Public Comment

**CBCM** 

A-36



Hermosa Beach Office Phone: (310) 798-2400 San Diego Office Phone: (619) 940-4522

## Chatten-Brown, Carstens & Minteer LLP

2200 Pacific Coast Highway, Suite 318 Hermosa Beach, CA 90254 www.cbcearthlaw.com Michelle N. Black Email Address: mnb@cbeearthlaw.com Direct Dial: 310-798-2400 Ext. 5

February 24, 2023

By e-mail sbcob@countyofsb.org and bnegrete@countyofsb.org

Board of Supervisors County of Santa Barbara 105 E Anapamu Street, Suite 407 Santa Barbara, CA 93101 RECEIVED

- 202 FEB 27 A 9: 32

COUNTY OF SUPERVISORS

Re: February 28, 2023 Agenda Item A-36: Opposition to Agreement for Construction and Dedication of Flood Control Improvements for Village Square Subdivision; File Reference No. 22-01130 (Final Map of Tract No. 14,608, Legacy Estates/Village Square,

02TRM-00000-00007)

## Honorable Supervisors:

These comments are submitted on behalf of Save Los Alamos concerning the Legacy Estates/Village Square Subdivision Project ("Project"). These comments supplemental our prior letter to you dated February 2, 2023 to provide additional support for requiring a subsequent environmental impact report. In addition to our prior comments, we note that the Flood Control Improvement project you are voting on routes through land that is officially designated an "agricultural preserve." This land is protected by the Williamson Act.

Save Los Alamos respectfully requests that the Board require thorough environmental review of the Project's likely impacts the Los Alamos community and the entire Los Alamos Valley environment.

- I. The County Must Prepare a Subsequent Environmental Impact Report and Adopt Findings before Approving the Flood Control Agreement for the Project.
  - A. Significant, Adverse Impacts Will Occur in Ways More Severe Than Identified in 2005, Requiring the Flood Control District to Adopt Findings and a Statement of Overriding Considerations Prior to Approval of the Agreement.

There can be no serious question that the Project will have significant impacts on Los Alamos. The County certified an EIR for the Project nearly 18 years ago, in 2005. However, CEQA requires additional environmental analysis to account for the changes to the Project, its circumstances, and changes in the availability of mitigation and alternatives that have occurred in the nearly 18 years that have passed since 2005 that create new impacts and render already-identified impacts more severe than previously recognized.

In 2005, the EIR identified several impacts as significant and unavoidable, thus requiring the Flood Control District to adopt a statement of overriding considerations before it may approve any discretionary portion of the Project. (Pub. Resources Code section 21081.) The EIR stated the following impacts would be significant and unavoidable:

Aesthetics/Visual (AES-1 project development would substantially obstruct views of important visual resources including the Purisima Hills and agricultural lands as experienced from Main Street, Coiner Street, and Den Street.

Biological Resources- Bio 4.1: Site development would potentially result in the disturbance and mortality of individual California redlegged frogs and the potential 'take' of a federal threatened species....

Public Facilities (Police Protection) -PF-4 Residential buildout of the Legacy Estates tract map would result in a substantial increase of urban development that would further exacerbate existing inadequate Sheriff's Department staffing levels.....

Water Resources – WR-2- The proposed project would result in a net water demand drawn from the San Antonio Groundwater Basin exceeding 22 AFY.

(EIR, p. ES-5.) In light of these impacts, which would now be worse, the EIR must be recirculated with additional information and the District must evaluate whether it may adopt a Statement of Overriding considerations at all. It may not do so because there are environmental superior alternatives available, and not all mitigation measures to lessen these and other impacts have been adopted. Therefore the findings required by Public Resources Code section 21081 cannot be supported by substantial evidence.

The Flood Control District is a Responsible Agency for purposes of the Village Square Subdivision project. (See CEQA Guidelines section 15381 [defining "Responsible Agency" to include "all public agencies other than the lead agency which have discretionary approval power over the project."]) A responsible agency such as the Flood Control District is required to make findings and, if need be, to adopt its own statement of overriding considerations if it intends to approve a discretionary action for a project having significant impacts. (Public Resources Code section 21081; CEQA Guidelines section 15096 subd. (h); Resource Defense Fund v. Local Agency Formation Com. (1987) 191 Cal.App.3d 886, 896.) As courts have explained:

[A responsible agency] must, before "approv[ing] or carry[ing] out a project for which an environmental impact report has been certified which identifies one or more significant effects on the environment that would occur if the project is approved or carried out," "make[] one or more of the following findings with respect to each significant effect:

- [¶] (1) Changes or alterations have been required in, or incorporated into, the project which mitigate or avoid the significant effects on the environment.
- [¶] (2) Those changes or alterations are within the responsibility and jurisdiction of another public agency and have been, or can and should be, adopted by that other agency.
- [¶] (3) Specific economic, legal, social, technological, or other considerations ... make infeasible the mitigation measures or alternatives identified in the environmental impact report." (Pub. Resources Code, § 21081, subd. (a).) Each agency's findings, moreover,

must be "accompanied by a brief explanation of the rationale for each finding." (CEQA Guidelines, § 15091, subd. (a); see also Resource Defense Fund v. Local Agency Formation Com. (1987) 191 Cal.App.3d 886, 896, 236 Cal.Rptr. 794 ["the responsible agency must independently make its own findings and conclusions" and these "findings [must] be written and accompanied by a supporting statement of facts"], disapproved of on another ground by Voices of the Wetlands v. State Water Resources Control Bd. (2011) 52 Cal.4th 499, 529, 128 Cal.Rptr.3d 658, 257 P.3d 81.)

(We Advocate Through Environmental Review v. City of Mount Shasta (2022) 78 Cal.App.5th 629, 638–640, emphasis added.)

Therefore, since there is no statement of overriding considerations, and no necessary findings currently in front of you, any attempt to approve the Flood Control Agreement would be a violation of law.

## B. The Approval of the Flood Control Improvement Project is a Discretionary Action.

Counsel for Legacy Estates, Ms. K.M. Neiswender has incorrectly asserted that the Agreement for Construction and Dedication of Flood Control Improvements for Village Square Subdivision that you would be voting on "is not a 'discretionary approval' for the project, as defined by CEQA, but merely a contract implementing an existing condition." (Neiswender Feb. 6, 2023 Letter, p. 1.) This assertion is incorrect. The relevant guidelines implementing CEQA provide the following definition:

"Discretionary project" means a project which requires the exercise of judgment or deliberation when the public agency or body decides to approve or disapprove a particular activity, as distinguished from situations where the public agency or body merely has to determine whether there has been conformity with applicable statutes, ordinances, regulations, or other fixed standards. The key question is whether the public agency can use its subjective judgment to decide whether and how to carry out or approve a project.

Cal. Code Regs. Tit. 14, § 15357; Section 21083, Public Resources Code; Friends of Westwood, Inc. v. City of Los Angeles (1987) 191 Cal. App. 3d 259.) Plainly, in deciding how and if the Flood Control and Water Conservation District will enter into the detailed agreement for construction and dedication of flood control improvements, you must exercise serious "judgment or deliberation" and use your "subjective judgment to decide whether and how to carry out or approve" the project.

There can be no serious dispute that with the Flood Control Agreement, you are presented with a discretionary choice. That being the case, adequate review pursuant to the California Environmental Quality Act (CEQA) must support the considered exercise of your judgment whether and how to approve the Agreement.

## II. Approval of the Agreement Would Violate the Williamson Act.

The storm drain portion of the residential development under consideration is currently set to be partially built on farmland in a land conservation contract (08AP044) with the County of Santa Barbara Agricultural preserve. (See 2012-0062875 Land Conservation Contract recorded 9/20/2012; 2012-0062584 Land Conservation Contract recorded 9/19/2012; and 2012-0061823 Land Conservation Contract, 9/17/2012). Approval of the proposed Flood Control Agreement would be incompatible with these Williamson Act Contracts. The Village Square off-site flood control plan routes the storm drainage through the east side of the Carrari Trust Farm. Notably, the Williamson Act contracts for the Carrari farmland were recorded in 2012 so they did not exist when the EIR was certified by the County of Santa Barbara in August 2005.¹ Therefore, subsequent environmental review is required prior to approval of a project that is incompatible with these contracts.

As set forth by the Williamson Act of 1965, the conversion of usage such as proposed by the Flood Control Agreement is not permissible. The

<sup>&</sup>lt;sup>1</sup> This fact alone refutes the contention of the Neiswender letter that "nothing has changed" with regard to flooding and storm drain improvements. (Neiswender Feb. 6 2023 Letter, p. 2.)

Williamson Act Compatibility guidelines identify when a proposed use would be compatible with Williamson Act protection:

B. The use does not require and will not encourage the extension of urban services such as sewer or the upgrade of public roads to urban standards that could encourage premature conversion of agricultural land to non-agricultural uses.

(Williamson Act Compatibility guidelines 2-1, section 2-1.2 Other Compatibility Criteria, emphasis added.) The use of the Carrari farmland *is* to provide the extension of urban services, in this case flood control. Thus, it is not compatible with the Williamson Act contract protections of this land. Due to the relocation of the ranch road noted in the EIR map, the amount of useable farmland will also be reduced.

The proposed flood control system will extend across Highway 135 and through the Portico Hills Vineyard not currently in a land conservancy trust. This will encourage premature conversion of this land to non-agricultural uses. The construction of the underground culvert will require the removal of established grapevines.

## III. New Climate Change Facts Require Subsequent Environmental Review.

A central point in the debate over whether to require Legacy Estates to conduct a subsequent Environmental Impact Report (EIR) is whether there is "new information" that could not be known at the time of the initial study that requires review.

The Santa Barbara Counties' own "Santa Barbara County Climate Change Vulnerability Assessment" ("Report") dated November 2021 used Los Alamos as a case study. We incorporate this entire report by reference, and have included a summary and excerpts of the portions of it which are relevant specifically to Los Alamos. (Enclosure 2.) This Report shows that climate stressors are predicted to steadily increase. (Report, p. 41, Tables 9 and 10.) Base flows in rivers and creeks are projected to decline significantly. (Report, p. 66.) Inland flooding will increase because of the increase in frequency and intensity of heavy rainstorms. (Report, p. 71.) Infrastructure

including road, bridges, and presumably flood control infrastructure, will be highly or severely vulnerable to various hazard types including inland flooding and landslide and debris flow. (Report, p. 111 and Tables 21 and 23, pages 119, 120, 122, and 129).

In Legacy Estate's recent February 6, 2023 correspondence, they claim "the original EIR did not address climate change. That was not required in 2005, but the issue was addressed in the 2011 LACP EIR, beginning on page 4-10.25. As noted, the Legacy project was part of the LACP EIR plan area." (Neiswender Feb. 6, 2023 Letter, p. 2.)

While the 2011 Los Alamos Community Plan EIR did discuss climate change, it was only in connection with then-current understanding of "greenhouse gases" and **not** in reference to the increased risk of flooding and mudslides caused by climate change. Additionally, and most importantly, the EIR made *no mention* of the risk of "atmospheric rivers" and increasingly more severe rainstorms causing increased dangers of inland flooding and mudflows.

Futhermore, with respect to water supply, the Report stated base flows in rivers and creeks are projected to decline significantly. (Report, p. 66.) This will exacerbate the significant water supply impacts the project would have. Correspondence from the applicant states the original EIR states water supply was sufficient (Neiswender Feb. 6 2023 Letter, p. 2, citing EIR section 4.10.6) as if there were no impacts, but this is misleading because the EIR also states that cumulative water demand impacts would be significant and unavoidable. (EIR, section 4.12.3, p. 4.12-4.) The EIR states "As the proposed project's water demand would exceed the 22 AFY [acre-feet/year] Threshold and would further contribute to existing overdraft conditions, the project's contribution to this cumulative impact would be *significant and unavoidable* (Class I)." (EIR, p. 4.12-4.) The present project and changes in its circumstances will make this impact more severe than were identified in the EIR.

As climate expert Katerina Gonzales points out in Scientific American, "Atmospheric rivers are becoming more intense with climate change because they're holding more moisture. We have to make huge investments in green infrastructure, which uses nature to absorb runoff—such as floodplains,

parks, and rain gardens. Our infrastructure was built for a 20th-century climate that no longer exists. More intense days are coming, and these storms are just a preview." (<a href="https://www.scientificamerican.com/article/why-california-is-being-deluged-by-atmospheric-rivers/">https://www.scientificamerican.com/article/why-california-is-being-deluged-by-atmospheric-rivers/</a>; Robin Meadows on January 11, 2023, Scientific American.)<sup>2</sup> This could not have been known in either 2005 or 2011.

Additional evidence that new flooding and mudflow threats are presented today, which could not have been known at the time of earlier decisions, are described by Kelly Hubbard in a recent article and video presentation. (See <a href="https://www.independent.com/multimedia/county-releases-debris-flow-five-year-anniversary-video/">https://www.independent.com/multimedia/county-releases-debris-flow-five-year-anniversary-video/</a>.) This presentation cites recent scientific studies, which must also be considered. (See <a href="https://www.science.org/doi/10.1126/sciadv.abq0995">https://www.science.org/doi/10.1126/sciadv.abq0995</a> ["Climate change is increasing the risk of a California megaflood", August 12, 2022, Science Advances.)

Therefore, this is a clear issue for the Flood Control District and the Board of Supervisors. Both the Flood Control District and the County must require Legacy Estates to conduct a subsequent EIR to study the increased impacts and severity of impacts associated with climate change induced flooding, drought, and wildfires. Then, the Flood Control District and County must come up with ways to mitigate these impacts.

## IV. The County's Street Vacation Process Has Not Complied with the Streets and Highways Code.

We previously objected when the County of Santa Barbara in December 2022 purported to agree "to vacate and abandon those portions of Public Road Easements and Rights of Way of Main Street, Perkins Street, Shaw Street, Coiner Street, Den Street, and St. Joseph Street obtained by the County of Santa Barbara per Book B Page 406 of Miscellaneous Records lying within the subdivision boundary of Final Map of Tract No. 14,608, Legacy Estate/Village Square that are not shown, as stated on the Abandonment Note on said Tract Map."

<sup>&</sup>lt;sup>2</sup> This and other cited articles are incorporated in this letter by reference.

Under the definition of "Discretionary Project" quoted above, this abandonment of various public road easements is clearly a discretionary decision that required specific findings, and adequate environmental review to support that decision. Since neither of these occurred, the purported abandonment is void. (See City of Rancho Palos Verdes v. City Council (1976) 59 Cal.App.3d 869, 889 [City Council approval of street vacation set aside where unsupported by findings required in the Streets and Highways Code].)

Streets and Highways Code Section 8324 requires findings must be made; Section 8323 requires notice must be given to the public prior to abandonment of a public street. The County has not made these findings or provided the requisite notice.

Prior to valid abandonment, the County should have prepared a Subsequent EIR that supports the discretionary decision to abandon the easements. We request that you advise the County that subsequent environmental review is required prior to your further review of the Flood Control Agreement.

All comments to the County and evidence in the County public road abandonment file are incorporated herein by reference. The County's approval of the road abandonments will have cumulative impacts with the Flood Control District's potential approval of the Flood Control Agreement and both are part of the same project. Therefore, both must be considered together.

#### V. Conclusion

On behalf of Save Los Alamos, we thank you for your consideration of these comments and urge the Flood Control District to reject the agreement for dedication and construction of Flood Control Improvements for the Project until proper environmental review is done.

There are impacts that were not considered in 2005 and changed circumstances have both new environmental impacts and an increase in severity for others. Flooding and mudflows will be more severe than was analyzed. Climate change-related drought conditions will exacerbate the significant impacts of the proposed project's increased demand on

groundwater supplies. Accordingly, the Flood Control District does not have substantial evidence that the Project's impacts were adequately disclosed, analyzed, and mitigated in the 2005 EIR. Nor does the Flood Control District have evidence to support a statement of overriding considerations pursuant to Public Resources Code section 21081 since not all impacts have been identified, mitigation measures adopted, and superior alternatives shown to be infeasible.

The Flood Control District must prepare, circulate, and certify a subsequent EIR before considering this impactful Project further.

Sincerely,

Michelle N. Black Douglas Carstens

#### **Enclosures**:

- 1. Williamson Act Contracts for Carrari Farm (COB File numbers 12-00722, 12-00723, and 12-00729)
- 2. Summary of North County Impacts and excerpts from Santa Barbara County Climate Change Vulnerability Assessment, November 2021 (the full Assessment in incorporated herein by reference).

cc:

Supervisor Bob Nelson (Nelson@bos.countyofsb.org)
Supervisor Das Williams (SupervisorWilliams@countyofsb.org
Supervisor Joan Hartman (JHartmann@countyofsb.org)
Supervisor Laura Capps (Lcapps@countyofsb.org)
Supervisor Steve Lavagnino (Steve.lavagnino@countyofsb.org)

2012-0003435

08:02AH 19-Jan-2012 | Page 1 of 2

Recorded
Official Records
County of
Santa Barbara
Joseph E. Holland
County Clerk Recorder

39.00

RECORDING REQUESTED BY:

AND WHEN RECORDED MAIL TO:

C. KENT STEPHENS, ESQ. ATTORNEY AT LAW P O BOX 1454 SANTA MARIA CA 93456

2-

2-1

SPACE ABOVE THIS LINE FOR RECORDER'S USE

APN: 101-193-003

#### SUBSTITUTION OF TRUSTEE AND FULL RECONVEYANCE

WHEREAS, JOAQUIN HENRY GONZALES and JESSIE R. GONZALES, husband and wife the original Trustors, Santa Ynez Valley Mortgage Company, a California Corporation the original Trustee, and JOE F. CARRARI and PHYLLIS M. CARRARI, husband and wife the Beneficiary, under that certain Deed of Trust dated July 29, 1992 and recorded as instrument no. 92-061523 on August 2, 1992 in the Official Records of the County of Santa Barbara, State of California, and

WHEREAS, the undersigned Beneficiary desires to substitute a new Trustee under said Deed of Trust in place and instead of Santa Ynez Mortgage Company, a California Corporation.

NOW THEREFORE, the undersigned hereby substitutes **JOE F. CARRARI** as Trustee, under said Deed of Trust and **JOE F. CARRARI** as the substituted Trustee does hereby reconvey, without warranty, to the person or persons legally entitled thereto, the Estate now held thereunder.

Dated: /- 4-/2

OF F CAPPARI

Beneficiary

JOE F. CARRARI

Substituted Trustee

PHYLLIS M. CARRARI

Beneficiary

#### **ACKNOWLEDGMENT**

State of California County of Stanta Barbarg before me, personally appeared JOE F. CARRARI and PHYLLIS M. CARRARI who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to met that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument. I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct. CARMEN VASQUES WITNESS my hand and official seal. Commission # 1829111 Notary Public - California Santa Barbara County
My Comm. Expires Jan 2, 2013 Signature (Seal)

## Recording Requested By

Date: September 17, 2012

Return by inter-office mail to: CLERK OF THE BOARD 105 E. ANAPAMU STREET **ROOM 407** SANTA BARBARA, CA 93101

ATTENTION: Russ Barker



REC FEE

Recorded Official Records County of Santa Barbara Joseph E. Holland County Clerk Recorder

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NO FEE PER GOVERNMENT CODE 6103

#### Title(s)

SHORT FORM LAND CONSERVATION CONTRACT CARRARI AGRICULUTRAL PRESERVE REPLACEMENT 08AGP-00000-00042

COB file number: 12-00722

Recording Requested by County of Santa Barbara	,
When Recorded Return to the	
Clerk of the Board of Supervisors	
County of Santa Barbara	1
105 East Anapamu Street	
Santa Barbara, California 93101	)

#### SHORT FORM LAND CONSERVATION CONTRACT

Incorporating Board of Supervisors Resolutions and
Long Form Contract by Reference

08AGP-00000-00042

THIS LAND CONSERVATION CONTRACT, is made by and between Joe F. Carrari and Phyllis M. Carrari, as Trustees of The Carrari Family Trust UDTA dated February 28, 2002 hereinafter referred to as "OWNER" and the COUNTY OF SANTA BARBARA, a political subdivision of the State of California, hereinafter referred to as "COUNTY".

### WITNESSETH:

WHEREAS, OWNER possesses certain real property situated in the County of Santa Barbara, State of California, hereinafter referred to as "THE SUBJECT PROPERTY," and more particularly described in Exhibit A attached hereto and by this reference incorporated herein; and

WHEREAS, THE SUBJECT PROPERTY is now devoted to agricultural uses and uses compatible therewith; and

WHEREAS, the parties hereto desire to create an "agricultural preserve," consisting of THE SUBJECT PROPERTY, to be established by COUNTY by resolution and by this contract,

and to be designated as the Carrari Agricultural Preserve Name, 08AGP-00000-00042, Assessor Parcel Number 099-030-059, 1,842.8 acres; replacing a portion of 02AGP-00000-00020 with zoning of AG-II-100, and AC Comprehensive Plan designation restrictions.

NOW, THEREFORE, both OWNER and COUNTY, in consideration of the mutual promises, covenants and conditions to which reference is made herein and substantial public benefits to be derived therefrom, do hereby agree as follows:

FIRST: THE SUBJECT PROPERTY shall be subject to all restrictions and conditions adopted or to be adopted by resolutions and minute orders by the Board of Supervisors of the County of Santa Barbara, California, including without limitation those recorded on November 5, 1971, as Inst. No. 36187, Bk. 2371, pg. 404; January 3, 1972, as Inst. No. 57, Bk. 2381, page 794; October 30, 1974, as Instr. No. 38788, Bk. 2539, pg. 258; November 10, 1975, as Instr. Nos. 40442 and 40443, Bk. 2592, pgs. 1763 and 1767; December 11, 1975, as Instr. No. 44871, Bk. 2595, pg. 2134; May 20, 1977, as Reel No. 77-24881; July 11, 1977, Reel No. 77-34734; November 14, 1978, Reel No. 78-52990; October 15, 1980, Reel No. 80-41873, and November 2, 2007, Reel No. 2007-0077408 of the Official Records of the County of Santa Barbara, California, and IT IS MUTUALLY AGREED that the conditions and restrictions set forth in said resolutions and minute orders are adopted and incorporated herein and made a part hereof as though fully set forth herein at length, and the OWNER will observe and perform said provisions.

SECOND: In consideration of the promises, OWNER shall indemnify and save harmless COUNTY from and against any and all claims, liability, suits, damages, costs including reasonable attorney's fees, losses and expenses in any manner resulting from, arising out of, or connected with the use of any Surveyor's Map depicting the preserve and the description of THE SUBJECT PROPERTY attached hereto.

THIRD: This Contract shall be effective as of the first day of January, 2013, and shall remain in effect for a period of ten (10) years from each succeeding January first.

IN WITNESS WHEREOF, the County of Santa Barbara has executed this Contract

COUNTY OF SANTA BARBARA

BOARD OF SUPERVISORS

By:

DORÉEN FARR, Chair

Attest:

CLERK OF THE BOARD

By:

Deputy Clerk

Approved As To Form:

GOUNTY COUNSEL, DENNIS A. MARSHALL

By:

Lee County

**OWNER** 

CARRARI FAMILY TRUST, UDTA dated February 28, 2002

Joe F. Carrari, Trustee

Phyllis M. Carrari, Trustee

#### **ACKNOWLEDGEMENT**

STATE OF CALIFORNIA ss. COUNTY OF SANTA BARBARA

On <u>September 11, 2012</u> before me, <u>Russ Barker, Deputy Clerk of the Board of Supervisor's</u> personally appeared <u>Doreen Farr, Chair of the Board of Supervisors</u>, personally proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that she executed the same in her authorized capacity and that by her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal this September 17, 2012

CHANDRA WALLER CLERK OF THE BOARD

Russ Barker, Deputy Clerk

California Civil Code Section 1189

Attached to: Short Form Land Conservation Contract; 08AGP-00000-00042



# County of Santa Barbara BOARD OF SUPERVISORS

#### Minute Order

September 11, 2012

Present:

5 - Supervisor Carbajal, Supervisor Wolf, Supervisor Farr, Supervisor Gray, and Supervisor Lavagnino

#### PLANNING AND DEVELOPMENT

File Reference No. 12-00722

RE:

Consider recommendations regarding the Carrari Agricultural Preserve Replacement Contract, Los Alamos area, Third District, as follows:

- a) Approve and authorize the Chair to execute an Agricultural Preserve Replacement Contract 08AGP-00000-00042, on a single 1,842.8-acre parcel, APN 099-030-059, located approximately 1/2 mile west of the township of Los Alamos, known as 4300 Highway 135, in the Los Alamos area;
- b) Authorize recordation by the Clerk of the Board; and
- c) Find that the proposed action is an administrative activity, as described in 14 CCR 15378(b)(5), which will not result in direct or indirect physical changes in the environment and is therefore not a "project" as defined for purposes of the California Environmental Quality Act (CEQA).

A motion was made by Supervisor Lavagnino, seconded by Supervisor Carbajal, that this matter be Acted on as follows:

- s) Approved; Chair to execute;
- b) Authorized; and
- c) Approved.

The motion carried by the following vote.

Ayes:

 Supervisor Carbajal, Supervisor Wolf, Supervisor Farr, Supervisor Gray, and Supervisor Lavagnino

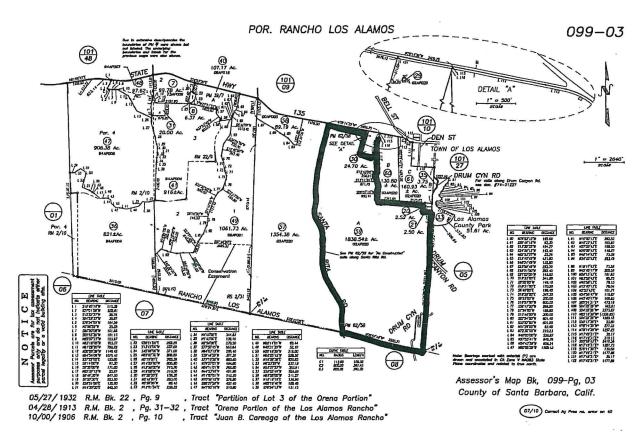
#### LEGAL DESCRIPTION FOR 08AGP-00000-00042

Parcel A of Parcel Map 14,733 in the County of Santa Barbara, State of California, as per map recorded in Book 62, pages 58 through 60 inclusive of Parcel Map, in the Office of the County Recorder of said County.

APPROVED AS TO FORM

COUNTY SURVEYOR LICENSE EXP. ..

## 08 AGP-00000-0004Z





Date: September 19, 2012

Return by inter-office mail to: CLERK OF THE BOARD 105 E. ANAPAMU STREET ROOM 407 SANTA BARBARA, CA 93101

ATTENTION: Russ Barker

Co

REC FEE

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Recorded

Official Records

County of

Santa Barbara

Joseph E. Holland

County Clerk Recorder

I JA 10:30AH 19-Sep-2012 | Page 1 of 9

9

NO FEE PER GOVERNMENT CODE 6103

Title(s)

SHORT FORM LAND CONSERVATION CONTRACT CARRARI AGRICULUTRAL PRESERVE REPLACEMENT 08AGP-00000=00043

COB file number: 12-00723

Recording Requested by	)
County of Santa Barbara	,
When Recorded Return to the	
Clerk of the Board of Supervisors	
County of Santa Barbara	,
105 East Anapamu Street	,
Santa Barbara, California 93101	,
	j

#### SHORT FORM LAND CONSERVATION CONTRACT

Incorporating Board of Supervisors Resolutions and
Long Form Contract by Reference

08AGP-00000-00043

THIS LAND CONSERVATION CONTRACT, is made by and between Joe F. Carrari and Phyllis M. Carrari, as Trustees of The Carrari Family Trust UDTA dated February 28, 2002 hereinafter referred to as "OWNER" and the COUNTY OF SANTA BARBARA, a political subdivision of the State of California, hereinafter referred to as "COUNTY".

#### WITNESSETH:

WHEREAS, OWNER possesses certain real property situated in the County of Santa Barbara, State of California, hereinafter referred to as "THE SUBJECT PROPERTY," and more particularly described in Exhibit A attached hereto and by this reference incorporated herein; and

WHEREAS, THE SUBJECT PROPERTY is now devoted to agricultural uses and uses compatible therewith; and

WHEREAS, the parties hereto desire to create an "agricultural preserve," consisting of THE SUBJECT PROPERTY, to be established by COUNTY by resolution and by this contract,

and to be designated as the Carrari Agricultural Preserve Name, 08AGP-00000-00043, Assessor Parcel Number 099-030-060, 130.4 acres; replacing a portion of 02AGP-00000-00020 with zoning of AG-II-100, and AC Comprehensive Plan designation restrictions.

NOW, THEREFORE, both OWNER and COUNTY, in consideration of the mutual promises, covenants and conditions to which reference is made herein and substantial public benefits to be derived therefrom, do hereby agree as follows:

FIRST: THE SUBJECT PROPERTY shall be subject to all restrictions and conditions adopted or to be adopted by resolutions and minute orders by the Board of Supervisors of the County of Santa Barbara, California, including without limitation those recorded on November 5, 1971, as Inst. No. 36187, Bk. 2371, pg. 404; January 3, 1972, as Inst. No. 57, Bk. 2381, page 794; October 30, 1974, as Instr. No. 38788, Bk. 2539, pg. 258; November 10, 1975, as Instr. Nos. 40442 and 40443, Bk. 2592, pgs. 1763 and 1767; December 11, 1975, as Instr. No. 44871, Bk. 2595, pg. 2134; May 20, 1977, as Reel No. 77-24881; July 11, 1977, Reel No. 77-34734; November 14, 1978, Reel No. 78-52990; October 15, 1980, Reel No. 80-41873, and November 2, 2007, Reel No. 2007-0077408 of the Official Records of the County of Santa Barbara, California, and IT IS MUTUALLY AGREED that the conditions and restrictions set forth in said resolutions and minute orders are adopted and incorporated herein and made a part hereof as though fully set forth herein at length, and the OWNER will observe and perform said provisions.

SECOND: In consideration of the promises, OWNER shall indemnify and save harmless COUNTY from and against any and all claims, liability, suits, damages, costs including reasonable attorney's fees, losses and expenses in any manner resulting from, arising out of, or connected with the use of any Surveyor's Map depicting the preserve and the description of THE SUBJECT PROPERTY attached hereto.

THIRD: This Contract shall be effective as of the first day of January, 2013, and shall remain in effect for a period of ten (10) years from each succeeding January first.

IN WITNESS WHEREOF, the County of Santa Barbara has executed this Contract

**OWNER COUNTY OF SANTA BARBARA** SUPERVISORS CARRARI FAMILY TRUST, UDTA dated February 28, 2002 **EQUNTY COUNSEL, DENNIS A. MARSHALL** 

#### ACKNOWLEDGEMENT

STATE OF CALIFORNIA ss. COUNTY OF SANTA BARBARA

On <u>September 19, 2012</u> before me, <u>Russ Barker, Deputy Clerk of the Board of Supervisor's</u> personally appeared <u>Doreen Farr, Chair of the Board of Supervisors</u>, personally proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that she executed the same in her authorized capacity and that by her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State California that the Fore going paragraph is true and correct.

WITNESS my hand and official seal this September 19, 2012

CHANDRA WALLER CLERK OF THE BOARD

Russ Barker, Deputy Clerk

California Civil Code Section 1189

ACKNOWLEDGMENT				
State of California County of Santa Barbara)				
On July 02, 2012 before me, Anabel Mincitar Zamora, Notary Public (insert name and title of the officer)				
personally appeared *****Phyllis Marie Carrari and Joe F. Carrari**** who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.				
I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.				
WITNESS my hand and official seal.  Signature Malel Zamora (Seal)  ANABEL MINCHAR Zamora Commission # 1890989 Notary Public - California Santa Barbara County My Comm. Expires May 25, 2014				

Attached to: Short Form Land Conservation Contract; 08AGP-00000-00043

#### LEGAL DESCRIPTION FOR 08AGP-00000-00043

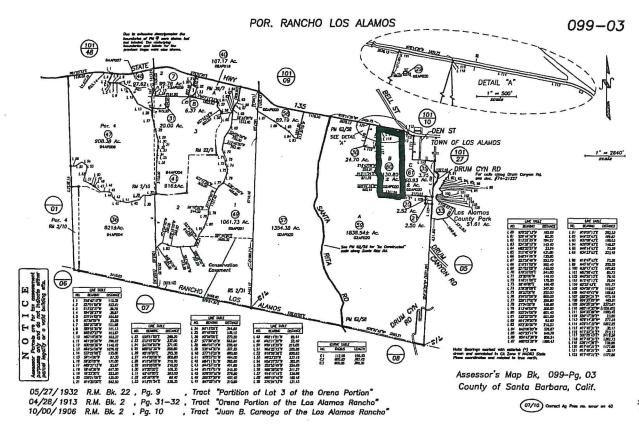
Parcel B of Parcel Map 14,733 in the County of Santa Barbara, State of California, as per map recorded in Book 62, pages 58 through 60 inclusive of Parcel Map, in the Office of the County Recorder of said County.

> APPROVED AS TO FORM AND SURVEY CONTENT

COUNTY SURVEYOR LICENSE EXP. 12 31



## 08 AGP-00000-00043





# County of Santa Barbara BOARD OF SUPERVISORS

#### **Minute Order**

September 11, 2012

Present: 5

5 - Supervisor Carbajal, Supervisor Wolf, Supervisor Farr, Supervisor Gray,

#### PLANNING AND DEVELOPMENT

File Reference No. 12-00723

RE:

Consider recommendations regarding the Carrari Agricultural Preserve Replacement Contract, Los Alamos area, Third District, as follows:

- a) Approve and authorize the Chair to execute an Agricultural Preserve Replacement Contract 08AGP-00000-00043, on a single 130.4-acre parcel, APN 099-030-060, located approximately ½ mile west of the township of Los Alamos, known as 4300 Highway 135, in the Los Alamos area;
- b) Authorize recordation by the Clerk of the Board; and

and Supervisor Lavagnino

c) Find that the proposed action is an administrative activity, as described in 14 CCR 15378(b)(5), which will not result in direct or indirect physical changes in the environment and is therefore not a "project" as defined for purposes of the California Environmental Quality Act (CEQA).

A motion was made by Supervisor Lavagnino, seconded by Supervisor Carbajal, that this matter be Acted on as follows:

- a) Approved; Chair to execute;
- b) Authorized; and
- c) Approved.

The motion carried by the following vote.

Ayes:

 Supervisor Carbajal, Supervisor Wolf, Supervisor Farr, Supervisor Gray, and Supervisor Lavagnino

This is a true certified copy of the original document on file or of record in my office, it bears the seal and signature, imprinced in purple int, of the Clerk of the Board of Supervisors.

Clients of the Board, Sente Berbera County, California



Recorded
Official Records
County of
Santa Barbara
Joseph E. Holland
County Clerk Recorder

I REC FEE

0.00

09:46AN 20-Sep-2012 | Page 1 of 9

Date: September 20, 2012

Return by inter-office mail to: CLERK OF THE BOARD 105 E. ANAPAMU STREET ROOM 407 SANTA BARBARA, CA 93101 ATTENTION: Russ Barker

NO FEE PER GOVERNMENT CODE 6103

#### Title(s)

SHORT FORM LAND CONSERVATION CONTRACT CARRARI AGRICULUTRAL PRESERVE REPLACEMENT 08AGP-00000-00044

COB file number: 12-00729

Recording Requested by	
County of Santa Barbara	
When Recorded Return to the	
Clerk of the Board of Supervisors	
County of Santa Barbara	
105 East Anapamu Street	
Santa Barbara, California 93101	

#### SHORT FORM LAND CONSERVATION CONTRACT

Incorporating Board of Supervisors Resolutions and
Long Form Contract by Reference

08AGP-00000-00044

THIS LAND CONSERVATION CONTRACT, is made by and between Joe F. Carrari and Phyllis M. Carrari, as Trustees of The Carrari Family Trust UDTA dated February 28, 2002 hereinafter referred to as "OWNER" and the COUNTY OF SANTA BARBARA, a political subdivision of the State of California, hereinafter referred to as "COUNTY".

#### WITNESSETH:

WHEREAS, OWNER possesses certain real property situated in the County of Santa Barbara, State of California, hereinafter referred to as "THE SUBJECT PROPERTY," and more particularly described in Exhibit A attached hereto and by this reference incorporated herein; and

WHEREAS, THE SUBJECT PROPERTY is now devoted to agricultural uses and uses compatible therewith; and

WHEREAS, the parties hereto desire to create an "agricultural preserve," consisting of THE SUBJECT PROPERTY, to be established by COUNTY by resolution and by this contract,

and to be designated as the Carrari Agricultural Preserve Name, 08AGP-00000-00044, Assessor Parcel Number 099-030-061, 158.2 acres; replacing a portion of 02AGP-00000-00020 with zoning of AG-II-100, and AC Comprehensive Plan designation restrictions.

NOW, THEREFORE, both OWNER and COUNTY, in consideration of the mutual promises, covenants and conditions to which reference is made herein and substantial public benefits to be derived therefrom, do hereby agree as follows:

FIRST: THE SUBJECT PROPERTY shall be subject to all restrictions and conditions adopted or to be adopted by resolutions and minute orders by the Board of Supervisors of the County of Santa Barbara, California, including without limitation those recorded on November 5, 1971, as Inst. No. 36187, Bk. 2371, pg. 404; January 3, 1972, as Inst. No. 57, Bk. 2381, page 794; October 30, 1974, as Instr. No. 38788, Bk. 2539, pg. 258; November 10, 1975, as Instr. Nos. 40442 and 40443, Bk. 2592, pgs. 1763 and 1767; December 11, 1975, as Instr. No. 44871, Bk. 2595, pg. 2134; May 20, 1977, as Reel No. 77-24881; July 11, 1977, Reel No. 77-34734; November 14, 1978, Reel No. 78-52990; October 15, 1980, Reel No. 80-41873, and November 2, 2007, Reel No. 2007-0077408 of the Official Records of the County of Santa Barbara, California, and IT IS MUTUALLY AGREED that the conditions and restrictions set forth in said resolutions and minute orders are adopted and incorporated herein and made a part hereof as though fully set forth herein at length, and the OWNER will observe and perform said provisions.

SECOND: In consideration of the promises, OWNER shall indemnify and save harmless COUNTY from and against any and all claims, liability, suits, damages, costs including reasonable attorney's fees, losses and expenses in any manner resulting from, arising out of, or

connected with the use of any Surveyor's Map depicting the preserve and the description of THE SUBJECT PROPERTY attached hereto.

THIRD: This Contract shall be effective as of the first day of January, 2013, and shall remain in effect for a period of ten (10) years from each succeeding January first.

IN WITNESS WHEREOF, the County of Santa Barbara has executed this Contract

in withess whereor, the county	of Santa Barbara has executed this Contra
on 9/20/2012	
COUNTY OF SANTA BARBARA	OWNER
BOARD OF SUPERVISORS	CARRARI FAMILY TRUST, UDTA dated February 28, 2002
DOREEN FARR, Chair Attest:	By: Jul "F" Carrar
CLERK OF THE BOARD	Joe F. Carrari, Trustee  By: Phyllis M Carrari
Deputy Clerk	Phyllis M. Carrari, Trustee
Approved As To Form:	
COUNTY COUNSEL, DENNIS A. MARSHALL	
By: Valuation Deputy County Counsel	

## **ACKNOWLEDGMENT** State of California County of \_\_\_\_\_ Santa Barbara \_\_\_\_\_ before me, <u>Anabel Minc</u>itar Zamora, Notary Public On July 02, 2012 (insert name and title of the officer) \*\*\*\*\*Phyllis Marie Carrari and Joe F. Carrari\*\*\*\*\* personally appeared who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument. I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct. ANABEL MINCHAR ZAMORA Commission # 1890989 WITNESS my hand and official seal. Notary Public - California Santa Barbara County My Comm. Expires May 25, 2014

Attached to: Short Form Land Conservation Contract; 08AGP-00000-00044

# LEGAL DESCRIPTION FOR 08AGP-00000-00044

Parcel C of Parcel Map 14,733 in the County of Santa Barbara, State of California, as per map recorded in Book 62, pages 58 through 60 inclusive of Parcel Map, in the Office of the County Recorder of said County.

APPROVED AS TO FORM

AND SURVEY CONTENT A

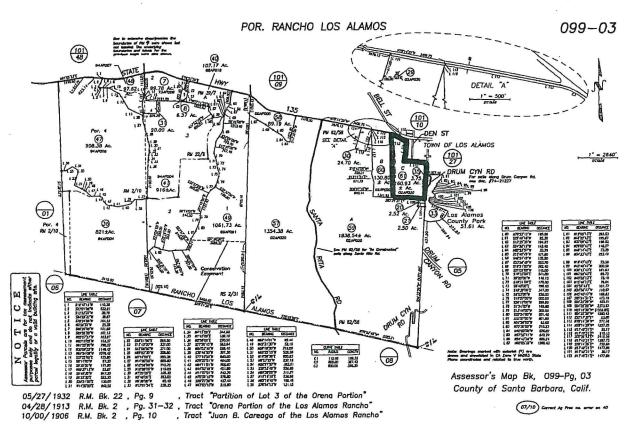
ALEKSANDAR JEVREUDVIC, PLS 8378

MICHAEL B. EMMONS, PLS 5899

COUNTY SURVEYOR LICENSE EXP.

LAND SUPPLIE YOUR AND S

# 08 AGP-00000-00044





# County of Santa Barbara BOARD OF SUPERVISORS

#### Minute Order

September 11, 2012

Present:

5 - Supervisor Carbajal, Supervisor Wolf, Supervisor Farr, Supervisor Gray, and Supervisor Lavagnino

#### PLANNING AND DEVELOPMENT

File Reference No. 12-00729

RE:

Consider recommendations regarding the Carrari Agricultural Preserve Replacement Contract, Los Alamos area, Third District, as follows:

- a) Approve and authorize the Chair to execute an Agricultural Preserve Replacement Contract 08AGP-00000-00044, on a single 158.2-acre parcel, APN 099-030-061, located approximately 1/2 mile west of the township of Los Alamos, known as 4300 Highway 135, in the Los Alamos area;
- b) Authorize recordation by the Clerk of the Board; and
- c) Find that the proposed action is an administrative activity, as described in 14 CCR 15378(b)(5), which will not result in direct or indirect physical changes in the environment and is therefore not a "project" as defined for purposes of the California Environmental Quality Act (CEQA).

A motion was made by Supervisor Lavagnino, seconded by Supervisor Carbajal, that this matter be Acted on as follows:

- a) Approved; Chair to execute;
- b) Authorized; and
- c) Approved.

The motion carried by the following vote.

Ayes:

5 - Supervisor Carbajal, Supervisor Wolf, Supervisor Fart, Supervisor Gray, and Supervisor Lavagnino

This is a true cartified copy of the original document on the or of occard in my office. It bears the seel and dynamic, imprinated in graphs int, of the Clerk of the Good of Supervisors.

Clerk of the Board of Supervisors County, California Data 9-70-12 by Dapany: (Quee Product

#### **ACKNOWLEDGEMENT**

STATE OF CALIFORNIA
ss.
COUNTY OF SANTA BARBARA

On September 20, 2012 before me, Russ Barker, Deputy Clerk of the Board of Supervisor's personally appeared Doreen Farr, Chair of the Board of Supervisors, personally proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that she executed the same in her authorized capacity and that by her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State California that the Fore going paragraph is true and correct.

WITNESS my hand and official seal this September 20, 2012

CHANDRA WALLAR CLERK OF THE BOARD

Russ Barker, Deputy Clerk

California Civil Code Section 1189

#### **North County Summary of the**

#### SANTA BARBARA COUNTY CLIMATE CHANGE VULNERABILITY ASSESSMENT

#### November 2021

Link to full report: Microsoft Word - SantaBarbaraCounty CCVA Report Final Clean.docx

The Vulnerability Assessment helps Santa Barbara County comply with state laws, identifies the most vulnerable populations and assets in the county...(Page ES-2)

In each subregion, the project team v Technical studies by the California Energy Commission identify these four models as "priority models" for the state because they are the most accurate for California's climate conditions. Data produced by these four and six other suitable models are available from the Cal-Adapt website. selected a centralized, unincorporated, census-designated place to gather projection data—Los Alamos for North County...(Page 39)

#### Pollution-burdened communities (Page 15)

Drinking water contamination-Los Alamos

# Isolated and rural communities (Page 15)

Los Alamos

#### Climate Stressors (Page 38)

In each subregion, the project team selected a centralized, unincorporated, census-designated place to gather projection data-Los Alamos for North County (p.39)

Table 9. Historical and Projected Annual Average Minimum Temperature (\*F), RCP 8.5

Subregion	Historical	2030	2060	2100
North County	43.8	47.1	48.9	51.1

(Page 41)

Table 10. Historical and Projected Annual Average Maximum Temperature (\*F), RCP 8.5

Subregion	Historical	2030	2060	2100
North County	68,7	71.6	73.7	75.6

(Page 41)

## Precipitation (Page 45)

Changes in precipitation patterns can, directly and indirectly, cause or worsen hazards in the county, such as drought, inland and coastal flooding, landslides, severe weather, and wildfire. (Page 45)

Table 11. Historical and Projected Annual Average Precipitation (in/yr), RCP 8.5 (p.45)

Subregion	Historical	2030	2060	2100
North County	16.7	19.2	17.6	19.7

#### **Drought** (Page 65)

Droughts are a regular occurrence in California and are measured by the timing and length of the drought. However, in the past 50 years, there have been four major statewide droughts, plus smaller regional droughts.60 Due to the changes in precipitation patterns discussed under "Primary Climate Stressors," droughts will likely last longer and happen more frequently because of more variability in precipitation extremes. Base flows in rivers and creeks in the county's coastal and inland areas are projected to decline significantly in the North County and South Coast subregions, in an early- and late-century extended drought scenario, shown in Table 13 (Page 66)

Table 13. Changes in Base Flow in Creeks During Extended Drought Scenarios (in/yr), RCP 8.5

Subregion	Historical	Early Century	Late Century
North County	16.7	19.2	17.6

(Page 66)

#### Extreme Heat (Page 69)

Historically, the county has experienced an average of four extreme heat days a year. This is expected to increase to 12 extreme heat events per year by 2030, 19 extreme heat events per year by 2060, and 34 extreme heat events per year by 2100. (Page 69)

Table 14. Projected Number of Extreme Heat Days, RCP 8.5

Subregion	Historical	2030	2060	2100
North County	4	7	11	19

(Page 70)

Table 15. Projected Length of Heat Waves (days), RCP 8.5

Subregion	Historical	Historical 2030		2100
North County	2.6	2.7	3.9	5.2

(Page 70)

Table 16. Projected Number of Warm Nights, RECP 8.5

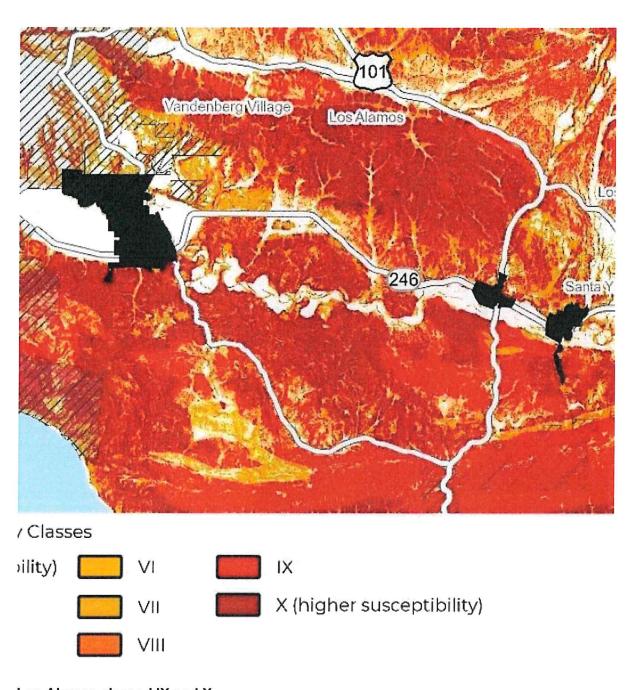
Subregion	Historical	2030	2060	2100
North County	4	20	52	93

(Page 70)

# **Inland Flooding** (Page 71)

Between 1862 and 2014, the county experienced 19 significant inland flooding events.65 Although climate change will increase the frequency and intensity of droughts, scientists also project that it will increase the frequency and intensity of heavy rainstorms that cause inland flooding, although precipitation levels are expected to increase only slightly. Up to half of California's precipitation comes from a relatively small number of intense winter storms, which are expected to become more intense with climate change. For example, what is currently a 200-year storm, or one that has a 1 in 200 chance of occurring in a given year, by 2100 would increase in frequency by 40 to 50 years (to a 1 in 150/160 chance in a given year).66 This means that the 100-year and 500-year floodplains may expand, and the current floodplains may become 40- to 50-year floodplains. (Page 71)

Figure 30. Landslide Susceptibility Areas in North County



Los Alamos classed IX and X

(Page 78)

# Wildfire (Page.81)

Wildfires are fires burning in natural areas, although they can easily spread into developed areas between urban and wildland zones, known as the wildland-urban interface.69,70 The wildland-urban interface can expose people and property to the flames, increasing the risk of injury, death, and property damage or destruction. (Page 81)

Vandenberg Village Los Alamos

Los O

Santa Yne

Gaviota

N

Figure 33. Fire Hazard Severity Zones

Fire Hazard Severity Zones - Hazard Class

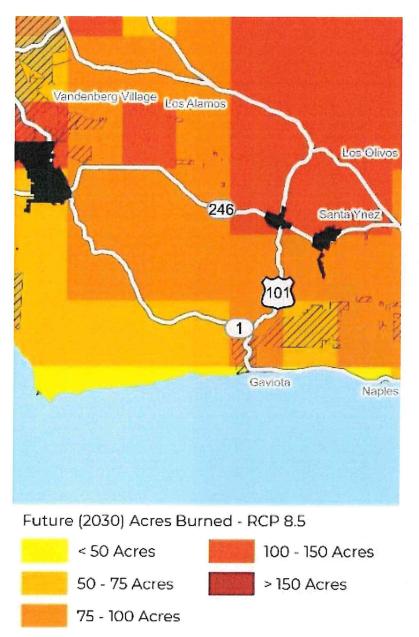
Very High High

Moderate

Los Alamos Hazard Class High and Very High

(Page 83)





Future (2030) Acres Burned-RCP 8.5: Los Alamos-75-100 Acres and 100-150 Acres (Page 85)

Vandenberg Village (Los Alamos L'os Olivos Santarynez Gaviota Naples Future (2060) Acres Burned - RCP 8.5 < 50 Acres 100 - 150 Acres 50 - 75 Acres > 150 Acres

Figure 36. Projected Annual Average Acres Burned in the County 2060

Future (2060) Acres Burke-RCP 8.5: Los Alamos-100-150 Acres (Page 86)

75 - 100 Acres

# <u>Infrastructure</u>

Of the 44 infrastructure types evaluated in the Vulnerability Assessment, 39 were highly or severely vulnerable (scoring V4 or V5) for at least one hazard type. Infrastructure is generally most vulnerable to wildfire, inland flooding, and landslides. The most vulnerable infrastructure types were evacuation routes, major roads and highways, railroads, and single access roads. (Page 111)

Table 21. Infrastructure Highly and Severly Vulnerable to Climate Change Hazards

# North County

	Drought	Dune and Bluff Erosion	Extreme Heat	Inland Flooding	Landslide and Debris Flow	Sea Level Rise	Severe Weather	Wildfire
Bicycle routes					V4			V4
Bridges				V4	V5		V4	
Bus routes				V4	V3			V5
Evacuation routes				V4	V4			V4
Hiking Trails					V4			V5
Major roads and highways				V4	V4			V4
Oil and gas infrastructure		-			V4	_		V4

Single access roads		V5	V4		V4	V5
				1		

(Pages 119 and 120)

# **Buildings and Facilities** (Page 122)

Table 23. Buildings and Facilities Highly and Severly Vulnerable to Climate Change Hazards

# North County

	Coastal Storms	Drought	Dune and Bluff Erosion	Extreme Heat	Inland Flooding	Landslide and Debris Flow	Sea Level Rise	Severe Weather	Wildfire
Community Center									V4
Homes, residential structures, and residential opportunity sites	V4		V5		V5	V5	V4	V4	V5
Bus routes					V4	V3			V5
Evacuation routes					V4	V4			V4
Hiking Trails						V4			V5
Major roads and highways			,		V4	V4			V4

Oil and gas infrastructure				V4		V4
Single access roads			V5	V4	V4	V5

(Page 129)

# Communities with high pollution burden (p.c-3)

Persons living in areas with high levels of soil, water, and/or atmospheric pollution, as measured by the number of permitted facilities and measurements of key pollutants. These areas include Casmalia, Garey, Sisquoc, Los Alamos, New Cuyama, Cuyama, Vandenberg Village, and Mission Hills. (Page C-3)

The Vulnerability Assessment evaluates the impact and adaptive capacity of 138 populations and assets for each of the relevant 13 hazards. Vulnerability scores were assigned on a scale of 1 to 5 (as shown in Figure 6) to reflect how susceptible the population or asset is to the harm posed by the hazard. The project team assessed 963 different pairings for vulnerability, 361 of which scored as highly or severely vulnerable (V4 or V5). This section summarizes the key vulnerabilities in unincorporated Santa Barbara County, which only includes descriptions of population and assets with high or severe vulnerability (scores of V4 or V5). The population and assets are grouped by common categories because many of them share similar reasoning for impacts and adaptive capacity. For example, bus routes, evacuation routes, and major roads and highways all depend on the County roadway network and would therefore experience similar impacts and have similar adaptive capacities. For a detailed list of vulnerability scores for all populations and assets, refer to Appendix D. (Page 99).



# Santa Barbara County

Climate Change Vulnerability Assessment

November 2021



# **Executive Summary**

# Purpose of the Climate Change Vulnerability Assessment

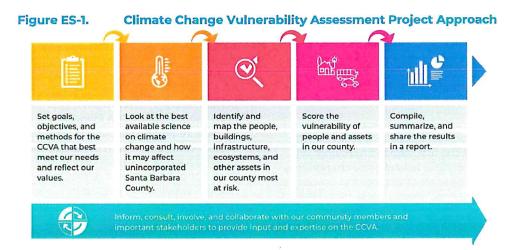
The County of Santa Barbara (County) prepared this Climate Change Vulnerability Assessment (Vulnerability Assessment or CCVA) as the first step to improving regional resiliency by analyzing how climate change may harm the community. The assessment looks at how severe the effects of climate change hazards are likely to be for the county's people and assets and identifies which groups of people and assets face the greatest potential for harm. The County will use these results to prepare an Adaptation Plan and update the Santa Barbara County Seismic Safety and Safety Element to increase resiliency throughout the unincorporated county.

The CCVA is an assessment of the unincorporated areas of the county. The project team evaluated vulnerabilities of populations and assets in unincorporated Santa Barbara County based on current and future hazards associated with climate change. Some of these vulnerabilities are worsened by existing issues in the county, preventing populations and assets from responding and recovering from hazards. The CCVA follows state guidance and relies on local, regional, state, and federal resources; however, it is not a comparison with other counties in the state. The CCVA is a study, not a policy document. The document does not provide project or program solutions to reduce risk and vulnerability caused by current of future climate change hazards.

The Vulnerability Assessment helps Santa Barbara County comply with state laws, identifies the most vulnerable populations and assets in the county, and helps improve the eligibility of the County for grant funding to implement adaptation projects and develop resilience programs. **Figure ES-1** shows the approach used to develop the Vulnerability Assessment.

November 2021 Page ES-1 Executive Summary





#### **Frontline Communities**

The Vulnerability Assessment includes an analysis of 22 different frontline populations and communities in the unincorporated county. Frontline populations and communities are people who experience the impacts of climate change earlier and/or to a disproportionately severe degree than others in the unincorporated county and are the least able to access resources. A full definition of frontline communities can be found in the County and Subregional Profiles section of the report. The Vulnerability Assessment used US Census data for 15

frontline community indicators in each census block group of the county. The 15 indicators were:

- 1. Children under 10 years old
- 2. Senior citizens 65 years or older
- 3. Senior citizens living alone
- 4. People living in rental homes
- 5. Households without access to a vehicle
- 6. People living in mobile homes
- 7. Adults without a high school degree
- 8. Overcrowded households

November 2021 Page ES-2 Executive Summary



North County has floodplains that cross the subregion along rivers, including the Santa Maria River, San Antonio Creek, and Santa Ynez River, and create flood hazards for communities that border these waterways in the Santa Maria and Santa Ynez Valleys. In the steeper and heavily vegetated areas of North County, fire hazards and landslide susceptibility are high. The subregion also faces water restrictions during droughts, which are exacerbated by extreme heat days that require additional water to irrigate agricultural lands.

The primary transportation routes in the subregion are US-101 and SR-1, and secondary transportation routes include SR-246, SR-135, SR-154, and SR-166. The Union Pacific Railroad provides passenger and freight transit services along the western edge of North County. Santa Maria Airport is the only commercial airport in the subregion; Lompoc City Airport and Santa Ynez Airport provide municipal services, and Vandenberg Space Force Base provides military air services.

**Table 3** shows the frontline populations and communities in the CCVA with available information from US Census data, reports, or studies. The following list identifies the issues and the areas where frontline communities live and work. Pollution-burdened communities are in the 80th percentile or greater for potential exposure to pollutants and adverse environmental conditions caused by pollution, as defined by CalEnviroScreen.<sup>28</sup>

- Pollution-burdened communities<sup>29</sup>
  - Groundwater contamination: Southern Santa Maria Valley, Orcutt, Garey, Sisquoc, areas between Guadalupe and Santa Maria.
  - Drinking water contamination: Santa Ynez Valley, Foxen Canyon, Purisima Hills, Garey, Sisquoc, Santa Rita Hills, Los Olivos, Los Alamos.
  - Hazardous waste storage: Casmalia, Vandenberg Village, Garey, Sisquoc.
  - Pesticide exposure: Santa Maria Valley, Santa Rita Hills, areas surrounding Lompoc.
- Isolated and rural communities: Garey, Sisquoc, Casmalia, Betteravia, Los Alamos, Santa Rita Hills, Vandenberg Village, Mission Hills, Paradise Road.
- Persons living on single-access roads: southern Orcutt, Vandenburg Village, Mission Hills, Santa Rita Hills, White Hills, Cebada Canyon, Santa Ynez Valley, Los Olivos, north of Buellton, Paradise Road.



#### Climate Scenarios

The Vulnerability Assessment is based on accurate and up-to-date information, including the State Cal-Adapt database, the California Adaptation Planning Guide, and the California Fourth Climate Change Assessment. Many projections of climate change hazards rely on multiple scenarios that reflect different levels of global greenhouse gas (GHG) emissions and atmospheric GHG concentrations. The Intergovernmental Panel on Climate Change, an organization that represents the global scientific community, uses Representative Concentration Pathways (RCP) or climate scenarios. RCPs are labeled with numbers that refer to the increase in the amount of energy that reaches each square meter of Earth's surface under that scenario. The four RCPs are:

- RCP 2.6. Under this scenario, global GHG emissions peak around 2020 and then decline quickly.
- RCP 4.5. Under this scenario, global GHG emissions peak around 2040 and then decline.
- RCP 6. Global emissions continue to rise until the middle of the century.
- RCP 8.5. Global emissions continue to rise until at least the end of the century.<sup>43</sup>

#### Intergovernmental Panel on Climate Change (IPCC)

The IPCC recently released "The Physical Science Basis" of the Sixth Assessment Report that updates global climate change projections for the near-term, mid-term, and long-term based on greenhouse gas emission trends from the past decade. It moves away from using RCPs, instead using five different scenarios called "shared socioeconomic pathways," which consider socioeconomic trends underlying each scenario. This Vulnerability Assessment does not use these updated projections because at time of writing they are not available at a local scale. However, the IPCC report does reaffirm the use of projections comparable to RCP 8.5 as the suggested emission scenario to use for Cal-Adapt data.

Source: IPCC, 2021: Summary for Policymakers. In: Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Masson-Delmotte, V., P. Zhai, A. Pirani, S. L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M. I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T. K. Maycock, T. Waterfield, O. Yelekçi, R. Yu and B. Zhou (eds.)]. Cambridge University Press. In Press.

The Cal-Adapt database, which provides California-specific climate change hazard projections, uses RCP 4.5 for a low emissions scenario and RCP 8.5 for a high emissions scenario. The Governor's Office of Planning and Research's Planning and Investing for a Resilient California recommends using RCP 8.5 for analyses considering

November 2021 Page 38 Climate Stressors



impacts through 2050, because there are minimal differences between emission scenarios for the first half of the century. It also recommends using RCP 8.5 for late-century projections for a more conservative and risk-adverse approach.<sup>44</sup> The recently updated California APG follows these recommendations. The project team input the RCP 8.5 GHG emission scenario to global climate models on the Cal-Adapt database and other resources.

In accordance with Cal-Adapt guidance and best practices, the project team modeled future conditions in Santa Barbara County using an average of multiple climate models to ensure the accuracy of climate projections and to the extent that data from multiple models are available. The project team used averages of the CanESM2 (average), CNRM-CS5 (cooler/wetter), HadGEM2-ES (warm/drier), and MIROC5 (complement) models where possible, as recommended by state quidance.

The following sections describe the four primary climate stressors, ten secondary climate stressors, and the compounding or cascading effects that may happen in Santa Barbara County. Each climate stressor includes trends and projected changes and, where available, the project team divided projections into the three subregions—North County, Cuyama Valley, and South Coast (see **Figure 1**). In each subregion, the project team

selected a centralized, unincorporated, census-designated place to gather projection data—Los Alamos for North County, New Cuyama for the Cuyama Valley, and Montecito for the South Coast—because it illustrates general trends in its subregion. Some locations in the subregions may see higher or lower projections.

#### **Uncertainty**

Like any forecast, there is some uncertainty in the projections of climate change hazards. Climate change is caused by GHG emissions, and therefore changes in the amount of emissions in the near term compared to the distant future will have a larger effect on the severity of climate change effects. These uncertainties depend partly on factors such as population levels, economic activities, government policies, and personal behavior. Scenarios with low probability and high severity may occur due to interannual variability that could result in more severe impacts than those evaluated in this report. However, by using an average of the most accurate models, the project team used the most likely projections of climate change hazards.

Technical studies by the California Energy Commission identify these four models as "priority models" for the state because they are the most accurate for California's climate conditions. Data produced by these four and six other suitable models are available from the Cal-Adapt website.





#### Precipitation

Two distinct metrics measure precipitation: 1) annual average precipitation and 2) seasonality. Countywide historical annual average precipitation was 17.6 inches per year. Projections show a

fluctuation in precipitation by 2.8 inches per year by 2030, 1.2 inches per year by 2060, and 3.9 inches per year by 2100.48 Table 11 shows the expected annual average precipitation change countywide and in the three subregions. Changes in average precipitation due to climate change are also expected to vary substantially in different regions of the county. For instance, the eastern areas of the county in the Los Padres National Forest are projected to see increased annual averages, and the areas in the Santa Maria Valley and the Cuyama Valley will likely see a decrease in annual average precipitation. Although there will likely be a slight increase in precipitation throughout the 21st century, the seasonality may change (i.e., timing during a given year). There will likely be more rain during periods of precipitation (e.g., storms with higher rainfall totals), fewer total days with precipitation, and an increase in year-to-year variability. This means that more rain may fall during fewer storms throughout the year.

Figure 9 through Figure 11 show the projected precipitation levels in 2030, 2060, and 2100 compared to historical baseline conditions (1961 to 1990). These figures show a gradual increase in average annual precipitation in North County and South Coast, with larger increases in annual average precipitation in the Los Padres National Forest. Based on these projections, the Cuyama Valley will likely experience little variation in annual average precipitation compared to historical baseline conditions, even though the subregion may experience considerable variation in totals year-to-year. Changes in precipitation patterns can, directly and indirectly, cause or worsen hazards in the county, such as drought, inland and coastal flooding, landslides, severe weather, and wildfire. The next section discusses these secondary hazards in more detail.

Table 11. Historical and Projected Annual
Average Precipitation (in/yr), RCP 8.5

Subregion	Historical	orical 2030		2100
Countywide	17.6	20.4	18.8	21.5
North County	16.7	19.2	17.6	19.7
Cuyama Valley	7.2	7.7	6.9	8.4
South Coast	21.8	25.5	23.9	27.9

Source: California Energy Commission. 2018. "Annual Averages". https://cal-adapt.org/tools/annual-averages/.

Note: Projections are an average of the four State-recommended climate models (HadGEM2-ES, CNRM-CM5, CanESM2, MIROC5), averaged for 2030-2050, 2050-2070, and 2070-2099.





#### Drought

A drought occurs when conditions are drier than normal for a long period of time, making less water available for people, agricultural uses, and ecosystems. Historically, groundwater has accounted for 75 percent of the county's water use for

domestic, commercial, industrial, and agricultural uses. However, several of the basins are in overdraft conditions, where groundwater users pump more water to the surface than is replenished into the basin, causing a drawdown in the water table. Figures 24 and 25 show the depth to groundwater in the Cuyama Valley Groundwater Basin in the springs of 2015 and 2017. These figures show that groundwater fell by nearly 50 feet in some areas of Cuyama Valley in just two years during the last major drought. In addition to the use of local groundwater and surface water supplies, unincorporated Santa Barbara County receives water from the State Water Project that is stored in Lake Cachuma. This supply depends on precipitation and snowpack in the Sierra Nevada.

#### Water Supply in Santa Barbara County

The three subregions in Santa Barbara County receive water from different sources—groundwater, the State Water Project, surface water, and desalinized water. Some South Coast areas, including City of Santa Barbara and Montecito, have access to a desalinization plant. South Coast and North County also receive water from the State Water Project through direct pipelines to water purveyors or Lake Cachuma. South Coast receives State Water Project water through Lake Cachuma; however, drought can reduce this supply below the minimum threshold for pumping out of the reservoir. Communities in the Santa Ynez Valley receive small amounts of water via surface water supplies from the Santa Ynez River, which can be drawn down in drought conditions. All regions of the county rely on some level of groundwater, but Cuyama Valley relies solely on groundwater. In years with little rainfall, higher levels of groundwater pumping can create overdraft in groundwater basins and higher concentrations of water pollutants. The Cuyama Valley region may have few alternatives if groundwater cannot be used; however, similar to other groundwater basins in the county, the Cuyama Valley groundwater basin has a Groundwater Sustainability Agency that is developing a Groundwater Sustainability Plan to bring the basin into sustainable conditions.



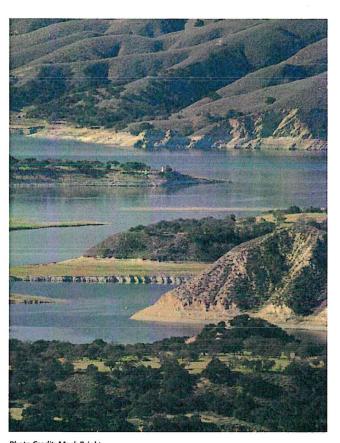


Photo Credit: Mark Bright

Droughts are a regular occurrence in California and are measured by the timing and length of the drought. However, in the past 50 years, there have been four major statewide droughts, plus smaller regional droughts. Due to the changes in precipitation patterns discussed under "Primary Climate Stressors," droughts will likely last longer and happen more frequently because of more variability in precipitation extremes. Base flows in rivers and creeks in the county's coastal and inland areas are projected to decline significantly in the North County and South Coast subregions, in an early- and late-century extended drought scenario, shown in **Table 13**.

Table 13. Changes in Base Flow in Creeks During Extended Drought Scenarios (in/yr), RCP 8.5

Subregion	region Historical Early Century		Late Century	Subregion		
Countywide	2.1	1.4	1.3	Countywide		
North County	1.4	1.2	1.2	North County		
Cuyama Valley	0.4	0.4	0.4	Cuyama Valley		
South Coast	4.1	2.6	2.6	South Coast		

Source: California Energy Commission. 2018. "Extended Drought Scenarios." https://cal-adapt.ora/tools/extended-drought/.
Note: Projections are an average of the four State-recommended climate models (HadGEM2-ES, CNRM-CM5, CanESM2, MIROC5), averaged for 2030-2050, 2050-2070, and 2070-2099.

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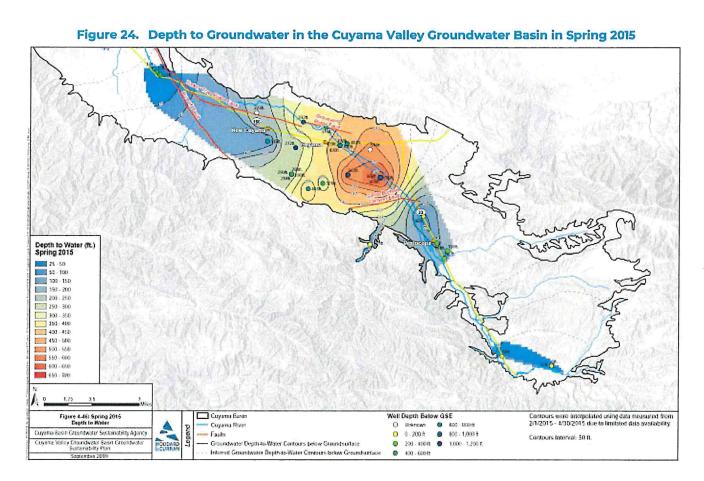
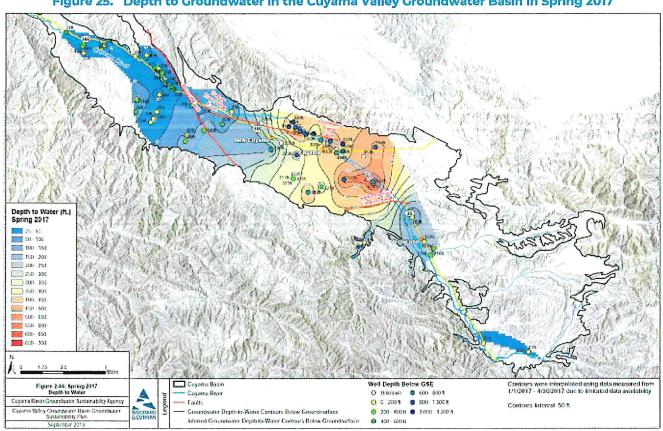




Figure 25. Depth to Groundwater in the Cuyama Valley Groundwater Basin in Spring 2017



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#### Sierra Nevada Snowpack

Snowpack is the amount of snow that accumulates during the winter. It is a natural reservoir that stores water during the winter. As it slowly melts in the spring and summer, it feeds streams and rivers that provide water to regions hundreds of miles away along the Central Coast and Southern California. The southwest region of the United States relies on snowmelt to supply 50 to 80 percent of the lake, reservoir, river, and creek inflows for water supply.

Snowpack levels dropped by 25 percent during the 2011 to 2016 drought, and average springtime snowpack is expected to drop 64 percent by 2100. In 2021, the snowpack in the Northern Sierra was 70 percent of the average, but the rain was less than 50 percent of the annual average, making it the third driest year on record. Loss of snowpack will increase as temperatures increase because of less precipitation during droughts, more precipitation falling as rain, and snow melting earlier in the spring.

Sources: ARCCA, 2018, From Mountain to Cities: Exploring California's Urban Connections to Sierra Nevada Ecosystems. https://arccacalifornia.org/wpcontent/uploads/2018/08/ARCCA-UrbanRural-Whitepaper.pdf.

California Department of Water Resources. 2021. "Statewide Snowpack Well Below Normal as Wet Season Winds Down". https://water.ca.gov/News/News-Releases/2021/April-21/Statewide-Snowpack-Well-Below-Normal-as-Wet-Season-Winds-Down.



#### **Extreme Heat**

Extreme heat occurs when temperatures rise significantly above normal levels, and the key metric is the number of extreme heat events per year and heat wave duration. "Extreme heat" is a relative

term—temperatures of 100 degrees are normal in places like Palm Springs, but almost unprecedented in coastal areas of Santa Barbara County. The county has different extreme heat temperatures in different regions. On an extreme heat day, temperatures reach at least 88.7 degrees in Los Alamos, 101.3 degrees in Cuyama, and 87 degrees in Montecito. Although temperatures are lower in coastal areas, it is still dangerous when temperatures are higher than usual, because people and assets may not have the resources to cope with them.

Historically, the county has experienced an average of four extreme heat days a year. This is expected to increase to 12 extreme heat events per year by 2030, 19 extreme heat events per year by 2060, and 34 extreme heat events per year by 2100.<sup>62</sup> **Table 14** shows the number of extreme heat days projected in the three subregions. The duration of heat waves is projected to increase countywide—from 2.7 days historically to 4.3 days by 2030, 5.6 days by 2060, and 9.4 days by 2100.<sup>63</sup> **Table 15** shows the increases in heat wave duration by subregion.



Table 14. Projected Number of Extreme Heat Days, RCP 8.5

Subregion	Historical	2030	2060	2100
Countywide	4	12	19	34
North County	4	7	11	19
Cuyama Valley	4	22	31	46
South Coast	5	7	11	21

Source: California Energy Commission. 2018. "Extreme Heat Days and Warm Nights." <a href="https://cal-adapt.org/tools/extreme-heat/">https://cal-adapt.org/tools/extreme-heat/</a>. Note: Projections are an average of the four State-recommended

climate models (HadGEM2-ES, CNRM-CM5, CanESM2, MIROC5), averaged for 2030-2050, 2050-2070, and 2070-2099.

Table 15. Projected Length of Heat Waves (days), RCP 8.5

Subregion	Historical	2030	2060	2100
Countywide	2.7	4.3	5.6	9.4
North County	2.6	2.7	3.9	5.2
Cuyama Valley	2.2	6.9	9.0	14.7
South Coast	2.4	2.5	3.5	5.3

Source: California Energy Commission. 2018. "Extreme Heat Days and Warm Nights." <a href="https://cal-adapt.org/tools/extreme-heat/">https://cal-adapt.org/tools/extreme-heat/</a>.

Note: Projections are an average of the four State-recommended climate models (HadGEM2-ES, CNRM-CM5, CanESM2, MIROC5), averaged for 2030-2050, 2050-2070, and 2070-2099

When the daily minimum temperatures remain significantly above normal, warm nights can worsen an extreme heat day because people and assets may not get relief from high temperatures. A warm night is when temperatures remain above 56.3 degrees in Los Alamos, 62.8 degrees in Cuyama, and 60.1 degrees in Montecito.<sup>64</sup> **Table 16** shows the number of warm nights projected in the county and subregions.

Table 16. Projected Number of Warm Nights, RCP 8.5

Subregion	Historical	2030	2060	2100
Countywide	4	26	51	88
North County	4	20	52	93
Cuyama Valley	4	16	30	52
South Coast	4	23	47	81

Source: California Energy Commission. 2018. "Extreme Heat Days and Warm Nights." <a href="https://cal-adapt.org/tools/extreme-heat/">https://cal-adapt.org/tools/extreme-heat/</a>. Note: Projections are an average of the four State-recommended climate models (HadGEM2-ES, CNRM-CM5, CanESM2, MIROC5), averaged for 2030-2050, 2050-2070, and 2070-2099.

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## **Inland Flooding**

All flooding is a breakdown in conveyance. It happens when water surpasses the capacity of local water bodies to contain it, creeks and rivers to carry it, or soil to absorb it. When flood control infrastructure fails,

water builds up and washes into normally dry areas, where it can cause significant harm to buildings, people, and ecosystems. Floods can be caused by heavy rainfall, long periods of moderate rainfall, or blocked-off drainage areas during rainfall. A break in a dam, water pipe, or water tank can also cause flooding in rare instances. Floods that develop very quickly are called flash floods; they are especially dangerous because they give little or no warning. Floodwaters can be deep enough to drown people and move fast enough to carry away people or heavy objects, such as cars. In some cases, floods have lifted buildings off their foundations. Inland flooding is measured by the size of the areas flooded per year, and this will likely increase as more precipitation falls in fewer storms, discussed under "Primary Climate Stressors."

Between 1862 and 2014, the county experienced 19 significant inland flooding events. Although climate change will increase the frequency and intensity of droughts, scientists also project that it will increase the frequency and intensity of heavy rainstorms that cause inland flooding, although precipitation levels are expected to increase only slightly. Up to half of California's

precipitation comes from a relatively small number of intense winter storms, which are expected to become more intense with climate change. For example, what is currently a 200-year storm, or one that has a 1 in 200 chance of occurring in a given year, by 2100 would increase in frequency by 40 to 50 years (to a 1 in 150/160 chance in a given year). 66 This means that the 100-year and 500-year floodplains may expand, and the current floodplains may become 40- to 50-year floodplains.

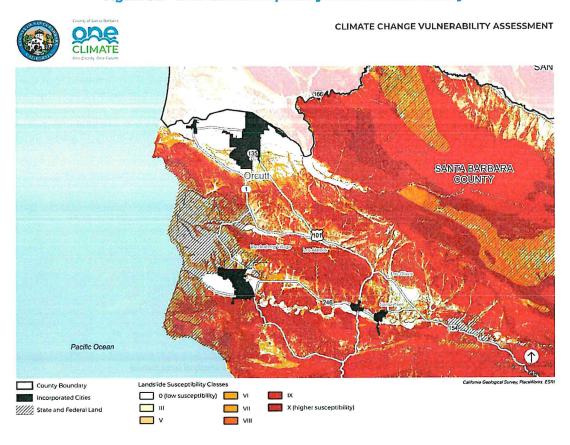
Figures 26 to 28 show the 100-year and 500-year floodplains in the North County, Cuyama Valley, and South Coast subregions, respectively.



Photo Credit: County of Santa Barbara



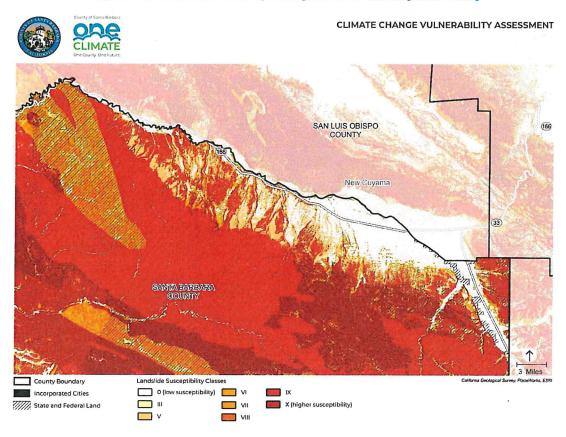
Figure 30. Landslide Susceptibility Areas in North County



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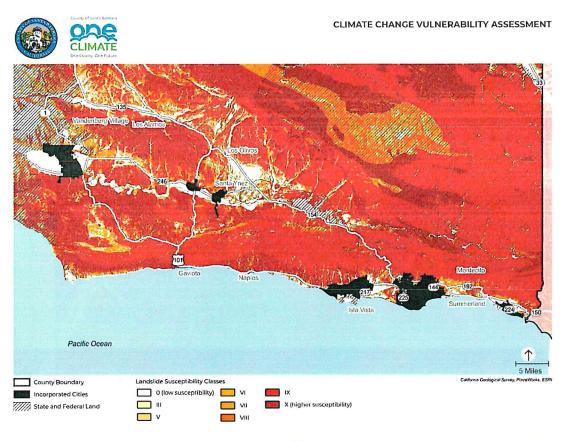


Figure 31. Landslide Susceptibility Areas in the Cuyama Valley





# Figure 32. Landslide Susceptibility Areas on the South Coast



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#### Severe Weather

Severe weather includes strong winds, hail, lightning, and heavy rainfall typically caused by intense storm systems, although types of strong winds, such as sundowners, can occur without a storm. Severe

weather is measured by the number of events per year, which is likely to increase. Severe winds can damage or destroy buildings, knock over trees, and damage power lines and electrical equipment. This includes sundowner winds, which can reach over 120°F and speeds of 60 miles per hour in some areas.<sup>68</sup>

#### **Extreme Winds in Santa Barbara County**

Santa Barbara County experiences two types of severe wind events that can harm people and cause cascading effects such as sparking wildfires and spreading them more quickly. They can also lead to Public Safety Power Shutdowns (PSPS) that can impact the County's economic drivers and key services. Santa Ana winds tend to blow most frequently during October to April. They flow from the inland deserts to the coastal areas of Southern California at an average wind speed of 40 miles per hour. Sundowner winds, which are unique to Santa Barbara County, flow down from the Santa Ynez Mountains. Both types of wind events are hot, gusty winds with low humidity that can raise the temperature in the region by 20 degrees Fahrenheit or more and can exacerbate other hazards occurring simultaneously in the county. Mapping known wind corridors associated with Santa Ana and Sundowner winds may assist in identifying additional vulnerabilities to severe weather and wildfire.



#### Wildfire

Wildfires are a regular feature of the landscape in Santa Barbara County. **Figure 33** shows the Fire Hazard Severity Zones throughout the county as designated by CAL FIRE. The Mediterranean-type climate and ecosystems in much of the state,

including Santa Barbara County, are especially fire prone. Winter rains support plant growth, and the summer dry season, droughts, and extreme heat events dry out vegetation, increasing the potential for ignition during the late summer and autumn when temperatures are high for several months without precipitation. Wildfires can be sparked by lightning, malfunctioning equipment, vehicle crashes, or many other causes. Most wildfire ignition is human caused. High winds can then spread wildfires quickly over the terrain. Wildfires are fires burning in natural areas, although they can easily spread into developed areas between urban and wildland zones, known as the wildland-urban interface. 69,70 The wildlandurban interface can expose people and property to the flames, increasing the risk of injury, death, and property damage or destruction. As shown in Figure 34, dozens of wildfires have burned in Santa Barbara County over the last century. Wildfires can be linked to landslides and debris flows on steep slopes in the county, as seen after the 2017 Thomas Fire.



Wildfires as a secondary climate stressor are measured by the number of acres burned per year, which is expected to increase in the 21st century. Historically, an annual average of 17,681 acres burned per year in the county, although some years have seen significantly more burnt acres. A projected increase in annual average precipitation can lead to an increase in the amount of fuel growth available for wildfires to burn. Due to higher annual average temperatures and the increased frequency and intensity of droughts, annual average acres burned is expected to increase to 23,040 acres per year (30 percent increase) by 2030, 25,782 acres per year (46 percent increase) by 2060, and 24,050 acres per year (36 percent increase) by 2100.71 Figures 35 to 37 show projected annual average acres burned in the county by 2030, 2060, and 2100, compared to historical baseline conditions (1961 to 1990). These figures show that the Los Padres National Forest has the highest annual average acres burned in early and midcentury, but that will shift toward Vandenberg Space Force Base and western Santa Barbara County by late century. In Cuyama Valley, annual average acres burned increase only slightly in early and midcentury and decrease in late century.



Photo Credit: Santa Barbara County Fire Department



Photo Credit: Santa Barbara County Office of Emergency Management

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CLIMATE CHANGE VULNERABILITY ASSESSMENT ODE CLIMATE 227) SAN LUIS OBISPO COUNTY KERN COUNTY New Cuyama VENTURA COUNTY Pacific Ocean County Boundary Fire Hazard Severity Zones - Hazard Class Incorporated Cities Very High State and Federal Land High Moderate

Figure 33. Fire Hazard Severity Zones



CLIMATE CHANGE VULNERABILITY ASSESSMENT

SAN LUIS OBISPO
COUNTY

NEW Cuyama

VENTURA
COUNTY

Pacific Ocean

County Boundary
Incorporated Cities

State and Federal Land

County Soundary
Incorporated Cities

State and Federal Land

County Soundary
Incorporated Cities

State and Federal Land

County Soundary
Incorporated Cities

State and Federal Land

Figure 34. Historical Wildfire Burn Areas

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1800 - 1969

2011 - 2019



Figure 35. Projected Annual Average Acres Burned in the County in 2030

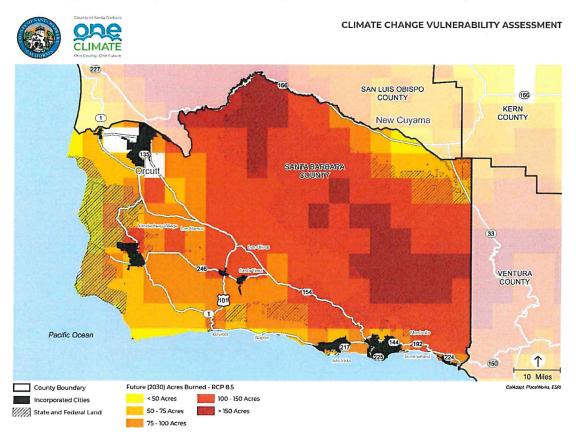
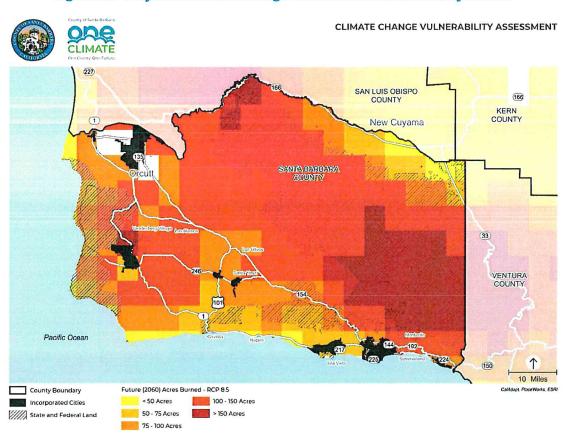




Figure 36. Projected Annual Average Acres Burned in the County in 2060



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# Critical Vulnerabilities

The Vulnerability Assessment evaluates the impact and adaptive capacity of 138 populations and assets for each of the relevant 13 hazards. Vulnerability scores were assigned on a scale of 1 to 5 (as shown in Figure 6) to reflect how susceptible the population or asset is to the harm posed by the hazard. The project team assessed 963 different pairings for vulnerability, 361 of which scored as highly or severely vulnerable (V4 or V5). This section summarizes the key vulnerabilities in unincorporated Santa Barbara County, which only includes descriptions of population and assets with high or severe vulnerability (scores of V4 or V5). The population and assets are grouped by common categories because many of them share similar reasoning for impacts and adaptive capacity. For example, bus routes, evacuation routes, and major roads and highways all depend on the County roadway network and would therefore experience similar impacts and have similar adaptive capacities. For a detailed list of vulnerability scores for all populations and assets, refer to Appendix D.

Critical Vulnerabilit	y Table L	egend .	
Agricultural Pests and Diseases		Human Health Hazards	8
Coastal Storms	mate.	Landslides and Debris Flows	1
Drought		Ocean Acidification	W
Dune and Bluff Erosion		Sea Level Rise	•
Extreme Heat		Severe Weather	P
Inland Flooding	1	Wildfire	
Decrease in Fog			



Of the 44 infrastructure types evaluated in the Vulnerability Assessment, 39 were highly or severely vulnerable (scoring V4 or V5) for at least one hazard type. Infrastructure is generally most vulnerable to wildfire, inland flooding, and landslides. The most vulnerable infrastructure types were evacuation routes, major roads and highways, railroads, and single access roads. **Table 20** provides a summary of the high (V4) and severe (V5) infrastructure vulnerabilities in the unincorporated areas of Santa Barbara County. **Table 21** shows which infrastructure types are highly or severely vulnerable to each hazard. Blank squares in this table indicate that a hazard is not applicable to an infrastructure type, and gray squares indicate that the hazard is applicable, but the score is less than V4 (highly vulnerable).

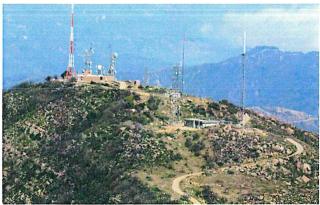


Photo Credit: Mark Bright

#### Adaptation Planning in Transportation Infrastructure

In 2020, the Santa Barbara County Association of Governments (SBCAG) completed a Multi-Modal Transportation Network Resiliency Assessment. The county's multimodal transportation network includes highways, arterial roads, and surface streets; bus transit routes, stops, and stations; the Union Pacific Railroad and the Amtrak routes and stations; the Santa Barbara Municipal Airport; and the county's network of bicycle paths. SBCAG's vulnerability assessment, the first product in the Resiliency Assessment, identifies 10 high-priority transportation systems, selected for their criticality to the county. It evaluates each high-priority transportation system and the current usage of the system, the importance of the system for emergency access, and the degree to which it serves low-income communities as well as its duplicability with already-selected systems. The high-priority systems are:

- US-101 Corridor
- Mission Drive (CA 246)
- San Marcos Pass Road (CA 154)
- Broadway/Orcutt Expressway (CA 135)
- Hollister Avenue/State Street
- Union Pacific Railroad
- Santa Barbara Municipal Airport/Goleta Slough
- Santa Barbara Train Station
- Breeze Bus Santa Maria Lompoc
- UCSB Bicycle Paths



Table 21. Infrastructure Highly and Severely Vulnerable to Climate Change Hazards

Infrastructure Types	(CAA		400			1		9	1
Airport (Commercial)	V4				V4		V5		
Airport (Military)									Color Color
Airport (Public- noncommercial)				-	V5		1.1	- 101	
Beaches	V5	1	V5				V5		
Bicycle routes (North County)					-	V4		161.0	V4
Bicycle routes (Cuyama Valley)								and Artis	
Bicycle routes (South Coast)	V4		V4		-	V4	V4	n Muali	
Bridges (North County)	- 1				V4	V5		V4	
Bridges (Cuyama Valley)					V5	V4		V5	
Bridges (South Coast)	- 12				V4	V4		V5	
Bus routes (North County)			=4.1		V4	V3	4		V5
Bus routes (Cuyama Valley)					V5	V4		V4	V5
Bus routes (South Coast)			V4		V4	V4			V4
Communication facilities						V4		V4	
Dams						V4		and a second	
Electric vehicle charging stations			•					V4	
Electrical substations				V4					V4
Electrical transmission and distribution lines				V5		V4		V4	V5

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**Vulnerability Assessment Results** 



Infrastructure Types	orda.							9	1
Evacuation routes (North County)			-		V4	V4		•	V4
Evacuation routes (Cuyama Valley)					V5	V4		V4	V5
Evacuation routes (South Coast)	V4		V4		V4	V5	V4	V4	V4
Flood control infrastructure	V5				-	V4	V4	V4	-
Hiking trails (North County)		-	-		-	V4		-	V4
Hiking trails (Cuyama Valley)		-			-	-		-	V4
Hiking trails (South Coast)	•	• •	-			V4	VI	-	V4
Landfills and transfer stations	-				-	V4		•	-
Major roads and highways (North County)			-	-	V4	V4		-	V4
Major roads and highways (Cuyama Valley)				-	V5	V4		V4	V5
Major roads and highways (South Coast)	V4		V4	-	V4	V5	V4	V4	V4
Military bases	-		-		-	-	-	_	V4
Parks and open space (North County)				aysin a				ing and and	policalisms
Parks and open space (Cuyama Valley)				en e	<u> </u>			ana da sad	e leafeat e



Infrastructure Types	- Can							9	
Parks and open space (South Coast)	V4		V4		-5110	115 <b>-</b> 11 is		sasti 1	
Power plants								I Salvery Line	
Railroads	V5		V5	V4	V4	V5	V4	il same	V5
Oil and gas infrastructure (North County)			- 1 T			V4			V4
Oil and gas infrastructure (Cuyama Valley)				-	Holf shefting	erii collect onti weeda	W 1 .		V4
Oil and gas infrastructure (South Coast)	V4		V5						V4
Single access roads (North County)	7			. 262	V5	V4		V4	V5
Single access roads (Cuyama Valley)	2				•	V4	- 1	V4	V5
Single access roads (South Coast)			V5	<b>!</b>	V4	V5	V4	V4	V5
Water and wastewater infrastructure (North County)		u dija nde Luinga			en general en en en en en				V4
Water and wastewater infrastructure (Cuyama Valley)		V4			ns are too lead area	anan asan		ene sellov Romineli eli	V4
Water and wastewater infrastructure (South Coast)	<b>V</b> 5		V4			V4	V5		V4

Note: Blank squares in this table indicate that a hazard is not applicable to an infrastructure type, and gray squares indicate that the hazard is applicable, but the score is less than V4 (highly vulnerable).





# **Buildings and Facilities**

The most vulnerable buildings and facilities throughout the County are homes, residential structures, and residential opportunity sites. In coastal areas along the

South Coast, these buildings can be damaged or destroyed by coastal hazards. Along bluff tops, they can fall into the ocean along with the bluffs. In inland areas in all subregions of the county, homes can become uninhabitable due to mold and mildew growth from inland flooding, foundation failures from landslides, and damage from severe weather or wildfire. These structures can be retrofitted, upgraded, or raised to prevent damage, but these solutions can be expensive or infeasible for property owners to complete.

Historic buildings and facilities are also highly vulnerable to climate change hazards, which can damage or destroy them, including their historic significance. Not only can retrofits or repairs be expensive, but they can cause these sites to lose their historic significance.

In Cuyama Valley, specifically New Cuyama, schools and commercial buildings are highly vulnerable to inland flooding, extreme heat, and severe weather. These buildings can be damaged, deteriorate more quickly, or cease to function as needed due to high winds, heavy rainfall, and heat waves. Due to the remoteness of the area, there are few alternative buildings and facilities that

could meet the demand of the community. In addition, building owners may not be able to afford retrofits.

The County and several community-based organizations have weatherization programs that can help owners upgrade buildings and facilities and protect them from a variety of hazards. These programs include Property Assessed Clean Energy Financing, Go Green Financing, SoCal Gas tax deductions, and funding through the California Earthquake Commission. There are also several wildfire reduction and mitigation programs available in certain areas of the county, including defensible space surveys and inspection programs, community chipping programs, and vegetation management programs through the California Vegetation Treatment Program. The Santa Barbara County Fire Department is also working with CAL FIRE and Santa Barbara County Fire Safe Council to develop and update Community Wildfire Protection Plans and assist with the development of a Regional Wildfire Mitigation Program, which will buffer development in the wildland-urban interface, prioritize retrofits, and conduct FireWise training in fire-prone areas.92

Of the 26 buildings and facility types evaluated in the Vulnerability Assessment, 12 were highly or severely vulnerable (scoring V4 or V5) for at least one hazard type. Buildings and facilities are generally most vulnerable to inland flooding and wildfire. The most vulnerable building types are residential structures and residential opportunity



Building and Facility Types							9	
Homes, residential structures, and residential opportunity sites (North County)			•	V4	V4		V4	V5
Homes, residential structures, and residential opportunity sites (Cuyama Valley)				V5			V5	V4
Homes, residential structures, and residential opportunity sites (South Coast)	V4	V5		V5	V5	V4	V4	V5
Libraries (North County)		ATTERIOR AND ADDRESS OF THE PARTY OF THE PAR					-	-
Libraries (Cuyama Valley)				V4				
Libraries (South Coast)							27-19-14-11	
Medical and care facilities (North County)								
Medical and care facilities (South Coast)								
Public safety buildings	-							V4
Schools (North County)							2.5	_
Schools (Cuyama Valley)			V4				V4	
Schools (South Coast)	- 1		-		V4			-

Note: Blank squares in this table indicate that a hazard is not applicable to a building or facility type, and gray squares indicate that the hazard is applicable, but the score is less than V4 (highly vulnerable).

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