate and unsupported. For instance, Table 3 reports that the median income in Castaic is \$100,568 and that people of color make up 85.9% of Castaic residents; the Report asserts that this information came from the County's "Equity Indicator Tool" and it provides two printouts of two different "census block groups" labeled "2B" and "2C". However, most of the area "captured" by the information provided in "2B" is not Castaic and the area "captured" by "2C" is only a small part of Castaic; furthermore, the \$100,568 income cannot be corroborated anywhere and it is not found in either "2B" or "2C". Additionally, the 85.9% "people of color" statistic comes from "2C" and is thus not representative because it pertains to only a small portion of the Community of Castaic. More accurate "Equity Indicators" that reflect the *actual community of Castaic* are derivable from data pertaining to unincorporated Castaic as a "Census Designated Places" (or "CDP"). For example, 2020 census data for the Castaic CDP reveals the median income to be \$127,344 and that 61% of the population consists of "people of color" [Attachment 25].

Similar problems are noted in the data pertaining to Florence Firestone; specifically, Table 3 reports that the median income of Florence Firestone is \$82,583. However, and as demonstrated in the figure presented in Section "2A" of the Report, only a very small portion of Florence Firestone earns this income level. More accurate data is obtained from 2020 Census data for the Firestone CDP which reports that the actual median income is only \$53,478 [Attachment 26]. Significant revisions to Table 3 are required to address these concerns; a corrected version is set forth below.

4.3 The Report Trivializes BESS Risks Posed to Rural Communities and Shows an Appalling Lack of Regard for Public Safety.

The Report states that "the siting of a BESS project in more dense communities, like Florence-Firestone, may potentially impact a greater number of people than BESS projects in less dense communities"; accordingly, the only conclusion a reader can draw is that BESS facilities should be placed in low density communities where fewer will be harmed when they explode. This evinces an appalling disregard for the safety of, and human life in, low density (i.e. rural) communities. It also clearly demonstrates that

Corrected Table 3:

Location and Anticipated Projects	BESS Capacity	Population	Median Income	% People of Color	Pollution Burden
Acton Humidor Angeleno (anticipated) Fleaflipper (anticipated) Maathai (anticipated)	>2,285 MW	5238	\$106,743 ^a	37.8% ^a	31% ^b
Antelope Acres El Campo Rangeland/High Valley	>208 MW	2,450 ^c	\$95,491 ^c	36.1% ^c	52% ^c
Castaic Homestead Ranger (pending)	75 MW	17,711 ^d	\$120,408 ^d	59.6% ^d	≤44% ^e
Ladera Heights Simon	>400 MW	6,654 ^f	\$112,604 ^f	85.7% ^f	90% ^g
Florence-Firestone Cald	100 MW	61983 ^h	\$53,478 ^h	99.6% ^h	99.6% ⁱ
Pearblossom Juniper	>150	522 ^j	NI ^j	27.6% ^j	31% ^j

^a The Equity Indicator Tool splits Acton into multiple Census Block Groups and the Humidor, Angeleno, Fleaflipper and Maathai BESS are located on the edge of one Census Block Group; it is inappropriate to use data from a single Census Block Group when the projects affect residents in surrounding census block groups. To address this, the data were obtained from the 2020 Census Report for the Acton CDP provided in Attachment 27.

^b This is the "Pollution Burden" reported in the Equity Indicator Tool for Census Block Group 9108152.

^c The Equity Indicator Tool splits the Community of Antelope Acres into two Census Block Groups; it is inappropriate to use data from a single Census Block Group when projects affect residents in surrounding Census Block Groups. There is no Antelope Acres CDP, so these values were derived by reconciling the data reported by the "Equity Indicator Tool" for both the Census Block Groups that underlie Antelope Acres; these data are provided in Attachment 28.

^d The Equity Indicator Tool splits Castaic into 7 different Census Block Groups and it fails to provide income data for two of them (including 9201021 where the Homestead and Ranger projects are located); therefore, the Equity Indicator Tool cannot be used to assess equity factors in Castaic attributed to BESS projects. To address this, the data were obtained from the 2020 Census Report for the Castaic CDP provided in Attachment 25.

^e This value is the highest "Pollution Burden" noted in the Equity Indicator Tool across all Census Block Groups in and near Castaic.

^f The Equity Indicator Tool provides no demographic information for Ladera Heights; therefore, it cannot be used to assess the equity factors in Ladera Heights attributed to BESS projects. To address this, the data were obtained from the 2020 Census Report for the Ladera Heights CDP provided in Attachment 29.

^g This value is the "Pollution Burden" reported by the Equity Indicator Tool for the Ladera Heights Census Block Group.

^h The Equity Indicator Tool splits the Community of Florence-Firestone into many individual census block groups and the Cald project is located on the edge of one Census Block Group; it is inappropriate to use data from one Census Block Group when the project affects residents in surrounding Census Block Groups. To address this, the data were obtained from the 2020 Census Report for the Florence CDP; it is provided in Attachment 26.

ⁱ This is the "Pollution Burden" reported in the "Equity Indicator Tool" for Census Block Group 5354002.

^j These data were obtained from the "Equity Indicator Tool" for Census Block Group 9110011 provided in Attachment 30.

Regional Planning considers that Li BESS facilities are an inevitability and therefore belong in rural communities because of the risk they pose. It is the Acton Town Council's position that **no** community should **ever** be exposed to Li BESS risks regardless of whether they are densely populated or sparsely populated, particularly given that safer alternative battery technologies are becoming available (such as "Iron Flow" batteries [Attachment 31]). BESS explosions and fires occur with alarming frequency and once initiated, they create a toxic environment and fire risk that cannot be stopped; accordingly, they should not be placed *anywhere that people live* and they certainly should not be concentrated in rural areas simply because Regional Planning believes it is where they will do less harm. The life of a rural resident is every bit as valuable as the life of an urban resident and neither should be sacrificed. Moreover, it is the County's responsibility to secure the safety and security of *all* county residents; it cannot "pick and choose" which residents will be protected and which will not.

California's frantic and almost schizophrenic pursuit of "renewable energy NOW" is putting residents at risk and this frenzy is now driving the County to irresponsibly "rubberstamp" dangerous BESS projects that pose community risks *which cannot be mitigated*. The Report fails to grasp all of this, and instead of acknowledging the unmitigable community risks posed by Li BESS facilities, page 7 concludes (wrongly and without supporting evidence) that "BESS hazards" can be mitigated by utilizing "a closed building". There is no evidence which shows that putting Li BESS in a "closed building" properly mitigates the community risks that it poses; in fact, Li BESS are always located in "closed buildings" because they are containerized in closed structures before they are shipped. The problem is, these "container modules" are designed to vent when thermal runaway occurs; this venting exposes the community to toxic gases and creates open air flames that can spark a conflagration event. Even NFPA standards require "deflagration venting" (or "explosion control") in all rooms, buildings, cabinets and units where BESS are located [NFPA -855 Chapter 9]; thus, Li BESS facilities are anything but "closed" when a deflagration event occurs even if they are placed in a "closed building" as the Report recommends. Furthermore, placing BESS containers in a "closed building" will make it harder to manage a deflagration event because it will restrict firefighter access; this in turn will allow the deflagration to spread to adjoining container modules and thereby substantially increase community risks.

4.4 "Recommendations" Offered in the Report Ignore the Principal Aim of the Motion and will Actually Cause BESS Overconcentration.

The Acton Town Council's greatest concern with the Report is the "recommendations" that it offers; specifically, we are concerned that these recommendations fail to address the primary aim of the Motion: namely, to *AVOID* overconcentration of BESS facilities within communities. Rather than identifying communities that are slated for an overconcentration of BESS projects and discussing the relevant factors and criteria necessary to prevent BESS overconcentration, the Report merely recommends a bifurcated permitting process to facilitate BESS project

approvals: 1) a ministerial site plan review process for approving "small" primary BESS projects and all accessory BESS projects (regardless of size or location); and 2) a discretionary Conditional Use Permit ("CUP") process for approving primary BESS projects that are not "small". The Report goes on to say that the capacity of a BESS and its proximity to residences and schools could be used to determine whether a project receives either ministerial or discretionary approval and that discretionary approvals could incorporate mitigation measures. However, the Report *does not* explain how BESS developments should be controlled to avoid overconcentration within individual communities and it certainly does not articulate that a proposed BESS project could be denied if it would result in a BESS overconcentration within a community.

Instead, the Report discusses overconcentration only in relation to "particularly larger primary use BESS projects" and it only recommends that overconcentration be addressed by "evaluating existing infrastructure and the number of grid interconnection points in a particular area". These assertions are irrational and insupportable for a number of reasons. First, overconcentration is not merely an artifact of "particularly large primary use BESS" facilities because multiple small and medium sized primary use and accessory use BESS facilities can cause overconcentration in the same manner and to the same extent as "particularly large" BESS facilities. In other words, overconcentration is an artifact of the total capacity of *all* BESS facilities within a community (regardless of primary or accessory) and not just "particularly large" BESS facilities. This makes sense because BESS impacts on, and BESS safety risks posed to, a community are directly related to the total capacity of all BESS facilities within the community. To illustrate this fact, consider the three Hecate BESS projects proposed in Acton (Humidor, Flea Flicker, and Maathai); these projects will be connected by a single transmission line and have a discharge capacity of nearly 1,000 MW *which is larger than any BESS facility anywhere in the country*. Overconcentration by multiple small and medium sized BESS projects is just as big a concern as overconcentration by large BESS projects and the Report is flat out wrong to declare otherwise.

Second, the notion that only "primary use" BESS can create an overconcentration is absurd; a BESS facility that is an "accessory use" can be just as large and pose just as great a risk to County residents as a BESS facility that is a "primary use". For instance, the 200 MW of "accessory use" BESS in Antelope Acres are more susceptible to deflagration than the 75 MW of "primary use" BESS in Castaic because (As explained above), overconcentration is a function of the cumulative BESS capacity within a community regardless of whether the BESS is a "primary" or "accessory" use. Therefore, it is silly to conclude (as the Report does) that only "primary use" BESS facilities contribute to overconcentration.

Third, overconcentration cannot be addressed by evaluating "existing infrastructure" or "grid interconnection points" because overconcentration is not a function of "existing infrastructure" or "grid interconnection points" and because BESS

facilities can be placed anywhere in the County and tap into virtually any and all existing distribution, subtransmission, and transmission lines. In other words, Los Angeles County has *millions* of BESS "interconnection points" and they exist everywhere throughout the County. Moreover, BESS projects are not constrained by existing "grid interconnection points" because they can always be developed with their own interconnection lines, switchgear, and transformers to accommodate whatever operating voltage they choose and connect with wherever facilities they wish. Therefore, the Report errs in concluding that "the number of grid interconnection points in a particular area" is relevant to BESS overconcentration. The *only* way to address overconcentration in a community is to limit the cumulative size and capacity of BESS facilities within the community and deny applications for new BESS projects facilities when they exceed the established limit; the Report fails to recognize this and is therefore substantially deficient.

Fourth, implementation of the recommendations presented by the Report will effectively *guarantee* that BESS overconcentration will occur; this is because the Report recommends ministerial approval for ***all*** BESS facilities regardless of size or location when they are proposed as an accessory use. Under the scheme recommended by the Report, an energy developer could secure a Conditional Use Permit for a small 40 MW solar farm on A2 land and then, once the solar farm is constructed, that same developer could turn around and obtain ministerial approval for a co-located 500 MW BESS facility *without environmental review or community notification!* Because the 500 MW BESS would be incidental to, related to, and subordinated to the existing and approved "principal" solar farm, it would meet the County Code definition of an "Accessory Use" and receive perfunctory approval. The Acton Town Council is confident that this is precisely what energy developers will do in order to "fast track" perfunctory approvals for their BESS projects.

It is certain that the recommendations offered in the Report will facilitate and expedite BESS project approvals throughout unincorporated Los Angeles County. However, the recommendations do not achieve the primary aim of the Motion because they *do not AVOID* BESS overconcentration; in fact, they *guarantee* that BESS overconcentration will occur. Worse yet, the recommendations provide no insight on how the serious safety and environmental risks posed by Li batteries will be mitigated on those rare occasions when a BESS project will be subject to discretionary review; perhaps this is because the community risks posed by BESS facilities *cannot be mitigated*.

4.5 The Report Substantially Misrepresents Acton Town Council Comments Submitted to the State Fire Marshal.

The Acton Town Council takes issue with the discussion on page 7 of the Report regarding limiting BESS facilities in Very High Fire Hazard Severity Zones because it grossly misrepresents comments which the Acton Town Council submitted to the State

Fire Marshal pursuant to proposed revisions to adopted Fire Hazard Maps. Contrary to what the Report states, the Acton Town Council did not "detail concerns because their community was included in a Very High Fire Hazard Severity Zone, and such designation was unwarranted". What the Acton Town Council *did* assert was 1) that CALFIRE failed to produce data which justifies Acton's VHFHSZ designation; and 2) that this made it impossible for us to assess the efficacy of Acton's VHFHSZ designation; we also pointed out that the data which the Acton Town Council has gathered demonstrates that Acton does not warrant a VHFHSZ designation. Our comments focus entirely on CALFIRE's data availability (or rather lack of data availability) and the fact that, until CALFIRE makes the data available, the VHFHSZ designation assigned to the Community of Acton lacks technical basis and is therefore arbitrary and capricious. In other words, we did not say that a VHFHSZ is unwarranted; we said that CALFIRE has failed to demonstrate that a VHFHSZ is warranted and therefore it is inappropriate for Acton to have a VHFHSZ designation.

4.6 The Report Dupliciously Asserts that Restricting Development Based Solely on its Location in a VHFHSZ is Insupportable.

Regional Planning states on page 7 of the Report that imposing "development restrictions" based exclusively on a site being located in a VHFHSZ is "difficult to support given the general concerns with the use of these maps to control development in high hazard area". The Acton Town Council finds this statement to be incredibly duplicitious because the Regional Planning Commission just approved a new ordinance (the "CWP Ordinance") that expressly allows the County to deny any subdivision *simply because it is located in a VHFHSZ*¹². In developing and approving the Ordinance, Regional Planning takes the stance that the County must be empowered to deny developments just because they are in a VHFHSZ; yet, in the Report, Regional Planning takes an entirely contradictory stance that the County must not be empowered to deny developments just because they are in a VHFHSZ. The Acton Town Council considers it to be the height of hypocrisy for Regional Planning issue a Report that claims it is "difficult to support" a County restriction on deflagration-prone BESS facilities simply because they are located in VHFHSZs and at the same time adopt an approve which authorizes the County to deny subdivisions simply because they are located in VHFHSZs.

The absurdity of the contradictory stances that Regional Planning has taken in the CWP Ordinance and in the Report is revealed when one considers their implications: the CWP Ordinance establishes that the County can deny even a minor

¹² On June 14, 2023, the Regional Planning Commission approved a "Wildfire Protection" Ordinance stating that, if any portion of a tentative subdivision map is in a VHFHSZ, the advisory agency "may disapprove the map". [Section 26 of Project No. PRJ2020-002395: <https://lactrp.legistar.com/View.ashx?M=F&ID=12035925&GUID=EE51D005-FA84-4F8A-A281-8D53C5145489>].

land division which poses no risks to the community simply because it is in a VHFHSZ (such as subdividing an 80-acre parcel into four 20-acre parcels); yet, the Report establishes that, in the very same VHFHSZ, it is perfectly reasonable for the County to approve thousands of megawatts of BESS facilities which pose *very real and very significant* wildfire and safety risks to the community. Regional Planning's hypocrisy is magnified by the fact that BESS facilities pose a much greater safety risk to communities than subdivisions in general and minor land divisions in particular. Regional Planning cannot have it both ways; either it is reasonable and prudent to restrict development in VHFHSZs or it is not. The Acton Town Council observes that agencies tend to issue these types of contradictory policies only when they are pursuing an agenda rather than good governance; such appears to be the situation here.

4.7 Other Concerns With the Report.

Transmission BESS vs Distribution BESS: The Report asserts on page 2 that "the most similar use to a BESS explicitly defined in the Zoning Code is an Electric Distribution Substation" and that this conclusion is based on "the purpose of BESS and its connection to the larger network for distributive purposes". These statements are categorically false, particularly in regards to transmission BESS. As explained in the NOE Appeal, Electric Distribution Substations are very small, they operate at very low voltages, they are only connected to distribution facilities and they are not connected to the transmission system. In contrast, transmission BESS are enormous (for instance, the Angeleno BESS is more than a mile long), they operate at high voltages, they connect to CAISO's grid, and they are controlled by CAISO. Transmission BESS *never* serve a distribution purpose; in fact, the Federal Energy Regulatory Commission does not allow distribution facilities to serve a transmission function (as the Appeal explains). Accordingly, the only use that is identified in the County Code which is in any way similar to a transmission Bess is an "Electric Transmission Substation", not an Electric Distribution Substation. The Code clearly acknowledges a distinct difference between distribution substations and transmission substations and the Report errs substantially in failing to acknowledge a similar distinction between distribution BESS and transmission BESS.

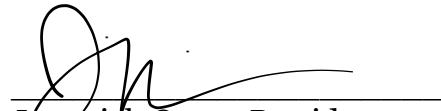
The Attrition Rate of BESS Projects: The report asserts on page 4 that "there is a high degree of attrition in the interconnect application process and that only 15 to 20% of proposed projects are realized"; this suggests that Regional Planning does not believe that most of the BESS facilities identified in the Report will be constructed. It is important to disabuse the County of this notion, particularly in regards to the four transmission BESS facilities proposed for Acton because the energy developers who own these projects have every intention of moving forward with them. Avantus has already given a community presentation on the 1,415 MW Angeleno project and entered into purchase contracts with the property owners. Hecate has already received approval of the Humidor project and its intention to move forward with the Fleaflicker and Maathai projects is evinced by the franchise ordinance that is poised for County approval which

will permit the construction of a high voltage transmission line that is sufficiently oversized to connect all three BESS projects. The transmission BESS projects proposed for Acton are going forward despite the high attrition rate asserted by the Report.

5.0 CONCLUSION

For all the reasons set forth above, the Acton Town Council urges the Board of Supervisors to uphold the Appeal, rescind the Humidor BESS NOE, and remand the Project back to Regional Planning. We also respectfully request that the Board return the BESS Report back to Regional Planning and ask staff to amend it to address the concerns expressed herein.

Respectfully Submitted;



Jeremiah Owen, President
The Acton Town Council

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ATTACHMENT 3

**SCIENTIFIC REPORTS ARTICLE ON TOXIC FLUORIDE
GAS EMISSIONS FROM LITHIUM ION BATTERIES. ")**

SCIENTIFIC REPORTS



Correction: Author Correction

OPEN

Toxic fluoride gas emissions from lithium-ion battery fires

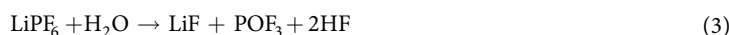
Fredrik Larsson^{1,2}, Petra Andersson², Per Blomqvist² & Bengt-Erik Mellander¹

Lithium-ion battery fires generate intense heat and considerable amounts of gas and smoke. Although the emission of toxic gases can be a larger threat than the heat, the knowledge of such emissions is limited. This paper presents quantitative measurements of heat release and fluoride gas emissions during battery fires for seven different types of commercial lithium-ion batteries. The results have been validated using two independent measurement techniques and show that large amounts of hydrogen fluoride (HF) may be generated, ranging between 20 and 200 mg/Wh of nominal battery energy capacity. In addition, 15–22 mg/Wh of another potentially toxic gas, phosphoryl fluoride (POF₃), was measured in some of the fire tests. Gas emissions when using water mist as extinguishing agent were also investigated. Fluoride gas emission can pose a serious toxic threat and the results are crucial findings for risk assessment and management, especially for large Li-ion battery packs.

Lithium-ion batteries are a technical and a commercial success enabling a number of applications from cellular phones to electric vehicles and large scale electrical energy storage plants. The occasional occurrences of battery fires have, however, caused some concern especially regarding the risk for spontaneous fires and the intense heat generated by such fires^{1–5}. While the fire itself and the heat it generates may be a serious threat in many situations, the risks associated with gas and smoke emissions from malfunctioning lithium-ion batteries may in some circumstances be a larger threat, especially in confined environments where people are present, such as in an aircraft, a submarine, a mine shaft, a spacecraft or in a home equipped with a battery energy storage system. The gas emissions has however only been studied to a very limited extent.

An irreversible thermal event in a lithium-ion battery can be initiated in several ways, by spontaneous internal or external short-circuit, overcharging, external heating or fire, mechanical abuse etc. This may result in a thermal runaway caused by the exothermal reactions in the battery^{6–10}, eventually resulting in a fire and/or explosion. The consequences of such an event in a large Li-ion battery pack can be severe due to the risk for failure propagation^{11–13}. The electrolyte in a lithium-ion battery is flammable and generally contains lithium hexafluorophosphate (LiPF₆) or other Li-salts containing fluorine. In the event of overheating the electrolyte will evaporate and eventually be vented out from the battery cells. The gases may or may not be ignited immediately. In case the emitted gas is not immediately ignited the risk for a gas explosion at a later stage may be imminent. Li-ion batteries release a various number of toxic substances^{14–16} as well as e.g. CO (an asphyxiant gas) and CO₂ (induces anoxia) during heating and fire. At elevated temperature the fluorine content of the electrolyte and, to some extent, other parts of the battery such as the polyvinylidene fluoride (PVdF) binder in the electrodes, may form gases such as hydrogen fluoride HF, phosphorus pentafluoride (PF₅) and phosphoryl fluoride (POF₃). Compounds containing fluorine can also be present as e.g. flame retardants in electrolyte and/or separator¹⁷, in additives and in the electrode materials, e.g. fluorophosphates^{18,19}, adding additional sources of fluorine.

The decomposition of LiPF₆ is promoted by the presence of water/humidity according to the following reactions^{20,21}:



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Battery	Numbers of batteries per test	Type	Nominal capacity per battery (Ah)	Nominal voltage per battery (V)	Cell packaging
A	5–10	LCO (LiCoO ₂)	6.8	3.75	Prismatic hard Al-can
B	2	LFP (LiFePO ₄)	20	3.2	Pouch
C	5	LFP (LiFePO ₄)	7	3.2	Pouch
D	9	LFP (LiFePO ₄)	3.2	3.2	Cylindrical
E	5	LFP (LiFePO ₄)	8	3.3	Cylindrical
F	2	NCA-LATP (LiNiCoAlO ₂ -LiAlTiPO ₄)	30	2.3	Pouch
G	2	Laptop pack*	5.6	11.1	Cylindrical

Table 1. Details of the tested Li-ion battery cells. *Each laptop battery pack has 6 cells of type 18650; arranged 2 in parallel and 3 in series.

Of these PF₃ is rather short lived. The toxicity of HF and the derivate hydrofluoric acid is well known^{22–24} while there is no toxicity data available for POF₃, which is a reactive intermediate²⁵ that will either react with other organic materials or with water finally generating HF. Judging from its chlorine analogy POCl₃/HCl²⁴, POF₃ may even be more toxic than HF. The decomposition of fluorine containing compounds is complex and many other toxic fluoride gases might also be emitted in these situations, however, this study focuses on analysis of HF and POF₃.

Although a number of qualitative and semi-quantitative attempts have been made in order to measure HF from Li-ion batteries under abuse conditions, most studies do not report time dependent rates or total amounts of HF and other fluorine containing gases for different battery types, battery chemistries and state-of-charge (SOC). In some measurements reported, HF has been found, within limited SOC-variations, during the abuse of Li-ion battery cells^{15,16,26}, as well as detected during the abuse of battery packs²⁷. However, time-resolved quantitative HF gas emission measurements from complete Li-ion battery cells undergoing an abusive situation have until now only been studied to a limited extend; for a few SOC-values, including larger commercial cells^{28,29}, a smaller-size commercial cell³⁰ and a research cell (i.e. non-commercial cell)³¹. Time-resolved quantitative HF measurements on the gas release from complete electric vehicles including their Li-ion battery packs during an external fire have also been performed³². Other types of gas emissions from Li-ion cells during abuse have been the subject of a somewhat larger number of investigations^{33–41}. Since the electrolyte typically is the primary source of fluorine, measurements of fluorine emissions from battery type electrolytes have been studied. For example, fire or external heating abuse tests have been performed on electrolytes^{42–46} and the quantitative amounts of HF and POF₃ have been measured in some cases^{45,46}. Other studies of electrolytes exposed to moderate temperatures, 50–85 °C, show the generation of various fluorine compounds^{20,21,47–49} and some studies include both electrolyte and electrode material^{50,51,52}.

Our quantitative study of the emission gases from Li-ion battery fires covers a wide range of battery types. We found that commercial lithium-ion batteries can emit considerable amounts of HF during a fire and that the emission rates vary for different types of batteries and SOC levels. POF₃, on the other hand, was found only in one of the cell types and only at 0% SOC. The use of water mist as an extinguishing agent may promote the formation of unwanted gases as in eqs (2)–(3) and our limited measurements show an increase of HF production rate during the application of water mist, however, no significant difference in the total amount of HF formed with or without the use of water mist.

Lithium-ion battery fire tests. The experiments were performed using an external propane burner for the purpose of heating and igniting the battery cells as described in the Methods section. Seven different types of batteries, type A–G, were investigated, from seven manufacturers and with different capacity, packaging type, design and cell chemistry, as specified in Table 1. Type A had a lithium cobalt oxide (LCO) cathode and carbon anode, types B to E had lithium-iron phosphate (LFP) cathode and carbon anode, type F had nickel cobalt aluminum oxide (NCA) and lithium aluminum titanium phosphate (LATP) electrodes while type G was a laptop battery pack with unspecified battery chemistry. All electrolytes contained LiPF₆. Most of the cells were tested for different SOC levels, from fully charged, 100% SOC, to fully discharged, 0% SOC. The study included large-sized automotive-classed cells, i.e. series production cells of high industry quality, with long life time etc.

The heat release rate (HRR) and the emitted HF for B-type cells with different SOC values are shown in Fig. 1. Only the 100% SOC cells show several distinct peaks, corresponding to intense flares, when the cells vented and the emitted gas burn, for all other cells the heat release as a function of time is more smooth. These behaviors are reproducible also for the other tested cell types, e.g., only the 100% SOC cells show the more violent heat release peaks with intense flares.

The measurements of the gas emissions during the fire tests show that the production of HF is correlated to the increase in HRR although somewhat delayed. From Fig. 1b it is evident that the higher SOC value, the higher values for the peak HF release rate. The total amount of HF varies considerably for the different battery types, see Fig. 2a. The amount of HF produced, expressed in mg/Wh, where Wh is the nominal battery energy capacity, is approximately 10 times higher for the cell with the highest values compared to the cells with the lowest values. The different relative amount of electrolyte and filler materials in the cells could be the simple explanation of this variation but information on those amounts are difficult to access for commercial batteries. The highest HF values are found for the pouch cells, a possible explanation would be that hard prismatic and cylindrical cells can build a

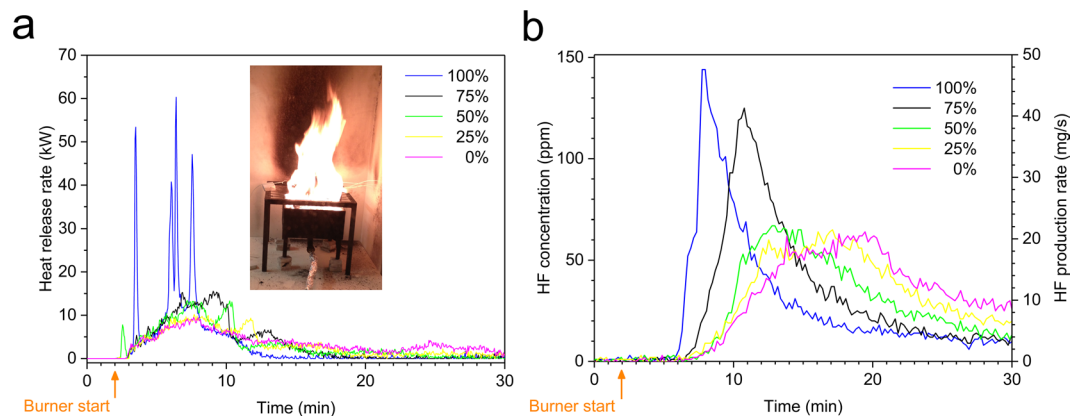


Figure 1. Results for type B cells, for 0–100% SOC with intermediate SOC-steps of 25%, exposed to an external propane fire; (a) showing the heat release rate (burner HRR contribution is subtracted), the inset photo shows burning battery cells during the test; (b) showing the HF release both as the measured concentrations as well as the calculated HF production rates. The HF production rates are calculated from the measured HF concentration by the Ideal gas law taking into account the ventilation flow, see Methods. The starting time of the heating process is marked on the time axis.

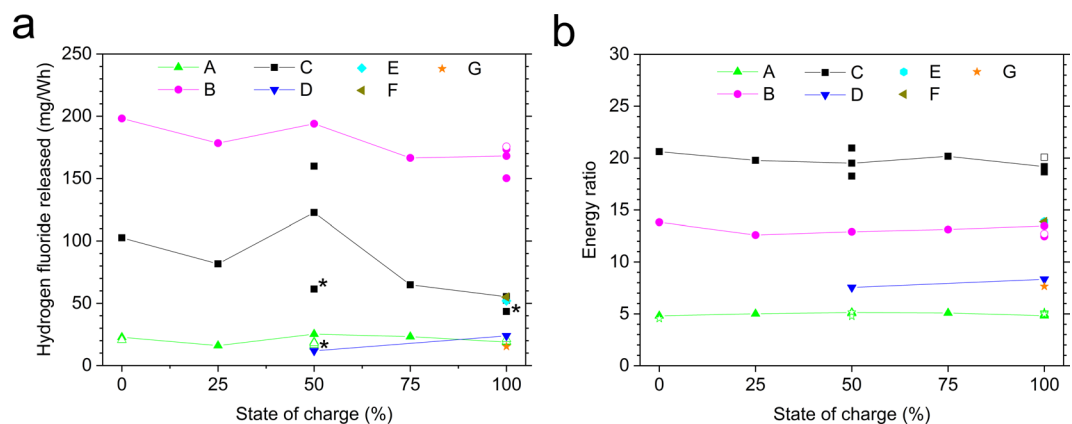


Figure 2. Total amount of HF measured by FTIR, normalized to nominal electrical energy capacity (a) and the energy ratio (b), for seven types of Li-ion battery cells and with various state of charge levels. Non-filled symbols indicate a repetition variant, e.g. applying water mist. The lines are intended as a guide for the eye. The energy ratio is a dimensionless value calculated by taking the total heat release from the battery fire divided by the nominal electrical energy capacity. Note that for 100% SOC the values are overlapping for type C, E and F as well as for type A, D and G in (a) and type B, E and F in (b). *Low value for type C at 50% and 100% SOC and type D at 50% SOC due to that a pre HF-saturation was not applied, therefore a part of the HF release was likely to be saturated in the gas sampling system, see Methods.

higher pressure before bursting, rapidly releasing a high amount of gases/vapors from the electrolyte. Due to the high velocity of the release and thus the short reaction time, combustion reactions might be incomplete and less reaction products might be produced. In the test involving type G the cylindrical cells were layered horizontally, thus having a different venting direction and possibly increased wall losses, which combined with a very energetic response, might suggest why HF was detected only from the filter analysis and not detected by FTIR-analysis. The tested pouch cells of type B and C burned for longer time and with less intensity. The pouch cell of type F, however, burned faster, possibly due to its different electrode materials. The SOC influence on the HF release was less significant and the trend in Fig. 2a shows higher HF values for 0% than for 100% SOC, however with clear peaks at 50% SOC. Although these results are reproducible, they are difficult to explain. In other studies^{30,31}, significantly narrower in test scope, involving smaller-sized cells and using a somewhat different abuse method, it was found that the total amount of HF measured by real-time FTIR was higher for decreasing SOC (tests conducted at 100%, 50% and 0% SOC).

The HRR curve is used to calculate the total heat release (THR) which corresponds to the energy released from the burning battery. THR is obtained by integrating the measured HRR (with the burner contribution subtracted) over the complete test time. Fig. 2b shows the energy ratio, that is how much energy is produced by the burning

Battery	Nominal energy capacity (Wh)	Normalized total HF detected with FTIR (mg/Wh)	Normalized maximum HRR (W/Wh)	Normalized THR (kJ/Wh)
A	128	15–25	243–729	17–19
B	128	150–198	78–633	45–50
C	112	43–160	116–491	66–75
D	92	12–24	207–315	27–30
E	132	52	235	50
F	138	55	384	50
G	124	15	460	28

Table 2. Main test results normalized to nominal energy capacity, when applicable including various SOC-levels.

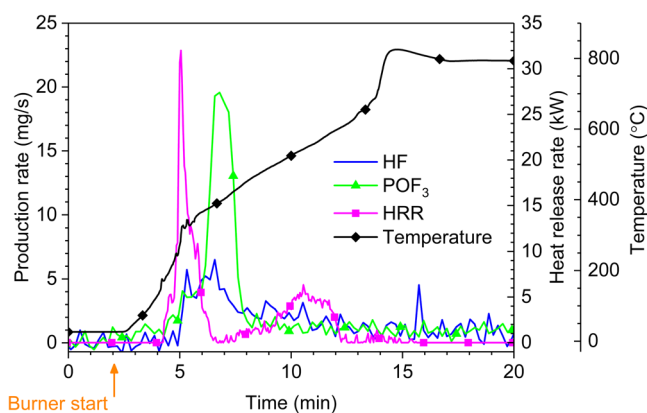


Figure 3. Results for a test with 5 type A cells at 0% SOC showing HF and POF_3 , HRR and average surface temperature of the battery cells.

battery, compared to the amount of nominal electrical energy capacity a fully charged battery can deliver to an external circuit. The energy ratio is therefore a comparison between the chemical and the electrical energy of the Li-ion battery cell. The energy ratio varies considerably for the different cell types but is approximately constant for each cell, independent of SOC level. There are some similarities in Fig. 2a and b for the pouch cells, type B and C, which give the highest values in both cases, although in reverse order. This might indicate a higher amount of combustibles, e.g. electrolyte, in these cells compared to the other cells. It is also interesting to see that the energy ratio varies significantly between the tested cells, ranging from 5 to 21. This is important knowledge for fire protection and fire fighting. The energy ratio thus refers to a nominal fully charged battery while in normal use only a part of the SOC-window is used, for example half (50%) of the SOC-window (corresponding to cycling the battery between e.g. 30% and 80% SOC). If instead, the total heat release divided by the used electric battery capacity in the specific application is considered, higher energy ratio values are obtained. A summary of the results is shown in Table 2.

The measured heat release from an overheated battery may include several aspects, e.g. the battery temperature increase and the combustion of released gases. Variations due to the type of battery cell, the initiation method, e.g. if the test is done as an external fire test, an external heating or an overcharge test, and the test method, e.g. access to ambient oxygen (inert, under-ventilated or well-ventilated fire), and the presence of an external igniter, can greatly affect the amount of measured heat release. Energy release from a internal cell event in a confined environment can, for example, be lower than the energy release from the same cell in case of external fire. Thus energy ratios published using other methods and other types of Li-ion cells can be significantly different^{7,52,53}.

For all tested battery types and selected SOC-levels, POF_3 could only be measured quantitatively for type A battery cells at 0% SOC. Repeated measurements confirmed the presence of POF_3 only for type A and only for 0% SOC. No POF_3 could thus be detected in any of the other tests. POF_3 is an intermediate compound and the local combustion conditions in every test, will influence the amounts of POF_3 generated. This shows the importance of investigating many different set-ups when evaluating emitted gases.

In Fig. 3 the HRR, the average surface temperature of the five cells as well as the HF and POF_3 production rates are shown for type A cells at 0% SOC. The POF_3 curve is less noisy than the HF curve due to different signal-to-noise ratios of the FTIR instrumentation at the different wavenumbers. There is a secondary peak in HRR approximately 5 minutes after the main heat event, this peak does not correspond to any peaks in the mass flow of HF or POF_3 . The explanation for this could be that the second peak in the heat release rate involves burning of mainly non-fluorine containing compounds. The temperature curve shows a rapid increase above the

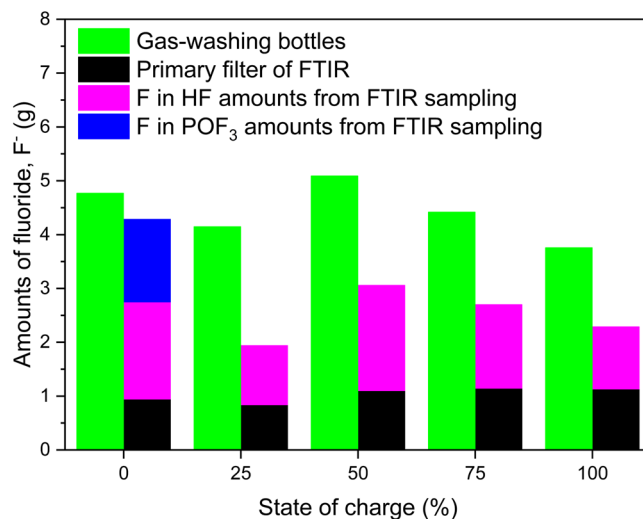


Figure 4. Total amount of measured fluoride, F, for type A, for 0–100% SOC with intermediate steps of 25%. The amount of F from the FTIR is calculated from the measurement results for POF₃ and HF, while the amount of fluoride from gas-washing bottles and primary filter analyses is measured as water soluble fluoride.

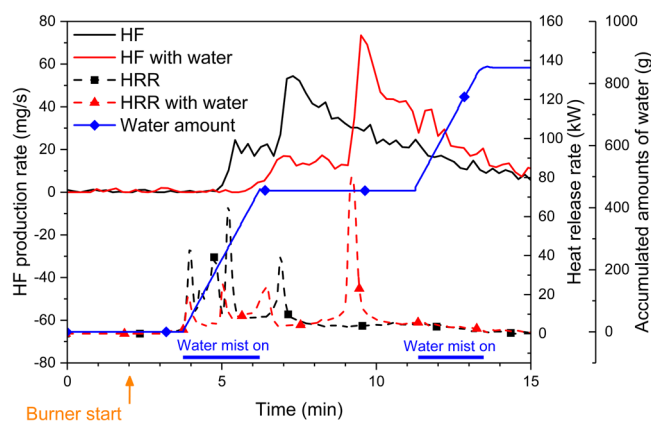


Figure 5. Results for type B cells at 100% SOC with and without the use of water mist.

melting temperature of the alumina cell case at about 660 °C. At these temperatures the alumina is molten and has formed a puddle on the burner bed beneath the battery cells. The thermal conditions in and around the thermocouples and the remains of the batteries have therefore changed considerably causing the apparent temperature increase.

In addition to the time resolved measurements with the FTIR, gas-washing bottles were used to determine the total fluorine content in the gas emissions during the tests. A comparison between the different measurement methods used can be seen in Fig. 4 for type A cells. Note that the FTIR measurements are performed only to detect HF and POF₃, other fluoride compounds are not included. It is interesting to note that for 0% SOC the total amount of fluoride measured by the gas-washing bottle technique matches rather well with the FTIR and primary filter analysis. For other SOC values the fluoride content is higher from the gas-washing bottle measurements. Still, the general trend observed in the FTIR measurements for different SOC values is more or less confirmed by the gas-washing bottle measurements.

Gas-washing bottles were also used for some of the tests involving battery types B and C. These batteries showed higher amounts of released HF compared to type A. The ratio between the total values of released fluoride from FTIR plus filter analysis and from the gas-washing bottles for type B and C was between 0.89 and 1.02, indicating a better correlation between FTIR and gas-washing bottles measurement when HF gas emissions are higher.

The total amount of POF₃ measured by FTIR for type A at 0% SOC was 2.8 g (for 5-cells) and 3.9 g (for 10 cells). Hence, the normalized total POF₃ production was 15–22 mg/Wh of nominal battery energy capacity. Abuse studies measuring POF₃ are few, Andersson *et al.*⁴⁶ found both HF and POF₃ when burning mixtures of propane and Li-ion battery electrolytes with a HF:POF₃ production ratio between 8:1 and 53:1. Besides HF and POF₃ measurements, several distinct non-assigned peaks were found in the FTIR measurements, e.g. at 1027 cm⁻¹

Battery	SOC (%)	Number of tests	Normalized total HF detected (mg/Wh)		Normalized maximum HRR (W/Wh)	Normalized THR (kJ/Wh)
			From FTIR	From gas-washing bottles		
A	100	6	19.8 ± 1.2 [3]	29.1 ± 3.1 [5]	612 ± 102	18.1 ± 0.46
	50	7	18.5 ± 3.9 [6]	36.7 ± 3.3 [6]	416 ± 39 [6]	18.0 ± 0.61 [6]
	0	2	21.6 ± 1.5	38.3 ± 1.6	214 ± 53	16.8 ± 0.66
B	100	4	166.8 ± 11.5	191.3 ± 11.3 [2]	538 ± 77	46.9 ± 1.9
C	100	3	53.9 ± 2.0 [2]*	N/A	461 ± 27	69.5 ± 2.6
	50	3	141.3 ± 26.3 [2]*	N/A	149 ± 5	70.5 ± 4.9

Table 3. Detailed results for all available repetitions. Values presented as mean values followed by the standard deviation, in case the data parameter was not measured in all tests the value in bracket declares the number of available tests used for the specific data parameter value. *For FTIR data for battery type C, one data point of 50% and one data point at 100% SOC are excluded as outliers since they were low due to that a pre HF-saturation was not applied in the test, see Methods.

and 1034 cm⁻¹, which have also been seen in other studies⁴⁶. They are compatible with the typical C-O stretching energies of low molecular weight alcohols in gas phase but also with in-plane stretching of aromatic compounds. This indicates the complexity and the limited knowledge in this area.

Water mist measurements. In order to study the effects of water on gas emissions, fire tests have also been performed where a water mist was applied during the fire. The reason for this experiment is that water is the preferred extinguishing agent for a lithium-ion battery fire. The intention in this study was however not to extinguish the fire completely. One potential problem regarding the use of water mist is that the addition of water may, in principle, increase the rate of formation of HF, see Eqs (2) and (3).

Figure 5 shows the results for type B cells with and without exposure to water mist, note that both the HRR and HF production are delayed when water mist is used. In this limited study, the peak of the HF production rate increased by 35% when using water, however no significant change in the total amounts of the HF release could be seen. A similar result has been reported in a previous study²⁸. The water mist was applied during two different periods of time, as marked in Fig. 5, adding a total of 851 g of water in the reaction zone, however, several other large sources of water were also present in the experiment, i.e. water production from the propane combustion and from humidity in the air. The water mist is cooling the fire and the top surface of the pouch cell was for some time partly covered with liquid water; this is the reason that the battery fire is delayed as seen in Fig. 5. The water mist might actually also clean the air by collecting fume particles and HF can be bound to water droplets, thus possibly lowering the amount of HF in the smoke duct and increasing the non-measured amount of very toxic hydrofluoric acid on the test area surfaces (e.g. walls, floor, smoke duct walls).

Repeatability

Repeated tests were performed for battery types A-C for selected SOC-levels. Some of the repetitions included a variant, e.g. including water mist; see Methods. In Fig. 2 all available test data are presented. Since the test repetitions are not clearly observable in Fig. 2 the results are also presented in Table 3 showing the mean values and standard deviations and the number of performed tests. While the ranges in Table 2 include data for all tested SOC-values, Table 3 shows test data for repeated measurements including repetition variants.

Figure 6 shows the repeatability results for four tests of battery type B for 100% SOC. The time evolution of HRR varies in the fire tests as seen in Fig. 6a. In fire tests there are always natural variations, however comparing the tests with 100% SOC, in Fig. 6a, with those with lower SOC-values presented in Fig. 1a, the repeatability of the 100% SOC tests is significant. The third repetition (black line) in Fig. 6a is delayed due to that it included an application of water mist, as discussed above. Although the appearance of the HRR plots of the four tests differs in Fig. 6a the THR (the integrated HRR) values are rather similar. Fig. 6b shows the HF release for the same four tests of type B at 100% SOC. Repetition 2 and 3 were performed in the third test period, without secondary FTIR filter, and therefore Repetition 2 occurs earlier while Repetition 3 is delayed due to the applied water mist, as discussed above. For the four tests of type B at 100% SOC the mean value of the total FTIR detected HF release is 166.8 mg/Wh with a standard deviation of 11.5 mg/Wh, as seen in Table 3. Comparing Fig. 1b and Fig. 6b, shows that for 100% SOC the HF release is faster and reaches a higher value. Repetition 1 in Fig. 6b shows lower HF release peak values, however, the total HF release value from the FTIR measurement of 168 mg/Wh is close to the average value (166.8 mg/Wh, as seen in Table 3).

Conclusions

This study covered a broad range of commercial Li-ion battery cells with different chemistry, cell design and size and included large-sized automotive-classed cells, undergoing fire tests. The method was successful in evaluating fluoride gas emissions for a large variety of battery types and for various test setups.

Significant amounts of HF, ranging between 20 and 200 mg/Wh of nominal battery energy capacity, were detected from the burning Li-ion batteries. The measured HF levels, verified using two independent measurement methods, indicate that HF can pose a serious toxic threat, especially for large Li-ion batteries and in confined environments. The amounts of HF released from burning Li-ion batteries are presented as mg/Wh. If extrapolated for large battery packs the amounts would be 2–20 kg for a 100 kWh battery system, e.g. an electric

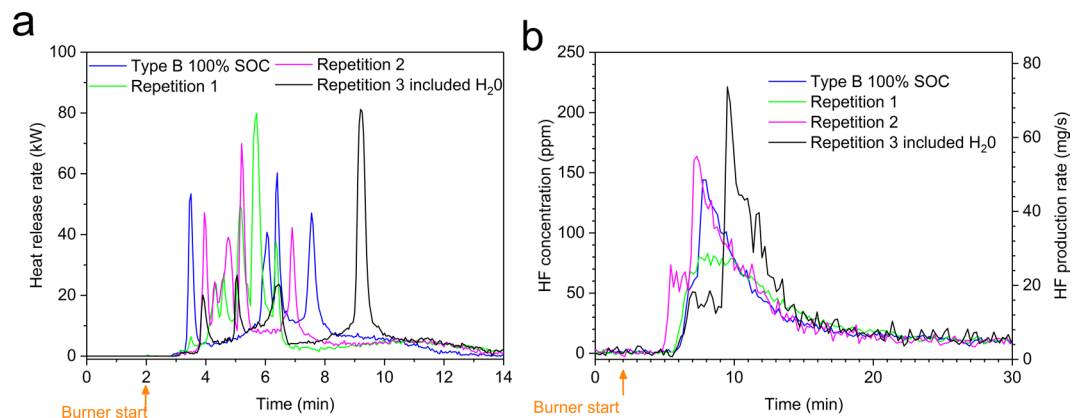


Figure 6. Repeatability for four tests of type B cells at 100% SOC, (a) shows the heat release rate (burner HRR contribution is subtracted) and (b) shows the HF release, both as the measured concentrations as well as the calculated HF production rates.

vehicle and 20–200 kg for a 1000 kWh battery system, e.g. a small stationary energy storage. The immediate dangerous to life or health (IDLH) level for HF is 0.025 g/m^3 (30 ppm)²² and the lethal 10 minutes HF toxicity value (AEGL-3) is 0.0139 g/m^3 (170 ppm)²³. The release of hydrogen fluoride from a Li-ion battery fire can therefore be a severe risk and an even greater risk in confined or semi-confined spaces.

This is the first paper to report measurements of POF_3 , 15–22 mg/Wh, from commercial Li-ion battery cells undergoing abuse. However, we could only detect POF_3 for one of the battery types and only at 0% SOC, showing the complexity of the parameters influencing the gas emission. No POF_3 could be detected in any of the other tests.

Using water mist resulted in a temporarily increased production rate of HF but the application of water mist had no significant effect on the total amount of released HF.

The research area of Li-ion battery toxic gas emissions needs considerable more attention. Results as those presented here are crucial to be able to conduct a risk assessment that takes toxic HF gas into account. The results also enable strategies to be investigated for counteractions and safety handling, in order to achieve a high safety level for Li-ion battery applications. Today we have a rapid technology and market introduction of large Li-ion batteries but the risks associated with gas emissions have this far not been possible to take into consideration due to the lack of data.

Methods

Seven types of Li-ion batteries were exposed to an external propane fire. Fire characteristics, gas emissions, battery temperatures and cell voltages were measured. In total 39 fire tests were conducted of which 20 were within the base test matrix, 19 were repeated measurements of selected battery types and SOC-levels of which 10 included a variant, e.g. water mist for fire-fighting. The amounts of emitted fluoride gases were measured with two parallel and independent techniques, FTIR (time resolved concentration measurements and total values achieved by integration of the time resolved curve) and gas-washing bottles (total values). The experimental setup is schematically shown in Fig. 7. The gas collecting system and measurement system of the *Single Burning Item (SBI) method* (EN 13823⁵⁴), which is normally used for reaction-to-fire classification of construction products according to EN 13501-1⁵⁵ was used in the tests. The tests were performed in three different test periods; the second test period was conducted about 1 year after the first and the third test period was conducted about 2.5 years after the first. Each test period involved several days of testing. The measurement equipment, as specified in the text below, was somewhat varying between the three test periods.

Batteries. Six different types of Li-ion battery cells, type A–F, and one Li-ion battery pack, type G, were tested as seen in Table 1. The number of cells used in each test was varied in order to achieve similar electrical energy capacity per test. The batteries were placed on wire gratings just above a 16 kW propane burner. The wire grating was made of steel wire about 2 mm thick over a surface of about $300 \times 300 \text{ mm}$. The quadrants of the grating were $40 \times 100 \text{ mm}$. The cells were not electrically connected to each other (except the laptop packs of type G, see note in Table 1). Type A–F was pure battery cells while type G was a complete laptop battery pack which included plastics box, electronics and cables. The chemical content of the polymer materials in the auxiliary components of the battery pack of battery type G is not known. It is possible, however not likely, that fluorine was included in some of the components, which in that case could have resulted in the production of HF. For battery type A, 5 cells/test was used except in two variant tests in which 10 cells/test were used.

The influence of different state of charge was investigated, for some battery types the complete SOC-window ranging from 0% to 100%, with intermediate steps of 25%, was investigated. The SOC levels included for each battery type and the numbers of repetitions per test type, i.e. the fire test matrix, is seen in Table 4. All parameters were not measured in all of the tests. Measurement of HRR and corresponding THR was conducted in 38 tests, FTIR in 35 tests and gas-washing bottles were used in 19 tests.

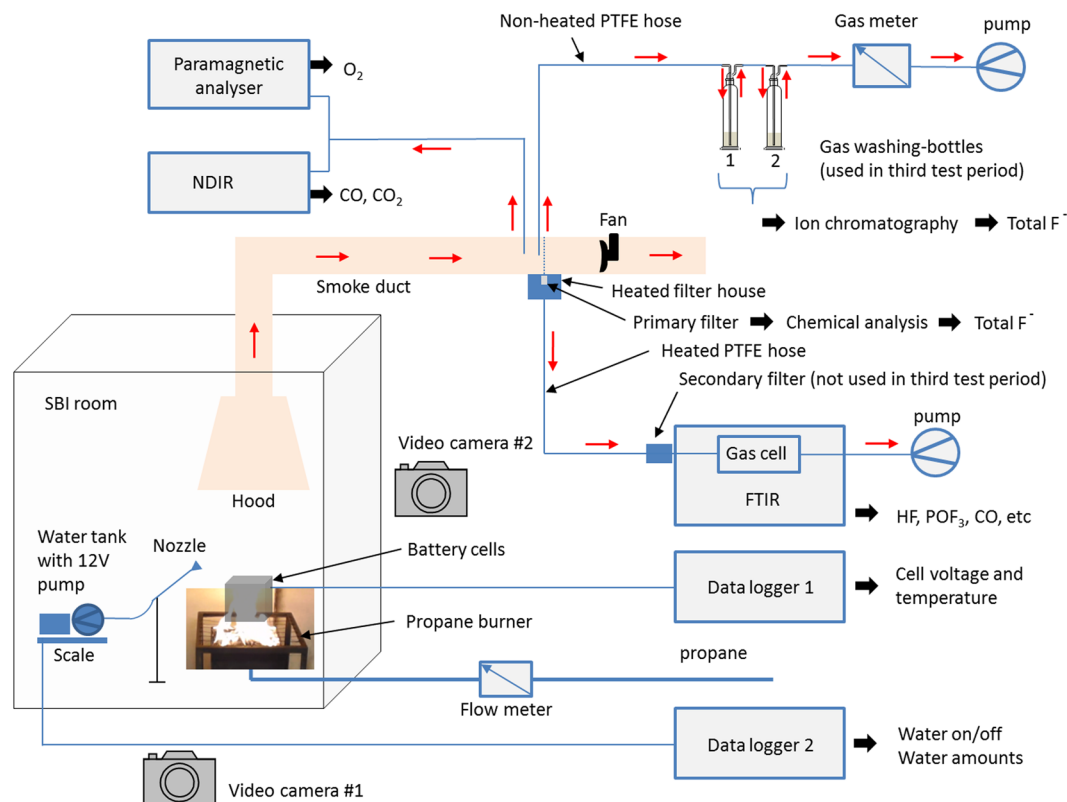


Figure 7. Schematic illustration of the experimental setup.

Battery	Number of tests per SOC-level					Number of tests
	0%	25%	50%	75%	100%	
A	1 + 1*	1	3 + 4*	1	3 + 3*	17
B	1	1	1	1	3 + 1*	8
C	1	1	3	1	2 + 1*	9
D			1		1	2
E					1	1
F					1	1
G					1	1
Total number of tests						39

Table 4. Detailed test matrix of the fire tests. *repetition includes a variant, e.g. water mist or 2 × 5-cell-pack (for battery type A).

The selected SOC level in each test was set using a charge/discharge procedure using ordinary laboratory equipment as well as dedicated battery test equipment, i.e. a *Digatron battery tester* and *Metrohm Autolab PGSTAT302N* with 20 A booster module. The cells were first fully charged by constant current followed by constant voltage (CC-CV) according to the manufacturer's instructions. For cells intended for tests with less than 100% SOC, the cell was discharged to the selected SOC level, using constant discharge current (CC). A relative low current rate, about C/5, was used and voltage and current rates were within the manufacturer limits. In most cases each battery type was tested during the same test period. However, the tests for type C and D were split in several test periods, for type C repetitions on 50% SOC were conducted in all three test periods, and for type B repetitions at 100% SOC were made in two test periods, the latter one included a water mist test.

All batteries were unused and the calendar life time of the cells before the tests were approximately 6–12 months for type A, F and G and between approximately 2–3 years for type B–E. The pouch cells; type B, C and F was mechanically tied together with steel wires (0.8 mm diameter). The type A hard prismatic cells were tight together in packs of five cells, “5-cell-pack”, using steel straps (1 × 13 mm). The hard prismatic and cylindrical cells were placed in boxes to protect test personnel from potential projectile hazards in case of cell explosions due to excessive pressure. The 5-cell-pack of type A was placed standing up, with the cell safety vents releasing straight upright in direction to the hood and smoke duct, inside a custom-made steel-net-box, see Fig. 8. Additionally, the 5-cell-pack of type A was fastened to the bottom of the steel-net-box with steel wire (0.8 mm diameter) in the



Figure 8. Photo of test type A, showing the 5-cell-pack inside a steel-net-box placed on the wire gratings. The sand bed for the propane burner is underneath the wire grating, a pilot flame (seen in front left corner of the burner) is used to ignite the propane gas.

corners to avoid it moving around due to e.g. explosion/rupture/venting. Type D and E cells were placed standing up in custom-made boxes made of non-combustible silica board and steel net at the top and bottom. Type G was placed in a steel net. The protective boxes and steel net were fastened in the wire gratings with steel wire and steel straps to avoid movement due to response to the fire. Care was taken to avoid external short circuiting when placing the battery on the wire gratings as well as avoiding accidental external electrical inter-cell-connections, e.g. for pouch cells the electrical tab terminals were cut. Still the battery test setup allowed that the separators and electrical insulation in the cells could melt due to the heat exposure which could cause various internal and external electrical contacts.

The battery surface temperature was measured with several type K thermocouples; the number of sensors varied for the different battery types. Battery cell surface temperature values presented in this paper are average values over the cell. Cell voltages were measured for type A, B, C and F battery tests. Cell voltage and thermocouple readings was sampled with 1 Hz using two types of data loggers, *Agilent 34972 A using an Agilent 34902 A reed multiplexer module* (for the third test period) and *Pico Technology ADC-24* (for the first and second test period).

Test procedure. The propane burner was started 2 minutes into each test, as indicated with arrows in the result figures in the paper. The burner was active as long as there was a heat contribution from the burning batteries; therefore, the burner was active for different durations of time for different batteries and SOC-levels. When the heat release from the batteries was no longer detectable, the power of the propane burner was doubled, i.e. to 32 kW, in order to be sure to fully burn out any residues of the batteries, for increased personnel safety. The fire emissions were collected in the hood and transferred in the smoke duct having a ventilation flow of 0.4 m³/s, with the exception that 0.6 m³/s was used in two tests with 100% SOC for type C. For these cases the values were scaled down to the lower flow values making the results from the two flow rates comparable. The SBI-room, see Fig. 7, had a ventilation inlet from an adjacent indoor laboratory hall (which had fresh air inlet from the ventilation system in the building), supplying ambient air with temperature about 20 °C entering beneath the propane burner. We consider the amount of ambient air to be sufficient to provide an oxygen-rich environment and thereby consider the battery fire as well-ventilated. However for some tests, during the rapid and energetic gas outbursts, a full combustion might not have occurred in these short time periods.

All tests were video recorded and for the majority of the tests an additional camera was used set at 90 degree angle from the other video camera, allowing simultaneous recording from two sides of the battery fire.

A part of the smoke duct flow was sampled to a *Servomex 4100 Gas purity analyser* where the oxygen content was measured by a *paramagnetic analyser* and CO and CO₂ were measured by a *non-dispersive infrared sensor (NDIR)*. By combing these two measurements, the heat release rate (HRR) is calculated using the oxygen consumption method corrected by CO₂⁵⁴. Each test day started with a blank test, i.e. using only the propane burner, to measure the HRR of the burner alone and measure blanks for FTIR and gas-washing bottles. In the presented HRR values of the battery tests the burner contribution to the HRR (about 16 kW, with slight daily variations, established by the blank tests) has been subtracted. The combined expanded uncertainty is ±5 kW for the HRR-values. By integrating the HRR values over the entire test, subtracting the HRR from the burner, the total heat release (THR) from the battery cells could be established. The oxygen consumption method is common in fire calorimetry, however when using it with batteries, the joule heating from electrical discharge within the cells is not accounted for, therefore the values of HRR and THR do not include the Joule heating. During the external fire tests, it is difficult to measure how much a battery cell is electrically discharged when the separator is melting. The energy ratios presented in Fig. 2b do not include any Joule heating as clearly stated by its definition. For 0% SOC the influence from Joule heating is in principle zero, however small amounts of joule heating might possibly be liberated when going to zero voltage even though other processes might occur. Li-ion cells can also release oxygen during thermal runaway and this could affect the measured O₂ levels. The amount of oxygen release varies

Spectral bands (cm ⁻¹)	Type of band
POF ₃	
868–874	P-F symmetric stretching mode ²⁰
1413–1418	P-O stretching mode ²⁰
HF	
4172–4175	HF R-branch stretching mode ³⁸
4202–4203	HF R-branch stretching mode ³⁸

Table 5. FTIR spectral band used for measurements of POF₃ and HF.

for different electrode materials, e.g. LFP typically releases less oxygen than LCO. However, the ventilation flow is large and the O₂ released from the battery cells is regarded as negligible.

Gas measurements. Besides the gas measurements in the SBI apparatus, measurements of gases were also conducted by online Fourier transform infrared spectroscopy (FTIR). The FTIR offers broad and diverse spectra of gases, the focus was however on fluoride gas emissions. The FTIR used was a *Thermo Scientific Antaris IGS analyzer (Nicolet)* with a gas cell. The gas cell was heated to 180 °C and had a volume of 0.2 L, 2.0 m path length and a cell pressure of 86.7 kPa which was maintained during the tests. The spectral resolution of the FTIR was 0.5 cm⁻¹ (accuracy 0.01 cm⁻¹) and 10 scans were used to collect a spectrum every 12 s, giving both accurate intensity, as well as relatively rapid measurements with its five spectrum per minute rate. A part of the duct flow, taken along the full duct pipe width (in the mid height of the pipe) from around 15 sampling holes (about 2 mm diameter, directed opposite to flow, pipe end was closed), was taken to online FTIR measurement. This sub-flow was extracted through a primary filter inside a heated filter house (180 °C) and then extracted through an 8.5 m sampling PTFE hose, heated to 180 °C, and then through a secondary filter and finally through the gas cell of the FTIR. The sub-flow was selected to be 3.5 L/min using a pump located after the FTIR gas cell. Between each test the FTIR sampling system was flushed with N₂ gas and a new background spectrum was measured. There is a natural delay time between the FTIR and the heat release measurement. In order to time synchronize them the (CO₂ measurements from both the FTIR and the NDIR) part of the heat release rate measurement, were overlaid.

One primary filter (M&C ceramic filter, type “F-2K”) was used per test and was chemically analysed for fluoride content after the test. It is known that HF may be partly adsorbed by this type of filter⁵⁶. The fluoride amount absorbed by the filter was determined by leaching the filter in an ultrasonic water bath for at least 10 min and thereafter the fluoride content in the water was measured by ion chromatography with a conductive detector, according to the method B.1 (b) of the SS-ISO 19702:2006 Annex B standard. The amount of HF is calculated by assuming that all fluoride ions present in the filter derives from HF. The secondary filter (M&C sintered steel filter), heated to 180 °C, was the same in all tests in the first and second test period. In the third test period the secondary filter was removed in order to decrease delay time and losses. The third test period started with burning 10 cells of type A in order to saturate the FTIR sampling system with HF and it was conducted because in the first and the second test period the first tests had indicated low HF values, HF was potentially lost during saturation of the gas collecting system.

The FTIR was calibrated^{29,57} for HF and POF₃. The minimum detection limit (MDL) for HF was 1.7 ppm and the limit of quantification (LOQ) was established to 5.7 ppm. The detection limit for POF₃ was 6 ppm²⁹. PF₅ was also qualitatively detectable by the FTIR²⁹ but not quantitatively calibrated. A classical least square (CLS) method was used for the quantification of HF and POF₃ using the spectral bands specified in Table 5. The relative error of the HF prediction is lower than 10 rel-%.

For all measurements, except type G, the measured ppm levels of HF were above the detection level. For POF₃, the maximum concentration was 11 ppm (5-cells) and 19 ppm (10-cells).

When the FTIR measurement stopped, HF levels were, in some of the tests, still somewhat above the detection limit, even though no HRR contribution was measured from the batteries. It is also possible that the HF was temporarily clogged in the sampling system. Some HF might not have been collected in the measurements and the effect of this error is largest for the batteries that give the lowest values. Thus the reported values might underestimate the released gas emissions.

In order to further improve the accuracy of the FTIR measurements, a data offset determination and a subsequent adjustment of the HF values was performed. The improvement was greatest for tests with lower concentrations, closer to the MDL value, e.g. type A with 5 cells with low values during relatively short periods of time. With 10 cells per test, the type A batteries gave higher signal-to-noise levels. The FTIR measurements started around 8 minutes before the burner was started. The calculated average HF ppm noise level was treated as an offset that had both negative and positive values, ranging from extreme values of about -2 to 3.5 ppm. This offset was compensated for by assuming a constant offset value and adding positive or negative offset values to the total HF release value. Note that the reported concentration values in ppm are only valid for the measurements in the smoke duct of our specific test equipment and method. The HF and POF₃ concentration values (in ppm) were used for calculating the corresponding production rates (in mg/s) using the ideal gas law and taking into account the measured ventilation flow rate in the smoke duct.

In the third test period the total amounts of water soluble fluorides were determined using gas-washing bottle technique. This was made in order to validate the results from the FTIR measurements with a separate measurement technique. The water soluble fluorides were collected in the bottles and the amount of HF was calculated by assuming that all fluoride ions present derives from HF. The sample gas was extracted from the center of

the smoke duct using a non-heated 6 mm (o.d.) diameter PTFE sampling tube with a length of about 1.5 m. The sampling was made using two gas-washing bottles connected in series each containing 40 mL of an alkaline buffer solution (20 mM Na₂CO₃/20 mM NaHCO₃). The second bottle was used to capture any losses from the first bottle. The sampling flow was 1.0 normal-L/min and the total sampled volume during a test was measured by a calibrated gas volume meter. The sampling flow rate was checked before the start of each test using a *Gilian Gilibrator-2 NIOSH Primary Standard Air Flow Calibrator* gas flow meter. The procedure during a test was to continuously sample during the full test time. When the test was completed, the sampling tube was disconnected from the exhaust duct to allow rinsing of the tube with buffer solution, about 30 mL in the first gas-washing bottle, to collect any fluoride deposited on the inner walls of the tubing, in order to minimize losses in the tube. Since the tube was rinsed, heating of the tube was not necessary (any condensation in tube was collected anyhow). Analysis of fluorine content of the absorption solutions was made using High Performance Ion Chromatography (HPIC). The contents of the two gas-washing bottles were analyzed separately. The bottles were rinsed with distilled water between each test in order to minimize any interference between tests.

Water mist test. In the water mist tests, a custom-made equipment was constructed, including a 12 V automotive pump and water container which was placed on a scale measuring the weight of the water. The scale readings and the on/off manual switching (of the 12 V) was recorded with 1 Hz using *Pico Technology ADC-24* with a custom-made *LabVIEW* program. The water mist was sprayed on or above the batteries using a metal nozzle. In order for precise time synchronization, the on/off 12 V signal was recorded by both data loggers (data logger 1 and data logger 2). A blank test, i.e. using only the propane burner and without batteries, was performed in order to calibrate the setup. The water flow was around 190 g water per min and consisted of deionized water.

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Author Contributions

F. Larsson planned the experiments, partially together with P. Andersson and B.-E. Mellander. P. Andersson made the initial data process of the SBI heat release data. P. Blomqvist planned and performed the FTIR and gas-washing bottles measurements and made the initial data processing. F. Larsson prepared the batteries and performed the measurement and data analyses of temperature, cell voltage and water mist, and did the post-measurements and final data processing. Water mist setup was planned and constructed by B.-E. Mellander and F. Larsson. All four authors were involved in the analyses of the data and wrote the paper.

Additional Information

Competing Interests: The authors declare that they have no competing interests.

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ATTACHMENT 4

HF AIR DISPERSION MODELING RESULTS

Toxic Threat Zone

Time: December 6, 2023 1325 hours PST (using computer's clock)

Chemical Name: HYDROGEN FLUORIDE

Warning: HYDROGEN FLUORIDE can react with water and/or water vapor. This can affect the evaporation rate and downwind dispersion. ALOHA cannot accurately predict the air hazard if this substance comes in contact with water.

Wind: 10 miles/hour from 270° true at 5 meters

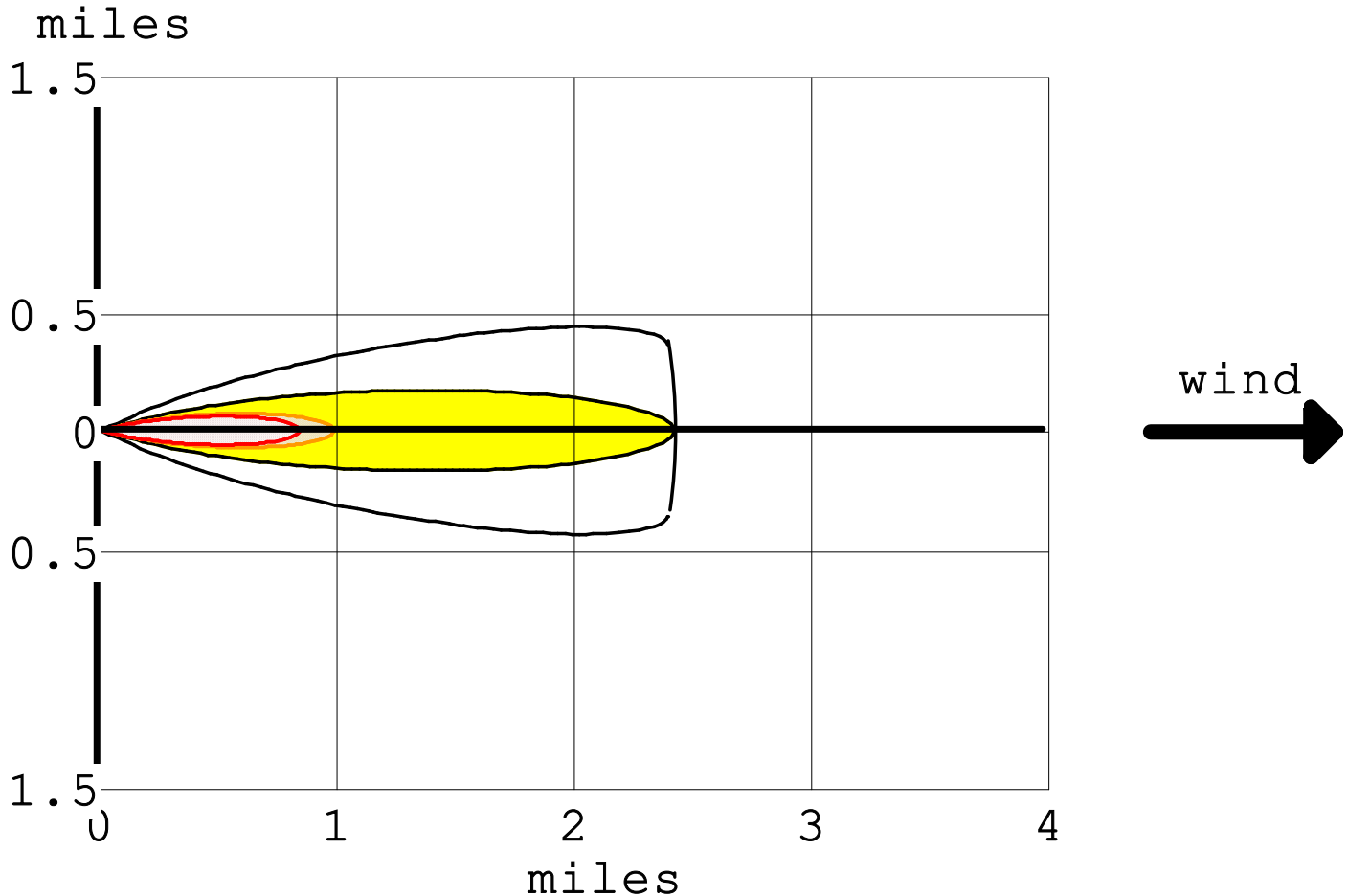
THREAT ZONE: (GAUSSIAN SELECTED)





Model Run: Gaussian

Red : 1491 yards --- (30 ppm = IDLH)

Orange: 1750 yards --- (20 ppm = ERPG-2)

Yellow: 2.4 miles --- (2 ppm = ERPG-1)



-  greater than 30 ppm (IDLH)
-  greater than 20 ppm (ERPG-2)
-  greater than 2 ppm (ERPG-1)
-  wind direction confidence lines

Text Summary

ALOHA® 5.4.7



SITE DATA:

Location: ACTON, CALIFORNIA
Building Air Exchanges Per Hour: 0.89 (unsheltered single storied)
Time: December 6, 2023 1325 hours PST (using computer's clock)

CHEMICAL DATA:

Warning: HYDROGEN FLUORIDE can react with water and/or water vapor. This can affect the evaporation rate and downwind dispersion. ALOHA cannot accurately predict the air hazard if this substance comes in contact with water.

Chemical Name: HYDROGEN FLUORIDE

CAS Number: 7664-39-3

Molecular Weight: 20.01 g/mol

AEGL-1 (60 min): 1 ppm AEGL-2 (60 min): 24 ppm AEGL-3 (60 min): 44 ppm

IDLH: 30 ppm

Ambient Boiling Point: 61.8° F

Vapor Pressure at Ambient Temperature: greater than 1 atm

Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)

Wind: 10 miles/hour from 270° true at 5 meters

Ground Roughness: open country

Cloud Cover: 0 tenths

Air Temperature: 85° F

Stability Class: D

No Inversion Height

Relative Humidity: 5%

SOURCE STRENGTH:

Direct Source: 152 kilograms/min

Source Height: 8 feet

Release Duration: 1 minute

Release Rate: 5.59 pounds/sec

Total Amount Released: 335 pounds

Note: This chemical may flash boil and/or result in two phase flow.

Use both dispersion modules to investigate its potential behavior.

THREAT ZONE: (GAUSSIAN SELECTED)

Model Run: Gaussian

Red : 1491 yards --- (30 ppm = IDLH)

Orange: 1750 yards --- (20 ppm = ERPG-2)

Yellow: 2.4 miles --- (2 ppm = ERPG-1)

Toxic Threat Zone

Time: December 6, 2023 1325 hours PST (using computer's clock)

Chemical Name: HYDROGEN FLUORIDE

Warning: HYDROGEN FLUORIDE can react with water and/or water vapor. This can affect the evaporation rate and downwind dispersion. ALOHA cannot accurately predict the air hazard if this substance comes in contact with water.

Wind: 10 miles/hour from 270° true at 5 meters

THREAT ZONE: (GAUSSIAN SELECTED)

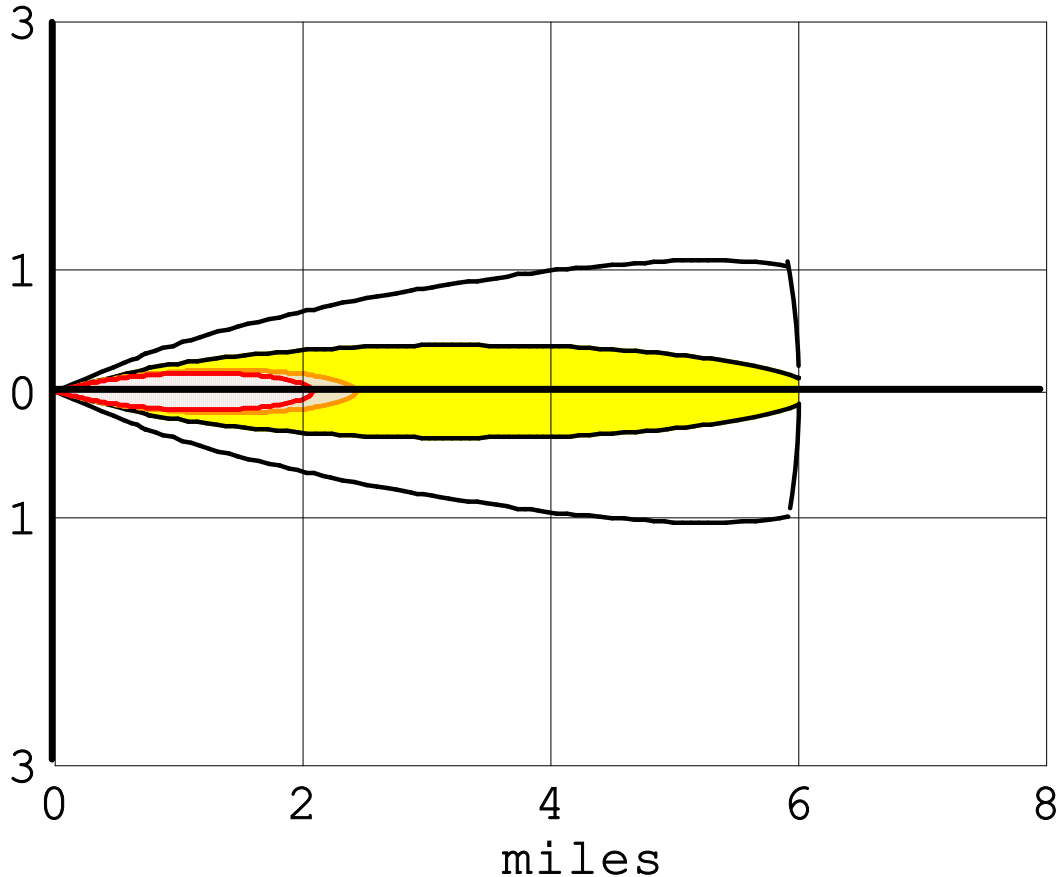
Model Run: Gaussian


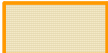


Red : 2.1 miles --- (30 ppm = IDLH)

Orange: 2.4 miles --- (20 ppm = ERPG-2)

Yellow: 6.1 miles --- (2 ppm = ERPG-1)

miles



-  greater than 30 ppm (IDLH)
-  greater than 20 ppm (ERPG-2)
-  greater than 2 ppm (ERPG-1)
-  wind direction confidence lines

Text Summary

ALOHA® 5.4.7



SITE DATA:

Location: ACTON, CALIFORNIA
Building Air Exchanges Per Hour: 0.89 (unsheltered single storied)
Time: December 6, 2023 1325 hours PST (using computer's clock)

CHEMICAL DATA:

Warning: HYDROGEN FLUORIDE can react with water and/or water vapor. This can affect the evaporation rate and downwind dispersion. ALOHA cannot accurately predict the air hazard if this substance comes in contact with water.

Chemical Name: HYDROGEN FLUORIDE

CAS Number: 7664-39-3

Molecular Weight: 20.01 g/mol

AEGL-1 (60 min): 1 ppm AEGL-2 (60 min): 24 ppm AEGL-3 (60 min): 44 ppm

IDLH: 30 ppm

Ambient Boiling Point: 61.8° F

Vapor Pressure at Ambient Temperature: greater than 1 atm

Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)

Wind: 10 miles/hour from 270° true at 5 meters

Ground Roughness: open country

Cloud Cover: 0 tenths

Air Temperature: 85° F

Stability Class: D

No Inversion Height

Relative Humidity: 5%

SOURCE STRENGTH:

Direct Source: 1520 kilograms/min Source Height: 8 feet

Release Duration: 1 minute

Release Rate: 55.9 pounds/sec

Total Amount Released: 3,351 pounds

Note: This chemical may flash boil and/or result in two phase flow.

Use both dispersion modules to investigate its potential behavior.

THREAT ZONE: (GAUSSIAN SELECTED)

Model Run: Gaussian

Red : 2.1 miles --- (30 ppm = IDLH)

Orange: 2.4 miles --- (20 ppm = ERPG-2)



Yellow: 6.1 miles --- (2 ppm = ERPG-1)

ATTACHMENT 5

A COMPREHENSIVE INVESTIGATION ON THE THERMAL AND TOXIC HAZARDS OF LARGE FORMAT LiFePO BESS



A comprehensive investigation on the thermal and toxic hazards of large format lithium-ion batteries with LiFePO_4 cathode

Yang Peng, Lizhong Yang  , Xiaoyu Ju, Baisheng Liao, Kai Ye, Lun Li, Bei Cao, Yong Ni

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Abstract

Toxic gases released from lithium-ion battery (LIB) fires pose a very large threat to human health, yet they are poorly studied, and the knowledge of LIB fire toxicity is limited. In this paper, the thermal and toxic hazards resulting from the thermally-induced failure of a 68 Ah pouch LIB are systematically investigated by means of the Fourier transform infrared spectroscopy (FTIR) and 1/2 ISO full scale test room. The LIBs with higher state of charge (SOC) are found to have greater fire risks in terms of their burning behavior, normalized heat release rate, and fire radiation, as well as the concentration of toxic gases. Specifically, the thermal hazards are evaluated by combining the effects of convective and radiative heat. The major toxic gases detected from the online analysis are CO, HF, SO_2 , NO₂, NO and HCl. Furthermore, Fractional Effective Dose (FED) and Fractional Effective Concentration (FEC) models are used to quantitatively assess the overall gas toxicity. Results show that the effects of irritant gases are much more significant than those of asphyxiant gases. HF and SO_2 have much greater toxicity than the other fire gases. The maximum FEC value is approaching the critical threshold in such fire scenarios.

Introduction

Lithium-ion batteries (LIBs) are widely used in various applications today and are seen as the promising

power source for electric vehicles (EVs), due to their high energy density and long cycle life (Wu et al., 2018; Wang et al., 2012). However, thermal runaway may occur, when the batteries are misused or encounter abnormal environmental conditions, which is generally accompanied by heat release, gas emissions, fire and possible explosions. Fire accidents caused by LIBs have been reported continually (Abada et al., 2016) and the safety problems have become a major obstacle that hinders the further development of EVs.

Considerable research has been carried out to investigate the thermal runaway features of LIBs. Experimental techniques such as differential scanning calorimetry (Zhang et al., 2019) (DSC), extended volume accelerating rate calorimetry (EV-ARC) (Feng et al., 2014a, b), vent sizing package 2 (VSP2) (Jhu et al., 2011, 2012; Chen et al., 2016), cone calorimeter (Fu et al., 2015; Zhong et al., 2018), Copper Slug Battery Calorimetry (CSBC) (Said et al., 2018; Liu et al., 2015, 2016) and even ISO 9705 room test apparatus (Ping et al., 2015) have been utilized to analyze the thermal hazards of single and multiple LIBs. For example, Said (Said et al., 2018) measured the energetics of thermally induced LIB failure by means of CSBC and cone calorimeter. The results showed that the heat released through flaming combustion of ejected battery materials was about three times as much as that generated inside the battery. Li et al. (2019) investigated the thermal runaway propagation mechanism of large format LIB with $\text{Li}(\text{Ni}_{1/3}\text{Co}_{1/3}\text{Mn}_{1/3})\text{O}_2$ cathode based on the results from the EV-ARC tests. The propagation time between adjacent LIBs was significantly delayed in 50% SOC module compared with 100% SOC module. Chen et al. (2017) conducted experiments in Hefei (100.8 kPa) and Lhasa (64.3 kPa) to investigate the fire behaviors of LIBs at different atmospheric pressures. It was determined that the low atmospheric pressure can largely weaken the combustion intensity of the LIBs. However, in some circumstances, the risks of fire effluents can be more serious than the fire itself, and the intense heat generated by LIB fires especially in enclosed environments. Deaths and injuries are mainly due to the inhalation of smoke and toxic gases in most fire accidents (Stec, 2017). To reduce the possibilities of safety problems, LIBs have to pass various abuse tests (overcharging, short circuit, crushing, penetration and overheating, etc.) before sales, yet there is no requirement to assess the toxicity of burning LIBs.

Until now, few studies have been done on evaluating the fire effluents of LIB and the knowledge of their toxicity is very limited. Fredrik (Larsson et al. (2014); Larsson et al., 2017, 2018; Andersson et al., 2016) conducted fire tests on various types of LIBs, which mainly focused on the quantitative analysis of toxic fluoride gases. It was observed that lower SOC batteries produced higher amounts of HF and the added water mist increased the peak production rate of the HF, but there was no significant change in the total amount of HF released. Ribière et al. (Ribière et al., 2012) utilized a Fire Propagation Apparatus (FPA) to investigate the combustion characteristics of the materials ejected from a 2.9 Ah pouch cell. Significant concentrations of toxic gases including HF, CO, NO, SO_2 and HCl were identified, and HF was considered to be the most critical gas emitted from F-containing batteries. Fabian Diaz et al. (2019) calculated the theoretical contaminated volume to evaluate the hazards of gas emissions produced in mechanical and thermal treatment of spent lithium-ion batteries. It was found that the battery with LiFePO_4 cathode produced the most amount of toxic gases, with an environmental contaminated volume of 379 m^3 during pyrolysis in nitrogen atmosphere. Sun et al. (2016) investigated the combustion products of two types of commercial LIBs with electrochemical sensors, and more than 100 volatile organic compounds were identified. They showed that the types of combustion products were related to SOC, and the fully charged batteries had the most serious toxicity. Lecocq et al. (2016) performed fire tests on 1.3 Ah lithium iron

phosphate batteries using FPA, and the gas emission data of HF and SO₂ were used to predict the toxicity of the whole Lithium-ion module. The nature of the salt was found to significantly affect the critical thresholds. However, large scale tests and more comprehensive gas species are needed to better extrapolate the measured toxicity to real fire conditions. The existed research has confirmed the types of emission gases and stressed the fact that they are toxic and can cause environmental issues, however, at present, the combined toxic effects of these gas products on human health have not been fully evaluated.

In this work, both the thermal and toxic hazards, resulting from thermal runaway of large format LIBs, are investigated using the FTIR and 1/2 ISO full scale test room. The gas toxicity and thermal hazard are quantitatively evaluated. Some important parameters such as heat release rate (HRR), time to ignition and fire radiation, as well as multiple gases emissions, are measured and analyzed in detail to present a comprehensive characterization of LIB fire hazards.

Section snippets

LIB samples

The PL15181210 LIBs employed in this work are manufactured by Beijing National Battery Technology, with LiFePO₄/graphite as their electrodes, and they are widely used in electric buses. The LIB has a nominal capacity of 68 Ah and a nominal voltage of 3.22 V. The initial mass is 1250 ± 3 g and its physical dimensions are shown in Fig. 1. A battery testing system of NEWARE CT-4004-10V100A-NFA controlled by a computer was employed to prepare LIBs to the expected SOC using the constant...

Assessment of Fire Gas Toxicity

The concentration limits considered by the National Institute for Occupational Safety and Health (NIOSH) of USA to be Immediately Dangerous to Life or Health (IDLH) (The National Institute for Occupational Safety and Health (NIOSH), 2014), are taken into account to conduct a preliminary assessment. Moreover, toxic-gas models described in ISO 13571 (1357) are introduced in this study to evaluate the combined toxic effects. This method is a good way to quantitatively assess the overall gas...

Burning behaviors

Fig. 4 shows the typical burning behaviors of the 68 Ah batteries with 0%, 50%, 75% and 100% SOC. It can be observed that the LIBs, with different SOCs, all undergo several burning stages: (I) heating and expansion, (II) stable combustion with small flame, (III) jet fire, (IV) second stable combustion and (V) abatement and extinguishment. The LIBs show similar behaviors at stages I, II and V while significant differences can be seen at stages III and IV.

At stage I, the LIBs are continuously...

Conclusions

This paper presents a comprehensive study on the thermal and toxic hazards of 68 Ah pouch lithium iron phosphate batteries conducted in 1/2 ISO full scale test room under well-defined conditions.

It is observed that the batteries experience a peaceful burning stage with a small flame before the onset of thermal runaway, which is beneficial for possible early warning and emergency management. The jet flame reaches a length of 55 cm for the fully charged battery, which is more than 2.5 times that...

Acknowledgments

This work was supported by National Science Foundation of China (No.51636008), Key Research Program of Frontier Sciences, CAS [No. QYZDB-SSW-JSC029] and the Fundamental Research Funds for the Central Universities (No. WK2320000040)....

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J. Power Sources (2014)

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Thermal runaway potential of LiCoO_2 and $\text{Li}(\text{Ni}_{1/3}\text{Co}_{1/3}\text{Mn}_{1/3})\text{O}_2$ batteries determined with adiabatic calorimetry methodology

Appl. Energy (2012)

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Effect of safety valve types on the gas venting behavior and thermal runaway hazard severity of large-format prismatic lithium iron phosphate batteries

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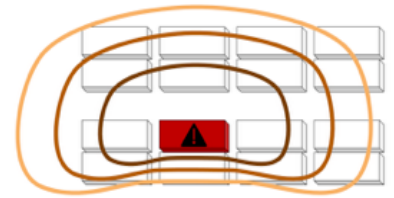
ATTACHMENT 15

**ELECTRIC POWER RESEARCH INSTITUTE BESS
FAILURE DATABASE**

BESS Failure Event Database

This is a public resource for documenting publicly-available data on battery energy storage failure events from around the world. All information included is available in the linked public documents. If there is a public event that is not included in the BESS Fire Event Database, please email the relevant information and link to supporting info to our [Storage Safety email \(mailto:Storage-Safety@epri.com\)](mailto:Storage-Safety@epri.com).

If you would like to be notified when a new event is added to this database or are interested in other EPRI energy storage safety research resources and opportunities please reach out to our [Storage Safety email \(mailto:Storage-Safety@epri.com\)](mailto:Storage-Safety@epri.com).



Stationary Energy Storage Failure Events

This table tracks utility and C&I scale energy storage failure events with publicly available information.

Note: Missing values in this table reflect unknowns.

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Location	Energy (MWh)	Power (MW)	Module Type	Application	Installation	Event Date	System Age (yr)	State During Accident	Source
US, PA, Millvale			SimpliPhi Power (LFP)	Solar Integration	Urban	30 January 2023		Operational	WTAE (https://www.wtae.com/article/millvale-fire-sprezzatura-food-energy-hub/42708022)
South Korea, Jeollanam-do, Yeongam-gun, Geumjeong-myeon	251			Solar Integration	Rural	27 December 2022	1.8	Operational	E2News.com (http://www.e2news.com/news/articleView.html?idxno=249345)
South Korea, Jeollanam-do, Damyang-gun, Mujeong-myeon, Deokgok-ri	9.1	2.5	Samsung SDI	Solar Integration	Rural	8 December 2022	5.5	Operational	E2News.com (http://www.e2news.com/news/articleView.html?idxno=248625)
China, Hainan	50	25	Ruipu	Solar Integration		20 October 2022	0	Commissioning	china5e.com (https://www.china5e.com/news/news-1142303-0.html)
US, CA, Moss Landing	730	182.5	Tesla	Energy Shifting, Ancillary Services	Substation	20 September 2022	0.5	Operational	KSBW News (https://www.ksbw.com/amp/article/fire-battery-storage-facility-moss-landing/41293594)
									Teller Report (https://www.tellerreport.com/tec)

South Korea, Incheon		103		Energy Shifting	Factory	6 September 2022		Operational	h/2022-09-06-fire-at-hyundai-steel-plant-in-incheon----flames-and-black-smoke-rising.SkbNbb7Vej.html
US, CA, Rio Dell			Lead Acid	Solar Integration / Backup	Rural	3 August 2022	4	Operational	KRCR (https://krctv.com/north-coast-news/eur-eka-local-news/battery-storage-container-explodes-rocking-rio-dell-rv-park)
US, AZ, Chandler	40	10	LG Chem [NMC]		Substation	18 April 2022	3	Operational	AZ Central (https://www.azcentral.com/story/money/business/energy/2022/04/21/fire-crew-s-tend-massive-smoldering-battery-chandler-facility/7405430001/)
US, CA, Valley Center	560	140	LG Energy Solution		Substation	5 April 2022	0.2	Operational	Valley Road Runner (https://www.valleycenter.com/articles/sprinklers-quickly-douse-terra-gen-fire/)
Longjing, Taichung City, Taiwan	1	1		Solar Integration	Power Plant	30 March 2022	2	Operational	Economic Daily (https://money-udn.com.translate.google.money/story/11799/620479?_x_tr_sl=zh-CN&_x_tr_tl=en&_x_tr_hl=en&_x_tr_pto=wapp)
US, CA, Moss Landing	400	100	LG Energy Solution	Solar Integration	Power Plant	13 February 2022	1	Operational	KSBW News (https://www.ksbw.com/article/second-battery-malfunction-in-less-than-6-months-reported-at-moss-landing-power-plant/39083568)
South Korea, Gunwi-gun,	1.5	0.45	LG Energy	Solar integration	Rural	17 January	3	Operation.	E2News (https://www.e2news.com.translate.google/news/articleView.html?idx

Gyeongsangbuk-do		Solution				2022	Fully charged	no=239023&_x_tr_sl=auto&_x_tr_tl=en&_x_tr_hl=en-US&_x_tr_pto=wapp	
South Korea, Nam-gu, Ulsan	50	10	SK Innovation	Peak Load Reduction	Urban	12 January 2022	2	Operational	E2News (https://www-e2news-com.translate.google/news/articleView.html?idxno=238938&_x_tr_sl=auto&_x_tr_tl=en&_x_tr_hl=en-US&_x_tr_pto=wapp)
US, CA, Moss Landing	1,200	300	LG Energy Solution	Solar Integration	Power Plant	4 September 2021	0.8		Vistra (https://investor.vstracorp.com/news?item=197)
Australia, Victoria, Geelong	450	300	Tesla	Grid Stability	Rural	30 July 2021	0	Construction, Commissioning	ABC News (https://www.abc.net.au/news/2021-07-30/tesla-battery-fire-moorabool-geelong/100337488)
US, IL, LaSalle	72	72	LFP	Frequency Regulation	Rural	19 July 2021	1.6		The Times (https://www.shawlocal.com/mywebsites/news/local/2021/07/19/no-evacuations-for-battery-fire-at-energy-storage-facility-east-of-grand-ridge/)
Germany, Neuhardenberg	5	5	[LFP]	Solar Integration and Frequency Regulation	Indoor/Hangar	18 July 2021	5		RBB 24 (https://www.rbb24.de/politik/beitrag/2021/07/brandenburg-neuhardenberg-brandschutz-batterie-solaranlage-feuerwehr.html)
Boulouparis, New Caledonia, France				Solar Integration	Rural	13 July 2021			FranceTVInfo.fr (https://la1ere.francetvinfo.fr/nouvellecaledonie/province-sud/boulouparis/centrale-photovoltaique-helio-a-boulouparis-les-consequences-de-l-explosion-1059016.html)

US, MI, Standish			Demand Charge Mgmt	Substation	19 April 2021	0	Installation	WSGW (https://www.wsgw.com/standish-battery-installation-fire-causes-shelter-in-place-no-adverse-conditions-found/)	
China, Beijing	25		Gotion High-Tech [LFP]	Solar Integration	Commerce Area	16 April 2021	2	Construction, Commissioning	CTIF Accident Analysis (https://www.ctif.org/news/accident-analysis-beijing-lithium-battery-explosion-which-killed-two-firefighters)
Australia, Bohle Plains	8	4	Tesla			7 April 2021	1.2		Townsville Bulletin (https://www.townsvillebulletin.com.au/subscribe/news/1/?sourceCode=TBWEB_WRE170_a_GGL&dest=https%3A%2F%2Fwww.townsvillebulletin.com.au%2Fnews%2Ftownsville%2Ffire-damages-yurikas-battery-facility-in-bohle-plain%2Fnews-story%2F442b8c00b6df5690e772b168d98b1579&memtype=anonymous&mode=premium)
South Korea, Hongseong			LG Energy Solution	Solar Integration		6 April 2021	3		Business Korea (http://www.businesskorea.co.kr/news/articleView.html?idxno=64241)
Gogyeong-myeon, Gyeongsangbuk-do, South Korea	4		LG Energy Solution	Solar Integration		11 March 2021			Newspim (https://www-newspim-com.translat.e.goog/news/view/20210311001212?_x_tr_sl=auto&_x_tr_tl=en&_x_tr_hl=en-US)
									FranceTVInfo.fr (https://france3-regions.france)

France, Ariège	0.5	0.5			Substation	1 December 2020			tvinfo.fr/occitane/ariege/foix/batteries-au-lithium-prennent-feu-x-container-ariege-1900866.html
UK, Liverpool	10	20	LG Chem [NMC]	Frequency Regulation	Substation	15 September 2020	1.5		Energy Storage News (https://www.energy-storage.news/news/fire-at-20mw-uk-battery-storage-plant-in-liverpool)
South Korea, Haenam	1.8	0.5		Solar Integration	Field	27 May 2020	2.2		E2News.com (http://www.e2news.com/news/articleView.html?idxno=222794)
Australia, Brisbane			[LFP]	Solar Integration		17 March 2020	6.7		Brisbane Times (https://www.brisbanetimes.com.au/national/queensland/firefighter-injured-in-overnight-blaze-at-griffith-university-campus-20200316-p54aet.html)
South Korea, North Jeolla, Jangsu	1			Solar Integration	Mountains	26 May 2019	1	Charged, discharging	MOTIE Investigation, June 2019 (http://www.motie.go.kr/motie/npresse/press2/bbs/bbsView.do?bbs_cd_n=81&bbs_seq_n=161771)
South Korea, North Gyeongsang, Chilgok	3.7			Solar Integration	Mountains	4 May 2019	2.2	Charged, inactive	MOTIE Investigation, June 2019 (http://www.motie.go.kr/motie/npresse/press2/bbs/bbsView.do?bbs_cd_n=81&bbs_seq_n=161771)
US, AZ, Surprise	2	2	LG Chem [NMC]	Volt Reg., PQ, Solar int.	Substation	19 April 2019	2		APS (https://www.aps.com/en/About/Our-Company/Newsroom/Articles/Equipment-failure-

								at-McMicken-Battery-Facility)
US, OR, Tualatin		Powin Energy	Manufacturing/Testing		11 April 2019	0		Oregon Live (https://www.oregonlive.com/washingtoncounty/2019/04/fire-breaks-out-during-battery-test-at-tualatin-warehouse.html)
South Korea, Ulsan	46.8		Demand Charge Mgmt	Factory	21 January 2019	0.6	Charged, inactive	MOTIE Investigation, June 2019 (http://www.motie.go.kr/motie/nel/press/press2/bbs/bbsView.do?bbs_cd_n=81&bbs_seq_n=161771)
South Korea, North Jeolla, Jangsu	2.5		Solar Integration	Mountains	15 January 2019	0.8	Charged, inactive	MOTIE Investigation, June 2019 (http://www.motie.go.kr/motie/nel/press/press2/bbs/bbsView.do?bbs_cd_n=81&bbs_seq_n=161771)
South Korea, South Gyeongsangnam, Yangsan	3.3		Demand Charge Mgmt	Factory	14 January 2019	0.8	Charged, inactive	MOTIE Investigation, June 2019 (http://www.motie.go.kr/motie/nel/press/press2/bbs/bbsView.do?bbs_cd_n=81&bbs_seq_n=161771)
South Korea, South Jeolla, Wando	5.2		Solar Integration	Mountains	14 January 2019	1.2	Charging	MOTIE Investigation, June 2019 (http://www.motie.go.kr/motie/nel/press/press2/bbs/bbsView.do?bbs_cd_n=81&bbs_seq_n=161771)
South Korea, Gangwon, Samcheok	2.7		Solar Integration	Mountains	22 December 2018	1	Charged, inactive	MOTIE Investigation, June 2019 (http://www.motie.go.kr/motie/nel/press/press2/bbs/bbsView.do)

								o?bbs_cd_n=81&bbs_seq_n=161771)
South Korea, North Chungcheong, Jecheon	9.3	Demand Charge Mgmt	Mountains	17 December 2018	1	Charged, inactive		MOTIE Investigation, June 2019 (http://www.motie.go.kr/motie/ne/presse/press2/bbs/bbsView.do?bbs_cd_n=81&bbs_seq_n=161771))
South Korea, South Gyeongsang, Geochang	1.3	Solar Integration	Mountains	21 November 2018	0.6	Charged, inactive		MOTIE Investigation, June 2019 (http://www.motie.go.kr/motie/ne/presse/press2/bbs/bbsView.do?bbs_cd_n=81&bbs_seq_n=161771))
South Korea, Gyeongsangbuk-do, Mungyeong	4.2	Solar Integration	Mountains	21 November 2018	0.9	Charged, inactive		MOTIE Investigation, June 2019 (http://www.motie.go.kr/motie/ne/presse/press2/bbs/bbsView.do?bbs_cd_n=81&bbs_seq_n=161771))
South Korea, North Gyeongsang, Yeongju	3.7	Solar Integration	Mountains	12 November 2018	0.8	Charged, inactive		MOTIE Investigation, June 2019 (http://www.motie.go.kr/motie/ne/presse/press2/bbs/bbsView.do?bbs_cd_n=81&bbs_seq_n=161771))
South Korea, South Chungcheong, Cheonan	1.2	Solar Integration	Mountains	12 November 2018	0.9	Charged, inactive		MOTIE Investigation, June 2019 (http://www.motie.go.kr/motie/ne/presse/press2/bbs/bbsView.do?bbs_cd_n=81&bbs_seq_n=161771))
				18				MOTIE Investigation, June 2019 (http://www.motie.go.kr/motie/ne/)

South Korea, Gyeonggi, Yongin	17.7	Frequency Regulation	Factory	October 2018	2.6	Maintenance	presse/press2/bbs/bbsView.do?bbs_cd_n=81&bbs_seq_n=161771)
South Korea, Jeju	0.2	Solar Integration		14 September 2018	4	Charging	MOTIE Investigation, June 2019 (http://www.motie.go.kr/motie/ne/presse/press2/bbs/bbsView.do?bbs_cd_n=81&bbs_seq_n=161771)
South Korea, Chungcheongnam, Taeon	6	Solar Integration	Waterfront	7 September 2018	0	Installation	MOTIE Investigation, June 2019 (http://www.motie.go.kr/motie/ne/presse/press2/bbs/bbsView.do?bbs_cd_n=81&bbs_seq_n=161771)
South Korea, Chungcheongbuk-do, Yeongdong	6	Solar Integration	Mountains	1 September 2018	0.7	Charged, inactive	MOTIE Investigation, June 2019 (http://www.motie.go.kr/motie/ne/presse/press2/bbs/bbsView.do?bbs_cd_n=81&bbs_seq_n=161771)
South Korea, Sejong	18	Demand Charge Mgmt	Factory	28 July 2018	0	Installation	MOTIE Investigation, June 2019 (http://www.motie.go.kr/motie/ne/presse/press2/bbs/bbsView.do?bbs_cd_n=81&bbs_seq_n=161771)
South Korea, South Gyeongsang, Geochang	9.7	Wind Integration	Mountains	21 July 2018	1.6	Charged, inactive	MOTIE Investigation, June 2019 (http://www.motie.go.kr/motie/ne/presse/press2/bbs/bbsView.do?bbs_cd_n=81&bbs_seq_n=161771)
							MOTIE Investigation,

South Korea, South Jeolla, Haenam	3	Solar Integration	Waterfront	12 July 2018	0.6	Charged, inactive	June 2019 (http://www.motie.go.kr/motie/neo/presse/press2/bbs/bbsView.do?bbs_cd_n=81&bbs_seq_n=161771)
South Korea, North Jeolla, Gunsan	19	Solar Integration	Waterfront	15 June 2018	0.5	Charged, inactive	MOTIE Investigation, June 2019 (http://www.motie.go.kr/motie/neo/presse/press2/bbs/bbsView.do?bbs_cd_n=81&bbs_seq_n=161771)
South Korea, South Jeolla, Yeongam	14	Wind Integration	Mountains	2 June 2018	2.4	Maintenance	MOTIE Investigation, June 2019 (http://www.motie.go.kr/motie/neo/presse/press2/bbs/bbsView.do?bbs_cd_n=81&bbs_seq_n=161771)

Showing 1 to 50 of 50 entries

Previous Next

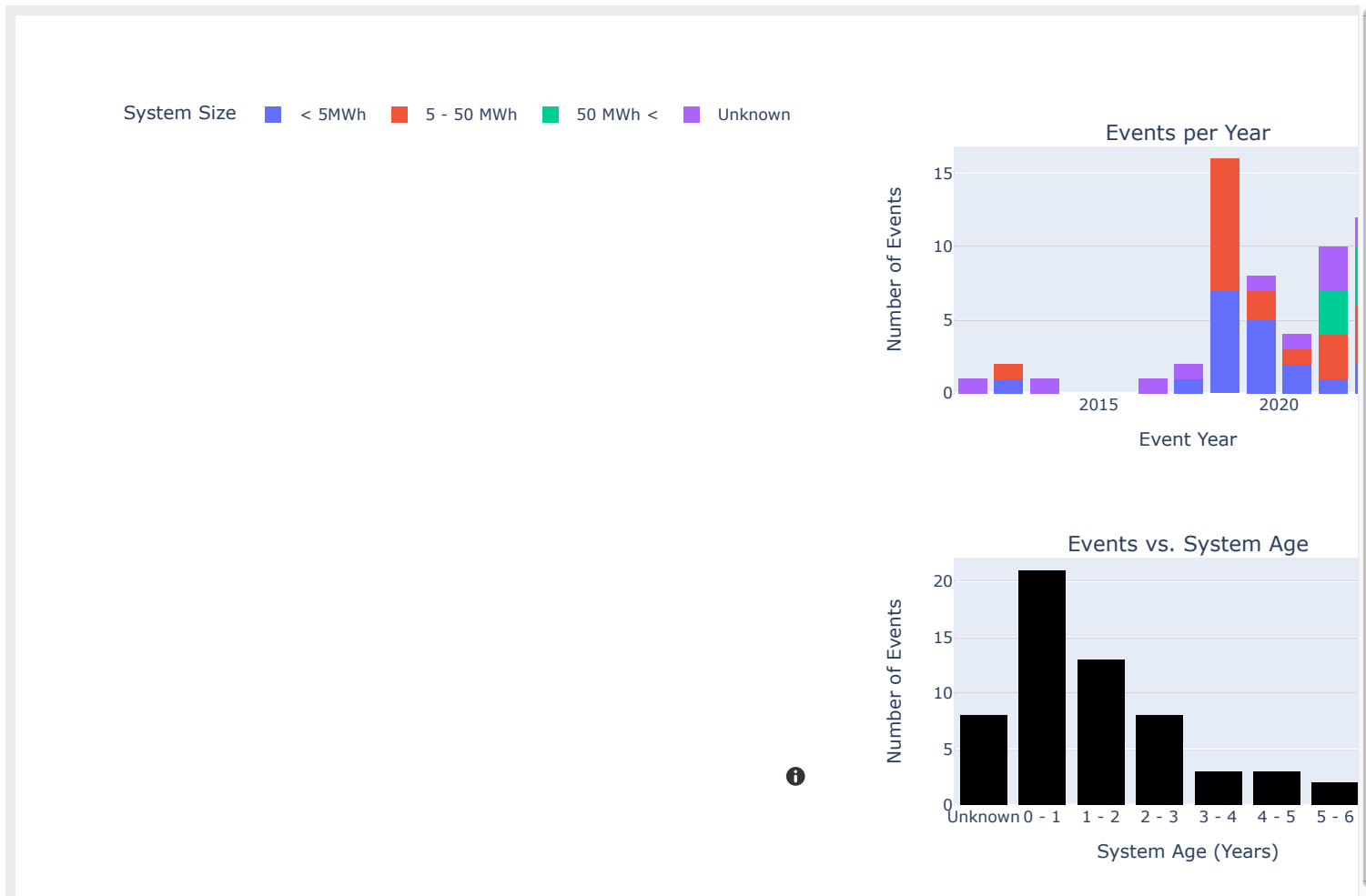


Figure 1. A breakdown of the stationary energy storage failure events from the above table.

Other Energy Storage Failure Events

This table tracks other energy storage failure events for scenarios that do not fit the criteria of the table above. This could include energy storage failures in settings like electric transportation, recycling, manufacturing, etc.

Note: Missing values in this table reflect unknowns.

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Location	Setting	Capacity (MWh)	Capacity (MW)	Operator / Integrator	Event Date	System Age (yr)	State During Accident	Description	Source
France, Rouen	Warehouse				16 January 2023		Storage	A fire spread through a warehouse containing thousands of lithium ion batteries.	the deep dive (https://thedeepdive.ca/huge-fire-breaks-out-at-a-french-warehouse-holding-thousands-of-lithium-batteries/) Electrek (https://electrek.co/2023/01/16/france-warehouse-fire-lithium-batteries/)

US, CA, Baker	Electric Vehicle Charging Station		Tesla	1 January 2023		Operational	This Megapack on a trailersystem is used to boost charging infrastructure at busy supercharger stations during peak times.	ps://electrek.co/2023/01/04/tesla-mobile-sup-ercharger-megapack-caught-on-fire/
Germany, Kaufbeuren	Battery test laboratory			3 November 2022		Testing	A battery exploded while undertest at an Intertek battery testing facility.	Allgau Newspaper (https://www.allgaeuer-zeitung-de.cdn.ampproject.org/c/s/www.allgaeuer-zeitung.de/allgaeuer/kaufbeuren/explosion-in-kaufbeuren-neugablonz-batterie-testlabor-in-die-luft-geflogen_arid-490378?type=amp)
US, CA, Palo Alto	EV Dealership		Tesla	7 August 2022		Storage	Failure within a stack of uninstalled EV batteries led to thermal runaway and damage to all batteries and some nearby property.	Palo Alto Fire Dept. (https://www.paloaltoonline.com/news/reports/1681511833.pdf)
Netherlands, Amsterdam	Maritime	0.7	EST-Floatch	25 July 2022	1	In transit / operation	Battery fire on Diesel-Electric hybrid river boat	The Maritime Executive (https://maritime-executive.com/article/river-cruise-ship-ev-acuated-after-possible-battery-explosion)
US, WI, Milwaukee	Hospital parking garage			21 June 2022		recycling bin	Container holding recycled batteries exploded in parking garage	WISN (https://www.wisn.com/articles/batteries-explode-in-milwaukee-hospital-parking-garage/40362133)
								SVT

Sweden, Karlskoga	Warehouse	10 April 2022	A fire outside of a warehouse where a large number of batteries were being stored.	Nyheter (https://www.svt.se/nyheter/lokalt/orebro/det-brinner-i-ett-batterilager-i-karlskoga-kraftig-rok)
South Korea, North Chungcheong, Cheongju	Manufacturing EcoPro BM	21 January 2022	Operational Manufacturing Facility	Korea JoongAng Daily (https://koreajongangdaily.joins.com/2022/01/21/national/social-affairs/fire-cheongju-EcoPro-BM/20220121174332885.html)
China, Wuhan	On highway during transport	12 January 2022	during transportation	Jimu News (https://news-cn-hubei.com.translate.google.com/content/2022-01/13/content_14407245.html?_x_tr_sch=http&_x_tr_sl=auto&_x_tr_tl=en&_x_tr_hl=en-US&_x_tr_pto=wap)
US, IL, Morris	Warehouse Superior Battery Inc.	2 July 2021		ABC (https://abc7chicago.com/morris-fire-update-battery/10853284/)

Showing 1 to 10 of 16 entries

Previous [1](#) [2](#) Next

Retrieved from "http://storagewiki.epri.com/index.php?title=BESS_Failure_Event_Database&oldid=2608"

This page was last edited on 17 August 2022, at 13:28.

ATTACHMENT 4

**Acton Town Council Comment Letter to
the California Energy Commission
Pursuant to the Staff Workshop on the
Safety of Battery Electric Energy Storage
Systems in Docket 24-BSS-01 Submitted
April 1, 2024.**



April 1, 2024

Elizabeth Huber, Director
Siting, Transmission and Environmental Protection Division
California Energy Commission
Docket Unit, MS-4
Docket No. 24-BSS-01
715 P Street Sacramento, California 95814

Subject: Staff Workshop on BESS Safety February 28, 2024.

Reference: Notice of Staff Workshop on BESS Safety Posted February 2, 2024, in
Docket 24-BSS-01.

Dear Director Huber;

The Acton Town Council respectfully submits the following comments in response to the California Energy Commission's ("Commission's") solicitation of public comment in the referenced Notice.

The Acton Town Council is a non-profit advocacy group that represents the interests of rural residents in the unincorporated community of Acton in North Los Angeles County; members of the Council are selected by the registered voters of the community of Acton, and any registered voter residing within the geographic boundaries of Acton is eligible to hold office and vote in its elections. The Acton Town Council is organized pursuant to its bylaws to represent the interests of rural residents in Los Angeles County and advocate on their behalf in matters ranging from local land use decisions to large "public benefit" projects such as electrical utility development. Moreover, the rural residential area of East Acton is slated for the development of more than 2,285 MW of new Lithium-based Battery Energy Storage Systems ("BESS"); this concentrated generation capacity in our rural town is larger than the Diablo Canyon nuclear generating station. The first of these projects has already been approved with no consideration or regard for environmental impacts or public safety. Accordingly, we have a substantial stake in the matters addressed in the referenced docket pertaining to safety considerations related to BESS project siting, permitting, construction and operation, and we respectfully offer the following comments to inform the Commission's consideration of matters pertaining to BESS facility siting and permitting. In the interest of brevity, our comments are arranged sequentially by topic.

The Acton Town Council Appreciates the Panel Discussion Convened in 24-BSS-01.

The Acton Town Council appreciates the Discussion convened by the Commission on February 23, 2024, to address land use and permitting issues (among other things) pertaining to large scale BESS facilities. In particular, we appreciate Mr. Kennedy's participation in the Panel because the concerns he highlighted are similar to the concerns we have in our own community. The Acton Town Council also appreciates the recommendation made by the moderator (Rohima Moly) that a statewide group of experts be convened as a resource for city and county planning staff; however, it is critical that such a "statewide group of experts" not be populated by industry shills or agents of energy developers who have a direct financial interest in expanding the deployment of lithium-based BESS facilities. One example of such an industry agent is Mr. Scott Murtishaw who participated in the Panel Discussion; his performance on the panel was appalling and it was clear from his statements that he is not an expert and that his only interest is in expanding BESS facilities as quickly as possible regardless of community risk or concerns.

The Acton Town Council is Concerned that the Commission is Unaware of Dangers Posed by LFP BESS.

One issue that became clear during the February 23 Panel Discussions is that the Commission has the mistaken impression that BESS facilities which utilize a "Lithium-Iron Phosphate" (LFP) chemistry are much safer than, and avoids the thermal runaway problems of, "Lithium-Nickel/Manganese/Cobalt" ("LNMC") batteries. For instance, in his introductory remarks, Chairman Hochschild stated "Certainly, the migration from NMC to LFP chemistry reduces significantly thermal runaway risk"¹. The mistaken notion that LFP batteries are safe compared to LNMC batteries was further perpetuated by the self-acknowledged non-expert Mr. Murtishaw² who stated "the concerns about thermal runaway and the intensity of fires actually apply to NMC and not to lithium iron phosphate³". This statement by Mr. Murtishaw is categorically false: LFP batteries *do* pose a significant thermal runaway risk (particularly when overcharged because their "thermal runaway" ignition temperature drops precipitously⁴). Moreover, recent

¹ Time stamp 06:58.

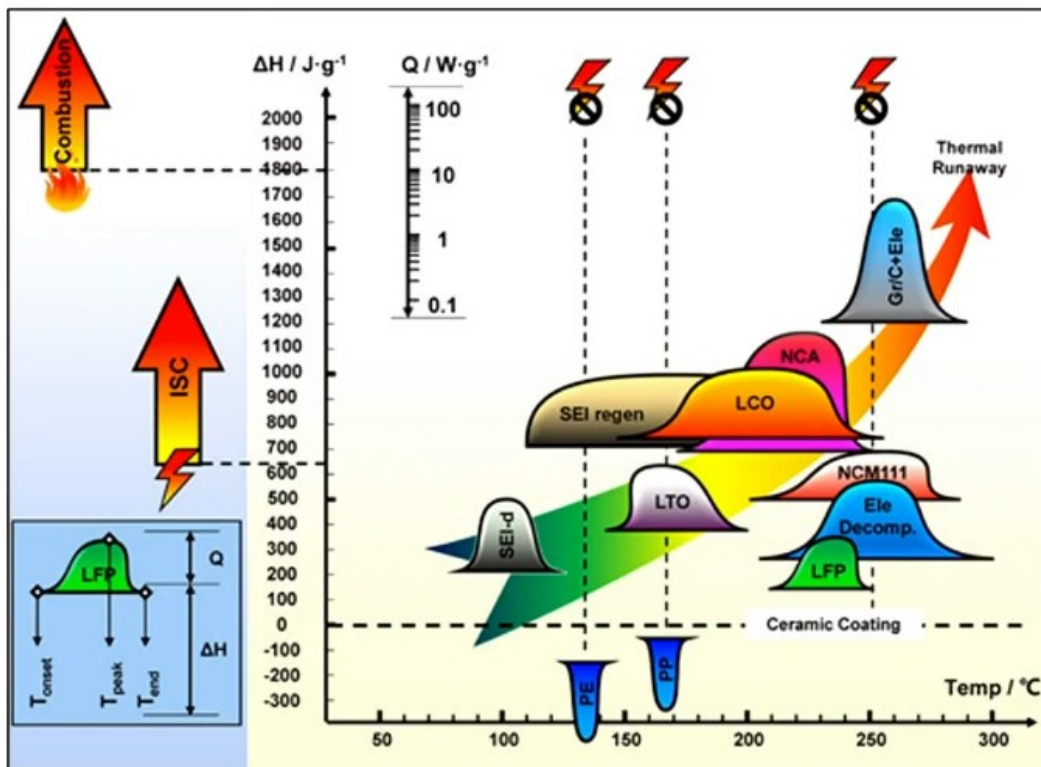
² Mr. Murtishaw affirms he is "far from being an expert"[Timestamp 1:16:34]; the description of his background indicates he has no expertise in engineering, chemistry, fire protection, or battery systems.

³ Timestamp 1:11:39.

⁴ *Study on Temperature Change of LiFePO₄/C Battery Thermal Runaway under Overcharge Condition*. Fei Gao et al 2021. Presented at the 3rd International Conference on Air Pollution and Environmental Engineering. IOP Conference Series: Earth and Environmental Science 631. <https://iopscience.iop.org/article/10.1088/1755-1315/631/1/012114/pdf>

findings released by the United Laboratory's Fire Safety Research Institute ("FSRI") utterly contradict Mr. Murtishaw's claim that the intensity of LFP fires is not a concern; specifically, FSRI found that LFP BESS fires are **more intense** and are arguably more explosive than LNMC BESS fires because thermal runaway events in LFP systems generate far more hydrogen gas and combustible hydrocarbons than thermal runaway events in LNMC system⁵. This *fact* has been corroborated by others⁶. Furthermore, industry shills like Mr. Murtishaw claim that LFP systems are "safe" because their thermal runaway temperature is high compared to LNMC systems; however, and as shown in Figure 1, FSRI data show the difference is less than 80°C.

Figure 1. Temperature Trends of Battery Chemistries



Source: *The Science of Fire and Explosion Hazards from Lithium Ion Batteries*. Presentation by Adam Barowy at the UL Fire Safety Research Institute Lithium-Ion Battery Symposium March 2023 [timestamp 13:55]. <https://fsri.org/research-update/lithium-ion-battery-symposium-resource-library>.

⁵ LFP batteries release approximately 50% hydrogen and 20% hydrocarbons, whereas LNMC batteries release approximately 30% hydrogen and 16% hydrocarbons. *The Science of Fire and Explosion Hazards from Lithium Ion Batteries*. Presentation by Adam Barowy at the UL Fire Safety Research Institute Lithium-Ion Battery Symposium March 2023 [timestamp 18:10]. <https://fsri.org/research-update/lithium-ion-battery-symposium-resource-library>

⁶ *A Review of Thermal Runaway Prevention and Mitigation Strategies for Lithium Ion Batteries*. Seham Shahid, Martin Agelin-Chaab. Published the Elsevier Journal of Energy Conversion and Management; Vol. 16. December 2022. Table 2. <https://www.sciencedirect.com/science/article/pii/S2590174522001337/pdf?md5=bbada63bcd4dca9cce371e45dc62c00&pid=1-s2.0-S2590174522001337-main.pdf>

In other words, and contrary to what Commission staff have been told by industry representatives, LFP batteries *are* susceptible to thermal runaway and they are ***particularly susceptible*** when overcharging occurs because overcharging drops the thermal runaway initiation temperature to as low as 116°C⁶ (which is actually lower than the thermal runaway initiation temperature for LNMC batteries). Furthermore, in experiments with fully charged (but not overcharged) LFP batteries, *degradation of the protective solid electrolyte interphase (SEI) film can begin at only 80 °C*; this exposes the anode which is the initiating factor for thermal runaway⁷. The Acton Town Council is very concerned that the Commission has the impression that LFP batteries are safe and that the LFP chemistry eliminates BESS public safety concerns; it does not. The Acton Town Council cannot fathom why energy developers continues to perpetuate the myth that LFP batteries are safe; nonetheless, we are committed to ensuring that neither the regulators nor the public are "taken in" by the LFP myth.

UL Certification Does Not Render BESS Facilities "Safe".

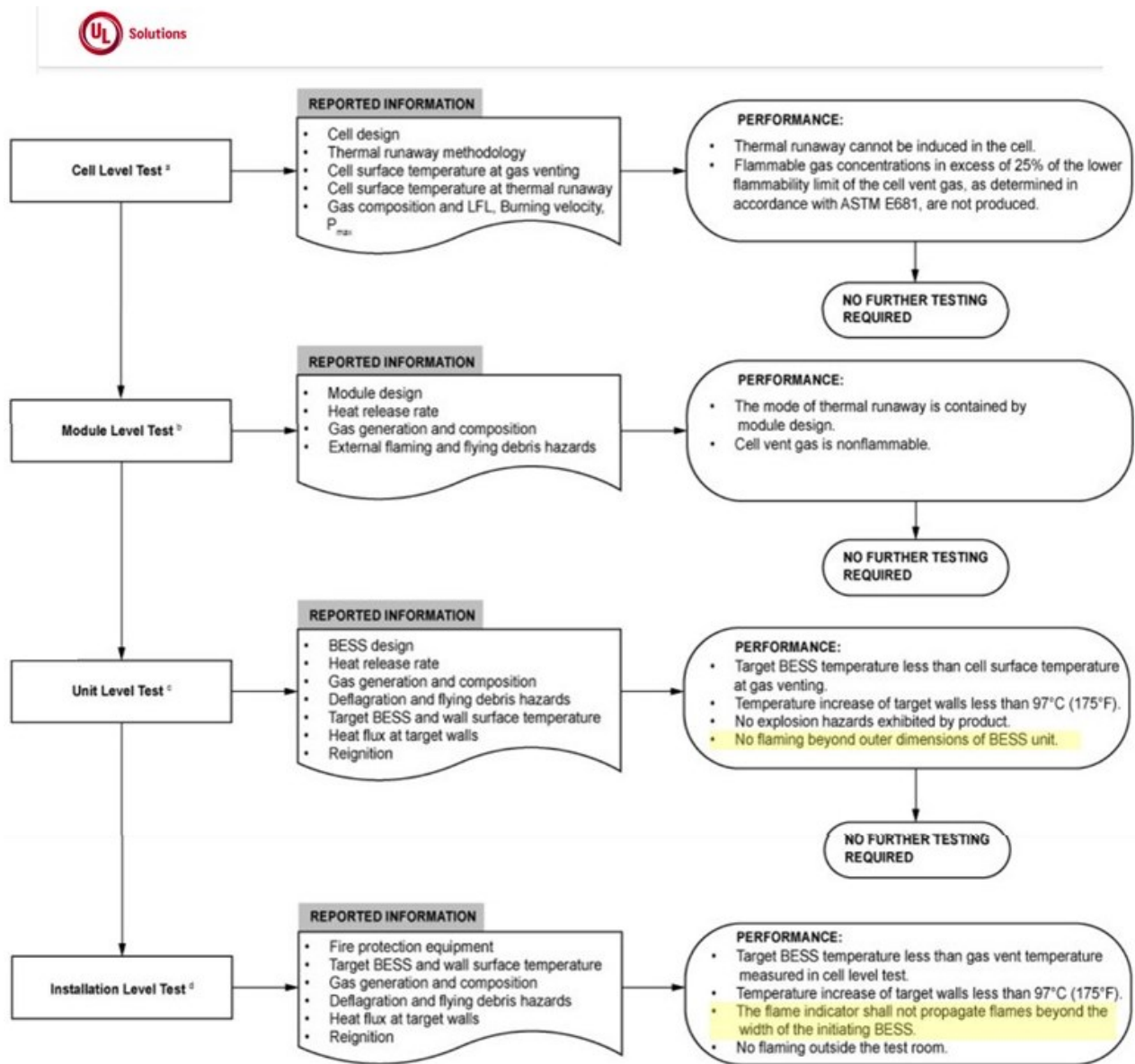
United Laboratories ("UL") has promulgated test method UL 9540A as the primary certification protocol for assessing the explosion and flame characteristics of Battery Energy Storage Systems (BESS), and it establishes that a large, container-based BESS system is UL-compliant if the flames and/or explosion that result from its deflagration do not propagate "beyond the width of the initiating BESS" (see Figure 2); this means that, even if a BESS container explodes or catches fire, it is still certifiable *as long as it does not cause other BESS containers to explode or catch fire*. UL 9540A constitutes a tacit admission that UL-compliant BESS pose very real fire and safety risks because they can (and do) explode and catch fire. And, while an engulfed UL-compliant BESS unit may not ignite other units, the embers generated by such an event can (and will) ignite surrounding vegetation or structures (particularly in wind-prone fire hazard areas). Consider for example the photograph provided in Figure 3 which was taken of a BESS fire in Australia in March of 2021; the Acton Town Council understands that this BESS facility was constructed in 2020 with "Tesla Megapack" products which, according to TESLA, was tested according to UL 9540A as of 2020⁸.

⁶ Thermal Runaway can be initiated at only 116 °C in overcharged LiFePO₄ batteries. *Study on Temperature Change of LiFePO₄/C Battery Thermal Runaway under Overcharge Condition*. Fei Gao et al 2021. Presented at the 3rd International Conference on Air Pollution and Environmental Engineering. IOP Conference Series: Earth and Environmental Science 631. <https://iopscience.iop.org/article/10.1088/1755-1315/631/1/012114/pdf>

⁷ *Revealing the Thermal Runaway Behavior of Lithium Iron Phosphate Power Batteries at Different States of Charge and Operating Environment*. Tianyi Li, Yinghou Jia. Journal of Electrochemical Science (September 2022) Article Number: 221030 <http://www.electrochemsci.org/papers/vol17/221030.pdf>

⁸ <https://r6.ieee.org/sfias/wp-content/uploads/sites/67/J-Gromadzki-Tesla-On-site-Energy-Storage-Systems.pdf>. Page 32.

Figure 2. UL-9540A Test Method Acceptance Chart.



Source: "UL 9540A Battery Energy Storage System (ESS) Test Method" by Howard D. Hopper, FPE - Global Regulatory Services Manager. [<https://www.ul.com/news/ul-9540a-battery-energy-storage-system-ess-test-method>].

Note: As indicated in the highlighted portions of this "Flow Chart", a BESS Container unit is deemed to meet the UL 9540A standard if it experiences a deflagration event which does not produce flames that extend beyond the width of the BESS Container Unit.

Figure 3. Containerized BESS After Thermal Runaway Initiates.



Source: <https://www.crowdjustice.com/case/bess-battery-storage-hazardous-material/>

BESS fires can be ignited for any number of reasons ranging from manufacturing defects to "glitches" in their cooling systems. The latter is a particular concern because battery cells generate significant heat when charging and discharging; therefore, BESS facilities are always constructed with extensive internal cooling facilities that heavily rely on fans. The reliance of BESS facilities on mechanical cooling systems renders them susceptible to failure. It should also be noted that "safe" BESS containers are designed to include "explosion vents" to direct flames and toxic gases out into the environment as indicated in Figure 4. The threat that this design scheme poses to communities in high fire hazard severity areas cannot be overstated.

Toxic Releases from BESS Fires and Explosions Must Be Considered.

Explosion and fire are not the only risks posed by Lithium-based BESS; in deflagration mode, Lithium-based BESS emit significant quantities of highly toxic gases which spread throughout surrounding areas; these toxic gases include hydrogen fluoride ("HF"), hydrogen chloride ("HCl"), and hydrogen cyanide ("HCN"). A study published by *Nature* determined that 20-200 milligrams of HF are released per watt-hour of battery discharge capacity⁹; reconciling this value with a typical Li-BESS container unit

⁹ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5577247/>

Figure 4. BESS Containers are Designed to Discharge Flames Upward.




Explosion vent panels are installed on the top of battery energy storage system shipping containers to safely direct an explosion upward, away from people and property. Courtesy: Fike Corp. Source: "Protecting Battery Energy Storage Systems from Fire and Explosion Hazards"; an article published by Power [<https://www.powermag.com/protecting-battery-energy-storage-systems-from-fire-and-explosion-hazards/>]

capacity of 7.6 MWh yields an HF release rate of 152-1,520 kg (or 334-3344 pounds) per deflagration event! When these values are input to the Environmental Protection Agency's air dispersion model (known as the "Areal Locations of Hazardous Atmospheres") and programmed for typical weather conditions in Acton, the results indicate that a single Li-BESS container deflagration will create a toxic HF cloud that is more than half a mile long and could exceed two miles in length (see Figures 5 and 6). Recent BESS fire events underscore the concerns surrounding toxic releases. For instance, during the 2023 Warwick BESS fire in New York, air sampling showed that "dozens of toxins were detected during the three-day fire"¹⁰ and during the Lyme fire,

¹⁰ <https://www.iomosaic.com/contact/demos/2023/09/19/battery-fires-challenge-warwick-ny-energy-storage-safety-measures>.

Figure 5. Dispersion Model Results of Low HF Release Levels

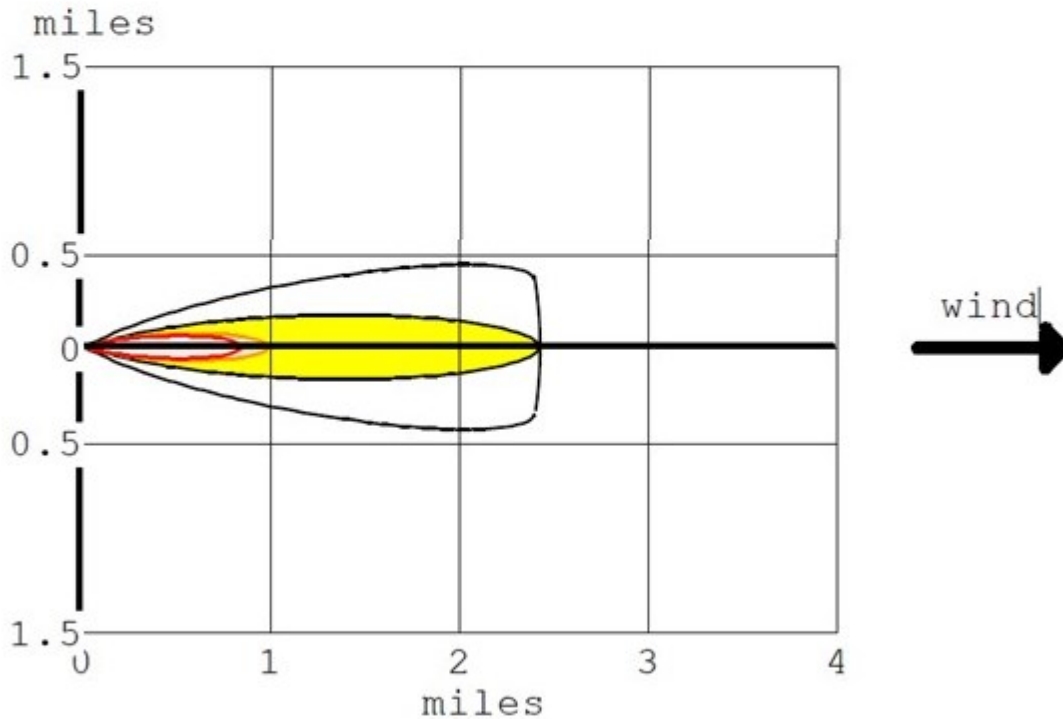
Toxic Threat Zone ALOHA® 5.4.7 

Time: December 6, 2023 1325 hours PST (using computer's clock)

Chemical Name: HYDROGEN FLUORIDE
Warning: HYDROGEN FLUORIDE can react with water and/or water vapor. This can affect the evaporation rate and downwind dispersion. ALOHA cannot accurately predict the air hazard if this substance comes in contact with water.

Wind: 10 miles/hour from 270° true at 5 meters

THREAT ZONE: (GAUSSIAN SELECTED)
Model Run: Gaussian
Red : 1491 yards --- (30 ppm = IDLH)
Orange: 1750 yards --- (20 ppm = ERPG-2)
Yellow: 2.4 miles --- (2 ppm = ERPG-1)








-  greater than 30 ppm (IDLH)
-  greater than 20 ppm (ERPG-2)
-  greater than 2 ppm (ERPG-1)
-  wind direction confidence lines

Figure 6. Dispersion Model Results of High HF Release Levels

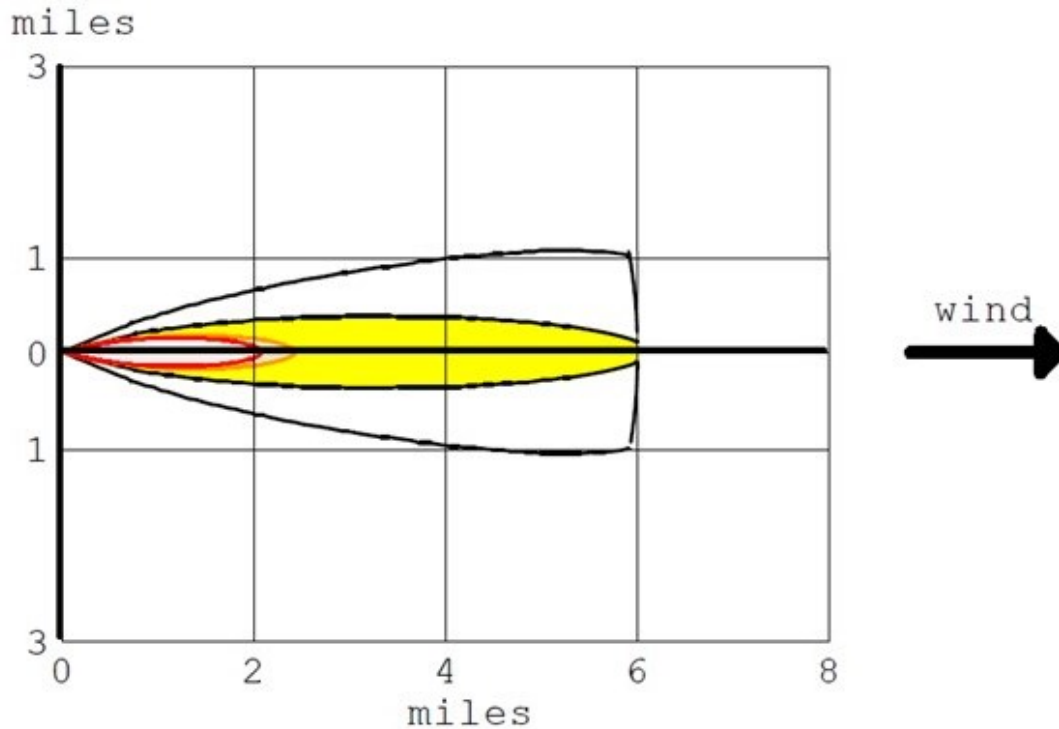
Toxic Threat Zone ALOHA® 5.4.7 

Time: December 6, 2023 1325 hours PST (using computer's clock)

Chemical Name: HYDROGEN FLUORIDE
 Warning: HYDROGEN FLUORIDE can react with water and/or water vapor. This can affect the evaporation rate and downwind dispersion. ALOHA cannot accurately predict the air hazard if this substance comes in contact with water.

Wind: 10 miles/hour from 270° true at 5 meters

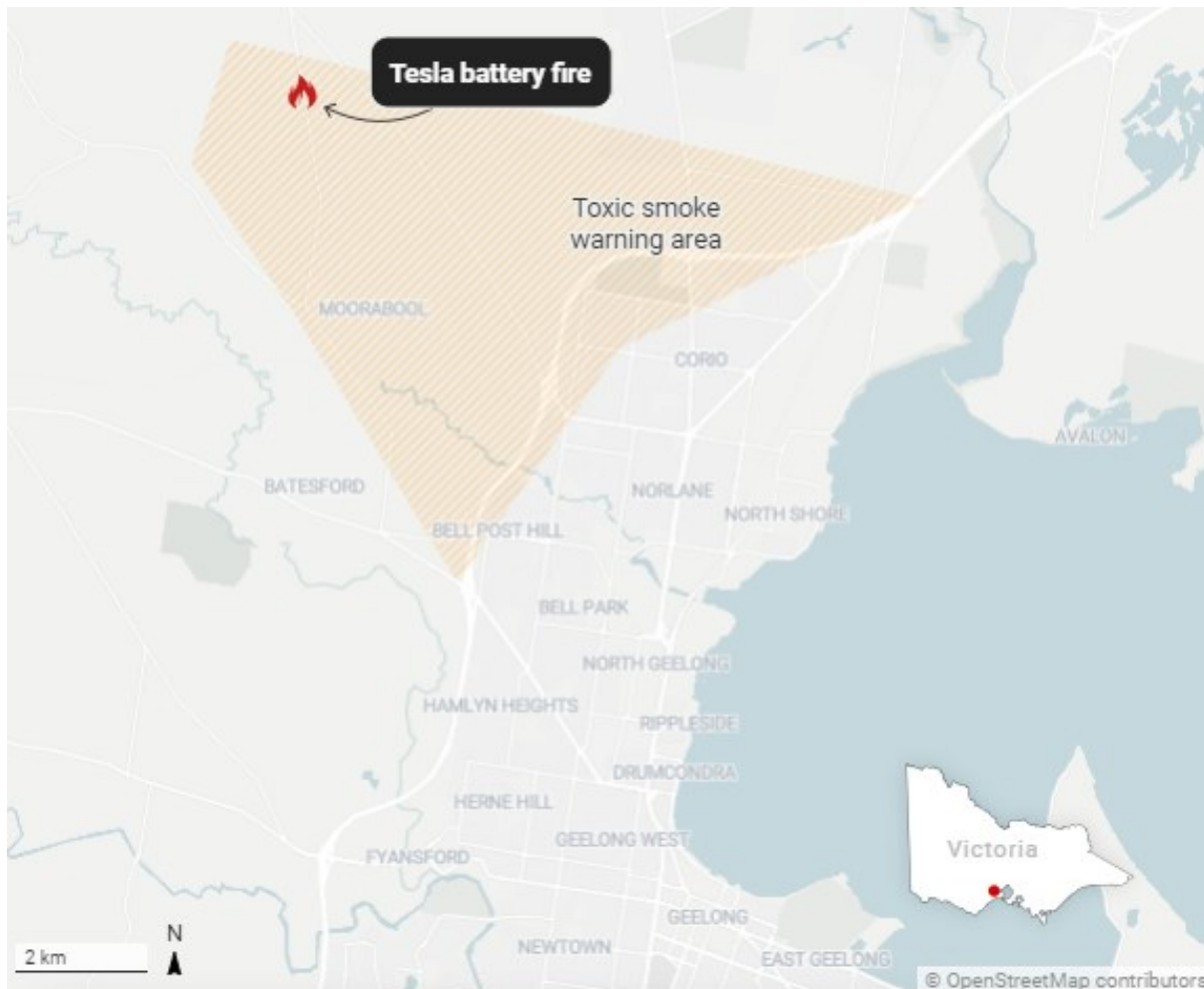
THREAT ZONE: (GAUSSIAN SELECTED)
 Model Run: Gaussian
 Red : 2.1 miles --- (30 ppm = IDLH)
 Orange: 2.4 miles --- (20 ppm = ERPG-2)
 Yellow: 6.1 miles --- (2 ppm = ERPG-1)



- greater than 30 ppm (IDLH)
- greater than 20 ppm (ERPG-2)
- greater than 2 ppm (ERPG-1)
- wind direction confidence lines

residents within a one-mile radius of the BESS fire were ordered to shelter in place for several hours¹¹. The risk from toxic gases released by the Moss Landing BESS fire in California was so significant that shelter in place orders were initiated and *Highway 1 was closed for 12 hours*¹². And, in response to the Australia BESS fire described above, people within 6 miles and downwind of the BESS facility were directed to "shelter in place"; a map of the affected area is provided in Figure 7. It is also a fact that the gases released from lithium-based batteries kill; According to Congressional Testimony offered by Chief Fire Marshal Flynn of the New York City Fire Department, the cause

Figure 7. Area Affected by "Shelter in Place" Orders During Australia BESS Fire Event.



Source: <https://www.theage.com.au/national/victoria/blaze-at-tesla-big-battery-extinguished-after-three-day-battle-for-control-20210802-p58f6x.html>

¹¹ <https://www.northcountrypublicradio.org/news/story/48209/20230727/solar-farm-battery-fire-in-jefferson-county>.

¹² <https://www.ksbw.com/article/highway-1-reopened-near-moss-landing-shelter-in-place-lifted/41302918>

of deaths in multiple New York City micro battery fires was the toxic fumes released by the batteries. He said "There was no fire that extended to the apartments of the people that were killed there. The smoke from these devices is so toxic that if it reaches your apartment, you're immediately overcome by this toxic gas"¹³. Given these facts, it is entirely imprudent to locate lithium-based BESS facilities near residences or anywhere near commuter corridors, train corridors, or in locations where large numbers of people congregate. Additionally, in communities like Acton where there are many animal rescue and animal training facilities, lithium-BESS facilities are particularly unsuitable because it would be difficult if not impossible for such facilities to bring all their animals "indoors" safely and quickly at a moment's notice.

The High Incidences of Manufacturing Defects Substantially Increase the Public Safety Risks Posed by BESS.

BESS fires and explosions can occur for any number of reasons ranging from manufacturing defects to "glitches" in the control system leading to overcharging to a mechanical failure in the cooling system; any of these events can result in thermal runaway. Manufacturing defects are perhaps the most insidious of all because they are invisible and can be virtually undetectable. Clean Energy Associates released a report just two months ago (in February 2024) which summarized the results of inspections conducted by CEA at 64 percent of the "Tier 1" lithium-based BESS manufacturers around the world (specifically, in the United States, South Korea, India, Viet Nam, and China) and found that 26% had deficiencies related to the *fire detection and suppression system* and 18% had deficiencies related to the *thermal management system*¹⁴. These statistics pertaining to manufacturing defects constitute further proof that lithium-based BESS systems pose real and significant public safety concerns. They also substantiate the fact that BESS health and safety risks increase within a particular area as the concentration of BESS facilities increases in the area because the probability of thermal runaway increases with increased numbers of batteries¹⁵.

¹³ <https://goldman.house.gov/media/press-releases/video-and-rush-transcript-congressman-dan-goldman-pushes-greater-regulation>

¹⁴ *BESS QUALITY RISKS: A Summary of the Most Common Battery Energy Storage System Manufacturing Defects*. February, 2024. CEA Insights. <https://info.cea3.com/hubfs/CEA%20BESS%20Quality%20Risks%20Report.pdf>

¹⁵ It is purely a "numbers game" in which the likelihood that a defective BESS unit (which could experience thermal runaway) is placed at a particular location increases as the total number of BESS units increase at that location. A recent study issued by Pacific Northwest Laboratories ("PNL") states "This point of failures being contained to the unit of origin is critical in both system design and assessing the project's overall risk profile. The risk of a fire incident at a battery storage project does not increase with project size; the two are decoupled in a well-designed system that prevents a fire in one unit from spreading to neighboring units. Regardless of project size, the fundamental question in assessing a project's risk is (continued)

Local Agencies with Permit Responsibilities Must Factor in Public Safety Concerns Before Approving any BESS Facility Permit.

Local agencies (including cities and counties) with permit authority over BESS facilities are required to comply with the California Environmental Quality Act ("CEQA") which, among other things, requires agencies to factor in the public health and safety risks posed by any proposed BESS facility. Specifically, agencies are required to either mitigate the public safety risks posed by the BESS facility to a level that is "less than significant" or adopt a finding that the benefits accrued by the BESS project outweigh the public health and safety risks that it poses. It is axiomatic that the health and safety risks posed by lithium-based BESS facilities are driven by the size of the facility, its proximity to people, and its location in relation to high fire risk areas. For example, a utility scale, lithium-based BESS facility placed in a Very High Fire Hazard Severity Zone poses a much greater wildfire risk than the same BESS facility located in a "low fuel" area. Similarly, a lithium-based BESS facility located in a residential area poses a much greater toxic gas risk than the same facility located in an unpopulated area. Accordingly, CEQA demands that local agencies weigh all these factors before approving any BESS facility despite the preference of energy developers to have BESS facilities approved without CEQA review or community input¹⁶. It is critical that any report issued by the Commission in this Docket clarify that BESS permitting (and particularly lithium-based BESS permitting) comply with CEQA and take into consideration the unique, location-specific factors that exist at every proposed BESS location.

Regardless of what industry representatives claim, communities have a right to demand a safe living environment and local agencies have an obligation to listen to these demands and reject BESS developments that endanger communities. The community "pushback" against BESS developments that local agencies are now experiencing is a predictable outcome of the carelessness shown by energy developers who have thoughtlessly pursued, advanced, and heavily advocated in favor of dangerous lithium-based storage technologies in the interest of expediency and despite the existence of safer alternatives that were rejected because they would take a little longer to develop. Rather than admit this error, energy developers have instead gone "all in" on lithium-

(continued) what happens if a single unit fails, rather than what happens if every unit fails at once." These statements merely articulate that the likelihood of a fire incident resulting from thermal runaway in a single BESS container has a low risk of spreading to other BESS containers if all the BESS containers are UL 9540A compliant because fires in UL 9540A certified BESS containers are less likely to spread to surrounding containers. However, the PNL report does not challenge, and cannot challenge, the indisputable fact that the probability of a BESS fire occurring in a particular area increases as the number of BESS units increase in a particular area. The PNL Report is "*Energy Storage in Local Zoning Ordinances*". October 2023. https://www.pnnl.gov/main/publications/external/technical_reports/PNNL-34462.pdf

¹⁶ For example, Mr. Murtishaw advocates in favor of "ministerial" review of lithium-based BESS so that they can be approved without CEQA, without public comment, and without any notice to affected communities. Timestamp 1:17:38.

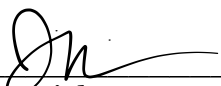
based battery systems and seek to expand these technologies by whatever means necessary (including understating the dangers of Lithium-based BESS facilities¹⁷ and denigrating public concerns regarding BESS facilities¹⁸). The blame for community opposition to BESS development lies entirely with the energy developers who chose expediency and profits over public safety when they pursued only lithium-based storage technologies and disregarded safer technologies.

Conclusion

The Acton Town Council urges the Commission to conduct an honest and unbiased assessment of public safety concerns relating to lithium-based BESS and thereby ensure that siting guidance developed for these systems is accurate and appropriate; moreover, this assessment must be developed without influence by energy developers or their agents (all of whom have a significant financial interest in the widespread deployment of lithium BESS facilities). In particular, the Acton Town Council recommends that the Commission's guidance document discourage the development of utility-scale BESS facilities in high fire hazard zones or near transit corridors or in populated areas.

If you have any questions or wish to discuss the concerns presented herein, please do not hesitate to contact me at atc@actontowncouncil.org.

Sincerely;



Jeremiah Owen, President
The Acton Town Council

¹⁷ In his remarks during the Panel Discussion, Mr. Murtishaw incorrectly stated that "a lot of the concerns about thermal runaway and the intensity of those fires actually apply to NMC [batteries] and not to lithium iron phosphate [batteries]". Timestamp 1:11:39. This statement is categorically false; both LNMC batteries and LFP batteries are susceptible to thermal runaway and LFP batteries are particularly susceptible if they are overcharged; furthermore, LFP battery fires are actually far more intense than LNMC batteries (as discussed above).

¹⁸ In his remarks during the Panel Discussion, Mr. Murtishaw said that the public comment he heard at a County Board of Supervisor meeting was "based on old information that apply to different technologies or ways that energy source projects were developed in the past but are no longer" [Timestamp 1:09:51]. The meeting that Mr. Murtishaw referred to took place in Los Angeles on December 19, 2023; several Acton Town Council members were present and we can assure the Commission that all the information conveyed in public comment pertained solely to lithium BESS technologies. Additionally, all the information conveyed by the public was current and represented the latest in technological information. Mr. Murtishaw's commentary on the efficacy and accuracy of public comment was not only insulting, it was also patently false. The meeting transcript is found here: https://file.lacounty.gov/SDSInter/bos/sop/transcripts/1153948_121923.pdf; public comment begins on page 143.

ATTACHMENT 5

**Acton Town Council Comment Letter to
the Regional Planning Commission
Pursuant to the Climate Action Plan
Submitted November 10, 2023.**



November 10, 2023

Honorable Michael R. Hastings, Chair
Los Angeles County Regional Planning Commission
320 W. Temple Street
Los Angeles, CA 90012

Electronic transmission of two 2 pages sent
care of Commission Secretary Ms. Elida Luna at
commission@planning.lacounty.gov and
climate@planning.lacounty.gov

Subject: Acton Town Council Comments on the Final Climate Action Plan.

Reference: Notice of Public Hearing issued Saturday, October 14, 2023.

Dear Commissioner Hastings;

The Acton Town Council respectfully offers the following comments on the Final Climate Action Plan ("CAP").

The Acton Town Council Greatly Appreciates the Revisions Made to Measure E1:

In numerous comments that the Acton Town Council has submitted over the last 4 years pursuant to the CAP, we have expressed great concern regarding how building decarbonization strategies would adversely affect the many rural residents in unincorporated Los Angeles County that utilize propane or natural gas for heating and cooking purposes rather than electricity because they have unreliable electrical service due to weather (such as when the community of Three Points lost power for a week because of heavy snow), deficient utility service (such as when Clean Power Alliance customers lose power due to inadequate infrastructure), and other reasons. These concerns are now allayed because of changes incorporated in Measure E1.

The Acton Town Council Requests Clarification Regarding Action E5.1

In previous comments, the Acton Town Council explained that Measure E5 pertaining to graywater systems cannot be applied to rural areas that rely on septic systems; in response, staff indicated that Measure E5 merely encourages the development of gray water systems in new developments "but does not require their installation". However, the plain language of Action E5.1 states that dual waste piping is **required** in all new residential developments. The Acton Town Council respectfully requests that the Commission clarify this inconsistency before approving the CAP.

The Acton Town Council Greatly Appreciates the Revisions Made to Action E4.1:

We are grateful that staff heard the concerns voiced by the Acton Town Council and others regarding prior versions of Action E4.1 and made appropriate revisions.

The Acton Town Council Greatly Appreciates the Revisions Made to Strategy 9:

We are grateful that staff heard the concerns voiced by the Acton Town Council regarding the fact that, in some communities, agricultural uses and rural residential uses are one in the same and that Strategy 9 was revised.

Measure T6 Should Include a Prohibition on New Gasoline and Diesel Service Stations.

The purpose of Measure T6 is to “Increase ZEV Market Share and Reduce Gasoline and Diesel Fuel Sales” and according to the description, it is supposed to “Set targets for reducing total gasoline and diesel vehicle fuel sales”. However, Measure T6 does not include any Implementing Actions or Performance Objectives that address gasoline or diesel vehicle sales; it also fails to provide any policy or direction pertaining to gasoline and diesel vehicle sales. One obvious Action that should be incorporated in Measure T6 is to prohibit the development of any new commercial gasoline or diesel fueling stations (i.e., "gas stations") in unincorporated Los Angeles County; such a prohibition is consistent with other CAP policies and it should be adopted.

The Acton Town Council Requests Clarification Regarding Measure T5

In previous comments, the Acton Town Council explained that Measure T5 poses potentially significant safety impacts at sensitive intersections within the Community of Acton (such as at the intersection of Crown Valley Road and Sierra Highway). In response, staff assert that Measure T5 only applies to development in areas that are within one half mile of a major transit stop and that it therefore does not apply to the Crown Valley Road/Sierra Highway intersection (see page 2.3-139 of the PEIR). However, nothing in the CAP states that Measure T5 applies only to development within a half mile of a major transit stop so Measure T5 does indeed apply to the intersection of Crown Valley Road and Sierra Highway. The Acton Town Council respectfully requests that the Commission clarify this inconsistency before approving the CAP.

CONCLUSION

The Acton Town Council appreciates this opportunity to address the Regional Planning Commission, and we respectfully request that you address the two inconsistencies noted above and also consider a prohibition on of new gas and diesel stations in the CAP. If you have any questions or require additional information, please do not hesitate to contact us at atc@actontowncouncil.org.

Sincerely,



Jeremiah Owen, President
The Acton Town Council

ATTACHMENT 6

**Acton Town Council Comment Letter to
the Regional Planning Commission
Pursuant to the Climate Action Plan
Submitted November 14, 2023.**



November 14, 2023

Honorable Michael R. Hastings, Chair
Honorable Pam O'Connor, Vice Chair
Honorable Yolanda Duarte-White, Commissioner
Honorable David W. Louie, Commissioner
Honorable Elvin W. Moon, Commissioner
Los Angeles County Regional Planning Commission
320 W. Temple Street
Los Angeles, CA 90012
Electronic transmission of two 2 pages sent c/o
Commission Secretary Ms. Elida Luna at
commission@planning.lacounty.gov

Reference: Agenda Item #7 of the Regional Planning Commission Hearing Scheduled for November 15, 2023 Pertaining to the Draft Climate Action Plan.

Dear Chair Hastings and Commissioners;

With this letter, the Acton Town Council seeks to memorialize specific issues pertaining to the proposed Climate Action Plan ("CAP") that were resolved in a recent discussion with planning staff; please accept these comments into the CAP evidentiary record.

CAP Provisions That Call For The Phase Out And Elimination Of Off Road Engines:

The numerous provisions set forth in the CAP that address "off road" equipment/devices and seek their phase out and elimination are not intended to target emergency generators. These "off road" equipment provisions are collected under "Strategy 4" pertaining to the decarbonization of transportation uses; accordingly, implementation of the proposed CAP will not result in the elimination of critical emergency generators that rural residents are frequently forced to rely on when electrical service is terminated due to inadequacies in the local electrical distribution system.

CAP Provisions That Call For The Decarbonization Of Applicable New Buildings

The decarbonization ordinance that will be developed to implement Action E 2.1 of the CAP will establish thresholds of applicability that are based on climate, geography, infrastructure, and sole-source dependency challenges that rural communities face; these applicability thresholds will determine whether, and to what extent, new development will be required to be fully decarbonized.

CAP Provisions that Call for the Decarbonization of Existing Buildings

Action E 1.1 requires the development of building standards for existing buildings and calls for the development of "reach codes" that will apply to major retrofits and renovations. The building standards developed pursuant to Action E 1.1 will not be "one size fits all" and will instead be adapted to the many unique environments that exist in unincorporated Los Angeles County and in particular, they will consider the climate, geography, infrastructure, and sole-source dependency challenges that rural communities face.

The Acton Town Council would also like to again recommend that the CAP be revised to incorporate a new action calling for an ordinance which prohibits the development of new commercial gas/diesel fueling stations. This recommendation is in line with Strategy 1 which requires the phase out of oil and gas extraction (page 3-15) and Strategy 4 which calls for all vehicles in unincorporated Los Angeles County to have zero carbon emissions (page 3-36); since the Board has already voted to prohibit new oil and gas extraction wells it seems the most logical "next step" would be to prohibit new gas/diesel fueling stations.

Thank you in advance for your time and consideration.

Sincerely;

/S/ Jacqueline Ayer

Correspondence Secretary

The Acton town Council

cc: The Association of Rural Town Councils [ourartc@gmail.com]
The Regional Planning Climate Action Team [climate@planning.lacounty.gov]