

LEMOORE
CALIFORNIA

**LEMOORE CITY COUNCIL
COUNCIL CHAMBER
429 C STREET
May 21, 2024
5:30 P.M.**

MEETING AGENDA

Please silence all electronic devices as a courtesy to those in attendance. Thank you.

- a. **CALL TO ORDER**
- b. **INVOCATION**
- c. **PLEDGE OF ALLEGIANCE**
- d. **ROLL CALL**
- e. **AGENDA APPROVAL, ADDITIONS, AND/OR DELETIONS**

1 – STUDY SESSION

- 1-1 Central Valley Justice Coalition (Avalos)
- 1-2 Optimized Investment Partners, LLC (Northcraft)
- 1-3 FM3 Research – Lemoore Sales Tax Feasibility Survey Analysis (Northcraft)

PUBLIC COMMENT

Public comment will be in accordance with the attached policy. This time is reserved for members of the audience to address the City Council on items of interest that are not on the Agenda and are within the subject matter jurisdiction of the Council. It is recommended that speakers limit their comments to three (3) minutes each and it is requested that no comments be made during this period on items on the Agenda. The Council is prohibited by law from taking any action on matters discussed that are not on the Agenda. Prior to addressing the Council, any handouts for Council will be provided to the City Clerk for distribution to the Council and appropriate staff. The public will have an opportunity to comment on items on the agenda once the item has been called and the Mayor opens the item to the public.

2 – CEREMONIAL / PRESENTATION

No Ceremonies or Presentations.

3 – DEPARTMENT AND CITY MANAGER REPORTS

- 3-1 Department & City Manager Reports

4 – CONSENT CALENDAR

Items considered routine in nature are placed on the Consent Calendar. They will all be considered and voted upon in one vote as one item unless a Council member or member of the public requests individual consideration.

- 4-1 Approval – Minutes – Regular Meeting – May 7, 2024
- 4-2 Approval – Resolution 2024-13 – Declaring Public Nuisance and Ordering Public Hearing Regarding Property Abatement
- 4-3 Approval – Resolution 2024-14 – Adopting the Kings County Multi-Jurisdictional Local Hazard Mitigation Plan
- 4-4 Approval – Notice of Completion – Tract No. 820 – Fairway Courtyards – Energy Homes, DBA: GJ Gardner Homes of California, Inc.
- 4-5 Approval – Budget Amendment – Cimarron Lift Station
- 4-6 Approval – Budget Amendment – Public Safety Facility Maintenance District (PFMD) Zone 2

4-7 Approval – Tyler Technology Software Implementation Update

5 – PUBLIC HEARINGS

Report, discussion and/or other Council action will be taken.

5-1 Public Hearing – CFD Annexation (Reeder)

*****This item is being continued to the next regular City Council Meeting, June 4, 2024*****

6 – NEW BUSINESS

Report, discussion and/or other Council action will be taken.

6-1 Report and Recommendation – Development of a Parks and Recreation Master Plan

7 – BRIEF CITY COUNCIL REPORTS AND REQUESTS

7-1 City Council Reports / Requests

CLOSED SESSION

This item has been set aside for the City Council to meet in a closed session to discuss matters pursuant to Government Code Section 54956.9(d)(4). The City Attorney will provide an oral report regarding the Closed Session.

1. Government Code Section 54957
Public Employee Appointment/Employment
Title: City Manager

ADJOURNMENT

Upcoming Council Meetings

- City Council Regular Meeting, Tuesday, June 4, 2024
- City Council Regular Meeting, Tuesday, June 18, 2024

Agendas for all City Council meetings are posted at least 72 hours prior to the meeting at the Council Chamber, 429 C Street and the Cinnamon Municipal Complex, 711 W. Cinnamon Drive. Written communications from the public for the agenda must be received by the City Clerk's Office no less than seven (7) days prior to the meeting date. The City of Lemoore complies with the Americans with Disabilities Act (ADA of 1990). The Council Chamber is accessible to the physically disabled. Should you need special assistance, please call (559) 924-6744, at least 4 business days prior to the meeting.

PUBLIC NOTIFICATION

I, Christal Schisler, Deputy City Clerk for the City of Lemoore, declare under penalty of perjury that I posted the above Regular City Council Agenda for the meeting of May 21, 2024 at Council Chamber, 429 C Street and Cinnamon Municipal Complex, 711 W. Cinnamon Drive, Lemoore, CA on May 16, 2024.

//s//

Christal Schisler, Deputy City Clerk



**CITY COUNCIL REGULAR MEETING
MAY 21, 2024 @ 5:30 p.m.**

The City Council will hold its public meetings in person, with a virtual option for public participation based on availability. The City of Lemoore utilizes Zoom teleconferencing technology for virtual public participation; however, the City makes no representation or warranty of any kind, regarding the adequacy, reliability, or availability of the use of this platform in this manner. Participation by members of the public through this means is at their own risk. (Zoom teleconferencing/attendance may not be available at all meetings.)

The meeting may be viewed through the following Zoom Meeting:

- Please click the link below to join the webinar:
- <https://us06web.zoom.us/j/85192331946?pwd=wyTpV4AhjbYuk3492gMhJo655SpQkm.1>
- Meeting ID: 851 9233 1946
- Passcode: 283854
- Phone: +1 669 900 6833

If you wish to make a general public comment or public comment on a particular item on the agenda, **participants may do so via Zoom during the meeting** or by **submitting public comments by e-mail to: cityclerk@lemoore.com**. In the subject line of the e-mail, please state your name and the item you are commenting on. If you wish to submit a public comment on more than one agenda item, please send a separate e-mail for each item you are commenting on. Please be aware that written public comments, including your name, may become public information. Additional requirements for submitting public comments by e-mail are provided below.

General Public Comments & Comments on City Council Business Items

For general public comments and comments regarding specific City Council Business Items, public comments can be made via Zoom during the meeting or all public comments must be received by e-mail no later than 5:00 p.m. the day of the meeting. Comments received by this time will be read aloud by a staff member during the applicable agenda item, provided that such comments may be read within the normal three (3) minutes allotted to each speaker. Any portion of your comment extending past three (3) minutes may not be read aloud due to time restrictions. If a general public comment or comment on a business item is received after 5:00 p.m., efforts will be made to read your comment into the record. However, staff cannot guarantee that written comments received after 5:00 p.m. will be read. All written comments that are not read into the record will be made part of the meeting minutes, provided that such comments are received prior to the end of the City Council meeting.

Public Hearings

For public comment on a public hearing, all public comments must be received by the close of the public hearing period. All comments received by the close of the public hearing period will be read aloud by a staff member during the applicable agenda item, provided that such comments may be read within the normal three (3) minutes allotted to each speaker. Any portion of your comment extending past three (3) minutes may not be read aloud due to time restrictions. If a comment on a public hearing item is received after the close of the public hearing, such comment will be made part of the meeting minutes, provided that such comment is received prior to the end of the meeting.

PLEASE BE AWARE THAT ANY PUBLIC COMMENTS RECEIVED THAT DO NOT SPECIFY A PARTICULAR AGENDA ITEM WILL BE READ ALOUD DURING THE GENERAL PUBLIC COMMENT PORTION OF THE AGENDA.



City of
LEMOORE
CALIFORNIA

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Staff Report

Item No: 1-1

To: Lemoore City Council
From: Marisa Avalos, City Clerk
Date: April 29, 2024 **Meeting Date:** May 21, 2024
Subject: Central Valley Justice Coalition

Strategic Initiative:

<input type="checkbox"/> Safe & Vibrant Community	<input type="checkbox"/> Growing & Dynamic Economy
<input type="checkbox"/> Fiscally Sound Government	<input type="checkbox"/> Operational Excellence
<input checked="" type="checkbox"/> Community & Neighborhood Livability	<input type="checkbox"/> Not Applicable

Proposed Motion:
Information Only.

Subject/Discussion:
Danielle Grassi with the Central Valley Justice Coalition will be in attendance to present an overview of the services offered by the non-profit such as human trafficking prevention and education services in Kings County.

Financial Consideration (s):

Alternatives or Pros/Cons:
Not Applicable

Commission/Board Recommendation:
Not Applicable.

Staff Recommendation:
Information Only.

Attachments:

- Resolution:
 - Ordinance:
 - Map
 - Contract
 - Other
- List:

Review:

- Asst. City Manager
- City Attorney
- City Clerk
- City Manager
- Finance

Date:

- 5/16/24
- 5/16/24
- 5/13/24
- 5/13/24



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Staff Report

Item No: 1-2

To: Lemoore City Council
From: Kevin Northcraft, Interim City Manager
Date: May 8, 2024 **Meeting Date:** May 21, 2024
Subject: Optimized Investment Partners, LLC

Strategic Initiative:

<input type="checkbox"/> Safe & Vibrant Community	<input type="checkbox"/> Growing & Dynamic Economy
<input type="checkbox"/> Fiscally Sound Government	<input type="checkbox"/> Operational Excellence
<input checked="" type="checkbox"/> Community & Neighborhood Livability	<input type="checkbox"/> Not Applicable

Proposed Motion:

Information Only.

Subject/Discussion:

David Bilby, President & CEO of Optimized Investment Partners will be providing a brief presentation regarding the investment report for quarter ended March 31, 2024. This presentation was requested by Mayor Pro Tem Gornick at the May 7, 2024 City Council meeting.

Financial Consideration (s):

Alternatives or Pros/Cons:

Not Applicable

Commission/Board Recommendation:

Not Applicable.

Staff Recommendation:

Information Only.

Attachments:

- Resolution:
 - Ordinance:
 - Map
 - Contract
 - Other
- List:

Review:

- Asst. City Manager
- City Attorney
- City Clerk
- City Manager
- Finance

Date:

- 5/16/24
- 5/16/24
- 5/13/24



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Staff Report

Item No: 1-3

To: Lemoore City Council
From: Kevin Northcraft, Interim City Manager
Date: April 29, 2024 Meeting Date: May 21, 2024
Subject: FM3 Research – Lemoore Sales Tax Feasibility Survey Analysis

Strategic Initiative:

<input type="checkbox"/> Safe & Vibrant Community	<input type="checkbox"/> Growing & Dynamic Economy
<input type="checkbox"/> Fiscally Sound Government	<input type="checkbox"/> Operational Excellence
<input checked="" type="checkbox"/> Community & Neighborhood Livability	<input type="checkbox"/> Not Applicable

Proposed Motion:

Information Only.

Subject/Discussion:

The City of Lemoore entered into an agreement with FM3 Research in January 2024 to conduct a survey regarding a potential sales tax. The survey launched Saturday, March 30, 2024 through April 7, 2024. FM3 conducted 440 total interviews of likely November 2024 Voters in the City of Lemoore. Residents were invited to complete the survey by telephone calls, email invitations, and text invitations.

FM3 Research will be presenting an overview of the survey results to Council and the public. Council is likely to be disappointed in the low trust levels cited in the survey. The consultant indicates that it is a trend in the state and county and not a reflection on Lemoore’s City Council.

Financial Consideration (s):

Not Applicable.

Alternatives or Pros/Cons:

Not Applicable

Commission/Board Recommendation:

Not Applicable.

Staff Recommendation:

Information Only.

Attachments:

- Resolution:
 - Ordinance:
 - Map
 - Contract
 - Other
- List:

Review:

- Asst. City Manager
- City Attorney
- City Clerk
- City Manager
- Finance

Date:

- 5/16/2024
- 5/16/2024
- 5/14/2024
- 5/13/24








City of Lemoore Community Issues Survey

March 30-April 7, 2024



OPINION
RESEARCH
& STRATEGY

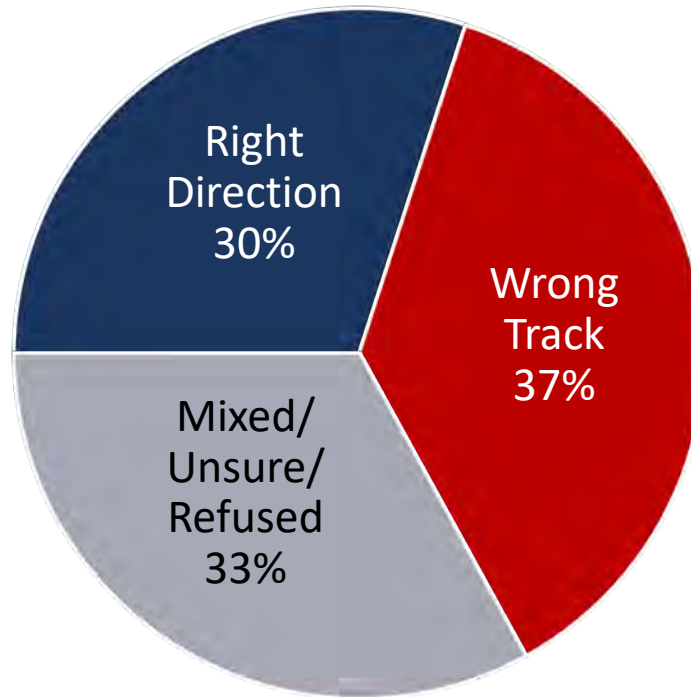
Survey Methodology

Dates	March 30-April 7, 2024
Research Population	Likely November 2024 Voters in the City of Lemoore
Total Interviews	440
Margin of Sampling Error	(Full Sample) $\pm 4.9\%$ at the 95% Confidence Level (Half Sample) $\pm 6.9\%$ at the 95% Confidence Level
Contact Methods	 Telephone Calls  Email Invitations  Text Invitations
Data Collection Modes	 Telephone Interviews  Online Interviews
Languages	English & Spanish

(Note: Not All Results Will Sum to 100% Due to Rounding)

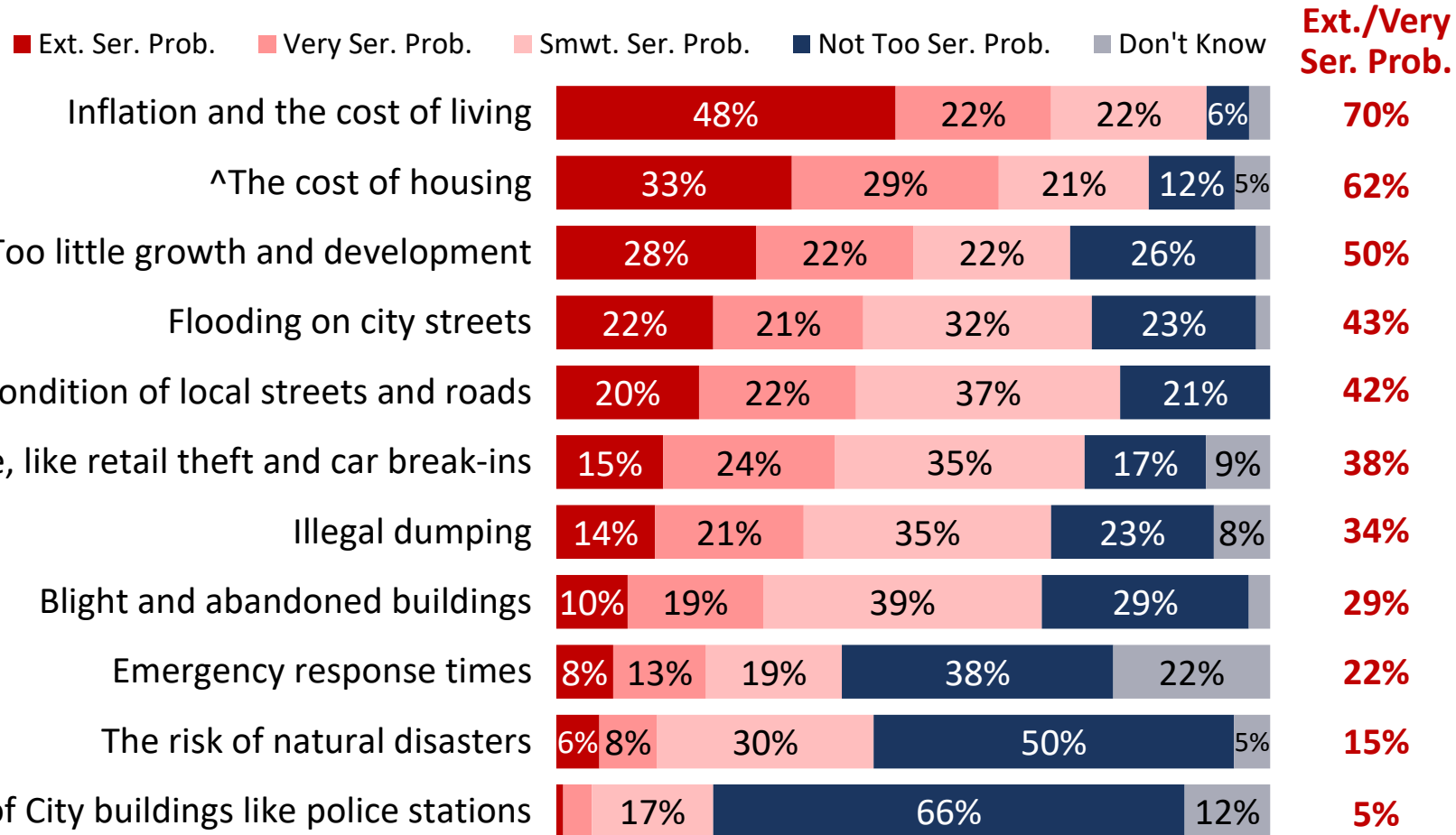
Nearly two-in-five voters are pessimistic about the direction of Lemoore.

Generally speaking, would you say that things in Lemoore are headed in the right direction or are they off on the wrong track?



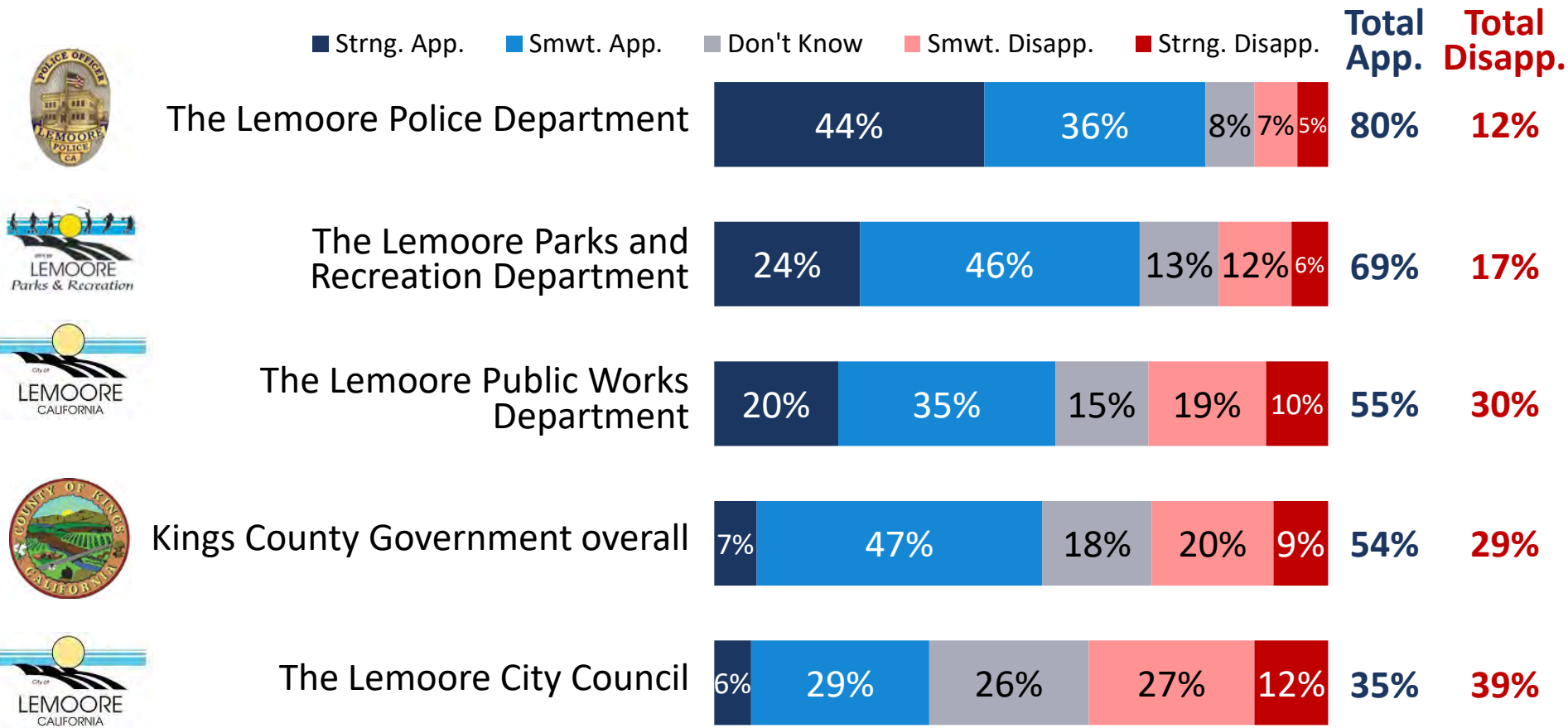
Inflation, the cost of living, and the cost of housing are the biggest concerns for local voters.

I'd like to read some problems facing Lemoore that other people have mentioned. Please tell me whether you think it is an extremely serious problem, a very serious problem, somewhat serious problem, or a not too serious problem in Lemoore.



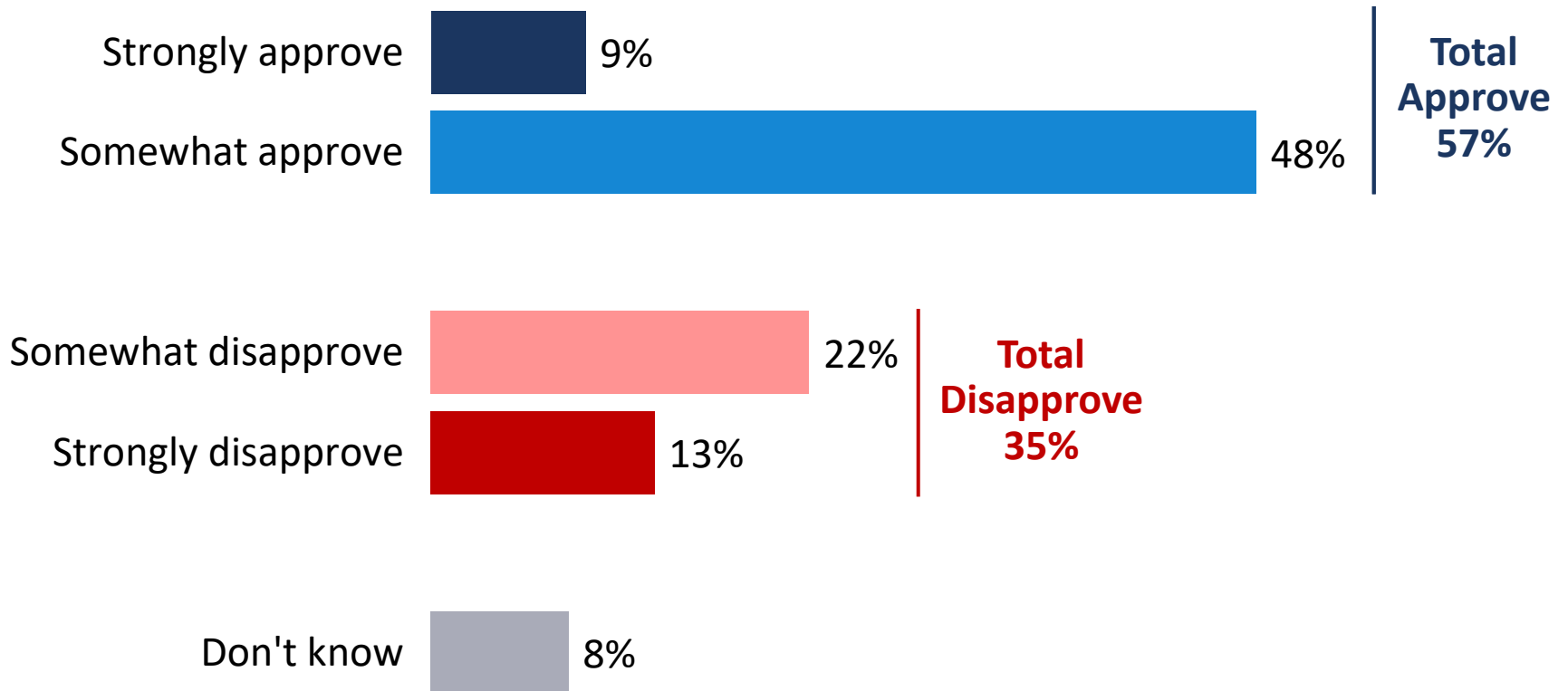
Voters broadly approve of the performance of the Lemoore Police Department and Parks and Recreation Department.

I am now going to mention some parts of Lemoore City government. Please tell me if you approve or disapprove of the job being done by that part of government.



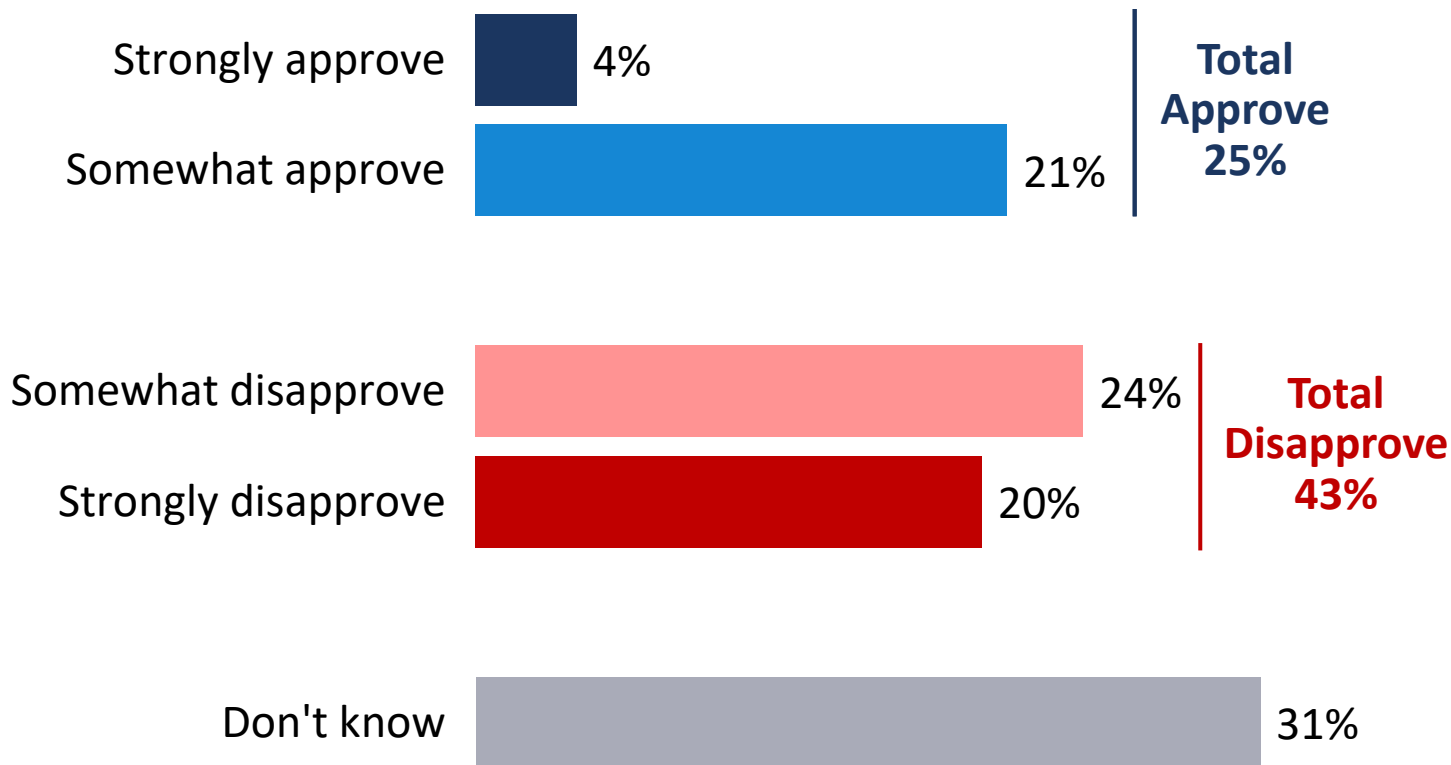
Just under 60% of voters approve of the City's job in providing services and taking care of residents' needs, but few feel strongly.

Overall, do you approve or disapprove of the job being done by the City of Lemoore in providing services and taking care of the needs of Lemoore residents?



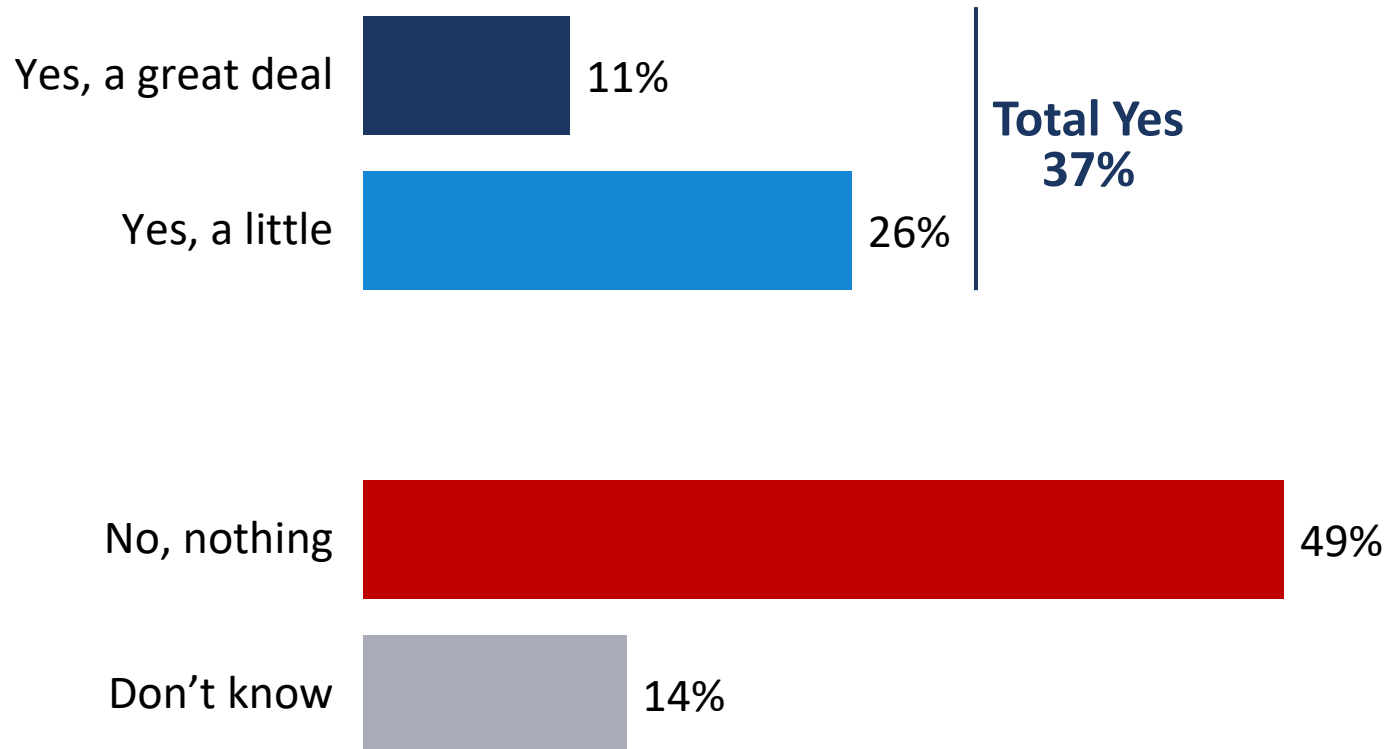
Only one-quarter of voters approve of the City's job in managing its budget and finances.

And do you approve or disapprove of the job being done by city government in managing the City's budget and finances?



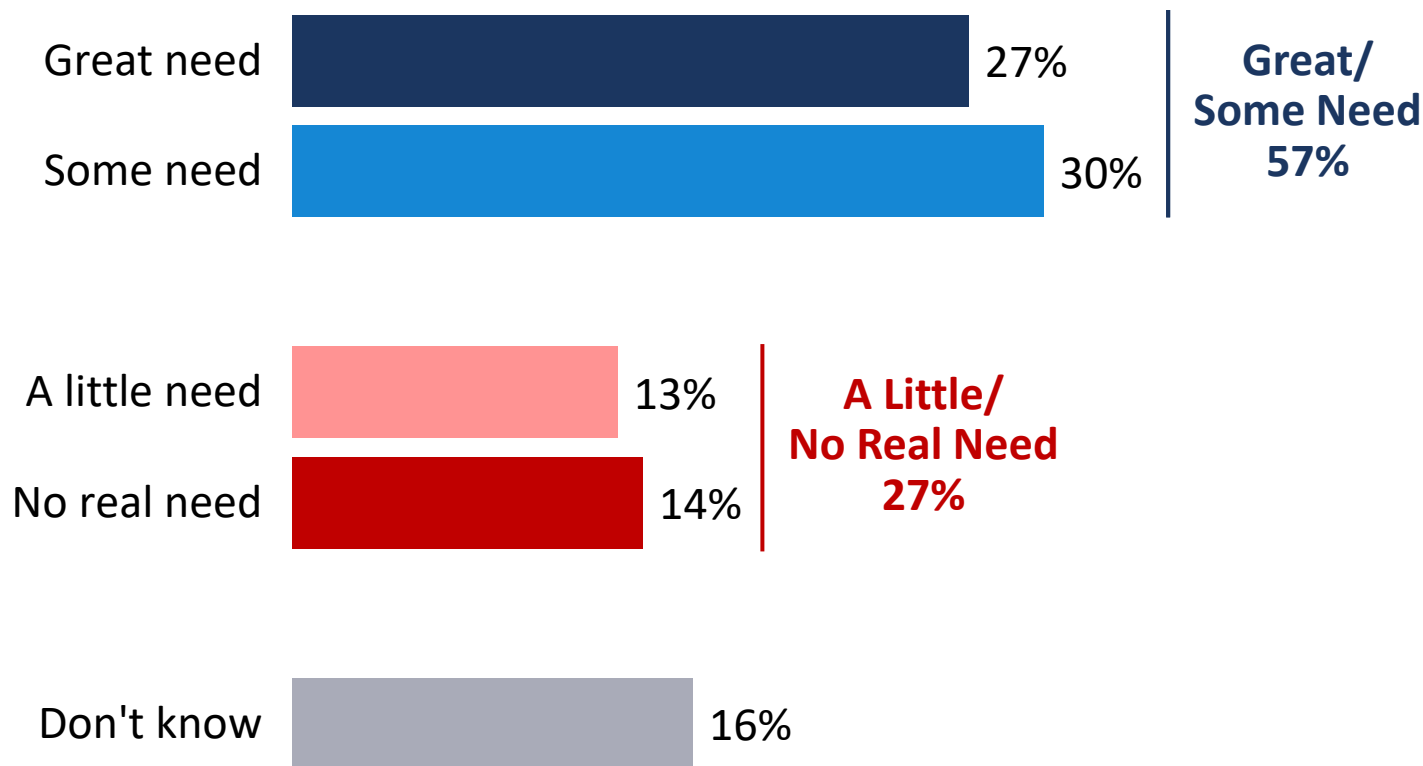
Two in five voters have heard something about city budget shortfalls.

Have you heard, seen, or read anything about the City of Lemoore facing budget shortfalls?



Three in five voters see a need for additional funding for City services, but few feel strongly.

Do you think the City of Lemoore has a great need for additional funding, some need, a little need or no real need for additional funds to provide City services to Lemoore residents?



Hypothetical Ballot Language Tested

(Reviewed by Legal Counsel)

The measure may be titled the **City of Lemoore Public Safety, Roads, City Services Measure** and may read as follows:

1¢ Sales Tax

Shall the measure to maintain vital Lemoore City services such as 911 emergency response, neighborhood police patrols, crime/gang prevention; keeping public areas safe/clean; maintaining/repairing streets, potholes, sidewalks; retaining local businesses; maintaining youth, senior, parks, recreation programs and for general government use by enacting a **1¢** sales tax providing approximately **\$3,300,000** annually until ended by voters; requiring audits, public spending disclosure, all funds used locally, be adopted?

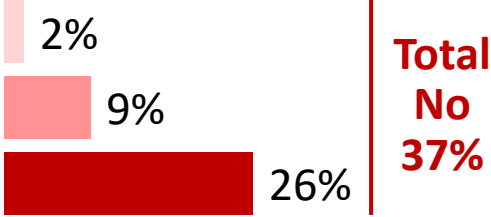
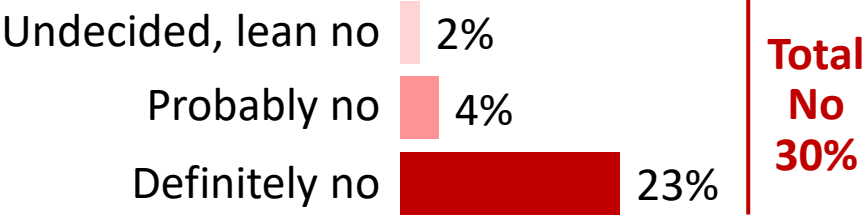
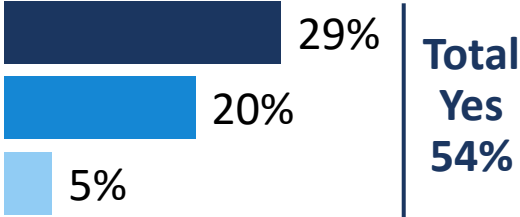
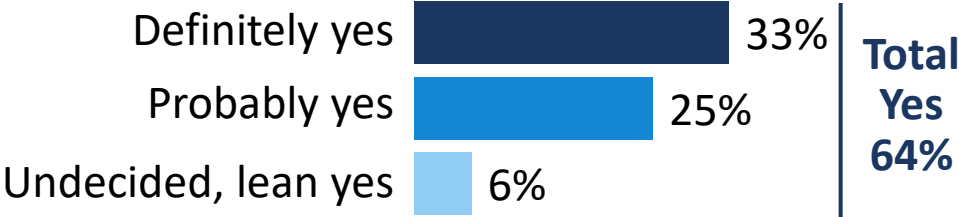
1 ½¢ Sales Tax

Shall the measure to maintain vital Lemoore City services such as 911 emergency response, neighborhood police patrols, crime/gang prevention; keeping public areas safe/clean; maintaining/repairing streets, potholes, sidewalks; retaining/attracting local businesses; maintaining youth, senior, parks, recreation programs and for general government use by enacting a **1 ½¢** sales tax providing approximately **\$4,950,000** annually until ended by voters; requiring audits, public spending disclosure, all funds used locally, be adopted?

A majority of voters backs a sales tax at either rate, but support is much broader for a one-cent tax.

1¢ Sales Tax

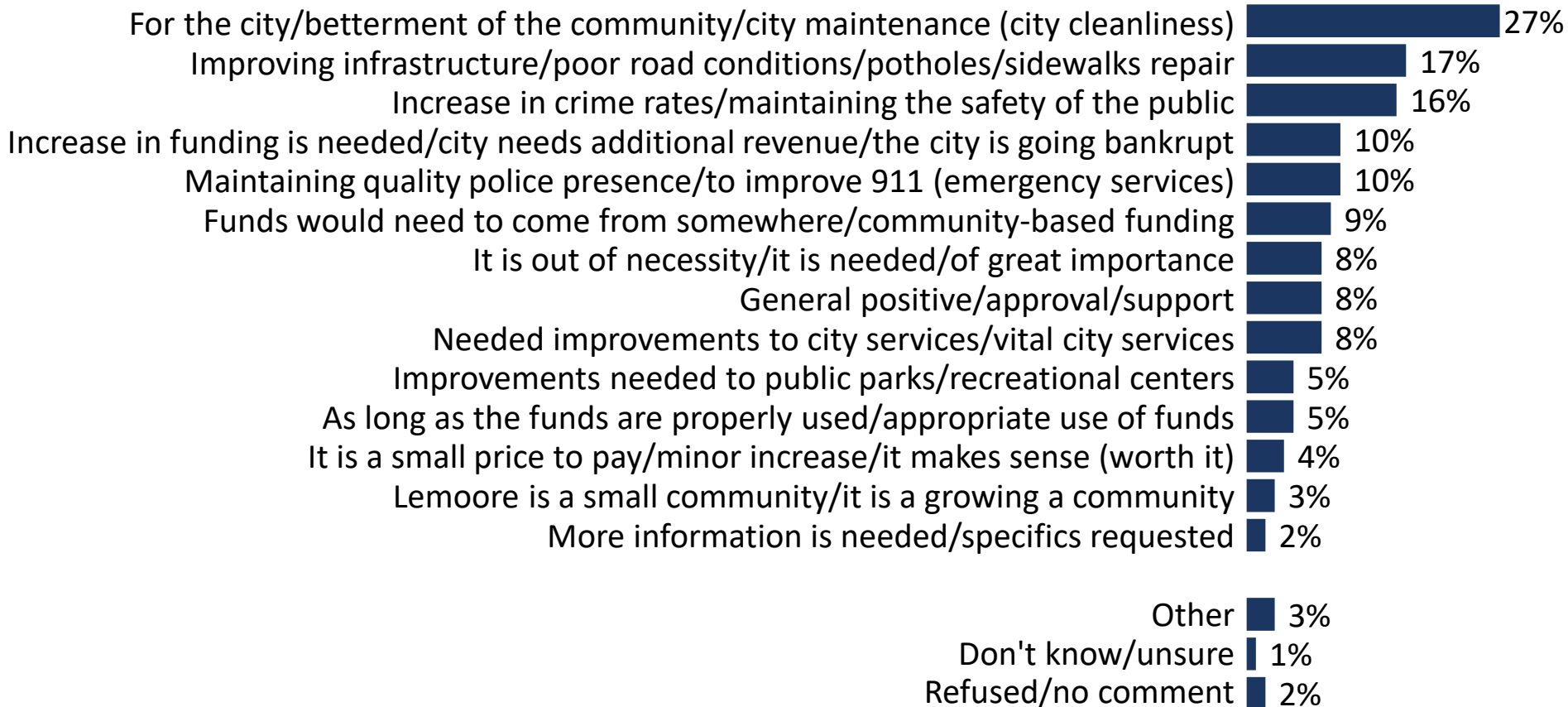
1 ½¢ Sales Tax



The top rationales for support included the general betterment of the City, improving infrastructure such as roads, potholes and sidewalks and to maintain public safety.

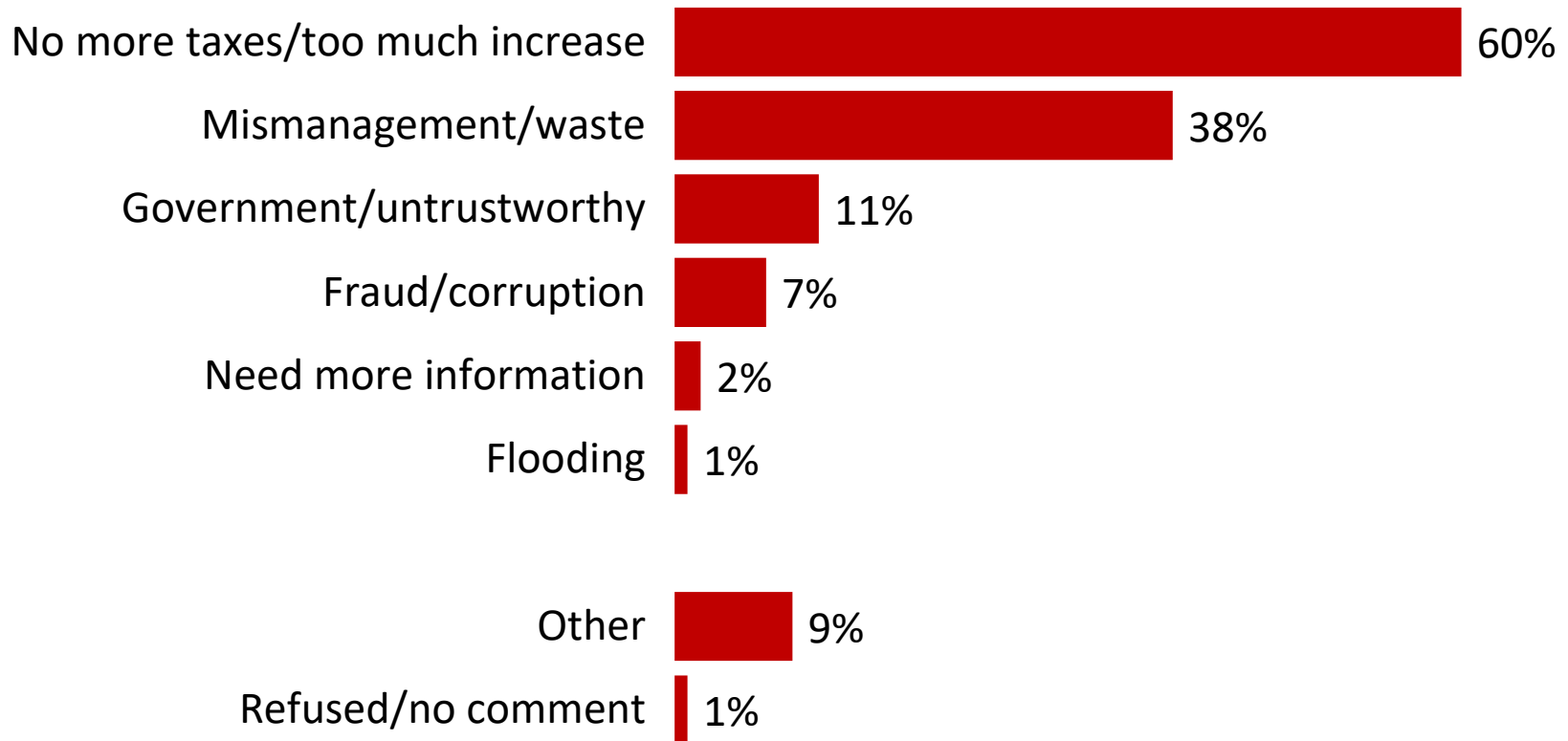
*In a few words of your own, why would you vote **YES** on this measure?*

(Open-ended; Asked of Yes Voters Only, n=259)

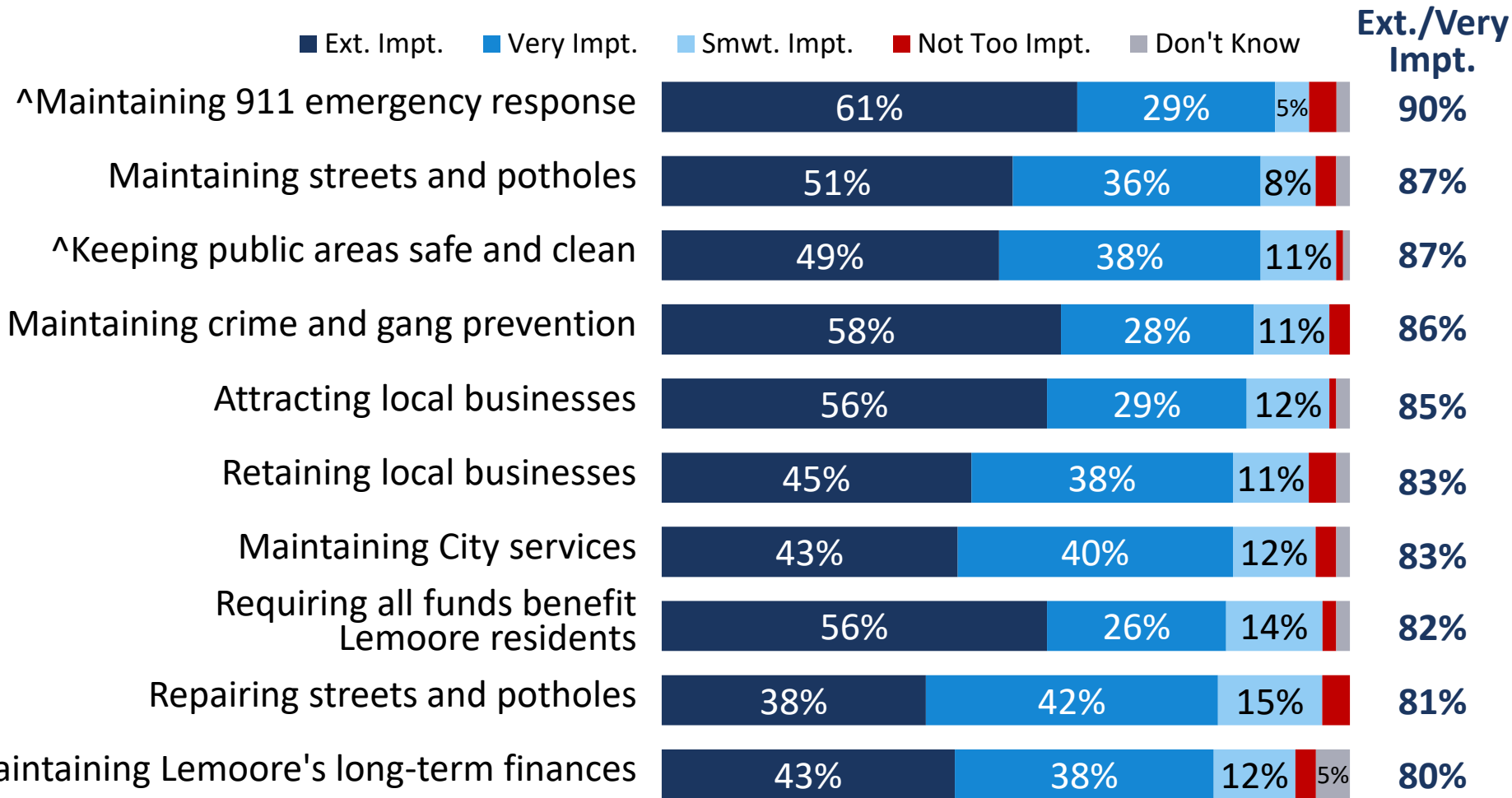


Opponents largely cited tax concerns, mismanagement and waste of funds.

*In a few words of your own, why would you vote **NO** on this measure?
(Open-ended; Asked of No Voters Only, n=147)*

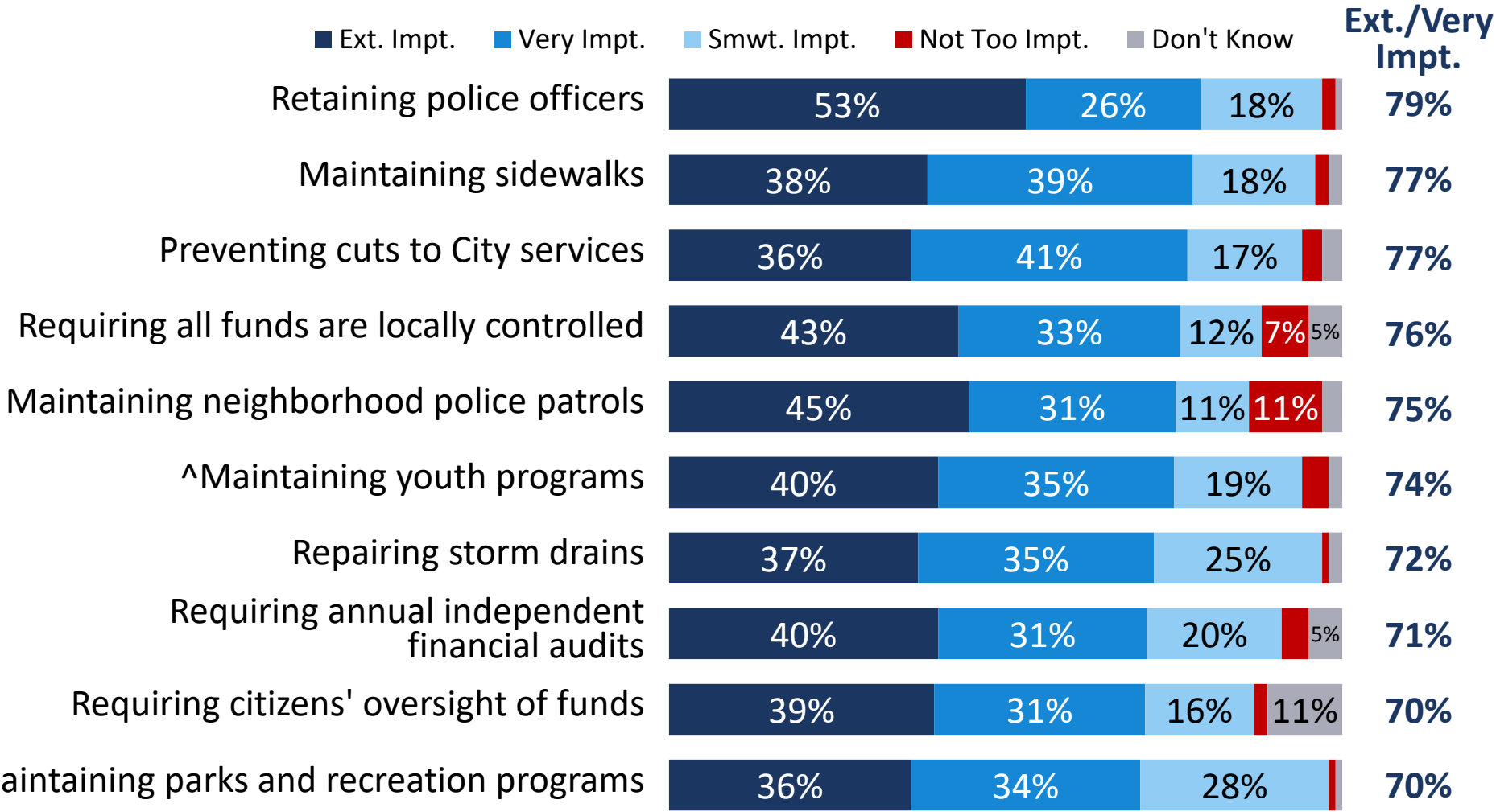


Maintaining 911 emergency response, streets and potholes; keeping public areas safe and clean; maintaining crime and gang prevention and attracting local businesses were among voters' top priorities.



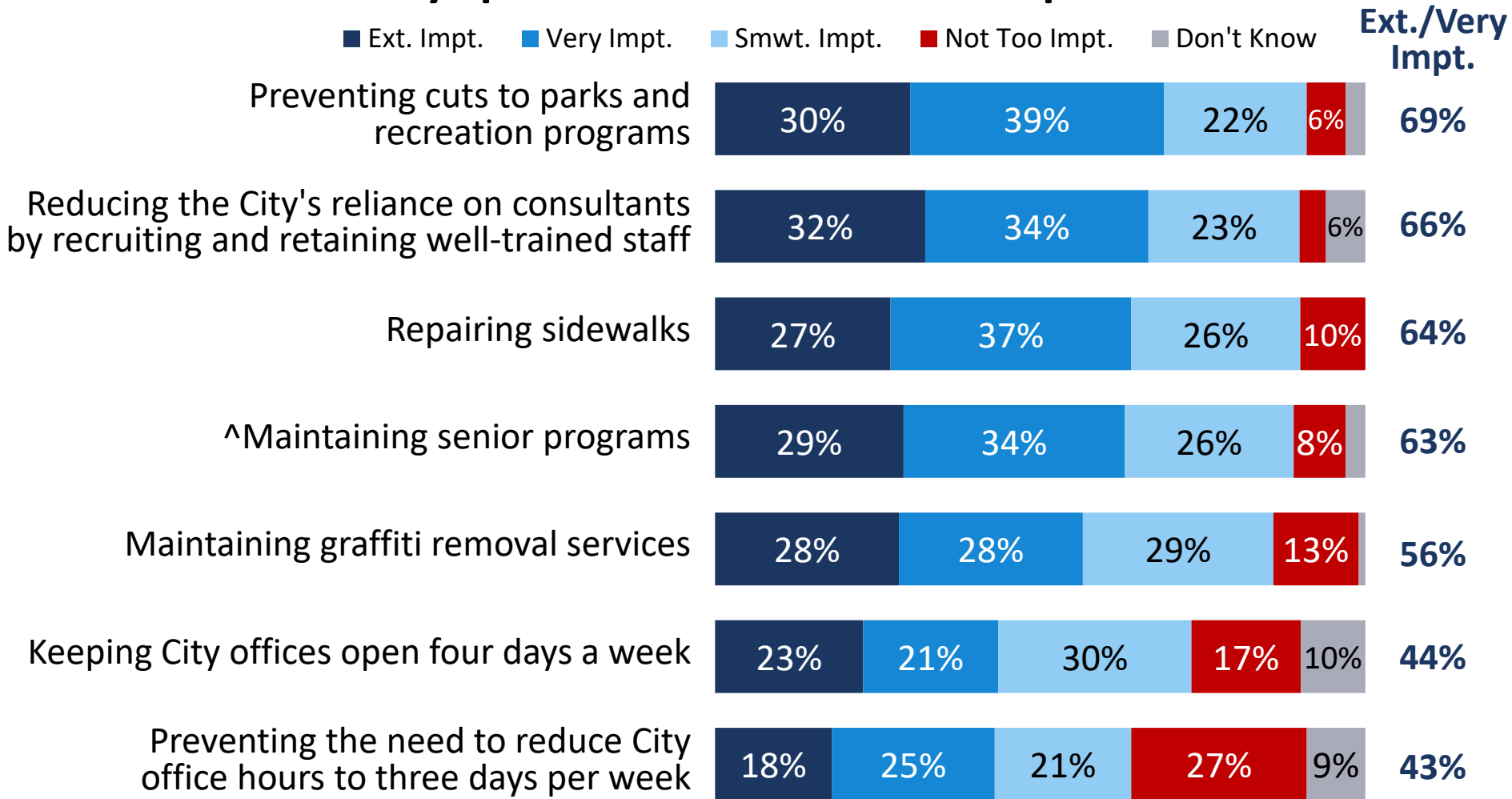
Q12. I am going to read you a list of possible projects, features, and provisions that might be included in this local ballot measure. Regardless of how you feel about this measure, please tell me how important it is to you personally that each provision or use of funds is included in the measure: extremely important, very important, somewhat important, or not too important. ^Not Part of Split Sample

Retaining police officers was seen as “extremely important” by more than half of voters.



Q12. I am going to read you a list of possible projects, features, and provisions that might be included in this local ballot measure. Regardless of how you feel about this measure, please tell me how important it is to you personally that each provision or use of funds is included in the measure: extremely important, very important, somewhat important, or not too important. ^Not Part of Split Sample

Keeping City offices open four days a week and preventing the need to reduce City office hours to three days per week were the lowest priorities.



Q12. I am going to read you a list of possible projects, features, and provisions that might be included in this local ballot measure. Regardless of how you feel about this measure, please tell me how important it is to you personally that each provision or use of funds is included in the measure: extremely important, very important, somewhat important, or not too important. ^Not Part of Split Sample

The most compelling messages about a measure include preventing cuts to the police force and neighborhood patrols, fiscal accountability, repairing streets, and local control of funds.

Ranked by Very Convincing

44%

(NEIGHBORHOOD PATROLS) Just five police officers patrol the whole City of Lemoore on an average shift. This measure is crucial to prevent cuts to our police force, maintain neighborhood, park and school patrols and support youth programs such as the Police Activities League (PAL), which keeps kids off the street and out of trouble, to make our city safer.

37%

^(ACCOUNTABILITY) This measure includes tough accountability provisions such as public disclosure of all spending and annual independent financial audits so that funds are used as promised, and only to benefit Lemoore residents.

32%

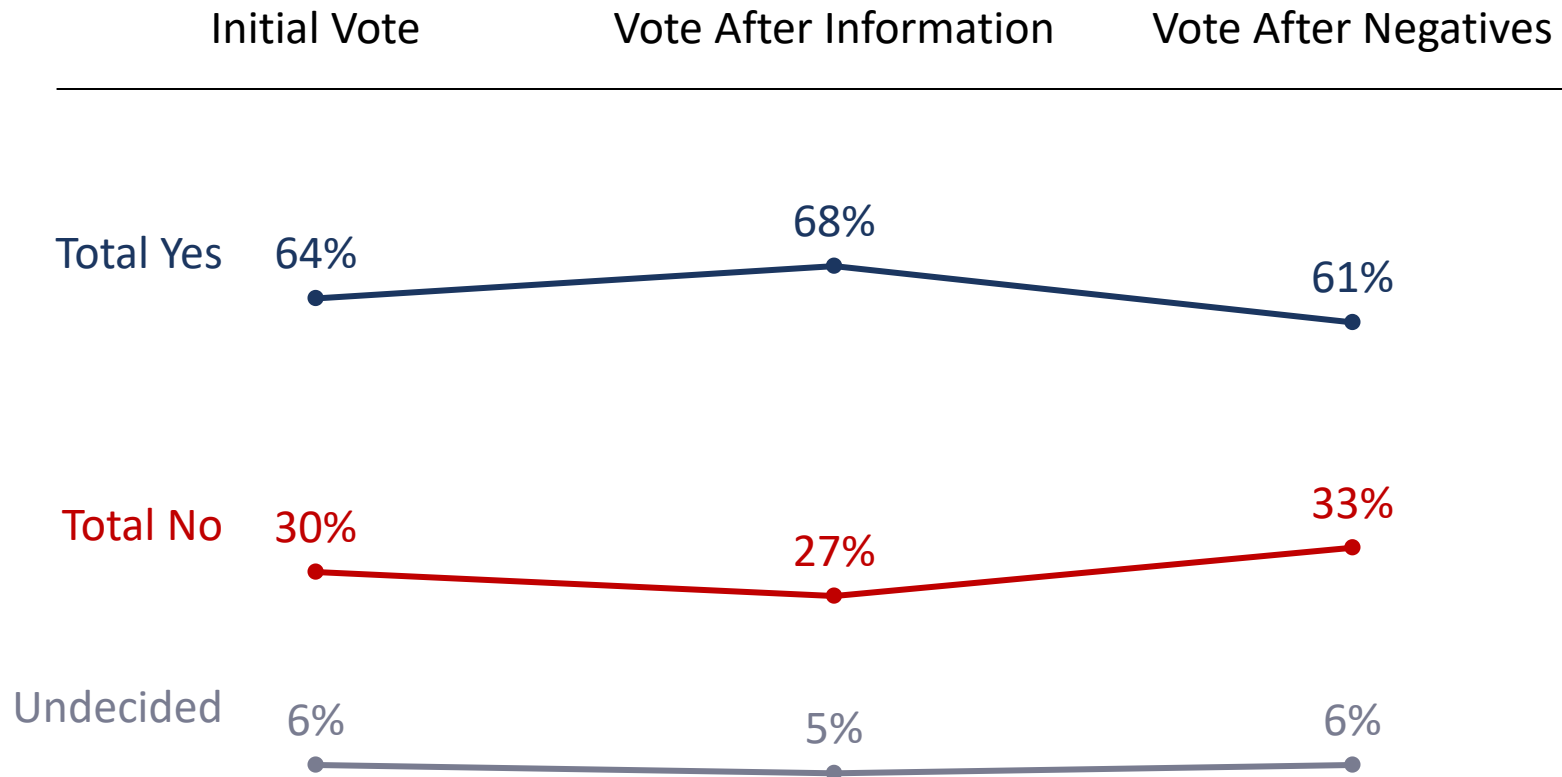
^(STREET CONDITIONS) Prior to last year's rainy season, independent engineers said forty percent of our roads need attention, rating over nineteen percent of Lemoore's streets as "fair" or "bad" and their condition has worsened this winter. Funds from this measure could be used to repair streets, fill potholes and prevent sinkholes. It will be less expensive to repair the streets now than waiting until later.

32%

(LOCAL CONTROL) Increasingly, the state of California has shifted responsibility for many programs back to local cities like Lemoore, without the funds necessary to provide these programs for local residents. All funds raised by this measure are required to be spent in Lemoore for local services and cannot be taken by Sacramento.

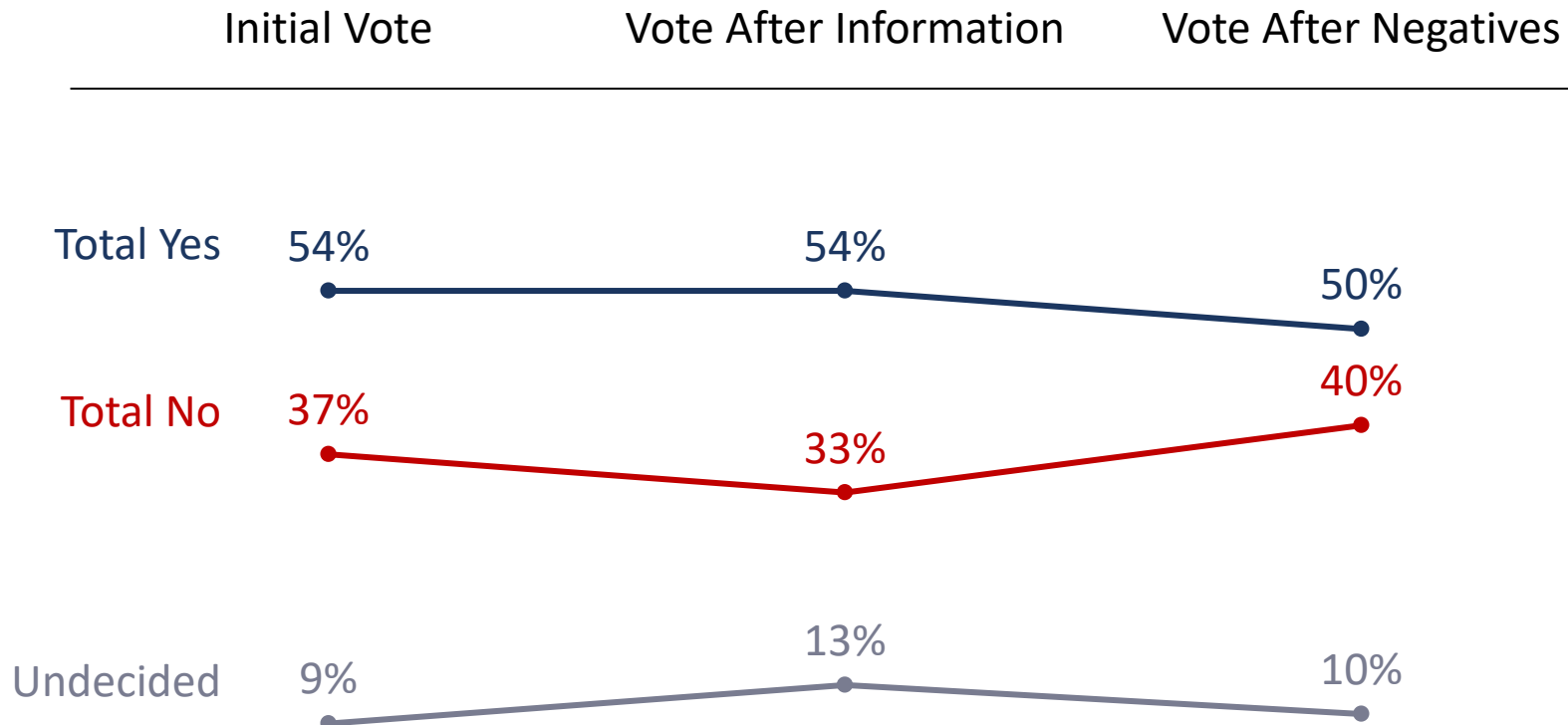
Support for the one-cent tax reaches over two-thirds after information but falls to three-fifths after negative statements.

1¢ Sales Tax



Support for the 1 ½ cent sales tax remained at 54% after information and decreased to 50% after negatives.

1 ½¢ Sales Tax



Conclusions

- Overall, a sales tax increase appears viable for the November ballot in Lemoore.
- A one-cent rate likely is more advisable than one-and-a-half cents.
 - An exchange of pro and con messaging results in reduced support, especially for the higher rate.
 - The measure has substantial initial support from more conservative voters, which may decline over time.
 - Voters express ambivalence – as in most communities – about the city’s management of its finances.
- Voters clearly prioritize investment in public safety, economic development, and street and road improvements.
- Important themes for public education and outreach include the measure’s benefits for public safety, for streets, and the presence of fiscal accountability provisions.

**For more information,
contact:**

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Fax (310) 453-6562



**OPINION
RESEARCH
& STRATEGY**

May 07, 2024 Minutes Lemoore City Council Regular Meeting

CALL TO ORDER:

At 5:31 p.m., the meeting was called to order.

ROLL CALL: Mayor: MATTHEWS
Council Members: GARZA, GORNICK, ORTH, LYONS

City Staff and contract employees present: Interim City Manager Northcraft; City Attorney Pizano; Police Chief Kendall; Assistant Public Works Director Lopez; Community Services Manager Greenlee; Management Analyst Schisler; Maintenance Coordinator Banuelos; Finance Manager Valdez; City Engineer Cowart; Maintenance Worker Alfonso Serrato; Maintenance Worker Richard Giesbrecht; Maintenance Worker Francisco Veloz; Management Analyst Amanda Champion; Maintenance Worker Paul Costa; Management Analyst Kristie Baley; City Clerk Avalos.

AGENDA APPROVAL, ADDITIONS, AND/OR DELETIONS

No agenda additions or deletions.

1- CEREMONIAL / PRESENTATION

1-1 Retirement Recognition – Ygnacio Carrillo (Rivera/Matthews)

Public Works Director Rivera and Mayor Matthews recognized Ygnacio Carrillo on his retirement with the City.

2 – STUDY SESSION

2-1 Transaction Taxes 101 – Hdl Companies (Northcraft)

Wayne Padilla with HDL Companies presented to Council regarding transaction and use tax which included:

- *Transaction and Use Tax History*
 - *1968 – Legislature preempts local governments from independent sales tax levies (R&T 7203.5 footnote)*
 - *1969 - Counties authorized to go to Voters for Transactions and Use Tax Overrides*
 - *2004 - Cities authorized to seek voter approval for transactions tax overrides*
- *General vs. Specific Tax*
- *Information about the ‘CAP’*
- *CA Base Sales Tax Rate Breakdown*
- *Number of TUT Districts are Increasing*
 - *Approximately 95% of the state’s population live in one or more transactions and use tax district.*
- *Transaction and Use Tax Allocations, Data and Auditing*
- *What is taxed*
 - *Sales tax is imposed on ALL sales of tangible personal property in CA*

- *Tax only levied once: when purchased or used by the ultimate consumer*
- *Retailer buys at wholesale and pays no tax*
- *Files resale permit with supplier*
- *What is 'Use Tax'*
 - *Charged on goods sold to CA customers from out-of-state retailers*
 - *Collected, but a local place of sale could not be determined*
- *What is NOT taxed*
 - *Property – Land and Buildings*
 - *Utilities – Gas, Electricity and Water sold in bulk or through pipes*
 - *Merchandise Sold to the Federal Government*
 - *Food Sold for Home Consumption*
 - *Prescription Medicine*
 - *Goods transmitted electronically (music, books, movies, computer software, etc.)*
- *Functional Differences to Bradley-Burns*
- *Online Sales*
 - *Transaction and Use Tax follows the goods to consumer/where goods are delivered, no matter where they come from*
- *Tax Returns and Cash Flow same as Bradley-Burns*
- *Data from CDTFA*
- *Transaction and Use Tax Forecasting*

2-2 Lemoore Police Dispatch Center Update (Kendall)

Police Chief Kendall presented to Council regarding Public Safety Dispatch Center

- *Dispatch Center Lobby is operational*
- *Motorola Contract is 95% complete*
- *Tower installation should be completed in May*
- *Next Steps and Timeline*
 - *Complete Server Construction – June 30, 2024*
 - *Hire and Train Staff – July to September 2024*
 - *Complete Conversion to City Operated Dispatch – October 2024*
- *Staffing*
- *Dispatch Funding*
 - *Current Dispatch Costs: \$738,000*
 - *Proposed Lemoore Dispatch: \$973,900*
 - *Remaining Available Grant Funds: \$1,300,000*
 - *It is projected in approximately 3 years, a City operated dispatch will be more cost effective than outsourcing based on historical inflation.*
 - *With an overall increase of approximately \$236,000, the grant funds can sustain the Lemoore dispatch salaries and operating costs for approximately 4-5 years.*
- *Benefits of Lemoore Dispatch*
 - *Increased span of control over operations*
 - *Control over future costs and increases*
 - *Dedicated dispatcher services to City of Lemoore citizens*
 - *Reduction of EMS calls dispatched to LVFD*
 - *Increased capacity for growth*
 - *Fulfill commitment of grant funds*

2-3 Sunset Vista Mobile Home Park Project (Rivera)

Public Works Director, Frank Rivera presented regarding Sunset Vista Mobile Home Park Project.

- State Water Board (SWB) and Self-Help Enterprises approached the City about the possibility of providing water and sewer service to the Sunset Vista Mobile Home Park.
- Mobile home park is currently out of city limits approximately over a mile north-west.
- SWB will pay for installation of piping. SWB has agreed for City to select the route and the City will be responsible for upsizing.
- One meter at property line.

PUBLIC COMMENT

Rosa Maria Jaramillo reported problems with the fence at the Lemoore Senior Center and stated golf balls are coming into the yard and are dangerous. Requesting assistance to repair fence and possibly have netting installed. She stated the golf balls are hitting the side of the building which was recently updated.

3 – DEPARTMENT AND CITY MANAGER REPORTS

Police Chief Kendall stated staff attended the First Responders Expo at Lemoore College. There have been several reports of fireworks being lit off within the City. The department is hosting a public meeting regarding the Military Equipment use policy on Friday at 9am.

Public Works Director Rivera reported the striping project is complete and the final map review for upcoming street maintenance project is almost complete.

Interim City Manager Northcraft informed that there are two upcoming Town Hall Meetings scheduled for May 16th and June 12th. Also, stated the survey results from FM3 will be discussed at the May 21st City Council meeting.

4 – CONSENT CALENDAR

- 4-1 Approval – Minutes – Regular Meeting – April 16, 2024
- 4-2 Approval – Notice of Completion – Striping Project
- 4-3 Approval – Investment Report for Quarter ended March 31, 2024
- 4-4 Approval – Denial of Claim for Ms. Uribe
- 4-5 Approval – Appointment of Lemoore Parks and Recreation Commissioners

Items 4-3, 4-4 and 4-5 were pulled for separate consideration.

Motion by Council Member Orth, seconded by Mayor Pro-Tem Gornick, to approve the Consent Calendar, except items 4-3, 4-4 and 4-5.

Ayes: Orth, Gornick, Garza, Lyons, Matthews

- 4-3 Approval – Investment Report for Quarter ended March 31, 2024

Motion by Council Member Lyons, seconded by Council Member Garza, to approve Investment Report for Quarter ended March 31, 2024

Ayes: Lyons, Garza, Orth, Gornick, Matthews

4-4 Approval – Denial of Claim for Ms. Uribe

Motion by Mayor Pro-Tem Gornick, seconded by Council Member Lyons, to approval the denial of Claim for Ms. Uribe

Ayes: Gornick, Lyons, Garza, Orth, Matthews

4-5 Approval – Appointment of Lemoore Parks and Recreation Commissioners

Motion by Council Member Orth, seconded by Mayor Pro-Tem Gornick, to approve the appointment of Lemoore Parks and Recreation Commissioners

Ayes: Orth, Gornick, Garza, Lyons, Matthews

5 – PUBLIC HEARINGS

Report, discussion and/or other Council action will be taken.

No Public Hearings.

6 – NEW BUSINESS

Report, discussion and/or other Council action will be taken.

No New Business.

7 – BRIEF CITY COUNCIL REPORTS AND REQUESTS

Mayor Matthews attended leadership summit in Sacramento, Little League fundraiser, District Attorney victim quilt ceremony, Every 15 Minute event at Lemoore High School, Grand Jury open house, Rotary bed building event, High Speed Rail informational meeting and Big Brother – Big Sisters event. She had a zoom call with UFC fighter Alex Perez and did a radio interview.

At 7:43 p.m., Council adjourned to Closed Session.

CLOSED SESSION

This item has been set aside for the City Council to meet in a closed session to discuss matters pursuant to Government Code Section 54956.9(d)(4). The City Attorney will provide an oral report regarding the Closed Session.

1. Government Code Section 54957
Public Employee Appointment/Employment
Title: City Manager
2. Government Code Section 54957.6
Conference with Labor Negotiator
Agency Designated Representatives: Crystal Pizano, City Attorney and Kevin Northcraft, Interim City Manager
Employee Organizations: General Association of Service Employees, Lemoore Police Officers Association, Lemoore Police Sergeants Unit, Police Professional Services Bargaining Unit, and Unrepresented
3. Government Code Section 54956.8

Conference with Real Property Negotiators
Property: 215 Hanford Armona Road, Lemoore APN: 021-380-002
Agency Negotiator: Kevin Northcraft, Interim City Manager
Negotiating Party: Michael Kennedy
Under Negotiation: Price and Terms

ADJOURNMENT

At 8:43 p.m., Council adjourned.

Approved the 21st day of May 2024.

APPROVED:

Patricia Matthews, Mayor

ATTEST:

Christal Schisler, Deputy City Clerk



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Staff Report

Item No: 4-2

To: Lemoore City Council

From: Matthew Smith, Lieutenant

Date: May 1, 2024

Meeting Date: May 21, 2024

Subject: Resolution 2024-13 – Declaring Public Nuisance and Ordering Public Hearing Regarding Property Abatement

Strategic Initiative:

- | | |
|--|--|
| <input checked="" type="checkbox"/> Safe & Vibrant Community | <input type="checkbox"/> Growing & Dynamic Economy |
| <input type="checkbox"/> Fiscally Sound Government | <input type="checkbox"/> Operational Excellence |
| <input type="checkbox"/> Community & Neighborhood Livability | <input type="checkbox"/> Not Applicable |

Proposed Motion:

Approve Resolution 2024-13, declaring the property listed on Exhibit “A” as a public nuisance and set a public hearing for June 4th, 2024.

743 Quince Avenue, Lemoore CA – APN:021-770-051
608 E. Deodar Lane, Lemoore, CA – APN: 021-190-007
325 G Street, Lemoore, CA – APN: 020-015-004
125 Toomey Street, Lemoore, CA – APN: 020-192-029

Subject/Discussion:

Staff has found that the property listed in Exhibit “A” is in violation of Lemoore Municipal Code Title Four Chapter Four (LMC 4-4-4), and would like to proceed with the property abatement process to alleviate any hazards or health concerns. Community Services Officers have been working with the property owners. There has been little compliance thus far. The property owners were issued final notices and re-inspections were made and they are still out of compliance as of today’s date.

If a public nuisance is declared, the city can proceed to the next step of the process which would be a public hearing. The public hearing would provide an opportunity for testimony from citizens, considering any and all objections to the removal of trash, junk, debris, and

scrap metal. The property owner will be provided with a copy of the approved resolution at least ten (10) days prior to the hearing. A notice of violation will also be posted at the property at least five (5) days prior to the hearing.

Financial Consideration(s):

Financial impact is unknown at this time. If the City must contract for removal of trash, junk, debris, scrap metal, the City initially bears the costs. The costs are passed on to the property owners in the form of a lien against the property and will be reimbursed with the next year's taxes.

The City may also use staff to abate the properties, keeping a detailed record of the charges to be assessed as a lien and recouped when taxes are received, and file a lien against the property following Council approval of the amounts to be collected.

Alternatives or Pros/Cons:

Alternative:

- Do not approve Resolution 2024-13 and have staff continue to work with property owners for compliance.

Commission/Board Recommendation:

Not applicable.

Staff Recommendation:

Staff recommends approval of Resolution 2024-13 and recommends a public hearing be set for June 4th, 2024.

Attachments:

- Resolution: 2024-13
- Ordinance:
- Map
- Contract
- Other

Review:

- Asst. City Manager
- City Attorney
- City Clerk
- City Manger
- Finance

Date:

- 5/16/24
- 5/16/24
- 5/13/24
- 5/13/24

List:

RESOLUTION NO. 2024-13

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LEMOORE DECLARING PUBLIC NUISANCE AND ORDERING A PUBLIC HEARING REGARDING PROPERTY ABATEMENT

WHEREAS, Lemoore Municipal Code Sections 4-4-2 through 4-4-9 provide a means for the City Council to find and declare public nuisances and order property abatement; and

WHEREAS, the City Council desires to initiate that process which will abate and remove fire/safety hazards from the City by declaring them to be public nuisances pursuant to the Municipal Code; and

NOW, THEREFORE, BE IT RESOLVED, by the City Council of the City of Lemoore, the following:

1. The Council hereby finds and declares that public nuisances, as declared in Resolution 2024-13 Exhibit “A” be ordered for abatement with the exception of those dismissed during the public hearing.
2. The Police Chief, or designee is hereby directed to obtain bids, and proceed with the acquisition of a contractor, or use city staff to remove said trash/debris, scrap metal and/or fire hazard and lien the corresponding property for accrued charges for said removal in compliance with Lemoore Municipal Code Sections 4-4-2 through 4-4-9.

PASSED AND ADOPTED by the City Council of the City of Lemoore at a regular meeting held on the 21st day of May by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

ATTEST:

APPROVED:

Marisa Avalos
City Clerk

Patricia Matthews
Mayor

EXHIBIT "A"

No.	Address	APN
1.	743 Quince Avenue, Lemoore. CA	021-770-051-000
2.	608 E. Deodar Lane, Lemoore, CA	021-190-007-000
3.	325 G Street, Lemoore, CA	020-015-004-000
4.	125 Toomey Street, Lemoore, CA	020-192-029-000



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Staff Report

Item No: 4-3

To: Lemoore City Council

From: Kevin Northcraft, Interim City Manager

Date: May 7, 2024 Meeting Date: May 21, 2024

Subject: Resolution 2024-14 – Adopting the Kings County Multi-Jurisdictional Local Hazard Mitigation Plan

Strategic Initiative:

- | | |
|---|--|
| <input type="checkbox"/> Safe & Vibrant Community | <input type="checkbox"/> Growing & Dynamic Economy |
| <input type="checkbox"/> Fiscally Sound Government | <input checked="" type="checkbox"/> Operational Excellence |
| <input checked="" type="checkbox"/> Community & Neighborhood Livability | <input type="checkbox"/> Not Applicable |

Proposed Motion:

Approve Resolution 2024-14 and adopt the Kings County Multi-Jurisdictional Local Hazard Mitigation Plan for the City of Lemoore.

Subject/Discussion:

The purpose of the hazard mitigation plan is to reduce or eliminate long-term risk to human life, property, and infrastructure by minimizing the impact of disasters. The City of Lemoore along with the City of Avenal, City of Corcoran, City of Hanford, and Kings County have developed this multi-jurisdictional hazard mitigation plan to reduce future losses to the county and its communities resulting from any natural or man-made disaster. The plan meets the requirements of the Disaster Mitigation Act (DMA) of 2000 (Public Law 106-390) and achieves eligibility for the Federal Emergency Management Agency (FEMA) Grant Program.

Hazard Mitigation Grant Program (HMGP) DR-4283 grant funds were utilized in 2022 to hire WSP USA Environment and Infrastructure Inc. formerly known as Wood Environment and Infrastructure Solutions, Inc. to update the previous federally required countywide Multi-Jurisdictional Hazard Mitigation Plan (MJHMP) (last adopted in 2012 and expired in 2017). The Disaster Mitigation Act (DMA) of 2000 (Public Law 106-390) requires all local governments to address risks and measures that can be taken in advance to reduce future losses from natural or man-made related disasters.

The planning process followed a methodology set by the Federal Emergency Management Agency (FEMA), which began with the formation of a Hazard Mitigation Planning Committee (HMPC) comprised of key stakeholders from the City of Lemoore, City of Avenal, City of Corcoran, City of Hanford, and Kings County. The HMPC conducted a risk assessment to examine the recorded history of losses resulting from natural or man-made disasters, assess probability and magnitude of future hazard events, and analyze the county’s assets at risk to hazards. The assessment included the review of natural or man-made disasters/events. The risk assessment indicated that drought, dense fog, extreme temperature, and agricultural pests and disease (amongst others) are the hazards most likely to significantly affect people and property in the county.

Based upon the risk assessment, the HMPC identified goals and objectives for reducing risk to hazards. To meet identified goals and objectives, the plan recommends mitigation actions to be completed prior to the next MJHMP update. The HMPC also developed an implementation plan for each action, which identifies priority level, activity description and responsible agency. This plan has been approved by the Governor’s Office of Emergency Services (CalOES) and FEMA, pending approval and adoption by each jurisdiction participating in the process.

Financial Consideration(s):

There is no fiscal impact to the City of Lemoore; however, having an approved Local Hazard Mitigation Plan will allow the City to apply for FEMA grant opportunities.

Alternatives or Pros/Cons:

N/A.

Commission/Board Recommendation:

N/A.

Staff Recommendation:

Staff recommends the approval of Resolution 2024-14 and adopt the Kings County Multi-Jurisdictional Local Hazard Mitigation Plan for the City of Lemoore

Attachments:

- Resolution: 2024-14
- Ordinance:
- Map
- Contract
- Other
- List:

Review:

- Asst. City Manager
- City Attorney
- City Clerk
- City Manager
- Finance

Date:

- 05/16/24
- 05/16/24
- 05/13/24
- 05/13/24

RESOLUTION NO. 2024-14

**A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LEMOORE
ADOPTING THE KINGS COUNTY MULTI-JURISDICTIONAL
LOCAL HAZARD MITIGATION PLAN**

WHEREAS, the City Council of the City of Lemoore (the “Council” and the “City” respectively”) recognizes the threat that natural hazards pose to people and property within the City; and

WHEREAS, undertaking hazard mitigation actions will reduce the potential for harm to people and property from future hazard occurrences; and

WHEREAS, an adopted multi-hazard mitigation plan is required as a condition of future funding for mitigation projects under multiple FEMA pre- and post-disaster mitigation programs; and

WHEREAS, the City fully participated in the FEMA-prescribed mitigation planning process to prepare this 2023 Multi-Hazard Mitigation plan which shall replace the previous 2015 Multi-Hazard Mitigation Plan; and

WHEREAS, the California Office of Emergency Services and Federal Emergency Management Agency, Region IX officials have reviewed the “Kings County, California Multi-Hazard Mitigation Plan” (the “Plan”) and approved it contingent upon this official adoption by the Council.

NOW, THEREFORE, BE IT RESOLVED as follows:

1. That the Council hereby adopts the Plan as its official multi-hazard mitigation plan.
2. That the Council will submit this Adoption Resolution to the California Office of Emergency Services and Federal Emergency Management Agency, Region IX officials to enable the Plan’s final approval.

PASSED AND ADOPTED at a Regular Meeting of the City Council of the City of Lemoore held on the 21st day of May 2024 by the following vote:

AYES:
NAYS:
ABSENT:

ATTEST:

APPROVED:

Christal Schisler, Deputy City Clerk

Patricia Matthews, Mayor



2023 KINGS COUNTY Multi-Jurisdictional Hazard Mitigation Plan

FINAL DRAFT | FEBRUARY 2024



Prepared for:
Kings County
Office of Emergency Services
280 Campus Drive
Hanford, CA 93230

Prepared by:
WSP Environment & Infrastructure, Inc.
10940 White Rock Road, Suite 190
Rancho Cordova, CA 95670





EXECUTIVE SUMMARY

The purpose of hazard mitigation is to reduce or eliminate long-term risk to people and property from hazards. The County of Kings (County) developed this Multi-Jurisdictional Hazard Mitigation Plan (MJHMP) update to make the County, its four participating jurisdictions, and its residents less vulnerable and more resilient to future hazard events. This plan was prepared pursuant to the requirements of the Disaster Mitigation Act of 2000 so that Kings County would be eligible for the Federal Emergency Management Agency's (FEMA) Pre-Disaster Mitigation and Hazard Mitigation Grant programs.

The County followed a planning process prescribed by FEMA, which began with the formation of a hazard mitigation planning committee (HMPC) comprised of key County representatives, four participating jurisdictions from the cities of Avenal, Corcoran, Hanford and Lemoore, and other regional stakeholders. The HMPC conducted a risk assessment that identified and profiled hazards that pose a risk to Kings County, assessed the County's vulnerability to these hazards, and examined the capabilities in place to mitigate them. The County is vulnerable to several hazards that are identified, profiled, and analyzed in this plan. Drought; extreme temperatures: extreme heat and freeze; flood; land subsidence; and severe weather hazards: fog, heavy rain, thunderstorms, hail, and lightning; are among the hazards that can have a significant impact on the County.

Based on the risk assessment review and goal-setting process, the HMPC adopted the following four goals, modified from their previous HMP, which provide the direction for reducing future hazard-related losses within the County's Planning Area:

- **Goal 1:** Reduce impacts of natural hazards to life, property, and the environment.
- **Goal 2:** Minimize impacts of natural disasters to agriculture and the economies of communities.
- **Goal 3:** Implement identified mitigation activities.
- **Goal 4:** Plan for and adapt to the effects of climate change.

To meet these goals, the plan recommends a total of 83 mitigation actions, which are summarized by jurisdiction and the hazard they mitigate in the table that follows. Together, the 83 mitigation actions address more than one hazard relevant to each jurisdiction given the mitigation strategy consists of several multi-hazard actions. Of the 83 mitigation actions in the updated plan, 14 were carried forward from the previous plan, including two actions that were revised, and 69 are new mitigation actions developed as part of the 2022-2023 planning process. This includes 28 Kings County actions and 55 jurisdiction-specific actions. Once formally approved by the California Office of Emergency Services (Cal OES) and FEMA Region IX and adopted by the County and their participating jurisdictions, this MJHMP will be updated every five years.



Table ES-1 Kings County Mitigation Actions

ID	LINKS TO GOALS	HAZARD(S) MITIGATED	DESCRIPTION/ BACKGROUND/ BENEFITS	JURISDICTION	LEAD AGENCY AND PARTNERS	COST ESTIMATE	POTENTIAL FUNDING	FEMA LIFELINE	PRIORITY	TIMELINE	IMPLEMENTATION STATUS
KC-1	Goal 1, Goal 2, Goal 3	Drought, Subsidence	Water Recharge Basin Partnership Program Partner with the State and contiguous counties to improve coordination, planning, and investment in long-term water supplies by developing a comprehensive water recharge basin project to meet demands of ongoing growth and development.	Kings County	State DWR led joint powers authority should be developed to manage this multi-jurisdictional project. California Department of Water Resources (DWR), Kings County water and irrigation districts, Kings County OES, Community Development	High	Possible grant and bond funds through recent State Propositions, DWR Grants, HMGP	Food, Hydration, Shelter	Medium	Ongoing	In progress. Funding not secured but has been applied for with Hazard Mitigation Grant Program
KC-2**	Goal 1, Goal 2, Goal 3	Dam Incidents, Earthquake, Flood, Dense Fog, Heavy Rain, Thunderstorms, Hail, and Lightning	Community Alert and Warning System - Purchase, install, test, and utilize a community wide alert and early warning system that alerts residents by phone, email, cell phone and other electronic communication devices.	Kings County	Kings County OES, Sheriff and City Law Enforcement, Kings County Operational Area partners, county communications and Cal OES, State Department of Corrections, State High Speed Rail Authority.	High	HMGP, Emergency Management Performance Grant (EMPG), Homeland Security Grant Program (HSGP) and potentially the EOC Grant Program	Safety and Security; Communications	High	Ongoing	In progress. Funding has been secured through EMPG grant
KC-3**	Goal 1, Goal 2, Goal 3	Drought, Earthquake, Extreme Temperatures: Freeze and Heat, Flood, Fog, Wildfire	New County EOC Assessment - Develop a standing EOC group to review and discuss specifications, supervise the creation of construction plans, identify funding mechanism and requirements, and identify the site for the new Kings County EOC.	Kings County	Kings County OES, County Departments, Kings County Fire Department, Kings County Environmental Health, Kings County Information Technology Department, and Kings County	High	General Fund, HMP Grants, EOC Grant Program, Partnership with State, County and Transportation Agencies, EMPG, Homeland Security Grant Program	Safety and Security; Communications	High	Short-term	In progress. Funding not secured yet



ID	LINKS TO GOALS	HAZARD(S) MITIGATED	DESCRIPTION/ BACKGROUND/ BENEFITS	JURISDICTION	LEAD AGENCY AND PARTNERS	COST ESTIMATE	POTENTIAL FUNDING	FEMA LIFELINE	PRIORITY	TIMELINE	IMPLEMENTATION STATUS
KC-4*	Goal 1, Goal 2, Goal 3	Agricultural Pests and Disease, Dam Incidents, Earthquake, Flood, Land Subsidence, Landslide, Wildfire	Inter-jurisdictional GIS Program – Establish a centralized, inter-jurisdictional GIS program to improve all phases of emergency management.	Kings County	Public Works Department . Kings County Community Development, OES, City GIS, IT, Cities of Avenal, Corcoran, Lemoore, and Hanford; special districts; water and irrigation districts; Local Agency Formation Commission of Kings County; and Kings County Association of Governments.	Moderate	Local government funds and possible grant funds through recent	Safety and Security; Communications; Transportation	Medium	Short-term	In progress. The County has been completely mapped; Hanford and Avenal have joined in on the project contracting with County GIS to meet their mapping needs. The project is planned to expand to include all the incorporated Cities and continue to create an integrated countywide GIS system and database.
KC-5	Goal 1, Goal 2, Goal 3	Drought, Earthquake, Extreme Temperatures: Freeze and Heat, Flood, Fog, Wildfire	Kings County Area Disaster Council - Review and update items related to the Kings County Area Disaster Council in the Kings County Emergency Services Ordinance to improve countywide coordination and the monitoring and implementation of the mitigation plan	Kings County	Kings County OES, County Admin Office, Board of Supervisors	Low	Kings County General Fund, EMPG	Safety and Security	High	Short-term	In progress. Organizational work to establish the Council was accomplished but formal meetings have not yet commenced.
KC-6	Goal 1, Goal 2, Goal 3	Agriculture and Pest Disease, Public Health, Extreme Temperatures: Freeze and Heat	Livestock Disposal Plan - Establish a livestock disposal plan and compost team to address livestock fatality during extreme heat events. This action would reduce impacts to the agricultural industry during extreme temperature events, reduce the potential for	Kings County	Kings County Agricultural Commissioner, Kings County Agricultural Advisory Committee, University of California at Davis Extension, Environmental Health Services, Natural	Moderate	Hospital Preparedness Grant, the actual costs to bury the carcasses would be the responsibility of the animal facility owner/operator	Safety and Security	High	Short-term	Not started, funding not yet secured



ID	LINKS TO GOALS	HAZARD(S) MITIGATED	DESCRIPTION/ BACKGROUND/ BENEFITS	JURISDICTION	LEAD AGENCY AND PARTNERS	COST ESTIMATE	POTENTIAL FUNDING	FEMA LIFELINE	PRIORITY	TIMELINE	IMPLEMENTATION STATUS
			agricultural pests and diseases and public health concerns, and avoid overwhelming critical rendering infrastructure.		Resources Conservation Service, Kings County Community Development Agency, Kings County Environmental Health, County OES, PHEP						
KC-7	Goal 1, Goal 2, Goal 3	Earthquake, Extreme Temperatures: Freeze and Heat, Flood, Fog, Wildfire	Disaster Evacuation Routes - Ensure the maintenance and enhancement of established disaster evacuation routes	Kings County	Kings County Public Works Department, Kings County Sheriff / City Police, County OES, Human Services Agency (HAS), Kings Rural Area Transit, Public Health Emergency Preparedness, Kings County Planning Agency; Cities of Avenal, Corcoran, Lemoore, and Hanford; California Department of Transportation	Moderate	Gas tax, federal/state transportation funding, Kings County General Fund for staff time, Community Power Resiliency Allocation Program, EMPC, HMGP	Transportation	High	Short-term	In progress. Funding has not been secured, may do this internally.
KC-8	Goal 1, Goal 2, Goal 3	Severe Weather - Dense Fog	Traffic Safety Fog Events - Improve lighting, signage, and traffic controls at critical intersections and roadways to improve safety during fog events.	Kings County	Kings County Public Works, Kings OES, County and City Law Enforcement, CHP, Caltrans	Moderate	Cal Trans Grants, EMPC, HSGP	Transportation	Medium	Short-term	Not started, funding not secured yet.
KC-9**	Goal 1	Dam Incidents, Earthquake, Flood, Land Subsidence, Landslide,	Automated Transportation App - Develop a transportation routing app, similar to the	Kings County	Kings County Public Works, Kings County Administration, City GIS and	Moderate	Community Power Resiliency Allocation	Transportation, Communications	Low	Short-term	New Action in 2023.



ID	LINKS TO GOALS	HAZARD(S) MITIGATED	DESCRIPTION/ BACKGROUND/ BENEFITS	JURISDICTION	LEAD AGENCY AND PARTNERS	COST ESTIMATE	POTENTIAL FUNDING	FEMA LIFELINE	PRIORITY	TIMELINE	IMPLEMENTATION STATUS
		Severe Weather: Dense Fog	Caltrans app, to divert traffic due to road conditions during hazard events		Emergency Management Department		Program, EMPC, HMGP				
KC-10*	Goal 2, Goal 3, Goal 4	Drought	Water Conservation Campaign - Create a water conservation campaign, utilizing social media, signage, and grass roots outreach	Kings County	Kings County Administration, Water Manager, Utility Districts	Low	DWR, FEMA HMA HMGP Funds	Food, Water, Shelter	High	Short-term	New Action in 2023.
KC-11*	Goal 2, Goal 4	Drought	Floodwater Recharge Project - Create a flood water recharge project utilizing a feasibility study, pumps, and land for recharge.	Kings County	Kings County Administration, Water Manager, Utility Districts, City and County Engineering Departments	Very High	FEMA HMA HMGP Funds, DWR	Food, Water, Shelter	High	Medium-term	New Action in 2023.
KC-12*	Goal 1, Goal 2, Goal 3, Goal 4	Drought, Subsidence	Land Subsidence Study - Conduct updated land subsidence study to understand elevation, shifts, and vulnerability.	Kings County	Kings County Administration, Water Manager, City and County Engineering Departments	Moderate	DWR, USACE, Cal OES	Safety and Security; Food, Water, Shelter; Transportation	Medium	Short-term	New Action in 2023.
KC-13*	Goal 1, Goal 2	Flooding, Fire	Debris Management Plan - Create a flood channel debris management plan to allow the flow of water, increase capacity, and remove fire hazards.	Kings County	Kings County Public Works, Water and Irrigation Districts, City Public Works	High	Proposition 68, Federal and State Resources	Safety and Security	High	Short-term	New Action in 2023.
KC-14*	Goal 1, Goal 2, Goal 3, Goal 4	Flood, Severe Weather - Heavy Rain/Thunderstorm/Hail/Lightning, Drought, Subsidence	Develop a series of flood control basins on the Kings River that either recharge or store water during flood flows.	Kings County	Kings County Conservation District (KRCD), Local GSAs	Very High	DWR Grants	Safety and Security, and Food, Water, Shelter	High	Long-term	New Action in 2023.
KC-15*	Goal 1, Goal 2, Goal 3, Goal 4	Flood, Subsidence, Severe Weather - Heavy Rain/Thunderstorms/Hail/Lightning	Sediment Removal - Remove sediment from the Kings to River to avoid future capacity issues.	Kings County	KRCD	Very High	HMPG Funds, Prop 68	Safety and Security	High	Medium-term	New Action in 2023.
KC-16**	Goal 1, Goal 4	Drought	Establish a Drought Task Force - Kings County will establish	Kings County	Water Districts, Small Water Suppliers, Non-	High	General Fund	Water Systems, Safety and Security	High	Short-term	New Action in 2023.



ID	LINKS TO GOALS	HAZARD(S) MITIGATED	DESCRIPTION/ BACKGROUND/ BENEFITS	JURISDICTION	LEAD AGENCY AND PARTNERS	COST ESTIMATE	POTENTIAL FUNDING	FEMA LIFELINE	PRIORITY	TIMELINE	IMPLEMENTATION STATUS
			and convene a task force that develops water shortage preparedness planning efforts for domestic wells, privately supplied homes, and small state water systems.		Transient Non-Community Water Systems; Kings County Department of Public Health						
KC-17	Goal 1, Goal 2, Goal 4	Drought	Regularly review and incorporate information from the Water Storage Vulnerability Tool to update information about drought and water shortage vulnerabilities in the County's MJHMP, WSCPs, and Drought Resiliency Plan	Kings County	Kings County Office of Emergency Services, Water Districts, Small Water Suppliers, Non-Transient Non-Community Water Systems, Kings County Department of Public Health	Little to No Cost	General Fund	Water Systems	High	Short-term	New Action in 2023.
KC-18	Goal 1, Goal 2, Goal 3, Goal 4	Drought	Water Shortage Contingency Plans (WSCPs) - The County will work with small water providers to develop a WSCP and update the plans every 5 years.	Kings County	Kings River Hardwick School, Hanford Christian School, Island Union School, Pioneer Union Elementary School, Lakeside Union School, Kings Ranch Ministries, Villa Terrace Apartments, Rollerland Company, Westlake Farms Headquarters, Couture Farms, State Water Resources Control Board (SWRCB)	Moderate	FEMA HMA, CA DWR	Water Systems	Medium	Short-term	New Action in 2023.
KC-19	Goal 1, Goal 2, Goal 3, Goal 4	Drought	County Drought Resiliency Plan – The County will develop a Drought Resiliency	Kings County	Water Districts, Small Water Suppliers, Non-Transient Non-	Moderate	FEMA HMA HMGP, DWR	Water Systems	Medium	Short-term	New Action in 2023.



ID	LINKS TO GOALS	HAZARD(S) MITIGATED	DESCRIPTION/ BACKGROUND/ BENEFITS	JURISDICTION	LEAD AGENCY AND PARTNERS	COST ESTIMATE	POTENTIAL FUNDING	FEMA LIFELINE	PRIORITY	TIMELINE	IMPLEMENTATION STATUS
			Plan that includes water districts, small water suppliers, and Non-Transient Non-Community Water Systems		Community Water Systems						
KC-20	Goal 1, Goal 2, Goal 3, Goal 4	Drought	Perform a countywide service area assessment to address the needs of maintaining an adequate level of service for all small public water systems.	Kings County	Water Districts, Small Water Suppliers, Non-Transient Non-Community Water Systems, Kings County Department of Public Health	Moderate	FEMA HMA HMGP	Water Systems	Medium	Short-term	New Action in 2023.
KC-21	Goal 1, Goal 3	Earthquake	Adopt Hazard-Resistant and Modern Building Ordinance to improve Seismic Resiliency - Residential properties would be most vulnerable during an major earthquake. This action promotes the regular local adoption of applicable building code updates to the Building Ordinance that are consistent with the minimum requirements in the California Building Code (CBC) and make use of the International Code Council (ICC) model building codes to provide a higher level of protection against seismic hazards.	Kings County	Kings County Community Development Agency	Moderate	FEMA Public Assistance, National Earthquake Hazards Reduction Program's State Assistance Grant Program	Safety and Security; Health and Medical, Energy, Communications, Transportation	Low	Short-term	New Action in 2023.
KC-22	Goal 1, Goal 2, Goal 3, Goal 4	Extreme Temperatures - Heat	Collaborate with the Kings County Farm Bureau to promote Climate-Smart Agricultural Practices that improve crop	Kings County	Kings County Agricultural Commissioner's Office, Department of Public Health,	High	California Climate Investments Technical Assistance Program	Safety and Security; Health and Medical, Energy, Transportation	Low	Medium-term	New Action in 2023.



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			resilience to extreme heat to ensure Kings County's working lands are productive and vulnerable and underserved communities can access produce throughout the year and refrigeration infrastructure.		Kings County Farm Bureau						
KC-23	Goal 1, Goal 3, Goal 4	Extreme Temperatures - Heat, Earthquake, Severe Weather: Heavy Rain/Thunderstorm/Hail/Lightning, Severe Weather: Wind/Tornado	Kings County Cool Zone and Warm Zone Program - Expand participating businesses and continuums of care in Kings County in partnership with major hospitals and medical clinics to ensure there are protections in place for the unhoused and other vulnerable populations during extreme temperature events. Also consider retrofitting designated facilities included in the Program that can also serve as Safe Rooms during earthquake and severe weather events.	Kings County	Kings County Department of Public Health, Kings County Office of Emergency Services, Kings Partnership	Moderate	EPA Grants, Office of Environmental Health Hazard Assessment (OEHA), Health and Human Services Agency Technical Support	Safety and Security; Health and Medical, Energy, Transportation	Low	Medium-Term	New Action in 2023.
KC-24	Goal 1, Goal 3, Goal 4	Extreme Temperatures - Heat and Freeze, Earthquake, Severe Weather: Heavy Rain/Thunderstorms/Hail/Lightning, Severe Weather: Wind/Tornado	Conduct a Public Survey on At-Risk Community Demographics and Disability Needs - A public survey will be developed around at-risk communities to understand those in the County with Access and Functional Needs (AFNs) and other disabilities, household	Kings County	Kings County Department of Public Health, Kings County Office of Emergency Services, Kings Partnership	Low	FEMA HMA HMGP	Safety and Security; Health and Medical, Energy, Transportation	High	Short-Term	New Action in 2023



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			emergency preparedness and evacuation and support needs, and medical devices and equipment needs at sheltering facilities.								
KC-25	Goal 1, Goal 3, Goal 4	Landslide	Development Regulations in Landslide Hazard Areas - Define steep slope/high-risk areas in land use, community plans, and specific plans in western Kings County and create guidelines for development in these areas or restrict development. The regulations should also ensure protections are in place for critical facilities, like transportation and communications facilities.	Kings County	Kings County Community Development Agency	Low	FEMA HMA HMGP	Safety and Security; Energy, Transportation	Low	Medium-Term	New Action in 2023.
KC-26	Goal 1, Goal 3, Goal 4	Severe Weather - All	Protect Existing Substandard Housing and New Residential Construction from Severe Weather Hazards - Identify Housing Rehabilitation Funding Opportunities and Review Building Ordinance and consider inclusion of techniques such as structural bracing (straps or clips, anchor bolts), shutters, roof coverings or interlocking shingles, flashing, and bracing elevated components in building design to	Kings County	Kings County Community Development Agency, City of Avenal, City of Corcoran, City of Hanford, City of Lemoore	Low	FEMA HMA HMGP	Safety and Security	Low	Medium-term	New Action in 2023. Complements Mitigation Action KC-21.



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			minimize severe weather, hail, and wind hazards.								
KC-27	Goal 1, Goal 3, Goal 4	Severe Weather - Wind/Tornado	Protect Power Line Infrastructure and Coordinate a Community Back-Up Power Resiliency Plan during PSPS Events - This will involve coordination with the CPUC, PG&E and SCE and the purchase of permanent generators in partnership with hospitals, nursing homes, and sheltering facilities.	Kings County	CPUC, Electric Safety and Reliability Branch, PG&E, SCE, City of Avenal	High	FEMA HMA HMGP, CPUC Rule 20 Undergrounding Programs, Federal Transportation Enhancements Program (under TEA-21)	Energy	Low	Medium-term	New Action in 2023.
KC-28	Goal 1, Goal 3, Goal 4	Wildfire	Regulate Development in Wildfire Urban Interface (WUI) in Western Portion of County - Update Safety Element policies to address current wildfire risk, discourage development in the WUI (very high Fire Hazard Severity Zones [VHFHSZs] or State Responsibility Area [SRA]), and implement defensible space inspection requirements through zoning or land use regulations related to emergency accessibility, water supply and flow for fire suppression, visible street addressing and signage, defensible space clearances, fuel modifications, and fire breaks.	Kings County	Kings County Fire Department	Moderate	General Fund	Safety and Security; Food, Hydration, Shelter; Health and Medical; Energy; Communications, Transportation; Water Systems	Low	Short-term	New Action in 2023.



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A-1	Goal 1, Goal 3, Goal 4	Earthquake, Land Subsidence, Landslide	Housing Rehabilitation Program - Continue and enhance housing rehabilitation program.	Avenal	City of Avenal Community Development Director	High	General Fund, Housing and Urban Development (HUD) Community Development Block Grant (CDBG) Funds, HOME, Cal Home Program	Food, Hydration, Shelter	Medium	Medium-term	In progress. Homes continue to be rehabbed with these funds-first come first serve. The City has received funding from CDBG, HOME, and the Cal Home Program to rehabilitate homes. Under this program most homes are torn down and reconstructed to current codes.
A-2	Goal 1, Goal 2, Goal 3, Goal 4	Flood, Drought, Earthquake, Land Subsidence	Vulnerability of Water Distribution System – Upgrade the two water transmission lines that supply water to the city and Avenal State Prison (one 18-inch line and one 12-inch line) that experience water leaks and movement due to earthquakes that lead to slope failure.	Avenal	City of Avenal Public Works Department	High	FEMA HMA HMPG, BRIC	Food, Hydration, Shelter	Medium	Long-term	In progress. Expected to be completed December 2023.
A-3	Goal 1, Goal 3, Goal 4	Earthquake, Subsidence, Landslide	Loss Reduction Program for unreinforced masonry (URM) Buildings - Establish a loss reduction program for URM buildings in compliance with the California URM Law of 1986. In response to the danger posed by the great number of potentially hazardous buildings in California, in 1986 the state legislature enacted the URM building law (Chapter 250, Statutes of 1986: SF547 [Alquist]; Government Code	Avenal	City of Avenal City Manager's Office, California Seismic Safety Commission, City of Avenal Public Works Department	Very High	FEMA HMA HMGP, BRIC, General Fund, Staff Time	Food, Hydration, Shelter	Medium	Long-term	In progress.



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			Section 8875 et seq.). The law mitigates hazards posed by URM's and applies to all jurisdictions in California's Seismic Hazard Zone 4, the region of highest earthquake activity in the nation.								
A-4	Goal 2, Goal 4	Earthquake	Replace Existing Valves at Tank Sites with Earthquake Valves to Protect Water Supply	Avenal	City of Avenal Public Works	Moderate	General Fund	Safety and Security	Medium	Medium Term	New Action in 2023.
A-5	Goal 2, Goal 3, Goal 4	Drought	Water Supply Rehabilitation - Install valve at the City water source to isolate from joint use facilities to maintain water supply during unexpected outages of Westland Water District facility.	Avenal	DWR, City of Avenal, Westlands Water District	Very High	FEMA HMA HMGP, BRIC, USDA DWSRF, DWR Urban Community Drought Relief Grant Program	Food, Hydration, Shelter	Low	Medium Term	New Action in 2023.
A-6	Goal 1, Goal 2, Goal 3, Goal 4	Flood; Severe Weather: Heavy Rain, Thunder, Hail, and Lightning	Improve Flow Design for Arroyo Esquinado Channel	Avenal	City of Avenal Public Works Department	Moderate	FEMA HMA HMGP, BRIC	Water Systems	Medium	Medium Term	New Action in 2023.
A-7	Goal 1, Goal 2, Goal 3, Goal 4	Flood	Stormwater Drainage Master Plan	Avenal	City of Avenal Public Works Department	Moderate	General Fund	Water Systems	Medium	Medium Term	New Action in 2023.
A-8*	Goal 1, Goal 2, Goal 3, Goal 4	Flood	Investigate Capacity for Floodwater Conveyance Facilities (Drainage Ditches and Culverts) along Arroyo del Camino	Avenal	City of Avenal Public Works Department	Moderate	FEMA HMA HMGP, BRIC, General Fund	Water Systems	Low	Medium Term	New Action in 2023.
A-9*	Goal 1, Goal 2, Goal 3, Goal 4	Land Subsidence	Conduct updated Land Subsidence Study to understand Elevation, Shifts, and Vulnerability.	Avenal	Kings County Administration, Water Management Agencies, City of Avenal Public Works Department	Moderate	DWR, FEMA HMA HMGP, USACE	Safety and Security, Food and Water, Shelter, Transportation	Medium	Long Term	New Action in 2023.



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A-10	Goal 1, Goal 2, Goal 3, Goal 4	Wildfire	Undergrounding of Utilities along City's Main Corridors	Avenal	Kings County Fire Department	High	FEMA HMA HMGP, US Forest Service WUI Grants	Energy	Medium	Medium Term	New Action in 2023.
A-11	Goal 1, Goal 3, Goal 4	Extreme Temperatures - Heat and Freeze, Earthquake, Severe Weather: Heavy Rain, Thunderstorms, Hail, and Lightning, Severe Weather: Wind and Tornado	Conduct a Public Survey on At-Risk Community Demographics and Disability Needs - A public survey will be developed around at-risk communities to understand those in the County with Access and Functional Needs (AFNs) and other disabilities, household emergency preparedness and evacuation and support needs, and medical devices and equipment needs at sheltering facilities.	Avenal	Kings County Department of Public Health, Kings County Office of Emergency Services, Kings Partnership	Low	FEMA HMA HMGP	Health and Medical, Energy, Transportation	High	Short Term	New Action in 2023.
C-1	Goal 1, Goal 2, Goal 3	Extreme Temperatures: Freeze and Heat	Equip and maintain the Recreational Association of Corcoran (RAC) Gymnasium Building, and Corcoran Transit Station with climate control features and designate each site as an Emergency Warming and Cooling Center for Sensitive Populations	Corcoran	City of Corcoran Public Works Department	High	FEMA HMA HMGP, Other State Grants	Safety and Security	High	Long Term	In progress - revised in 2023. This project has been carried over from the 2007 and 2012 MJHMPs. This action has also been modified to now include the RAC Building and the Corcoran Transit Station. These facilities are already in use for this purpose and now need to be maintained for this use.
C-2**	Goal 1, Goal 3	Extreme Temperatures: Extreme Heat	Emergency Power System for the Corcoran Depot Apartment complex operated by the Kings	Corcoran	City of Corcoran Public Works, Kings County Office of Emergency Services	High,	Community Power Resiliency Allocation Program, EMPCG, FEMA	Energy	High	Short Term	In progress - revised in 2023. Use of the Veteran's Hall is no longer needed now that the RAC gymnasium is



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			County Housing Authority.				HMA HMGP, SHSGP Grant Program				outfitted and serves a larger population. The next critically identified need area is the Corcoran Depot apartment complex as it houses a concentrated area of senior and special needs individuals.
C-3	Goal 1, Goal 2, Goal 3, Goal 4	Earthquake, Flood, Land Subsidence	Assess the Vulnerability of Critical Facilities – Assess vulnerability of critical facilities, including police/fire stations, hospitals, schools, and others, to identify and prioritize projects for multi-hazard risk reduction.	Corcoran	City of Corcoran Public Works, Police Department	High	General Fund	Water Systems	High	Ongoing	In progress. This was carried over from the 2012 MJHMP. The Police Department building is a newly constructed building that shifted all Police Department operations to the new facility in 2019. Other City facilities are routinely reviewed through risk management authority in order to maintain current insurance.
C-4	Goal 1, Goal 2, Goal 3, Goal 4	Drought	Assess Community Lifelines related to Water Distribution Systems – Assess vulnerability of lifeline utilities, including water distribution systems, to identify and prioritize projects for multi-hazard risk reduction.	Corcoran	City of Corcoran Public Works Department	High	Department of Water Resources (DWR) and Regional Water Quality Control Board (RWQCB)	Safety and Security, Water Systems	High	Ongoing	In progress. This was carried over from the 2007 MJHMP. Upgrades and investments are routinely planned for the City's CIP and funding through grants, loans and other City funding. The City's Water system is monitored and upgraded to maintain reliable system services, which also proactively addresses challenges posed by the drought. The City's Wastewater



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											ponds and connecting system were recently upgraded using American Rescue Plan (ARP) funding.
C-5	Goal 3	Cyber Threat	Use antivirus solutions, malware, and firewalls to block threats	Corcoran	City of Corcoran, Public Works Department	Moderate	General Fund	Safety and Security; Communications	Medium	Ongoing	New Action in 2023. The City has assessed network vulnerabilities and is currently implementing measures for cybersecurity. Monitoring and evaluation will be ongoing to evaluate changes and risks.
C-6**	Goal 1, Goal 2, Goal 3	Dam Incidents, Earthquake, Flood, Severe Weather: Dense Fog, Severe Weather: Heavy Rain, Thunderstorms, Lightning and Hail	Community Alert and Warning System - Purchase, install, test and utilize a community wide alert and early warning system that alerts residents by phone, email, cell phone and other electronic communication devices. This system can be expanded to include a Flood Early Warning System (FEWS) component (HMGP eligible component) that utilizes USGS and NOAA rainfall and flood gauges to initiate flood-specific warnings and downstream evacuations.	Corcoran	City of Corcoran, Corcoran Police Department, and Kings County OES	Moderate	Emergency Management Performance Grant (EMPG), Homeland Security Grant Program (HSGP), High Hazard Potential Dam (HHPD), FEWS designs that are eligible for HMPG funding	Safety and Security, Water Systems	High	Ongoing	New Action in 2023. The City has implemented NIXLE Alert System, and utilizes City associated social media for community announcements. Extended Countywide alert notification system is in development through Kings County OES - Funding has been secured through a EMPG Grant.
C-7	Goal 1, Goal 2, Goal 3	Drought	Public Education Program for Water Conservation	Corcoran	City of Corcoran, City Public Works Department	Low	General Fund, City Water Enterprise Fund, and Department of	Water Systems	High	Ongoing	New Action in 2023. The City is currently implementing citywide water meter installation along



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							Water Resources funding.				with public use property water use application, water restriction notifications, and enhancing water utility payment information. Together, these systems are providing enhanced water conservation education to the public and is anticipated to affect greater conservation headed into 2024 summer.
C-8*	Goal 1, Goal 2, Goal 3, Goal 4	Flooding, Drought, Subsidence	Corcoran Flood Protection – Multi-Agency Strategic Plan for Upstream Floodwater Diversion to Reduce Tulare Lake Flooding	Corcoran	City of Corcoran, Cross Creek Flood Control District, other Water & Irrigation Districts representing the Tulare Lake Basin, and DWR	Very High	FEMA HMA HMGP, DWR Riverine Stewardship Program and Urban Stream Restoration Program, Prop 68 Funds (Floodplain Management, Protection, and Risk Awareness Grant Program)	Water Systems	High	Long Term	New Action in 2023. Acknowledges that the USACE controls water releases from Pine Flat, Terminus, Schaefer, and Isabella Dams, and water and irrigation districts in Kings, Tulare, Fresno, and Kern counties. It is critical to beneficial groundwater recharge and management.
C-9*	Goal 1, Goal 3, Goal 4	Dam Failure; Flood; Severe Weather: Heavy Rain, Thunder, Hail, and Lightning	Enhanced Erosion Control and Protection of the Flood Control Levee	Corcoran	City of Corcoran, Cross Creek Flood Control District	High	FEMA HMA HMGP, DWR Urban Community Drought Relief Program	Safety and Security	Medium	Long Term	New Action in 2023. DWR response to 2023 flooding provided erosion control measures along the Corcoran Levee for enhanced erosion control. This established a flood response measure that can be replicated in future years with flood disasters.



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C-10*	Goal 2, Goal 3, Goal 4	Flooding, Drought, Subsidence	Increase Reservoir Storage for Control of Floodwater	Corcoran	Cross Creek Flood Control District, City of Corcoran, USACE, Kings County, Other Water Districts	Very High	FEMA HMA HMGP, DWR Grants	Water Systems	High	Long Term	New Action in 2023.
C-11	Goal 3	Public Health Hazards	Utilize trainings and exercises, epidemiology, and surveillance to control and combat public health risks	Corcoran	Kings County, City of Corcoran	Moderate	General Fund	Health and Medical	Medium	Short Term	New Action in 2023. This would be a Kings County Public Health Department initiated effort that the City supports and helps to facilitate in Corcoran.
C-12*	Goal 1, Goal 2, Goal 3	Flooding	Update the City's Storm Drain Master Plan every Few Years to included Planned Growth Areas	Corcoran	City of Corcoran	Low	General Fund	Water Systems	Low	Short Term	New Action in 2023. This is needed infrastructure for the City to diversify disbursement of stormwater drainage within the City.
C-13*	Goal 1, Goal 2, Goal 3	Flooding	Continue to Participate with the Cross Creek Flood Control District to Ensure Levees Protecting Corcoran from Tulare Lake Flooding are Adequately Monitored	Corcoran	City of Corcoran, Cross Creek Flood Control District	Low	General Fund	Water Systems, Safety and Security	High	Short Term	New Action in 2023. This is ongoing monitoring and maintenance efforts that are needed. New Action in 2023; this was integrated from the Safety Element (Policy 4.17).
C-14	Goal 1, Goal 3, Goal 4	Extreme Temperatures - Heat and Freeze, Earthquake, Severe Weather: Heavy Rain, Thunderstorms, Hail, and Lightning, Severe Weather: Wind and Tornado	Conduct a Public Survey on At-Risk Community Demographics and Disability Needs - A public survey will be developed around at-risk communities to understand those in the County with Access and Functional Needs (AFNs) and other disabilities, household emergency preparedness and evacuation and support needs, and	Corcoran	Kings County Department of Public Health, Kings County Office of Emergency Services, Kings Partnership	Low	FEMA HMA HMGP	Safety and Security, Health and Medical, Energy, Transportation	High	Short Term	New Action in 2023/



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			medical devices and equipment needs at sheltering facilities.								
H-1	Goal 1, Goal 2, Goal 3	Drought, Earthquake, Extreme Temperatures, Flood, Public Health Hazards, Wildfire	Public Education Program for All Hazards	Hanford	County and City Public Works, Kings County Health Dept., Kings County OES	Low	General Fund	Safety and Security	High	Ongoing	In progress. The Hanford Fire Department hired a Fire Marshal to lead Community Risk Reduction and public education program for the department. Outreach now includes numerous events such as school programs and other monthly events.
H-2	Goal 1, Goal 3	Drought	Retrofits to Water Storage Tanks - Two water storage tanks holding 800,000 gallons of water need to be seismically retrofitted against seismic and fire hazards following earthquakes	Hanford	City of Hanford Public Works Department	Moderate	DWR Grants, HMGP	Food, Water Shelter	High	Ongoing	In progress. Drilled two new wells to feed the system and added two additional 500,000 water tanks being proposed as part of the City Infrastructure Plan.
H-3	Goal 1, Goal 2, Goal 3	Earthquake	GIS Database of Unreinforced Masonry (URM) Buildings	Hanford	City of Hanford Fire Department, Kings County Community Development, OES, City GIS, IT	Moderate	General Fund	Safety and Security; Communication; Transportation	Medium	Short Term	Not started. Funding not secured yet.
H-4	Goal 1, Goal 3, Goal 4	Earthquake	Retrofit 58 URM Buildings in Downtown Hanford	Hanford	City of Hanford City Manager's Office	Very High	FEMA HMA HMGP	Food, Hydration, Shelter	Medium	Long Term	In progress. In certain cases, the City has required developers to conform to the most recent
H-5	Goal 1, Goal 2	Earthquake, Dam Incidents, Flood, Wildfire	Disaster Evacuation Routes - Ensure the maintenance and enhancement of established disaster evacuation routes	Hanford	City of Hanford City Manager's Office, City of Hanford Public Works Department,	Moderate	General Fund	Transportation	Medium	Medium Term	Not started.



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					Kings County OES						
H-6	Goal 1	Dam Incidents, Earthquake, Flood, Subsidence, Landslide, Fog, Severe Storms, Wildfire	Develop a transportation routing app, like the Caltrans app, to divert traffic due to road conditions during hazard events.	Hanford	Kings County Public Works, Kings County Administration	Moderate	Community Power Resiliency Allocation Program, Emergency Management Performance Grant (EMPG), HMGP	Transportation, Communication	Low	Short Term	New Action in 2023.
H-7	Goal 1, Goal 2	Flooding, Wildfire	Create a flood channel debris management plan to allow the flow of water, increase capacity, and remove fire hazards.	Hanford	Kings County Public Works, Water and Irrigation Districts, City Public Works	High	Proposition 68, Federal and State Resources	Safety and Security	High	Short Term	New Action in 2023.
H-8	Goal 1, Goal 2, Goal 3, Goal 4	Flood; Severe Weather: Heavy Rain, Thunder, Hail and Lightning; Drought; Subsidence	Develop a series of flood control basins on the Kings River that either recharge or store water during flood flows.	Hanford	Kings County Conservation District (KRCD), Local GSAs	Very High	DWR Grants, FEMA HMA HMGP, BRIC	Safety and Security, and Food, Water, Shelter	High	Long Term	New Action in 2023.
H-9	Goal 1, Goal 2, Goal 3, Goal 4	Flood, Severe Weather: Heavy Rain, Thunder, Hail and Lightning	Evaluate federal levees to determine height and make-up of levees to protect during 100-year storm events.	Hanford	United States Army Corps of Engineers (USACE), KRCD	Very High	USACE Grants	Safety and Security	High	Long Term	New Action in 2023.
H-10	Goal 1, Goal 2, Goal 3, Goal 4	Flood, Subsidence, Severe Weather: Heavy Rain, Thunder, Hail and Lightning	Remove sediment from Kings River to avoid future capacity issues.	Hanford	KRCD	Very High	HMPG Funds. Prop 68	Safety and Security	High	Medium Term	New Action in 2023.
H-11	Goal 1, Goal 2, Goal 3, Goal 4	Drought, Subsidence	Conduct updated land subsidence study to understand elevations, shifts, and vulnerability.	Hanford	Kings County Administration, Water Management Agencies	Moderate	DWR, USACE, Cal OES	Safety and Security, Food, water, Shelter, Transportation	Medium	Short Term	New Action in 2023.
H-12	Goal 3	Cyber-attack	Use antivirus solutions, malware, and firewalls to block threats	Hanford	Kings County, Avenal, Corcoran, Hanford, Lemoore	Moderate	General fund	Safety and Security, Communications	Medium	Ongoing	New Action in 2023.



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H-13	Goal 3	Public Health Hazards	Utilize trainings and exercises, epidemiology, and surveillance to control and combat public health risks	Hanford	County and City Public Health Departments	Moderate	General Fund	Health and Medical	Medium	Ongoing	New Action in 2023.
H-14	Goal 1, Goal 3	Earthquake, Drought	Safety Building & Community Center - Create a safety building for police and fire administration. Building will house EOC and a community center	Hanford	Hanford Police and Fire Departments	Moderate	General Fund	Safety and Security	Medium	Medium Term	New Action in 2023.
H-15	Goal 1, Goal 3, Goal 4	Extreme Temperatures: Heat and Freeze	Extreme Weather Shelter - Develop plan for center to assist at-risk populations during extreme weather events. Coordinate with regional plans for consistency.	Hanford	Hanford Community Development Agency, Police and Fire Department	Moderate	General Fund, APGP	Food, Hydration, Shelter	High	Medium Term	New Action in 2023.
H-16	Goal 1, Goal 3, Goal 4	Dam Incidents, Earthquake, Flood, Dense Fog Heavy Rain, Thunderstorms, Hail, and Lightning, High Wind and Tornado, Wildfire	Grangeville Overpass - Design and build an overpass for the train tracks to allow emergency vehicle access during a hazard event.	Hanford	Hanford Public Works, Community Development, and Administration	Very High	General Fund	Transportation	High	Long Term	New Action in 2023.
H-17	Goal 1, Goal 3, Goal 4	Dam Incidents, Earthquake, Flood, Dense Fog Heavy Rain, Thunderstorms, Hail, and Lightning, High Wind and Tornado, Wildfire	Assess the Capacity and Viability of Designate Evacuation Routes and Develop Evacuation Plan for All Hazard Scenarios	Hanford	Hanford Public Works, Community Development, and Administration	Very High	General Fund	Transportation	High	Long Term	New Action in 2023.
H-18	Goal 1, Goal 3, Goal 4	Dam Incidents; Extreme Temperatures - Heat and Freeze,	Conduct a Public Survey on At-Risk Community Demographics and Disability Needs - A	Hanford	Kings County Department of Public Health, Kings County Office of	Low	FEMA HMA HMCP	Safety and Security, Health and Medical, Energy, Transportation	High	Short-Term	New in 2023



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		Earthquake, Severe Weather: Heavy Rain, Thunderstorms, Hail, and Lightning, Severe Weather: Wind and Tornado	public survey will be developed around at-risk communities to understand those in the County with Access and Functional Needs (AFNs) and other disabilities, household emergency preparedness and evacuation and support needs, and medical devices and equipment needs at sheltering facilities.		Emergency Services, Kings Partnership						
L-1	Goal 1, Goal 3	Drought, Earthquake, Extreme Heat, Flood, Fog, Freeze, Wildfire	Public Education Program for All Hazards	Lemoore	City of Lemoore, City Public Works, Kings County Health Department, Kings County OES,	Low	General Fund, FEMA HMA HMGP, EMPG	Safety and Security; Communications	High	Short Term	In progress. This project entails establishing a training program to educate citizens about hazards and encourage households to have emergency kits, plans, and drills in place.
L-2	Goal 1, Goal 2, Goal 3, Goal 4	Drought	Long-Term Water Supply – Improve coordination, planning, and investment in long-term water supplies to meet demands of ongoing growth and development	Lemoore	City of Lemoore, Kings County Water District, Kings County, Kings County COG	Moderate	DWR Funds	Water Systems	High	Short Term	In progress. The City has installed a new well head and is actively pursuing funding sources to complete treatment and connection to water supply for development on the south side of town.
L-3*	Goal 1, Goal 3, Goal 4	Earthquake, Flood, Land Subsidence	Inter-jurisdictional GIS Program – Establish a centralized, inter-jurisdictional GIS program to improve all phases of emergency management	Lemoore	City of Lemoore Planning Department	Low	FEMA HMA HMGP, ESRI, General Fund	Communications	High	Ongoing	In progress. This project was completed as part of the 2012 MJHMP but carried forward in that plan as an ongoing effort. The City continues to participate in the Municipal GIS Program with the



ID	LINKS TO GOALS	HAZARD(S) MITIGATED	DESCRIPTION/ BACKGROUND/ BENEFITS	JURISDICTION	LEAD AGENCY AND PARTNERS	COST ESTIMATE	POTENTIAL FUNDING	FEMA LIFELINE	PRIORITY	TIMELINE	IMPLEMENTATION STATUS
											Kings County Planning Department.
L-4	Goal 1, Goal 3	Dam Incidents, Earthquake, Flood, Subsidence, Landslide, Fog, Severe Storms, Wildfire	Develop a transportation routing app, similar to the Caltrans app, to divert traffic due to road conditions during hazard events	Lemoore	Kings County Public Works, Kings County Administration, Kings County, City of Lemoore	Low	FEMA HMA HMGP	Transportation	Low	Medium Term	New Action in 2023.
L-5	Goal 1, Goal 2, Goal 3, Goal 4	Drought	Public Education Program for Water Supply and Conservation	Lemoore	City of Lemoore Administration Department, Finance Department	Low	FEMA HMA HMGP, DWR Grants	Water Systems	Medium	Short Term	New Action in 2023. The City of Lemoore recently hired a Water Conservation Officer to provide public education on water supply and conservation measures.
L-6	Goal 1, Goal 2, Goal 3, Goal 4	Flood	Well Protection and Flood Mitigation - Protect Wells from Floodwaters during Future Flooding Events by Building Infrastructure and Protection around the Well Sites	Lemoore	City of Lemoore Public Works	High	FEMA HMA HMGP, DWR Funds, USDA DWSRF	Water Systems	Medium	Medium Term	New Action in 2023. The City of Lemoore Public Works Department has created berms around City wells and is researching additional protective measure solutions.
L-7	Goal 1, Goal 2	Flood, Wildfire	Create a flood channel debris management plan to allow the flow of water, increase capacity, and remove fire hazards.	Lemoore	City of Lemoore, Kings County Public Works, Water and Irrigation Districts, City Public Works, Kings County	High	FEMA HMA HMGP	Safety and Security, Water Systems	High	Medium Term	New Action in 2023.
L-8*	Goal 1, Goal 2, Goal 3, Goal 4	Drought, Subsidence	Conduct updated land subsidence study to understand elevations, shifts, and vulnerability.	Lemoore	City of Lemoore, Kings County Administration, Water Management Agencies	Moderate	DWR, USACE, Cal OES	Safety and Security, Food, water, Shelter, Transportation	Low	Short Term	New Action in 2023. The City currently performs subsidence studies at areas of concern.
L-9	Goal 3	Cyber Attack	Use antivirus solutions, malware, and firewalls to block threats	Lemoore	Kings County, Avenal, Corcoran, Hanford, Lemoore	Moderate	General fund, HSGP	Safety and Security, Communications	Medium	Short Term	New Action in 2023. City of Lemoore IT staff will assess cyber security needs and seek solutions to



ID	LINKS TO GOALS	HAZARD(S) MITIGATED	DESCRIPTION/ BACKGROUND/ BENEFITS	JURISDICTION	LEAD AGENCY AND PARTNERS	COST ESTIMATE	POTENTIAL FUNDING	FEMA LIFELINE	PRIORITY	TIMELINE	IMPLEMENTATION STATUS
											improve security measures.
L-10	Goal 3	Public Health Hazards	Utilize trainings and exercises, epidemiology and surveillance to control and combat public health risks	Lemoore	County Public Health Department	Moderate	General Fund	Health and Medical	Low	Short Term	New Action in 2023. The City does not have a Public Health Department, but will coordinate with the Kings County Public Health Department during public health emergencies.
L-11	Goal 1, Goal 3	Dam Incidents	Develop plan addressing communication and evacuation for vulnerable populations in areas potentially impacted by Pine Flat Dam failure.	Lemoore	Kings County OES	Low	General Fund	Communications, Safety and Security	Low	Short Term	New Action in 2023. The City will coordinate with Kings County OES to create a response plan addressing the impacts of a dam failure.
L-12	Goal 1, Goal 3, Goal 4	Dam Incidents; Extreme Temperatures - Heat and Freeze, Earthquake, Severe Weather: Heavy Rain, Thunderstorms, Hail, and Lightning, Severe Weather: Wind and Tornado; Severe Weather: Dense Fog	Conduct a Public Survey on At-Risk Community Demographics and Disability Needs - A public survey will be developed around at-risk communities to understand those in the County with Access and Functional Needs (AFNs) and other disabilities, household emergency preparedness and evacuation and support needs, and medical devices and equipment needs at sheltering facilities.	Lemoore	Kings County Department of Public Health, Kings County Office of Emergency Services, Kings Partnership	Low	FEMA HMA HMGP	; Safety and Security, Health and Medical, Energy, Transportation	High	Short-Term	New Action in 2023

Acronyms and abbreviations are defined below:

- HMA - Hazard Mitigation Assistant Program
- HMGP - Hazard Mitigation Grant Program
- HSGP - Homeland Security Grant Program
- EMPG - Emergency Management Performance Grant
- Community Power Resiliency Allocation Grant Program - formerly the Public Safety Power Shutoff (PSPS) Program Funds
- DWR - Department of Water Resources Grant Funds



- Proposition 68 – water bond funds allocated to recreation, ecosystem protection, habitat conservation, and climate resilience projects
- KRCD – Kings River Conservation District Funds (funding from the California Department of Conservation [DOC])
- USACE – U.S. Army Corps of Engineers Funds
- APGP – Adaptation Planning Grant Program



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Annex A: City of Avenal

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1 INTRODUCTION

1.1 PURPOSE OF PLAN

Kings County including the participating jurisdictions have prepared this multi-jurisdictional hazard mitigation plan (MJHMP) to guide hazard mitigation planning to better protect the people and property of the County from the effects of hazard events. The purpose of this MJHMP is to identify policies, actions, and strategies that will help to reduce risk and prevent future losses. Hazard mitigation is best realized when community leaders, businesses, citizens, and other stakeholders join together to undertake a process of learning about hazards that can affect their area and use this knowledge to prioritize needs and develop a strategy for reducing damage. Hazard mitigation is most effective when it is based on a comprehensive long-term plan that is developed prior to a disaster occurring.

This plan demonstrates the Kings County communities' commitment to reducing risks from hazards and serves as a tool to help decision-makers direct mitigation activities and resources. This plan was also developed to make Kings County and the participating jurisdictions eligible for certain federal disaster assistance, specifically, the Federal Emergency Management Agency's (FEMA) Hazard Mitigation Assistance (HMA) grants including the Hazard Mitigation Grant Program (HMGP), Flood Mitigation Assistance (FMA) and Building Resilient Infrastructure and Communities (BRIC) program, as well as to make the County and jurisdictions more disaster resistant. This plan demonstrates the County's commitment to reducing risks from hazards and serves as a tool to help decision-makers direct mitigation activities and resources.

1.2 HAZARD MITIGATION PLANNING

FEMA has determined that there is a critical link between hazard mitigation planning and sustainability. This means if Kings County has the foresight to plan ahead to reduce the impacts of hazards, the County will be better able to prevent injury, loss of life and damage to our homes, businesses, and neighborhoods. The County can use the threat of disaster as a catalyst to act and develop a plan so we can recover more quickly following a disaster.

Kings County and the four participating jurisdictions have committed to reducing long-term risk to their citizens and damage to property from the effects of natural hazards. By planning, preparing, and adopting a MJHMP, the County and each jurisdiction are taking a proactive approach to reduce or eliminate the impacts of hazards before they occur.

FEMA defines "hazard mitigation" as any sustained action taken to reduce or eliminate the long-term risk to human life and property from hazards. The County's plan will serve as a tool for learning from disasters that have already occurred, so they can deal with them more effectively and efficiently with less expenditure than in the past.

Direct benefits include:

- Reduced loss of life;
- Reduced loss of property and essential services;
- Reduced economic hardship;
- Reduced reconstruction costs;
- Increased cooperation and communication within the community through the planning process;
- and
- Expedited post-disaster funding.

Indirect benefits include:

- Disaster resilience;
- Environmental quality;
- Economic vitality; and
- Improved quality of life.



1.3 FEDERAL REGULATORY FRAMEWORK

Section 322, Mitigation Planning, of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (“the Stafford Act”), enacted by Section 104 of the Disaster Mitigation Act of 2000 (“DMA 2000”), provides revitalized approaches to mitigation planning. Section 322 continues the requirement for a State Hazard Mitigation Plan (SHMP) as a condition of disaster assistance and establishes a new requirement for Local Hazard Mitigation Plans (LHMP). In order to apply for federal aid for technical assistance and post-disaster funding, local jurisdictions must comply with DMA 2000 and its implementing regulations (44 Code of Federal Regulations [CFR] Part 201.6).

Under the 2008 44 CFR update, requirements have changed governing mitigation planning provisions for LHMPs published under 44 CFR §201.6. LHMPs qualify communities for federal mitigation grant programs including:

- HMA Grants
- HMGP
- BRIC
- FMA
- High Hazard Potential Dam (HHPD)
- Severe Repetitive Loss (SRL)
- Repetitive Flood Claim (RFC)

1.4 STATE AND LOCAL REGULATORY FRAMEWORK

The MJHMP was prepared consistent with the Health and Safety Element (Safety Element) of the Kings County General Plan, as the planning effort covers common overlapping natural hazard issues and mutually-reinforcing policies and implementation programs. The MJHMP and Safety Element are considered complimentary documents that address natural hazards, and both planning documents contain goals, policies, and project actions or implementation programs to enhance the County’s mitigation efforts related to public safety.

California Government Code Section 65302.10, also referred to as Assembly Bill (AB) 2140 encourages California counties and cities to adopt their current, FEMA-approved LHMPs into the Safety Element of their General Plan. This adoption by reference or incorporation of the MJHMP into the Safety Element of the General Plan follows plan approval and makes Kings County and each participating jurisdiction eligible to be considered for part or all of its local-share costs on eligible public assistance funding to be provided by the State through the California Disaster Assistance Act (CDAA). The CDAA allows the State to pay up to 18.75% of the non-federal share that would otherwise fall upon a county or city to pay for public assistance projects. The legislature passed AB 2140 to provide additional funding after a disaster occurs. The local share is 25% of the total project cost; therefore, the legislation allows city and counties that comply to be eligible for only the remaining local share (6.25%).

AB 2140 is an optional state incentive to help counties and cities become more resilient to natural hazards. Compliance with AB 2140 also expires when the MJHMP expires, and the County must re-adopt the plan into the Safety Element during update cycles to ensure continued compliance and funding eligibility. Additionally, each participating jurisdiction in Kings County must adopt their annex into their own General Plan Safety Element, as the annex jurisdictions are not covered under the County’s General Plan Safety Element adoption.

1.5 BACKGROUND AND SCOPE

In the State of California and around the world, natural disasters occur frequently. Each year in the United States, disasters take the lives of hundreds of people and injure thousands more. Nationwide, taxpayers pay billions of dollars annually to help communities, organizations, businesses, and individuals recover from disasters. The time and money needed to recover from these events can strain or deplete local resources. These monies only partially reflect the true cost of disasters because additional expenses to insurance companies and non-governmental organizations are not reimbursed by tax dollars. Many disasters are predictable, and much of the damage caused by these events can be alleviated or even eliminated.



Hazard mitigation is defined by FEMA as “any sustained action taken to reduce or eliminate long-term risk to human life and property from a hazard event.” The results of a three-year, congressionally mandated independent study to assess future savings from mitigation activities provides evidence that mitigation activities are highly cost-effective. On average, each dollar spent on mitigation saves society an average of \$6 in avoided future losses in addition to saving lives and preventing injuries (Natural Hazard Mitigation Saves: 2017 Interim Report).

Hazard mitigation planning is the process through which hazards that threaten communities are identified; likely impacts are determined, prioritized, and implemented. This MJHMP update continues the hazard mitigation planning process for Kings County, the unincorporated county; the participating cities of Avenal, Corcoran, Hanford, and Lemoore. The plan identifies natural and human-caused hazards and risks within Kings County and identifies the hazard mitigation strategy to reduce vulnerability and make the communities of Kings County more disaster-resistant and sustainable. Information in this plan can be used to help guide and coordinate mitigation activities and local land use decisions. Proactive mitigation planning will help reduce the cost of disaster response and recovery to the community and its property owners by protecting critical community facilities, reducing liability exposure, and minimizing overall community impacts and disruption. The Kings County planning area has been affected by hazards in the past and is thus committed to reducing future disaster impacts and maintaining eligibility for federal funding.

1.6 PLAN UPDATE

This plan underwent a comprehensive update in 2022-2023 in fulfillment of the five-year update requirement. Several factors underscore the need for this planning effort:

- Kings County is exposed to hazards that have caused past damage.
- Limited local resources make it difficult to be pre-emptive in reducing risk. Eligibility for federal financial assistance is paramount to promote successful hazard mitigation in the area.
- Kings County and its partners recognize the probability of certain future hazards is increasing, and want to identify and implement mitigation actions that will address the needs of populations most vulnerable to these hazards impacts.
- Kings County and its partners participating in this plan want to be proactive in preparing for the probable impacts of natural hazards.

The Kings County’s 2012 MJHMP was already developed pursuant to the regulations of DMA 2000, and the implementing regulations set forth by the Interim Final Rule published in the Federal Register on February 26, 2002 (44 CFR Section 201.6). While the act emphasized the need for mitigation plans and more coordinated mitigation planning and implementation efforts, the regulations established the requirements that LHMPs must meet in order for a local jurisdiction to be eligible for certain federal disaster assistance and hazard mitigation funding under the Robert T. Stafford Disaster Relief and Emergency Act (Public Law 93-288). Because the Kings County planning and response area is subject to many kinds of hazards, access to these programs is vital. As a result, the County and its participating jurisdictions must complete a comprehensive plan update every five years. For the current plan update, Kings County completed the update as part of a multi-jurisdictional planning process in 2022-2023 to bring the MJHMP into compliance with recent legislation related to climate change probability, underserved and socially vulnerable populations, increased stakeholder engagement, and to address emerging concerns. The Kings County 2012 MJHMP was adopted by Kings County and the participating jurisdictions on January 13, 2015. The Kings County 2012 MJHMP was approved by FEMA on June 4, 2015.

Information in this plan will be used to help guide and coordinate mitigation activities and decisions for local land use policy in the future. Proactive mitigation planning will help reduce the cost of disaster response and recovery to the community and its property owners by protecting critical community facilities, reducing liability exposure, and minimizing overall community impacts and disruption. The Kings County planning area has been affected by hazards in the past and is thus committed to reducing future disaster impacts and maintaining eligibility for federal funding.

This MJHMP identifies resources, information, and strategies for reducing risk from natural hazards. Elements and strategies in the plan were selected because they meet a program requirement and because they best meet the needs of the planning partners and their citizens. One of the benefits of multi-jurisdictional planning is the ability to pool resources and eliminate redundant activities within a planning area that has uniform risk exposure and vulnerabilities. FEMA encourages multi-jurisdictional



planning under its guidance for the DMA. This plan will help guide and coordinate mitigation activities throughout the planning area. The plan was developed to meet the following objectives:

- Meet or exceed the requirements of the DMA.
- Enable all planning partners to use federal grant funding to reduce risk through mitigation.
- Meet the needs of each planning partner as well as state and federal requirements.
- Create a risk assessment that focuses on Kings County hazards of concern.
- Update the risk assessment with a consequence analysis that assesses the risk and vulnerability of people, property, critical facilities and infrastructure, natural and cultural resources, future development from these hazards of concern.
- Create a single planning document that integrates all planning partners into a framework that supports partnerships within the County and puts all partners on the same planning cycle for future updates.
- Meet the planning requirements of FEMA's Community Rating System (CRS), allowing planning partners that may choose to participate in the CRS program to enhance their CRS classifications.
- Coordinate existing plans and programs so that high-priority initiatives and projects to mitigate possible disaster impacts are funded and implemented.

1.7 MULTI-JURISDICTIONAL PLANNING

All citizens and businesses of Kings County are the ultimate beneficiaries of this MJHMP. The plan reduces the risk for those who live in, work in, and visit the County. It also provides a viable planning framework for all foreseeable natural hazards that may impact the County. Participation in the development of the plan by key stakeholders in the County helps ensure that outcomes will be mutually beneficial. The resources and background information in the plan are applicable countywide, and the plan's goals and recommendations can lay the groundwork for the development and implementation of local mitigation activities and partnerships.

The Kings County 2022-2023 MJHMP is a multi-jurisdictional plan that geographically covers people, property, and critical assets within Kings County's jurisdictional boundaries (hereinafter referred to as the planning area). Unincorporated Kings County and the following jurisdictions participated in the 2022-2023 update planning process:

- Kings County
- City of Avenal
- City of Corcoran
- City of Hanford
- City of Lemoore

The four cities were all participants of the 2012 Kings County MJHMP. In addition to these four cities, Santa Rose Rancheria/Tachi Yokut Tribe and the Kings County Office of Education representing various school districts were also all participants of the 2012 Kings County MJHMP, however, they opted not to participate in the 2022-2023 plan update due to limited staff capacity and resources. This 2022-2023 MJHMP update process covers four of the participating jurisdictions and includes four annexes.

1.8 PLAN ORGANIZATION

The sections that comprise the County's MJHMP include:

Executive Summary and Prerequisite – This section includes the executive summary of the MJHMP and addresses the formal adoption of the plan by each governing body to demonstrate the commitment of the community and elected officials to the County's goal of becoming disaster-resistant.

Section 1: Introduction – This section describes the purpose of the MJHMP update, the benefits of hazard mitigation planning, the federal and state regulatory requirements, and the background of the County's hazard mitigation planning process.

Section 2: Community Profile and Capability Assessment – This section provides the history and background of the County, including population trends and the demographic and economic conditions that have shaped the area. This section also includes the County's capability assessment.



Section 3: Planning Process – This section identifies the planning process, the HMPC members, the meetings held as part of the planning process, documents the outreach efforts, and the review and incorporation of existing plans, reports, and other appropriate information.

Section 4: Hazard Identification, Risk Assessment (HIRA), and Consequence Analysis –This section describes the process through which the HMPC and our local partners identified, screened, and selected the hazards to be profiled. The hazard analysis includes the description, location, extent, and probability of future events for each hazard. This section also includes a Vulnerability Assessment. The Vulnerability Assessment covers all hazards and considers the impact on the following assets: property; people; critical facilities and infrastructure; natural and cultural resources; economic condition of the jurisdiction; and future development trends.

Section 5: Mitigation Strategy – The mitigation strategy section provides a plan for reducing the potential losses identified in the vulnerability analysis. Mitigation goals and potential actions to minimize the risks and losses associated with each hazard will be described along with a strategy for implementation.

Section 6: Implementation and Maintenance – This section describes the method and schedule for monitoring, evaluating, and updating the plan to ensure it remains an active and applicable document.

Section 7: Plan Adoption – This section includes the plan adoption documentation and process for integrating the plan by reference into the County’s General Plan Safety Element.

Section 8: References – This section lists the sources cited in the plan.

Appendices

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Annexes

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2 COMMUNITY PROFILE AND CAPABILITY ASSESSMENT

2.1 HISTORY

As noted in the Kings County 2035 General Plan, Kings County was established in 1893 through a separation of territory from Tulare County. Additional territory was added from Fresno County in 1909 to make up what is known today as Kings County. Before the formation of the County, there were a number of historical events that led up to its establishment. Early inhabitants of this region were the Tache tribe of the Yokut Indians which existed throughout the San Joaquin Valley from the Delta to Tejon Pass. The first European contact occurred in 1805 when Lieutenant Gabriel Moraga led a company of Spanish soldiers and Franciscan clergymen through the eastern edge of the San Joaquin Valley while in search of possible mission sites. On January 6, 1805, they encountered a thriving Yokut Indian culture along the banks of a large river draining into the Laguna de Tache, (Tulare Lake). The river was named El Rio de los Santos Reyes, the “River of the Holy Kings,” later shortened to “Kings River.” This is where the County derived its namesake.

Prior to the development of any towns, Kings County was home to a handful of adventurous pioneers who settled primarily in the barren valley floor along the Kings River. Kingston, the first of several settlements located in Kings County was founded in 1856 and situated along the south bank of the Kings River. The town grew up around a ferry crossing that transported travelers across the Kings River who were traveling along the Spanish road called El Camino Viejo á Los Angeles (the old road to Los Angeles). Kingston was the only stopping point along the Overland Mail Company stage route between Stockton and Visalia.

Following Kingston, other communities sprang up in Kings County, primarily along existing or proposed railroad easements. The first incorporated community in Kings County was Lemoore. The success of the community was assured with the arrival of the Southern Pacific Railroad in 1877, the same year the community of Hanford was founded. Hanford later became incorporated in 1891, and later was selected as the County seat when in 1893, local voters approved the formation of a new county when a portion of western Tulare County was divided to form Kings County. In 1909, Kings County increased its boundary by 118 square miles when a triangular area of land was transferred from Fresno County’s jurisdiction to Kings County.

Settlement in Kings County remained modest throughout much of the County’s first century. The third incorporated community, Corcoran, was established on the San Francisco and San Joaquin Railroad in 1905 following a visit from Hobart Johnstone Whitley, a prominent land developer from southern California. The fourth incorporated town, Avenal, was established along the west side of the Kettleman Hills in an area historically called “Avena” by Spanish soldiers and explorers.

A number of unincorporated communities also grew from the early pioneering years. The Southern Pacific Railroad, which was the cause of many valley communities, was the primary driving force that led to the creation of Armona’s town layout in 1875 by John Yoakum for the Pacific Improvement Company. The railroad line followed in 1877, and Armona quickly became recognized as a main railroad shipping point for the rich Grangeville farming and fruit growing region. Farming and ranching supported the early economy of Kings County.

The community of Stratford has its origins dating back to 1899 when settlers of the Tulare Lake Basin dug three miles of canal to irrigate the farms of Blakeley, Clawson, Lovelace, and others who had settled on the margins of what was once water filled Tulare Lake. Stratford technically came into being in 1905 when the Empire Investment Company purchased 19,000 acres from the Bates, Davis and Miller Company. The town officially was organized by the sale of town lots from the ranch. However, due to a name conflict with another depot, the community’s name was changed to what it is recognized today “Stratford”. Manford Brown, a real estate developer founded the town of Kettleman City in 1929, following his donation of land to construct a school site and a community church. The community of Home Garden was established later during the 1940s and was initially home to many local farmers and farm industry workers. The City of Hanford has grown around the community on three sides, and Home Garden has evolved into a bedroom community for Hanford.

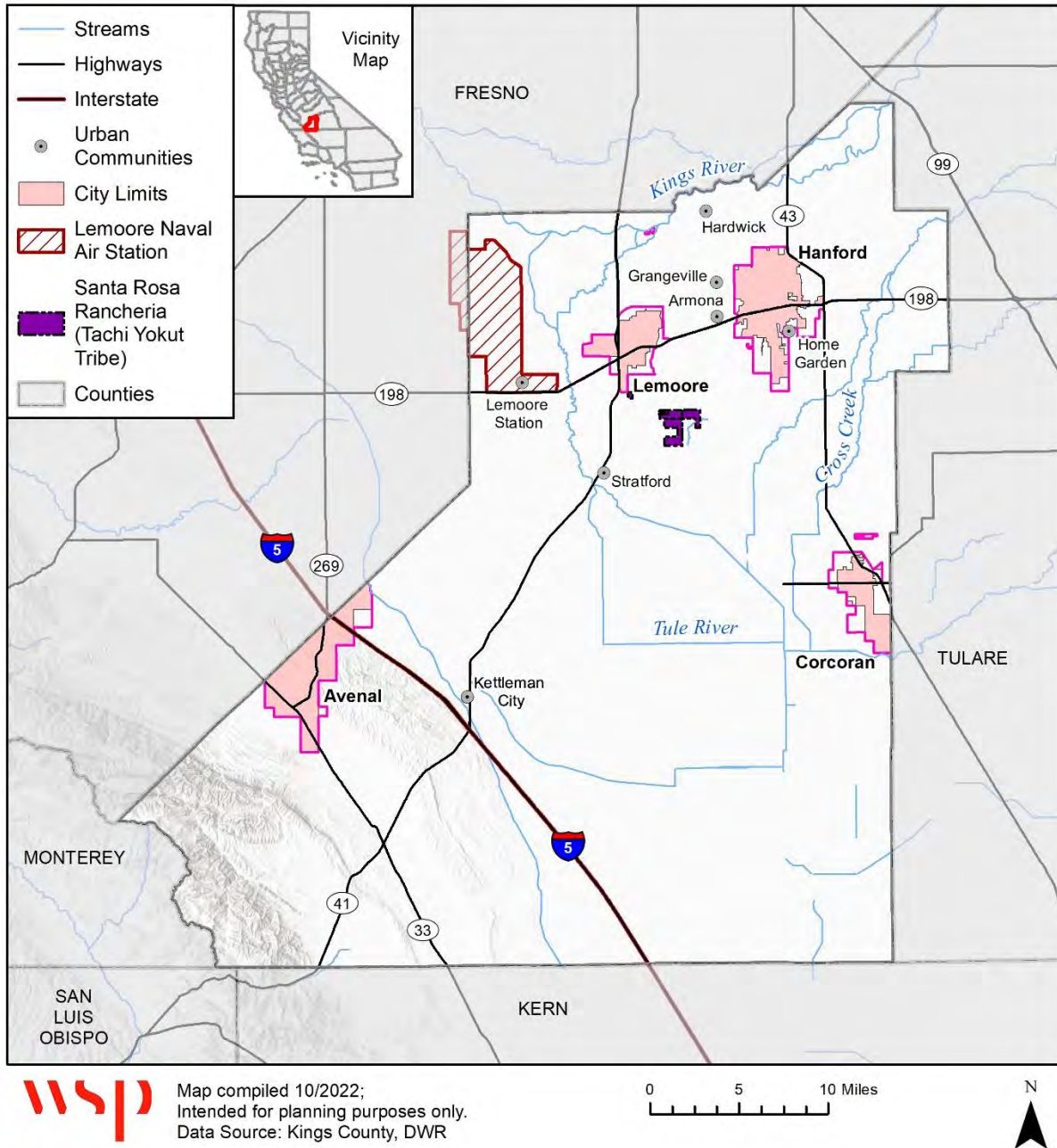


The Naval Air Station Lemoore (NASL) has been a strong economic force in the County since its development in 1961 when it was commissioned and constructed to be the largest and newest Master Jet Base in the Navy. Currently, the NASL hosts the Navy's largest west coast fighter/attack capability and houses approximately 175 Hornets and SuperHornets organized into 16 squadrons which comprise the Pacific Strike Fighter Wing.

Figure 2-1 shows the County's planning area.



Figure 2-1 County of Kings Planning Area





2.2 GEOGRAPHY AND CLIMATE

According to the U.S. Census Bureau, Kings County has a total area of 1,392 square miles, of which 1,389 square miles is land and 2.1 square miles (0.2%) is water. Kings County is bordered on the north and northwest by Fresno County, on the east by Tulare County, on the south by Kern County and a small part of San Luis Obispo County, and on the west by Monterey County. Most of the historic Tulare Lake was within Kings County. Kings County is governed by a five-member Board of Supervisors.

Kings County has a climate that can be described as warm and sunny for much of the year. Summers are dry and hot while winters are mild. The County averages approximately 7.43 inches of rainfall each year. Temperatures range from an average minimum temperature of 36.2 degrees Fahrenheit in the winter, and to an average high in the 90s during the summer months. The County has an annual average maximum temperature of 76 degrees Fahrenheit and an average minimum temperature of 62.3 degrees Fahrenheit. Table 2-1 lists the average maximum and minimum temperatures by month and associated average rainfall.

Table 2-1 Average Maximum & Minimum Temperatures by Month and Associated Average Rainfall

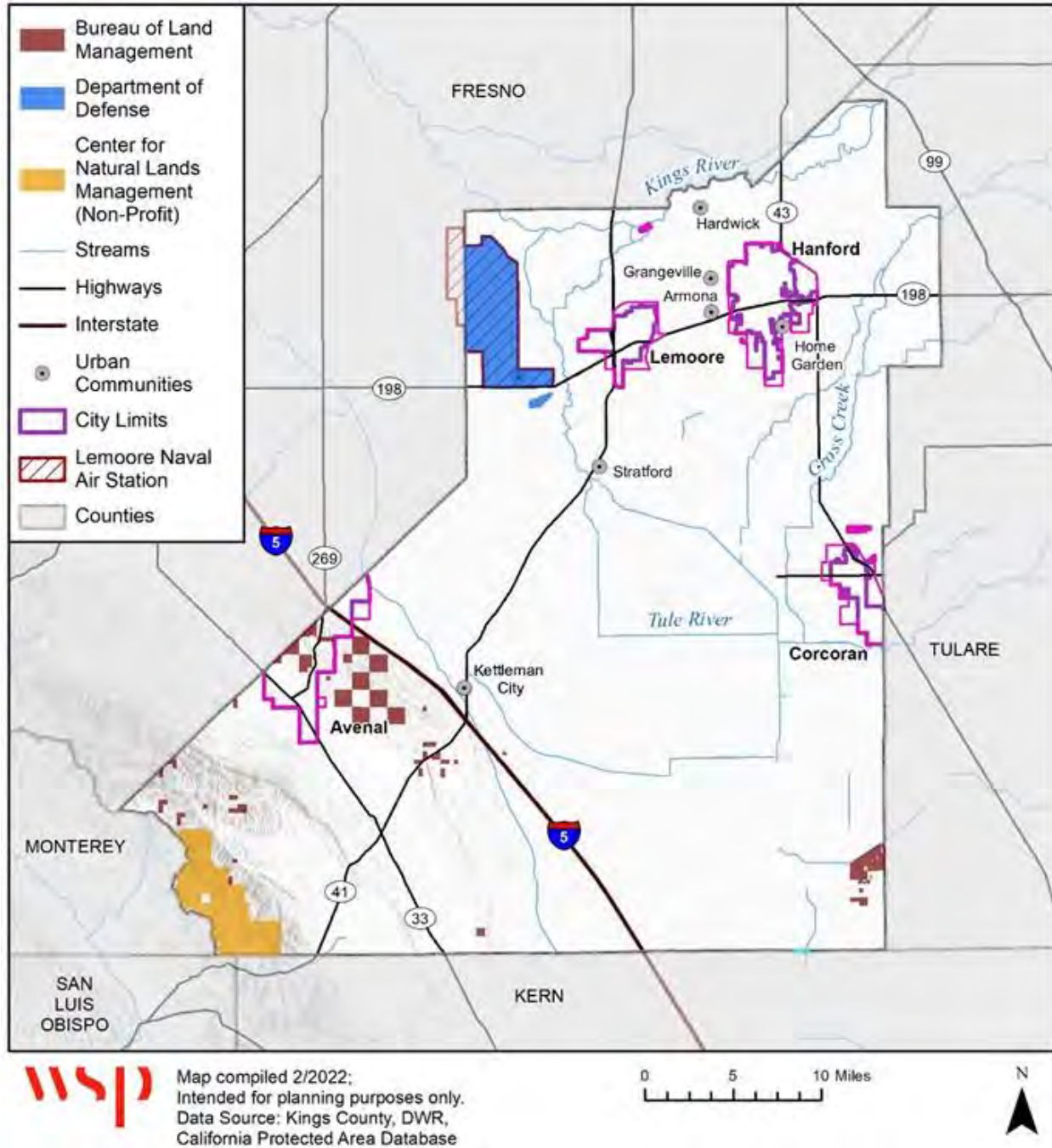
Average Maximum/Minimum Temperature	Average Rainfall
January 54.3°/36.2°F	January 1.55 inches
August 95.7°/63.7°F	August .01 inches
Annual 76°/62.3° F	Annual 7.43 inches

Note: The time frame for both temperature and precipitation is from 1950 to 2023.
Sources: Climate at a Glance County Time Series, NOAA

2.3 LAND OWNERSHIP

Large expanses of the County are public land. The entities and agencies that own non-public land within the County include the Bureau of Land Management (BLM), the Department of Defense (who owns the Lemoore Naval Air Station), and the Center for Natural Lands Management (which is a nonprofit land trust). Figure 2-2 shows the overall land ownership in the County.

Figure 2-2 Kings County Land Ownership



2.4 TRANSPORTATION SYSTEM

Kings Area Rural Transit (KART) is Kings County’s public transportation provider. KART provides transportation services to the cities and unincorporated communities of Armona, Avenal, Corcoran, Grangeville, Hardwick, Hanford, Kettleman City, Laton, Lemoore, and Stratford. KART also provides regular transportation services to Fresno and Visalia. Two railway stations are located within the County, Corcoran station and Hanford station. Both stations are Amtrak train stations.



The major highways in the County include Interstate 5 (I-5), State Route (SR) 41, Highway 198 and Highway 43. I-5 is a major north-south route of the Interstate Highway System in the United States, stretching from the Mexican border at the San Ysidro crossing to the Canadian border near Blaine, Washington. I-5 links the major California cities of San Diego, Santa Ana, Los Angeles, Stockton, Sacramento, and Redding. I-5 runs through the City of Avenal. SR 41 is a state highway in California, connecting the Central Coast with the San Joaquin Valley and the Sierra Nevada. SR 41 runs through the City of Lemoore and Kettleman City. SR 198 is an east-west state highway that connects the California Central Coast to the mid-Central Valley through Hanford and Visalia. It intersects I-5 and SR 41. SR 43 is a north-south state highway, which runs roughly parallel to SR 99, connecting the towns of Shafter, Wasco, Corcoran, and Selma, and the City of Hanford. All these highways are shown in Figure 2-1.

2.5 ECONOMY

Kings County is located in the heart of California’s rapidly growing San Joaquin Valley, the richest agricultural area in the world. With that distinction also come the challenges of an economy which has historically been dependent on seasonal agriculture and low wages. Select 2017-2021 economic characteristics estimated for Kings County by the U.S. Census Bureau American Community Survey (ACS) are shown in Table 2-2.

Table 2-2 Kings County Economic Characteristics

CHARACTERISTIC	KINGS COUNTY
Families below Poverty Level (%)	13.8%
All People below Poverty Level (%)	12.6%
Median Family Income	\$85,806
Median Household Income	\$69,717
Per Capita Income	\$38,332
Population in Labor Force	63.0%
Population Employed*	58.6%
Unemployment Rate**	6.3%

Source: U.S. Census Bureau ACS 2017-2021 5-Year Data Profile

Kings County provides a broad range of services to its residents, businesses, and visitors, and manages and operates its facilities to meet community needs. Agriculture is the dominant land use in the County, accounting for 90.2% of total land use (2023 General Plan 2010). Furthermore, as shown in Table 2-3, based on U.S. Census Bureau ACS, the most common industries within Kings County are educational services and health care and social assistance (a combined average of 20.3% of workers). Agriculture, forestry, fishing and hunting, and mining as well as Public administration are the other two major industries.

Table 2-3 and Table 2-4 below show the labor force breakdown by industry and occupation and are based on estimates from the 2017-2021 five-year ACS.

Table 2-3 Kings County Employment by Industry Sector, 2017-2021

INDUSTRY SECTOR	PERCENT OF WORKFORCE
Educational services, and health care and social assistance	20.3%
Agriculture, forestry, fishing and hunting, and mining	16.2%
Public administration	13.3%
Retail trade	10.0%
Arts, entertainment, and recreation, and accommodation and food services	8.3%
Manufacturing	7.6%
Professional, scientific, and management, and administrative and waste management services	6.0%



INDUSTRY SECTOR	PERCENT OF WORKFORCE
Transportation and warehousing, and utilities	5.0%
Construction	3.3%
Other services, except public administration	3.3%
Wholesale trade	2.9%
Finance and insurance, and real estate and rental and leasing	2.7%
Information	1.0%

Source: U.S. Census Bureau ACS 2017-2021 5-Year Data Profile

Table 2-4 Kings County Employment by Occupation, 2017-2021

OCCUPATION	# EMPLOYED	% EMPLOYED
Management, business, science, and arts occupations	13,224	25%
Service occupations	10,863	21%
Sales and office occupations	9,236	18%
Natural resources, construction, and maintenance occupations	11,125	21%
Production, transportation, and material moving occupations	8,029	15%
Total	13,224	25%

Source: U.S. Census Bureau American Community Survey 2017-2021 5-Year Estimates, www.census.gov/

*Excludes armed forces

2.6 POPULATION & HOUSING CHARACTERISTICS

The total estimated population of Kings County in 2021 was 151,887, up from 151,122 people in 2010. This constitutes less than a 1% increase in population. Select demographic and social characteristics for Kings County from the 2017-2021 ACS and the California Department of Finance (DOF) are shown in Table 2-5. Increases in population growth also increase exposure to severe weather-related hazards, pandemics/epidemics as well as earthquakes. This increase in growth also puts more demand on water resources and can increase vulnerability to drought.

Table 2-5 Kings County Demographic and Social Characteristics, 2017-2021

CHARACTERISTIC	KINGS COUNTY
Gender/Age	
Male	55.2%
Female	44.8%
Median age (years)	32.1
Under 5 years	7.5%
Under 18 years	27.2%
65 years and over	10.3%
Race/Ethnicity	
White	30.9%
Asian	3.7%
Black or African American	6.0%
American Indian/Alaska Native	0.8%
Hispanic or Latino (of any race)	55.5%



CHARACTERISTIC	KINGS COUNTY
Native Hawaiian and Other Pacific Islander	0.2%
Some other race	0.2%
Two or more races	2.7%
Education*	
% High school graduate or higher	89.4%
% with Bachelor's Degree or Higher	35.0%
Social Vulnerability	
% with Disability	13.0%
% Language other than English spoken at home	21.6%
% Speak English less than "Very Well"	8.3%
% of households with a computer	95.0%
% of households with an Internet subscription	90.1%
% of households with no vehicle available	5.3%

Source: CA Department of Finance U.S. Census Bureau ACS 2015-2019 5-Year Estimates, www.census.gov/

* Population 25 years and over

Table 2-6 summarizes information from the ACS 5-year estimates (2017-2021) related to housing occupancy in Kings County. More than half of the County residents own the home they live in.

Table 2-6 Kings County Housing Occupancy and Units, 2017-2021

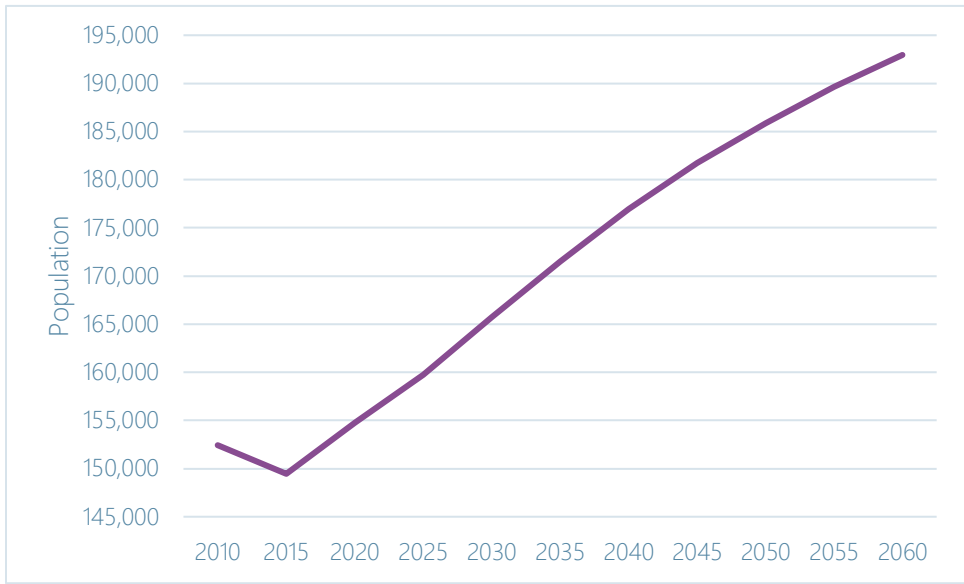
Housing Characteristic	Estimate	Percentage
Housing Occupancy		
Total Housing Units	46,145	100%
Units Occupied	43,286	93.8%
Vacant	2,859	6.2%
Housing Units		
1-unit detached	33,140	71.8%
1-unit attached	2,082	4.5%
2 units	1,337	2.9%
3 or 4 units	2,546	5.5%
5-9 units	1,655	3.6%
10-19 units	906	2.0%
20 or more units	2,403	5.2%
Mobile Home	2,017	4.4%
Boat, RV, van etc.	59	0.1%
Housing Tenure		
Owner Occupied	23,610	54.5%
Renter Occupied	19,676	45.5%

Source: U.S. Census Bureau ACS 2017-2021 5-Year Estimates, www.census.gov/

According to the DOF, the 2020 population of Kings County was 154,745 (DOF 2021). The DOF projects the total population will increase by 7% to 165,752 by 2030 (DOF 2021). These projections are shown in Figure 2-3. While total households in the County are also projected to increase from 44,561 in 2020 to 50,068 in 2030, people per household is projected to slightly decrease from 3.16 in 2020 to 3.06 persons per household in 2030 (DOF 2021).



Figure 2-3 Kings County Observed and Projected Population (2010 - 2060)



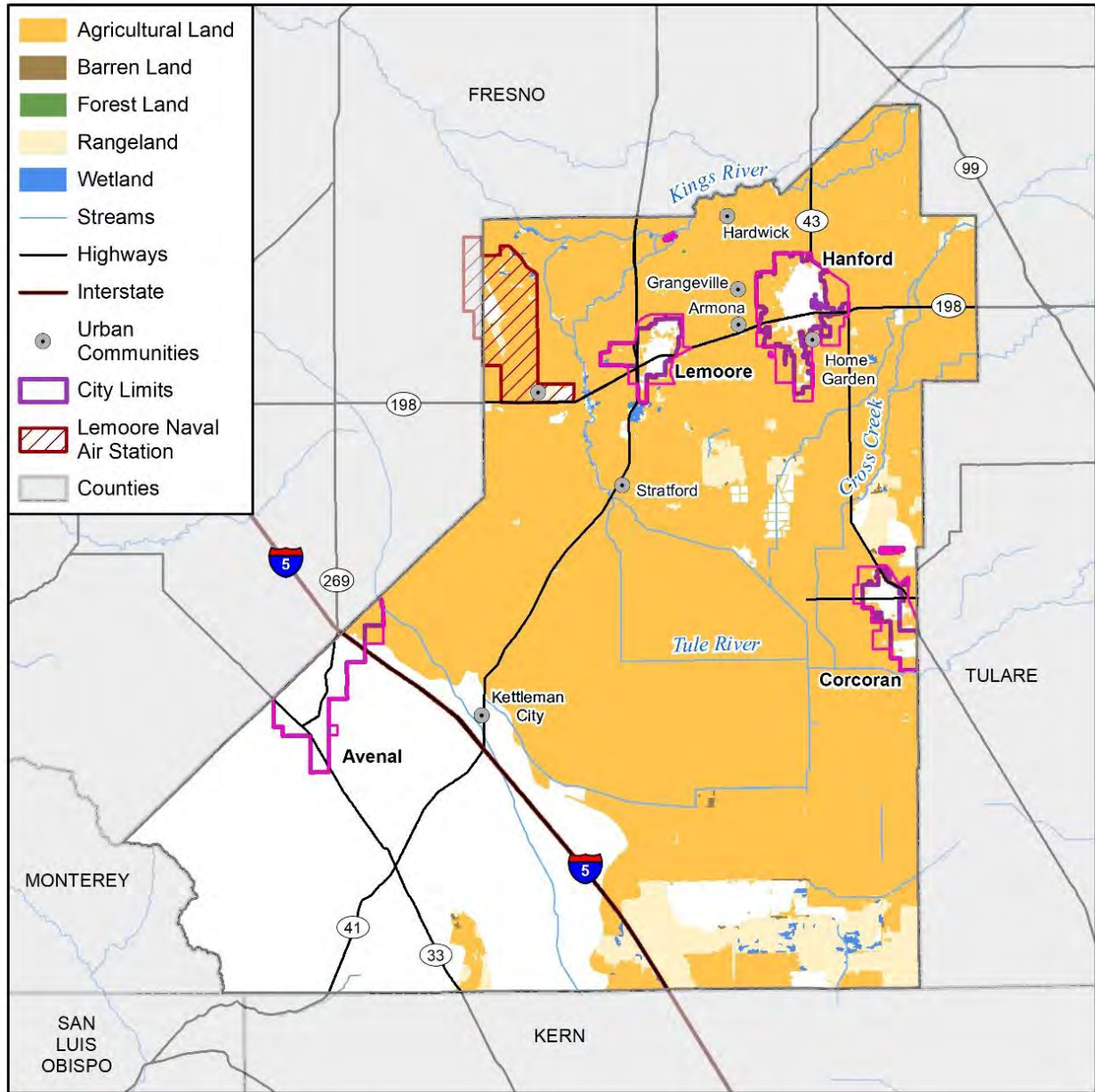
Source: DOF 2021

2.7 NATURAL AND RECREATION RESOURCES

As shown in Figure 2-4, the majority of the County’s land cover is agricultural land. Like other counties in the Central Valley, the agriculture industry is one of the pillar industries. Rangelands are also scattered over the County. The majority of the southwestern County is made up of rangeland.

Further details on the County’s natural resources can be found in Section 4.4.1.4 Cultural, Historical and Natural Resources.

Figure 2-4 Kings County Land Cover



Map compiled 2/2022;
Intended for planning purposes only.
Data Source: Kings County, DWR,
USDA

0 5 10 Miles



2.8 COUNTY'S MITIGATION CAPABILITIES

The following section assesses the County's and each participating jurisdiction's existing capabilities to pursue hazard mitigation. The capability assessment analyzes Kings County's capabilities that can be leveraged to mitigate hazards. Combining the risk assessment with the mitigation capability assessment results in the County's "net vulnerability" to disasters, and more accurately focuses the goals, objectives, and proposed actions of this plan.



The HMPC used a two-step approach to conduct this assessment for the County and jurisdictions. First, an inventory of common mitigation activities was made using a matrix. The purpose of this effort was to identify policies and programs that were either in place, needed improvement, or could be undertaken if deemed appropriate. Second, the HMPC conducted an inventory and review of existing policies, regulations, plans, and programs to determine if they contributed to reducing hazard-related losses or if they inadvertently contributed to increasing such losses.

This assessment is divided into four sections: regulatory mitigation capabilities; administrative and technical mitigation capabilities; fiscal mitigation capabilities; and mitigation outreach and partnerships. Additional information on jurisdiction capabilities can also be found in the participating jurisdictions' annexes.

2.8.1 Regulatory Mitigation Capabilities

The regulatory and planning capabilities listed in Table 2-7 outline planning and land management tools typically used by local jurisdictions to implement hazard mitigation activities and indicate those that are in place in Kings County.

Table 2-7 Regulatory Mitigation Capabilities

REGULATORY TOOL (ORDINANCES, CODES, PLANS)	KINGS COUNTY	AVENAL	CORCORAN	HANFORD	LEMOORE
General plan	Yes	Yes	Yes	Yes	Yes
Zoning ordinance	Yes	Yes	Yes	Yes	Yes
Subdivision ordinance	Yes	No	Yes	Yes	Yes
Growth management ordinance	No	No	No	No	No
Floodplain ordinance	Yes	Yes	Yes	Yes	Yes
Other special purpose ordinance (storm water, steep slope, wildfire)	No	No	Yes	No	No
Building code	Yes	No	Yes	Yes	Yes
Fire department ISO rating	N/A	N/A	N/A	N/A	N/A
Erosion or sediment control	Yes	No	No	No	No
Storm water management program	Yes	No	No	Yes	Yes
Site plan review requirements	Yes	No	No	Yes	No
Capital improvements plan	Yes	No	No	Yes	Yes
Economic development plan	No	No	No	No	No
Local EOP	Yes	No	No	No	No
Other special plans	N/A	N/A	N/A	N/A	No
Flood insurance study or other engineering study for streams	Yes	Yes	Yes	Yes	Yes
Elevation certificates	Yes	Yes	No	No	Yes

Source: Hazard Mitigation Planning Committee

2.8.2 Related Plans and Regulations

2035 Kings County General Plan, 2035

The 2035 Kings County General Plan defines goals, objectives and policies that will guide the physical growth, use and development of land under the jurisdictional authority of the County through the year



2035. The County's overarching priorities are to protect prime agricultural land, direct urban growth to existing cities and community districts, and increase economic and community sustainability. General Plan land use designations and policies are designed to encourage compact and community-centered development patterns that lower public service costs, make more efficient use of land, and discourage premature conversion of farmland to other uses. Policies embodied in this General Plan are designed to balance the protection of individual property owners' rights and property value with the efficient provision of public services to the community at large and long-term preservation of natural resources. The General Plan also contains specific community plans that elaborate on the development planning for the County's several urban communities.

The County's General Plan includes the six mandatory elements: the Land Use Element, Circulation Element, Open Space Element, Noise Element, Health and Safety Element, and 2016-2024 Housing Element. The General Plan also has a Dairy Element and an Air Quality Element. The Health and Safety Element contains goals and policies that address natural and human-caused hazards in the County.

Health and Safety Element

The purpose of the Health and Safety Element is to reduce or eliminate long-term risks to people and property from natural or man-made hazards. This element includes policies for community health and safety-related issues associated with the built environment that affect the health and safety of residents living within the County. This element concentrates on those hazards and community factors that are within the responsibility of the County to mitigate. These include land use decisions and patterns of development that directly and indirectly affect the health, well-being, and personal/property protection of county residents, and the mitigation of potential natural hazards. The Health and Safety Element also describes the location and extent of known hazards and provides maps of hazardous land uses and evacuation routes.

The Health and Safety Element is the primary vehicle for relating County land use policies to local safety planning and is comprised of three major components that include "Natural Hazards," "Community Health," and "Community Safety." While the Land Use Element identifies areas where hazardous land uses may be located, the Health and Safety Element contains policies for determining acceptable levels of public risk imposed by these land uses, as well as policies for mitigating the effects of natural or manmade catastrophes. The natural hazards discussed in the Health and Safety Element include:

- Geologic Hazards: including earthquake, subsidence and liquefaction, landslide, expansive soil;
- Flood Hazards: flood, dam inundation;
- Temperature Hazards: extreme heat, drought, freeze, fog;
- Fire Hazards; and
- Wind Hazards.

Moreover, the Health & Safety Element includes various Community Health and Safety components, which cover community health topics such as Built Environment Health and Medical Services, as well as community safety topics, including Safe Routes, Built Environment Safety, Law Enforcement, Fire Protection, Emergency Operations, Evacuation Routes, and Airport Safety.

The Safety Element fully incorporates the County's 2007 MJHMP by reference to meet the requirements under California Government Code Section 65302(g)(4). During the 2022-2023 MJHMP update process, the County OES and Planning and Community Development Department collaborated so that the forthcoming Health and Safety Element update would complement and be consistent with the efforts already underway associated with the MJHMP update, such as the climate-related hazards profiled and the other climate change considerations addressed in the risk and vulnerability assessment. The MJHMP update also now addresses socially vulnerable and underserved communities.

Kings County Emergency Operations Plan

The purpose of the County of Kings Emergency Operations Plan (EOP) and its Functional Annexes is to provide the basis for a coordinated response before, during and after a disaster incident. This plan is the principal guide for the County's response to, and management of real or potential emergencies and disasters occurring within its designated geographic boundaries. Specifically, this plan is intended to:

- Facilitate multi-jurisdictional and interagency coordination in emergency operations, particularly between local government, private sector, operational area (geographic county boundary), state response levels, and appropriate federal agencies.



- Serve as a county plan, a reference document, and when possible, may be used for pre-emergency planning in addition to emergency operations.
- To be utilized in coordination with applicable local, state, and federal contingency plans.
- Identify the components of an Emergency Management Organization (EMO), and establish associated protocols required to effectively respond to, manage and recover from major emergencies and/or disasters.
- Establish the operational concepts and procedures associated with field response to emergencies, and Emergency Operations Center (EOC) activities.
- Establish the organizational framework of the California Standardized Emergency Management System (SEMS), and the National Incident Management System (NIMS).

Emergency Services Ordinance, (County Code Chapter 6)

The declared purposes of this chapter are to provide for the preparation and carrying out of plans for the protection of persons and property within this County in the event of an emergency; the direction of the emergency organization; and the coordination of the emergency functions of this county with the cities in this County and with all other public agencies, corporations, organizations, and affected private persons. This ordinance also discusses the Kings Area Disaster Council, its powers and duties, the designation of director and assistant director of emergency services, etc.

Building Code (County Code Section)

Several specific building codes are adopted for Kings County. These codes include the 2013 edition of the California Building Standards Code, the California Fire Code (which is adopted separately), the Uniform Housing Code, and the Uniform Code for the Abatement of Dangerous Buildings. By adopting these codes, they become a part of the rules that apply to construction in the unincorporated area of Kings County. The codes are considered as if they are fully written in this statement, and they must be followed when constructing buildings in the county. However, if a newer edition of the California Building Standards Code is published within 180 days after this statement, that newer edition will replace the 2013 edition as the adopted building code for Kings County. So, in that case, the newer edition will be the set of rules that should be followed for construction purposes.

Flood Damage Prevention Ordinance (County Code Chapter 5A)

The purpose of this Ordinance is to promote public health, safety, and general welfare and to minimize public and private losses due to flood conditions in specific areas. The County's flood damage prevention ordinance provisions are designed to:

- Protect human life and health;
- Minimize expenditure of public money for costly flood control projects;
- Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;
- Minimize prolonged business interruptions;
- Minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, and streets and bridges located in areas of special flood hazard;
- Help maintain a stable tax base by providing for the sound use and development of areas of special flood hazard so as to minimize future blight areas;
- Assist potential buyers in identifying properties which are in areas of special flood hazard; and
- Promote those who occupy the areas of special flood hazard assuming responsibility for their actions.

Moreover, base flood data in the County must also meet the following requirements:

- Single parcels are required to elevate the lowest floor of any residential structure to no less than two feet above natural grade when base flood data does not exist. Nonresidential structures may elevate or floodproof to meet this standard.
- Multiple parcels (five or more) are required to have all proposals establish the 100-year base flood elevation before consideration of the preliminary plan for development. The floodplain administrator may, at his/her discretion, require higher standards.
- All new subdivision proposals and other proposed development, including proposals for manufactured home parks and subdivisions, greater than 50 lots or five acres, whichever is the lesser, shall:
 - Identify the Special Flood Hazard Areas (SFHA) and Base Flood Elevations (BFE);



- Identify the elevations of the lowest floors of all proposed structures and pads on the final plans; and
- If the site is filled above the base flood elevation, the following as-built information for each structure shall be certified by a registered civil engineer or licensed land surveyor and provided as part of an application for a Letter of Map Revision based on Fill (LOMR-F) to the floodplain administrator:
 - Lowest floor elevation;
 - Pad elevation; and
 - Lowest adjacent grade.

Kings County has numerous other plans, programs, and procedures in place that support hazard mitigation, public health and safety, hazardous materials management, and emergency operations. Related partner agency plans were also reviewed to inform the MJHMP to update risk assessment and mitigation strategies based on public availability, as they relate to flooding, drought, and water supply events, as well as agricultural pests and disease. These plans are listed below.

- 2017 U.S. Census of Agriculture. United States Department of Agriculture
- Agriculture Response Plans
- American Red Cross Emergency Plan
- California 2018 State Hazard Mitigation Plan (SHMP) (2023 Draft SHMP is in development)
- California’s Fourth Climate Change Assessment
- City of Lemoore Urban Water Management Plan 2015
- Continuity of Operations/Continuity of Government Plans (COOP/COG)
- Department of Water Resources Directory of Flood Officials
- Economic analysis of the 2014 drought for California agriculture. University of California, Davis, CA: Center for Watershed Sciences
- Kings River Handbook
- Kings County 2012 MJHMP
- Kings County Association of Governments Regional Climate Action Plan
- Kings County Department of Agriculture 2021 Crop Report
- Reclamation Emergency Action Plan (EAP)
- Safeguarding California Plan: California Climate Adaptation Strategy
- The Privacy Rights Clearinghouse. Data Breach Notification in the United States 2022 Report. 2023.
- Westlands Water District Water Management Handbook
- Westlands Water District Water Management Plan

2.8.3 Administrative and Technical Mitigation Capabilities

Table 2-8 below identifies the County personnel responsible for activities related to mitigation and loss prevention in Kings County and the unincorporated areas. Many positions are full-time and/or filled by the same person. A summary of technical resources follows.

Table 2-8 Kings County Administrative and Technical Mitigation Capabilities

PERSONNEL RESOURCES	YES/NO	DEPARTMENT/POSITION
Planner/engineer with knowledge of land development/land management practices	Yes	Community Development Agency
Engineer/professional trained in construction practices related to buildings and/or infrastructure	Yes	Public Works Department, Community Development Agency
Planner/engineer/scientist with an understanding of natural hazards	Yes	Public Works Department, Community Development Agency
Personnel skilled in Geographic Information System (GIS)	Yes	Community Development Agency, County Assessor
Full time building official	Yes	Community Development Agency
Floodplain manager/Floodplain Administrator	Yes	Building Official/Community Development Agency
Emergency manager	Yes	Office of Emergency Services
Grant writer	Yes	



PERSONNEL RESOURCES	YES/NO	DEPARTMENT/POSITION
Other personnel	N/A	
GIS Data Resources (Hazard areas, critical facilities, land use, building footprints, etc.)	Yes	Kings County Geographic Information System
Warning Systems/Services (Reverse 9-11, cable override, outdoor warning signals)	Yes	Office of Emergency Services
Other	N/A	

Source: HMPC 2022

Office of Emergency Services

The County's Office of Emergency Services (OES) is the County's emergency management agency, responsible for coordinating multi-agency responses to complex, large-scale emergencies, and disasters within Kings County. It is the responsibility of the County OES to develop and maintain the EOP, which serves as a guideline for who will do what, as well as when, with what resources, and by what authority--before, during, and immediately after an emergency. The County OES provides dedicated staff responsible for managing the County Emergency Operations Center (EOC) and developing and implementing training and exercise programs designed to coincide with the processes and procedures within the EOP.

The OES is the conduit for information and resource coordination between the State of California and the local governments of Kings County (the Kings Operational Area), as defined in California's Standardized Emergency Management System (SEMS). The Kings Operational Area includes all the political subdivisions of the County.

Kings County Fire Prevention Bureau

Kings County Fire Department protects approximately 153,000 residents. The Fire Department responds to an approximate 1,392 square-mile region through a combination of 10 stations and one headquarters office with 88 full-time employees. The Department's goal is to serve communities with the best in fire protection and offer a professional and dedicated response when citizens of Kings County call for help. Kings County Fire Department primarily serves the rural areas of the County and provides contractual services to the cities of Avenal and Corcoran. Kings County Fire Department responds to over 5,100 calls annually, averaging nearly 14 calls daily. Calls include structure, vehicle, wildland and grass fires, medical aids, traffic accidents, hazardous materials incidents and various public assistance calls.

Hanford Fire Department

The Hanford Fire Department consists of three stations staffed with paid professional firefighters. Each station is staffed with a Captain, who runs the station for their assigned shift; an Engineer, who is responsible for the safe operations and maintaining all apparatus; and a Firefighter, who operates and maintains the equipment. Together they make up the station crew that routinely responds to mitigate emergencies and events.

Kings County Public Works Department - Engineering

The County Engineer processes community development projects including land divisions, records of survey, County Right-of-Way (ROW) encroachment permits, and provides recommendations on zoning permits. The County Surveyor reviews land division proposals and community development applications. The division assists the public and county offices including the Clerk/Recorder's Office. In addition, the County Engineer provides support for traffic engineering, roadway and bridge design, project management, and contract preparation/administration for various road and building projects. The County Engineer also provides engineering support for the Waste Management Authority and administers the Solid Waste Ordinance. The County Engineer maintains engineering records on assessment districts, right-of-way, and County owned property.

Kings County Community Development Agency

The County's Planning Division keeps the County's General Plan on file. The Planning Division contains various commissions and committees, including Agricultural Advisory Committee, Local Assessment Committee, Planning Commission/Advisory Agency and Water Commission. The Planning Division also is



responsible for the GIS/Mapping system. The Building Division implements the County’s building ordinance, well ordinance, and flood damage prevention ordinance.

KC Alert

By opting into the Kings County emergency mass notification system, citizens will be informed before, during, and after incidents that could impact their safety. During hazard events, Kings County OES will launch a mass notification system that notifies registered users of important emergency information pertaining to severe weather, police and fire emergencies, and public health crises.

2.8.4 Fiscal Mitigation Capabilities

Table 2-9 identifies financial tools or resources that the County could potentially use to help fund mitigation activities.

Table 2-9 Kings County Financial Capabilities

FINANCIAL RESOURCES	ACCESSIBLE/ ELIGIBLE TO USE	COMMENTS/HAS THIS BEEN USED FOR MITIGATION IN THE PAST?
Authority to levy taxes for specific purposes	Yes	Has not been used. Must be approved by voters.
California Disaster Assistance Act	Yes	The County was awarded \$95 million in May 2023 to assist undocumented residents suffering from hardships and damages from the 2023 floods.
California Rapid Response Fund	Yes	The County was allotted funds from the Rapid Response Fund to provide disaster recovery services to mixed-status and undocumented families that were not eligible for FEMA individual assistance after the 2023 flooding events.
Capital improvements project funding	Yes	No.
Community Development Block Grants	Yes	Each year Kings County may apply under both the General Allocation and Economic Development components of the CDBG program. Potential projects under General Allocation include housing acquisition, housing rehabilitation, new construction, public works and community facilities. Potential projects under Economic Development include business loans, infrastructure grants, micro enterprise assistance, and other types of loans and grants for businesses. Projects funded with CDBG allocations must carry out at least one of three National Objectives as follows: benefit to low to moderate income persons, elimination of slums and blight, or meeting urgent community development needs. The Planning and Community Development Department also administers the Kings Urban County CDBG and Emergency Solutions Grant (ESG) funds.
Federal Grant Programs (HMGP)	Yes	HMGP funding has been used to update the County Hazard Mitigation Plan. Various departments in Kings County are eligible and will remain eligible for HMA BRIC funding that focuses on risk reduction and funding of public infrastructure projects that increase the County’s resilience to disasters. The County is eligible for HMA FMA funding that funds projects that reduce or eliminate the risk of repetitive flood damage to buildings insured by the NFIP. The County is also eligible for Homeland Security Preparedness Technical Assistance Program funding. This funding source builds



FINANCIAL RESOURCES	ACCESSIBLE/ ELIGIBLE TO USE	COMMENTS/HAS THIS BEEN USED FOR MITIGATION IN THE PAST?
		preparedness technical assistance activities in support of the four homeland security mission areas related to prevention, protection, response, and recovery.
Fees for water, sewer, gas, or electric services, new development	Yes	Has not been used. Services provided through cities or districts and levied through property assessments.
FEMA's Public Assistance Program	Yes	The County received post-flood funding from the Public Assistance Program in 2011 to repair roads, bridges, and public buildings, as well as for debris removal and protective measures. In 2020, the County received several rounds of funding from the Section 406 Public Assistance (PA) Program for protective measures resulting from the COVID-19 pandemic. In 2023, the County received additional funding from the PA Program for post-flood assistance.
Incur debt through general obligation bonds	Yes	No.
Incur debt through private activities	Yes	Has not been used. Do not have any in place.
Incur debt through special tax bonds	Yes	Has not been used. Must be approved by two-thirds voters.

Source: HMPC 2022-2023

2.8.5 Other Mitigation Programs and Partnerships

Table 2-10 below summarizes some of the mitigation partnerships and education or outreach capabilities available to Kings County.

Table 2-10 Kings County Education and Outreach Capabilities

EDUCATION & OUTREACH	YES/NO	COMMENTS
Local Citizen Groups That Communicate Hazard Risks	Yes	See below.
Firewise USA	No	There are currently no Firewise USA communities in the County.
StormReady	No	The County and all the participating are not StormReady communities.
Other		

Source: HMPC 2023

American Red Cross: The American Red Cross identified several capability enhancements through collaboration with the County, cities, and fire departments of Kings County. Programs such as outreach campaigns for preparedness education, continuing shelter inspections, and updating existing points of contact for shelter sites. These efforts will improve the American Red Cross' ability to conduct mitigation, preparedness, and response efforts in Kings County.

Dam Owners and Operators Coordination: Kings County coordinates with numerous dam owners and operators, including owners upstream of the County. Coordination involves partnerships with federal, state, and local officials, agency engineers, emergency managers, emergency preparedness coordinators, dam owners and operators, and property owners near areas that can be potentially affected by dam incidents. Key agencies within the County's partnership include the FEMA's National Dam Safety Program (NDSP), US Army Corps of Engineers (USACE), Bureau of Reclamation, California Division of Safety of Dams (DSOD), and other companies who own low-hazard dams in the County.



Given there is a range of mitigation actions that can be taken to reduce the risk of dam incidents and the effects of dam failure, the County has an ongoing partnership with key dam owners and operators to ensure each agency is aware of each other's actions and to coordinate them effectively, recognizing that working together maximizes risk reduction. As a result, many of these dam owners and operators were invited as stakeholders to inform and support the update of the County's MJHMP. Information on these dam owners and operators is shown in the Table 2-11 below.

Table 2-11 Kings County Dams of Concern Owner/Operator & Emergency Information

COUNTY	DAM NAME	DAM OWNER/OPERATOR	WHETHER OR NOT AN OFFICE, DEPARTMENT, OR AGENCY SUPPORTS DAM MITIGATION ACTIONS
Kings	Crescent Weir	Crescent Canal Company	Yes
	Empire Weir No.1	Empire Westside Irrigation District	Yes
	Empire Weir No.2	Tulare Lake Basin Water Storage District	Yes
	Island Weir	Laguna Irrigation District	Yes
	Last Chance Weir	Last Chance Water Ditch Company	Yes
	Lemoore Diversion Weir	Lemoore Canal and Irrigation Company	Yes
	Peoples Weir	Peoples Ditch Company	Yes
Tulare	Terminus	USACE - Sacramento District	Yes
	Schafer (Success Dam)	USACE - Sacramento District	Yes
Fresno	Pine Flat	USACE - Sacramento District	Yes

2.8.6 Opportunities for Enhancement

The 2022-2023 MJHMP update process provided the County and the participating jurisdictions an opportunity to review and update the capabilities currently in place to mitigate hazards. This also provided an opportunity to identify where capabilities could be improved or enhanced. Specific opportunities could include:

Safety Plan Update: Kings County has identified several plans which could be updated, specifically the County's General Plan Safety Element last updated in 2010. During the MJHMP update process, the County also indicated they will soon begin a formal update of the General Plan, including the Health and Safety Element. The County's Safety Element was last updated in 2010 to incorporate by reference the 2007 MJHMP.

The County will incorporate by reference the 2023 MJHMP into the County Safety Element to become eligible again for CDAA funding in the event of a disaster; this process also ensures further consistency of each plan and provides an opportunity to reference the MJHMP and enhance the capabilities for implementation of goals and objectives of each plan. The Safety Element currently covers several hazards that align with the MJHMP; it is only missing severe weather hazard: heavy rain, thunderstorm, hail, and lightning, the Safety Element does not discuss how these hazards disproportionately impact socially vulnerable populations and underserved communities. A comprehensive update of the Safety Element to include hazards and mitigation strategies addressed in the 2023 MJHMP update will ensure plan alignment and help the County integrate the related goals, policies, and mitigation actions into each plan.

Training: Provide training opportunities to help inform County staff on how best to integrate hazard information and mitigation projects into their departments. Kings County has identified a multi-year training and exercise plan which would cover all county departments. There are also several financial



resources that the County could leverage in the future for funding mitigation efforts. In particular, the 2022-2023 MJHMP provides eligibility for FEMA HMA grants. County OES staff can attend workshops and training regarding the grant application process and how to develop successful grant applications under the HMGP. Cal OES periodically hosts related training and webinars. Understanding the types of projects that can be funded, and the components of a successful application will enhance the chances of a successful grant award.

Hazard Mitigation Specialist: The County could appoint or assign someone in OES to oversee hazard mitigation grant opportunities. This could be a follow-up goal to the Cal OES grant training. This specialist can notify the County departments/agencies of upcoming grant cycles, and support tracking and completing the Notice of Intent (NOI) applications, grant applications, and final grant management reporting requirements. Related financial opportunities for enhancement should include applying for HMA grants, such as BRIC and HMGP funding as it becomes available. The Hazard Mitigation Specialist should also focus on funding mitigation actions that mitigate critical infrastructure, provide protection for those most vulnerable in the community, address climate change, public health hazards, extreme heat, flooding, other climate-related hazards and needed and related climate adaptation strategies.

HMGP Technical Assistance: HMGP funding opportunity provides support for communities to implement mitigation activities to reduce risk to life and property from natural hazards. In California, natural hazards include wildfire, earthquake, drought, extreme weather, flooding, and other impacts of climate change. Cal OES technical subject-matter experts are available to discuss project eligibility, benefit cost analysis, technical feasibility, and Environmental and Historic Preservation (EHP) requirements.

Firewise: Firewise USA® is a voluntary program that provides a framework to help neighbors get organized, find direction, and take action to increase the ignition resistance of their homes and community. The program is co-sponsored by the US Department of Agriculture (USDA) Forest Service, the U.S. Department of the Interior, and the National Association of State Foresters. As of June 2023, neither Kings County nor any of the incorporated jurisdictions in the County currently participate in the program. In order to become a Firewise USA site, a neighborhood, community, city, or county must form a board or committee comprised of residents and stakeholders, obtain a written wildfire risk assessment, develop and maintain an action plan, and contact the applicable state liaison to the program.

Storm Ready: Neither Kings County nor any of the incorporated jurisdictions in the County are certified as Storm Ready communities. The National Weather Service's (NWS) Storm Ready program helps local governments handle extreme weather and improve the timeliness and effectiveness of hazardous weather-related warnings for the public. To be officially Storm Ready, a community must:

- Establish a 24-hour warning point and EOC,
- Have more than one way to receive severe weather warnings and forecasts and to alert the public,
- Create a system that monitors weather conditions locally,
- Promote the importance of public readiness through community seminars, and
- Develop a formal hazardous weather plan, which includes training severe weather spotters and holding emergency exercises.

Community Rating System (CRS): An additional indicator of floodplain management capability is the active participation of local jurisdictions in the National Flood Insurance Program's (NFIP) Community Rating System (CRS). The CRS is an incentive-based program that encourages counties and municipalities to undertake defined flood mitigation activities that go beyond the minimum requirements of the NFIP, adding extra local measures to protect from flooding. All 18 creditable CRS mitigation activities are assigned a range of point values. As points are accumulated and reach identified thresholds, communities can apply for an improved CRS class. Class ratings, which run from 10 to 1, are tied to flood insurance premium reductions. As class ratings improve (decrease), the percent reduction in flood insurance premiums for NFIP policyholders in that community increases. These potential discounts in flood insurance premiums through CRS are summarized in Table 2-12 below.

As of June 2023, neither Kings County nor any of the other incorporated jurisdictions in the County participate in the CRS. Should the other jurisdictions and Kings County decide to join the CRS, it would be an opportunity for the enhancement of existing mitigation capabilities and help make flood insurance more affordable in the future.



Table 2-12 CRS Premium Discounts

CLASS	DISCOUNT	CLASS	DISCOUNT
1	45%	6	20%
2	40%	7	15%
3	35%	8	10%
4	30%	9	5%
5	25%	10	--

SFHA (Zones A, AE, A1-A30, V, V1-V30, AO, and AH): Discount varies depending on class. SHFA (Zones A99, AR/A, AR/AE, AR/A1-A30, AR/AH, and AR/AO): 10% discount for Classes 1-6; 5% discount for Classes 7-9. Non-SFHA (Zones B, C, X, D): 10% discount for Classes 1-6; 5% discount for Classes 7-9. In determining CRS premium discount, all AR and A99 Zones are treated as non-SFHAs.

Source: FEMA CRS Coordinators Manual



3 PLANNING PROCESS

Requirement §201.6(b) and §201.6(c)(1):

An open public involvement process is essential to the development of an effective plan. In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process shall include:

- (1) *An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval;*
- (2) *An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia, and other private and non-profit interests to be involved in the planning process; and*
- (3) *Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.*

[The plan shall document] the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.

3.1 BACKGROUND ON MITIGATION PLANNING IN KINGS COUNTY

The primary purpose of the Kings County MJHMP update is to reduce or eliminate long-term risk to people and property from natural hazards and their effects on the Kings County planning area. Kings County recognized the need and importance of a MJHMP and initiated its development in 2012 after receiving a grant award from FEMA. The County also qualified for Prepare CA, a program that covers the HMGP State match.

The plan underwent a comprehensive update in 2022-2023. The planning process followed during the update was similar to what was used in the original plan development, except that the 2022-2023 planning process did not have participation from the Santa Rose Rancheria/Tachi Yokut Tribe, who opted not to participate in the plan update. The 2022-2023 planning process also involved a multi-jurisdictional HMPC. WSP USA Environment & Infrastructure Solutions, Inc. (WSP) was procured to assist with the update in 2022 to 2023. The process is described further in this section and documented in Appendix B.

3.2 WHAT'S NEW IN THE PLAN UPDATE

DMA Requirement §201.6(d)(3):

A local jurisdiction must review and revise its plan to reflect changes in development, progress in local mitigation efforts, and changes in priorities, and resubmit it for approval within 5 years in order to continue to be eligible for mitigation project grant funding.

The updated MJHMP complies with the latest FEMA guidance and California OES guidelines for LHMPs, specifically FEMA's 2022 Local Mitigation Planning Policy Guide. The update followed the requirements noted in the DMA of 2000 and FEMA's 2023 Local Hazard Mitigation Planning Handbook.

This MJHMP update involved a comprehensive review and update of each section of the 2012 MJHMP, the integration of a detailed risk assessment, and an assessment of the progress in evaluating, monitoring, and implementing the mitigation strategy outlined in the initial plan. The planning process provided an opportunity to review jurisdictional priorities related to hazard significance and mitigation actions, and revisions were made where applicable to the base plan. Another change was the development of specific annexes for the municipalities of Avenal, Corcoran, Hanford, and Lemoore; jurisdictional information was integrated throughout the 2012 MJHMP.

While each jurisdiction participated in the previous MJHMP updates, representatives from multiple departments representing a Local Planning Team (LPT) for each of the participating jurisdictions were engaged and involved in the development of the 2023 MJHMP through multiple planning workshops and numerous one-on-one work sessions. Only the information and data still valid from the 2012 plan were carried forward as applicable to this MJHMP update. Also, given the four municipalities' participation, significant new hazard information was integrated into the base plan and into each annex. The 2012 MJHMP assessed nine hazards, including drought, earthquake, extreme heat, flood, fog, freeze, landslide, tornado, and wildfire. The 2023 MJHMP update assessed 15 natural, human-caused, and human-health hazards, including agricultural pests and disease; cyber-attack; dam incidents; drought; earthquake; extreme temperatures: freeze and heat, flooding; land subsidence; landslide; public health



hazards: epidemic/pandemic; severe weather: dense fog; severe weather: heavy rain, thunderstorms, hail, and lightning; severe weather: high wind/tornado; and wildfire. As a result, there are 10 new countywide mitigation actions, plus nine jurisdiction-specific mitigation actions that were developed for the four annexes for a total of 19 new mitigation actions.

3.2.1 Plan Section Review and Analysis – 2022-2023 Update

During the 2022-2023 MJHMP update process, the HMPC updated each of the sections of the previously approved plan to include new information. WSP developed a summary of each section in the plan and guided the HMPC through the elements that needed updating during the kick-off webinar in October 2022. This included analyzing each section using FEMA’s Local Mitigation Planning Handbook (2023) and the Local Mitigation Planning Policy Guide (2022; Effective April 19, 2023) to ensure that the plan met the latest requirements. In addition, for this plan update, the FEMA Local Mitigation Plan Review Tool was not provided with the approval of the 2012 version of this plan; therefore, it was not referenced. Therefore, previous 2012 FEMA comments on opportunities for improvement were not considered and addressed in the 2022-2023 update. Instead, the County focused the update on meeting the new requirements outlined in the Local Mitigation Planning Policy Guide.

The HMPC and WSP determined that nearly every section of the plan would need revision to align the plan with the latest FEMA planning guidance and requirements and recent California legislation. A detailed summary of the changes in this plan update is highlighted in Table 3-1 below.

Table 3-1 Kings County Hazard Mitigation Plan Update Highlights

PLAN SECTION	SUMMARY OF PLAN REVIEW, ANALYSIS, AND UPDATES
1. Introduction	<ul style="list-style-type: none"> Revised to reflect updated plan and 2022-2023 planning process
2. County Profile and Capability Assessment	<ul style="list-style-type: none"> Updated with recent census data and current economy description Updated land use and development trends
3. Planning Process	<ul style="list-style-type: none"> Described and documented the planning process for the 2022-2023 update, including coordination among agencies Described how the 2012 plan was integrated with/into other planning efforts, like the County Safety Element and EOP Removed 2012 planning process information Described changes to jurisdictional participation Described 2022-2023 update public participation process Summarized the results of the Public Survey Described the HMPC Described the 10-step process followed for the update
4. Hazard Identification and Risk Assessment and Consequence Analysis	<ul style="list-style-type: none"> Climate change information has been added to each hazard profile Updated list of disaster declarations to include recent data Updated tables to include recent National Center for Environmental Information data Updated past occurrences for each hazard to include recent data 2012 Plan Vulnerability Assessment is now included with the Risk Assessment and an integrated Vulnerability Assessment section organized by hazard The Vulnerability Assessment considers the impacts on the following assets: (1) people; (2) property; (3) critical facilities and lifelines; (4) economy; (5) cultural, historic and natural resources; (6) development trends. The Vulnerability Assessment includes a discussion on impacts on population assets, including socially vulnerable populations and underserved communities. Updated critical facilities identified from the 2012 plan; the critical facilities database now includes 646 facilities organized by Community Lifeline Updated growth and development trends to include recent Census and local data sources from the County’s Public Works Department and Community Development Agency, as well as the general plans and most up-to-date housing elements of the participating jurisdictions Updated historic and cultural resources using local/state/national sources Updated property values for vulnerability and exposure analysis, using updated building information based on assessor’s data; in order to estimate the participating



PLAN SECTION	SUMMARY OF PLAN REVIEW, ANALYSIS, AND UPDATES
	<p>jurisdictions” future development and growth areas’ vulnerability against hazards, the exposure analysis also includes properties that are located in Sphere of Influences (SOIs) in order to assess risk in future development areas; SOI exposure analysis was not carried out in the 2012 plan</p> <ul style="list-style-type: none"> • Updated estimate flood losses using the latest Digital Flood Insurance Rate Map (DFIRM) and assessor’s data • Updated National Flood Insurance Program (NFIP) data and Repetitive Loss structure data from the previous plan • Incorporated new hazard loss estimates since 2012, as applicable • Used updated GIS inventory data to assess wildfire threat to the County • Updated HAZUS-MH Level I earthquake vulnerability analysis data with two scenarios performed (one probabilistic scenario and one ShakeMap scenario) • Seven additional hazards that were not included in the 2012 plan are added and profiled, which include: Agricultural Pests and Disease, Cyber Attack, Dam Incidents, Land Subsidence, Public Health Hazards: Epidemic/Pandemic, Severe Weather: Heavy Rain, Thunderstorms, Hail, and Lightning, Severe Weather: High Wind • Updated information regarding specific vulnerabilities to hazards, including maps and tables of specific assets at risk, specific critical facilities at risk, and specific populations at risk • Revisited and updated hazard significance/priority levels • Updated maps in the plan where appropriate
5. Mitigation Strategy	<ul style="list-style-type: none"> • Indicated what actions have been implemented that may reduce previously identified vulnerabilities • Updated mitigation strategy based on the results of the updated risk assessment, consequence analysis, completed mitigation actions, and implementation obstacles and opportunities since the completion of the 2012 plan • Reviewed and updated goals and objectives based on HMPC input • Included updated information on how actions are prioritized, or how priorities changed • Reviewed mitigation actions from the 2012 plan and developed a status report for each • Identified if actions have been completed, deleted, or deferred/carried forward • Updated priorities on actions • Summarized successful implementation to highlight the implementation of actions identified in the 2012 plan • Identified new mitigation actions proposed by the HMPC with more detail on implementation than the previous plan • Nine new countywide mitigation actions were added to address existing hazards and new hazards • Eight new jurisdiction-specific mitigation actions were included in the annexes • Developed a summary table of mitigation actions for all participating jurisdictions
6. Plan Review, Evaluation, and Implementation	<ul style="list-style-type: none"> • Reviewed and updated procedures for monitoring, evaluating, and updating the plan • Revised to reflect current methods • Updated the system for monitoring the progress of mitigation activities by identifying additional criteria for plan monitoring and maintenance • Added a process for incorporation of the MJHMP update into existing mechanisms • Clarified future public involvement activities and tied them to the Outreach Strategy in Appendix F
7. Plan Adoption	<ul style="list-style-type: none"> • Updated to reflect the 2022-2023 adoption process
Jurisdictional Annexes	<ul style="list-style-type: none"> • Updated previous participants’ annexes with recent Census data • Updated past event history and hazard loss estimates • Added new maps and updated old maps as needed • Updated mitigation actions from 2012 and added new mitigation actions • Integrated the following annexes: <ul style="list-style-type: none"> A City of Avenal B City of Corcoran C City of Hanford D City of Lemoore
Appendices	<ul style="list-style-type: none"> • Appendix A: Planning Committee • Appendix B: Planning Process Documentation



PLAN SECTION	SUMMARY OF PLAN REVIEW, ANALYSIS, AND UPDATES
	<ul style="list-style-type: none"> • Appendix C: Approval and Adoption • Appendix D: Mitigation Categories and Alternatives • Appendix E: Annual Progress Meeting Agenda and Report Template • Appendix F: Outreach Strategy • Appendix G: Public Survey Results

3.3 MULTI-JURISDICTIONAL PARTICIPATION

In the 2022-2023 MJHMP update, the following jurisdictions participated in the planning process and will be adopting the updated plan following FEMA approval. All incorporated cities in the County participated in this planning process.

Lead Jurisdiction:

- Kings County

Municipalities:

- City of Avenal
- City of Corcoran
- City of Hanford
- City of Lemoore

The DMA planning regulations and guidance stress that each local government seeking FEMA approval of their mitigation plan must participate in the planning effort in the following ways:

- Participate in the process as part of the HMPC
- Detail areas within the planning area where the risk differs from that facing the entire area
- Identify potential mitigation actions
- Formally adopt the plan

For the Kings County planning area’s HMPC, “participation” meant the following:

- Providing facilities for meetings
- Attending and participating in the HMPC meetings
- Completing and returning WSP Plan Update Guide worksheets
- Collecting and providing other requested data (as available)
- Identifying mitigation actions for the plan
- Reviewing and providing comments on plan drafts and jurisdictional annexes
- Informing the public, local officials, and other interested parties about the planning process and providing the opportunity for them to comment on the plan
- Coordinating, and participating in the public input process
- Coordinating the formal adoption of the plan by the governing boards

The County and all jurisdictions with annexes to this plan and seeking FEMA approval met all these participation requirements. In most cases, one or more representatives for each jurisdiction attended the multi-jurisdictional webinars/meetings and workshops described in Table 3-4 and brought together the HMPC to help collect data, identify mitigation actions and implementation strategies, and review and provide data on annex drafts. In some cases, the jurisdictions had limited capacity to attend or had conflicts with HMPC meetings; in these cases, alternative forms of communication were used to provide input into the process, and in some instances, a representative from a different jurisdiction’s department attended the HMPC meeting on behalf of the main representative. County OES and WSP staff also met via virtual meetings with individual jurisdictions, such as the cities of Avenal, Corcoran, Hanford, and Lemoore to gather additional input on the planning process, existing capabilities, and new mitigation actions. Appendix B provides additional information and documentation of the planning process.

3.4 PLANNING PROCESS

WSP established the planning process for the Kings County MJHMP using the DMA planning requirements and FEMA’s associated guidance. The original FEMA planning guidance is structured around a four-phase process:

1. Organize Resources



2. Assess Risks
3. Develop the Mitigation Plan
4. Implement the Plan and Monitor the Progress

Into this process, WSP integrated a more detailed 10-step planning process used for FEMA's CRS and FMA programs. Thus, the modified 10-step process used for this plan meets the requirements of major grant programs including FEMA's HMGP, BRIC program, FMA Program, and flood control projects authorized by the U.S. Army Corps of Engineers.

In May 2023, FEMA released the Local Mitigation Planning Handbook that has become the official guide for local governments, including special districts, to develop, update and implement local mitigation plans. While the requirements under Section 201.6 have not changed, the Handbook guides local governments on developing or updating hazard mitigation plans to meet the requirements under the CFR Title 44 - Emergency Management and Assistance Section 201.6, Local Mitigation Plans for FEMA approval and eligibility to apply for FEMA HMA grant programs. It also offers practical approaches, tools, worksheets, and local mitigation planning examples for how communities can engage in effective planning to reduce long-term risk from natural hazards and disasters. The Handbook complements and liberally references the Local Mitigation Plan Review Guide (October 1, 2011), which is the official guidance for federal and state officials responsible for reviewing local mitigation plans in a fair and consistent manner.

Table 3-2 shows how the modified 10-step process fits into FEMA's four-phase process, and how these elements correspond to the tasks in the FEMA Mitigation Planning Handbook.

Table 3-2 Kings County Hazard Mitigation Planning Process

FEMA'S 4-PHASE DMA PROCESS	MODIFIED 10-STEP CRS PROCESS	FEMA LOCAL MITIGATION PLANNING HANDBOOK TASKS
1) Organize Resources		
201.6(c)(1)	1) Organize the Planning Effort	1: Determine the planning area and resources
201.6(b)(1)	2) Involve the Public	2: Build the planning team - 44 CFR 201.6 (C)(1)
201.6(b)(2) and (3)	3) Coordinate with Other Departments and Agencies	3: Create an outreach strategy - 44 CFR 201.6(b)(1)
		4: Review community capabilities - 44 CFR 201.6 (b)(2)&(3)
2) Assess Risks		
201.6(c)(2)(i)	4) Identify the Hazards	5: Conduct a risk assessment - 44 CFR 201.6 (C)(2)(i) 44 CFR 201.6(C)(2)(ii)&(iii)
201.6(c)(2)(ii)	5) Assess the Risks	
3) Develop the Mitigation Plan		
201.6(c)(3)(i)	6) Set Goals	6: Develop a mitigation strategy - 44 CFR 201.6(c)(3)(i); 44 CFR 201(c)(3)(ii) and 44 CFR 201.6(c)(3)(iii)
201.6(c)(3)(ii)	7) Review Possible Activities	
201.6(c)(3)(iii)	8) Draft an Action Plan	
4) Implement the Plan and Monitor Progress		
201.6(c)(5)	9) Adopt the Plan	7: Review and adopt the plan
201.6(c)(4)	10) Implement, Evaluate, and Revise the Plan	8: Keep the plan current
		9: Create a safe and resilient community - 44 CFR 201.6(c)(4)

3.4.1 Phase 1: Organize Resources

Planning Step 1: Organize the Planning Effort

The 2022-2023 planning process and update of the 2012 MJHMP had its roots in the development of a HMGP application. The County OES wrote the grant and in the process solicited commitments from local government jurisdictions that were interested in participating. With an understanding of the number of



jurisdictions and their commitment to participate, the HMGP application was approved and awarded to the County in 2021.

WSP worked with the County to get organized for the plan update. Organizational efforts were initiated with the County and participating jurisdictions in September 2022 to inform and educate the plan participants of the purpose and need for updating the countywide hazard mitigation plan. An initial meeting between WSP and County OES was held to discuss the organizational aspects of this plan update process. Invitations to the kick-off meeting for this plan update were extended to key County departments, the four incorporated communities, and representatives from special districts for the County and municipalities, as well as to other federal, state, and local stakeholders that might have an interest in participating in the planning process. Representatives from participating jurisdictions and HMPC members of the 2012 plan were used as a starting point for the invite list, with additional invitations extended as appropriate throughout the planning process. The list of initial invitees is included in Appendix A.

Representatives from the following County and municipal departments participated in the HMPC and the development of the plan update; these representatives are listed in Table 3-3. A list of specific HMPC representatives is included in Appendix A. Other local, state, federal, and agencies and stakeholders invited to participate in the HMPC are discussed under Planning Step 3.

Table 3-3 List of HMPC Participants for 2021-2022 MJHMP Update

NAME	TITLE	JURISDICTION
Abraham Valencia	Emergency Services Manager	County of Kings
Brionne Jackson	Public Health Emergency Planner	County of Kings
Chief William Lynch	Fire Chief	County of Kings
Chuck Kinney	Community Development Director	County of Kings
Supervisor Joe Neves	County Supervisor	County of Kings
Jimmy Hook	Ag Commissioner	County of Kings
Todd Barlow	Superintendent of Schools	County of Kings
Alex Torres	Risk Manager	Santa Rosa Rancheria Tribe
Greg Gatzga	City Manager	Corcoran
Chief Reuben Shortnacy	Police Chief	Corcoran
Chief Michael Kendall	Police Chief	Lemoore
Michelle Speer	Assistant City Manager	Lemoore
Chief Bruce German	Fire Chief	Lemoore
Chief Steve Pendergrass	Fire Chief	Hanford
Mario Cifuentez	City Manager	Hanford
Chief Parker Sever	Police Chief	Hanford
Antony Lopez	City Manager	Avenal
Chief Robert Nevarez	Police Chief	Avenal
Kelly Vandergon	Supervisor of Field Engineering and Planning	Westland Water District
Dennis Mills	General Manager	Kings County Water District
Gabriela Rodriguez	Executive Director	Kings Partnership
Leticia Hinojosa	Coordinated Entry Manager	Kings Tulare Homeless Alliance
Dennis Mills	General Manager	Mid-Kings River Groundwater Sustainability Agency
Silvia Montoya	Office Coordinator	Sequoia Riverlands Trust
Dominic Tyburski	Director of Public Works	County of Kings

Source: HMPC 2022-2023

Planning Meetings

The planning process officially began with a kick-off meeting on September 16, 2022, which involved County OES staff and the WSP team. On October 31, 2022, the HMPC convened for the first time. The first HMPC meeting covered the scope of work and an introduction to the DMA requirements. Participants were provided with a Plan Update Guide, which included electronic worksheets to facilitate the



collection of information necessary to support the update of the plan. Using FEMA guidance, WSP designed these worksheets to capture information on past hazard events, identify hazards of concern to each of the participating jurisdictions, quantify values at risk to identified hazards, inventory existing capabilities, and record possible mitigation actions. A copy of WSP's Plan Update Guide for this project is included in Appendix B. The County and each jurisdiction seeking FEMA approval of their plan completed and returned the worksheets in either the Plan Update Guide or shared their most recent local hazard mitigation plan for incorporation into the plan document.

During the planning process, the HMPC communicated through in-person meetings, virtual meetings, email, telephone conversations. The first three HMPC meetings were held virtually while the last HMPC meeting was held in person. Draft documents were emailed so that the HMPC members could easily access and review them. The County's OES staff and HMPC formally met four times during the planning period (September 16, 2022 – June 8, 2023). The purposes of these meetings are described in Table 3-4. The planning consultant sent meeting handouts ahead of time to the participating jurisdictions to review and provide feedback before or at the meeting. In addition to these meetings, some jurisdictions held meetings with subcommittees to discuss the needed input for the plan update. The Emergency Services Coordinator of the County's OES and WSP worked with the jurisdictions individually to obtain necessary information and input into the planning process. This was done through direct emails from the planning consultant and follow-up phone conversations with the consultant and County OES where necessary.

Table 3-4 Summary of Planning Meetings

MEETING NUMBER	MEETING TOPIC	DATE	LOCATION
1	Kick-off/HMPC Roles and Expectations (Kings County OES staff only)	September 16, 2022	Virtual/Webinar - Microsoft Teams
2	Overview of DMA 2000 & Hazard Mitigation Planning Process / Review 2012 MJHMP	October 31, 2022	Virtual/Webinar - Microsoft Teams
3	Hazard Identification and Risk Assessment	March 9, 2023	Virtual/Webinar - Microsoft Teams
4	Mitigation Strategy and Goals Update / New Mitigation Actions Brainstorm	June 8, 2023	In-Person Workshop

Source: WSP 2023

Internal Kick-off Meeting – On September 16, 2022, Kings County's OES staff and the WSP's team convened and discussed the project background and the overall MJHMP update process, as well as the scope of work and project goals. County OES staff and WSP's team also discussed the hazards that need to be profiled in this MJHMP update based on initial conversations with the County during an internal kick-off meeting. In addition, County OES staff and WSP's team reviewed potential additional HMPC members, partners, and stakeholders. Moreover, the outreach plan needed for the MJHMP update and GIS data needs were also discussed during the kick-off meeting.

HMPC Meeting #1 – Overview of DMA 2000 & Hazard Mitigation Planning Process

On October 31, 2022, the HMPC convened to discuss the process for completing the update of this plan. This first HMPC meeting was attended by twenty-one (21) representatives. The HMPC consisted of a mix of county departments, local governments, special districts, and stakeholders. A complete list of those in attendance at the first HMPC meeting can be found in the meeting minutes in Appendix B.

Following introductions, WSP reviewed the DMA requirements and the suggested planning process to follow to meet the requirements as well as the expected schedule of the process for the MJHMP update. The roles of the HMPC and stakeholders were discussed including the participation requirements for the different roles.

During the first HMPC meeting, the HMPC validated the identified hazards within the 2012 plan, together with additional hazards that are added and profiled in this 2023 MJHMP update. The HMPC collaboratively prioritized the hazards to identify which are of most concern to the County. More details are included in Section 4: Hazard Identification and Risk Assessment.



The group also discussed other agencies that should be part of this planning process, as well as related planning efforts to be coordinated with and recent studies to be incorporated. Part of this discussion was also related to creating an outreach strategy to involve the public throughout the planning process. This outreach strategy is included in Appendix F. The first HMPC meeting ended with WSP sharing handouts to assist in the planning process. These handouts included the Plan Update Guide, which outlined data collection needs for each participating jurisdiction.

HMPC Meeting #2 –Risk Assessment and Mitigation Goal Refinement

On March 9, 2023, the HMPC convened virtually to discuss the results of the risk and vulnerability assessment. Fourteen (14) members of the HMPC were present for the discussion. WSP began the meeting with a presentation on the results of the risk assessment findings for natural hazards and public health hazards. The group went through each hazard together and discussed the results as well as shared any local insight to inform the HIRA update. Refer to the meeting summary in Appendix B for notes related to each hazard discussed.

Following the discussion on the results of the risk assessment findings, WSP explained this update process provides an opportunity to review the previous plan's goals to determine if they are still valid, and comprehensive, and reflect current priorities, and updated risk assessment. Inputs on mitigation goals and objectives were solicited via virtual polls. The group was also encouraged to share insights on the development of mitigation goals, objectives, and specific actions and projects.

WSP shared with HMPC that the online public survey had been opened. A link was shared with the HMPC to easily distribute by email and for posting on each of the participating jurisdiction's websites and MJHMP webpages. This was encouraged to promote engagement and input from the public and participating jurisdiction communities. The meeting ended with a review of the next steps and the planning process schedule.

HMPC Meeting #3 –Mitigation Strategy

The HMPC convened for an in-person workshop on June 8, 2022, with 27 people participating to update the plan's mitigation strategy. The group finalized the plan's goals and objectives (Step 6) and reviewed the progress made on the previous mitigation actions from the 2012 LHMP. The group then discussed the criteria for mitigation action selection and prioritization using a worksheet provided by WSP. The group reviewed each possible new mitigation action. Additional details were provided by the Planning Committee (Step 7). This was followed by a group activity to elicit the development of new mitigation actions followed by another group activity to prioritize (rank) the top mitigation actions. WSP then briefly explained the plan implementation and maintenance process. The meeting ended with a review of the next steps and planning process schedule.

Planning Step 2: Involve the Public

Involving the public assures support from the community at large and is a required part of the planning process per the DMA 2000. Early discussions with Kings County and input received in the first HMPC meeting established the initial plan for public involvement in the plan update. Public outreach began with the development of an online public survey that was shared with each participating jurisdiction to post on their websites and disseminate via email to local stakeholders. The public outreach activities described here were conducted with participation from and on behalf of all jurisdictions participating in this plan.

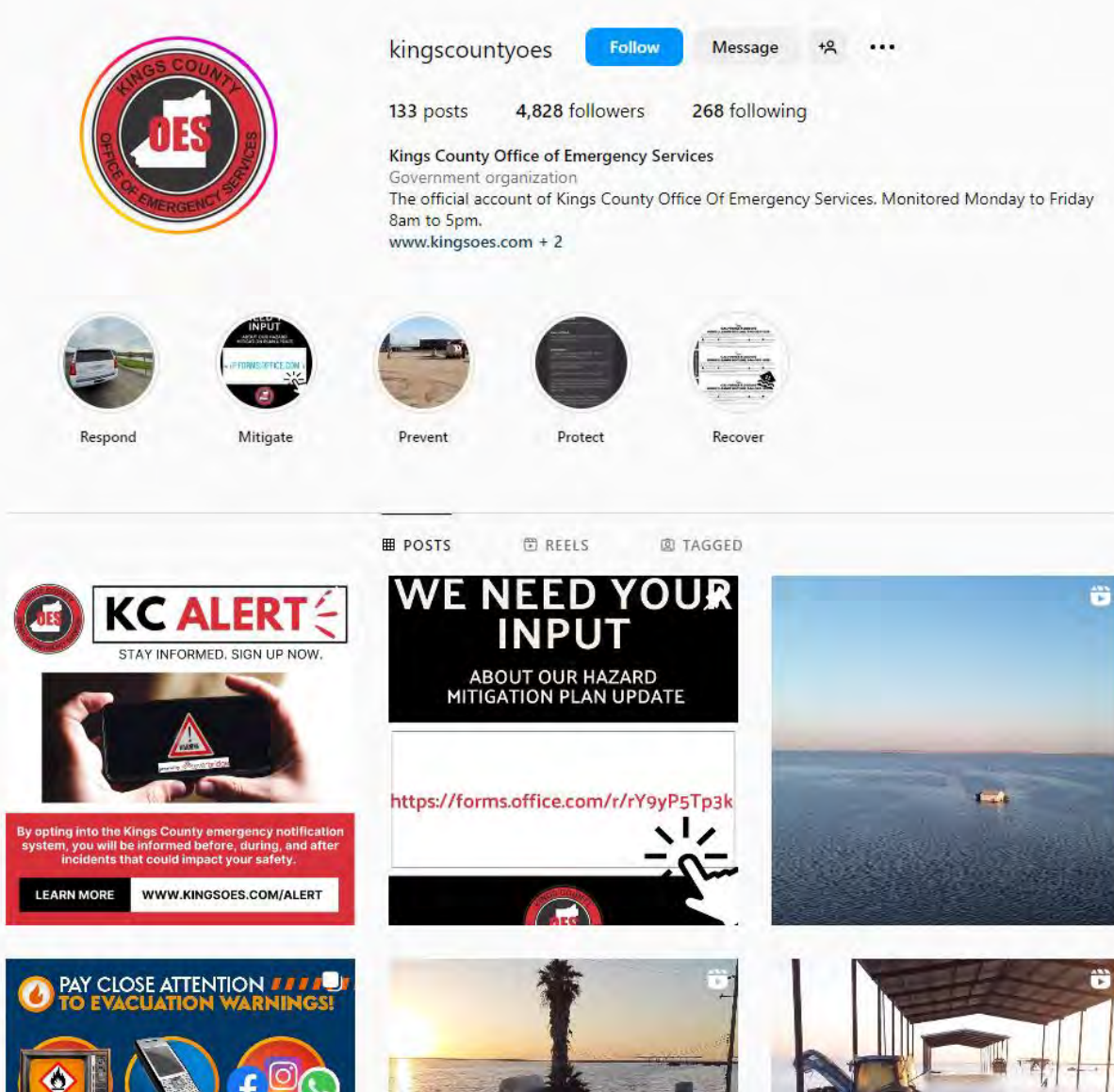
During the planning process, three public workshops were held to inform the public of the purpose of the DMA and the hazard mitigation planning process for the Kings County planning area. At each workshop, the public in attendance was provided links to electronic comment forms to leave any comments related to the County's MJHMP as well as provide their contact information if they would like to receive ongoing updates and information related to the planning process.

At the first HMPC meeting, the HMPC discussed additional options for public involvement and agreed to an approach using established public information mechanisms and resources within the community. These additional options are outlined in the Outreach Strategy. Additional public involvement activities included press releases, website postings, flyer development and distribution, three public workshops (two were held during the plan development and one was held during public review), and the collection of public comments on the draft plan. Details on the outreach methods and approach are also summarized in the Outreach Strategy included in Appendix F.

Plan Facts

The WSP team provided the County with a Webpage Background document that included MJHMP update information for the MJHMP Webpage. Some of this information was incorporated on the County's OES Instagram page. Figure 3-1 includes a screenshot of the County's OES Instagram page. As shown in the screenshot, the second post is the County's OES seeking participation in the MJHMP online public survey. Most of the information regarding the 2022-2023 MJHMP update is provided on the County's OES Instagram page.

Figure 3-1 Kings County's Instagram Page



Source: Kings County 2023

Online Public Survey

During the plan update's initial drafting stage, an online and bi-lingual public survey (in English and Spanish) was used to gather public input for the HMPC. The survey provided an opportunity for public input during the planning process before the finalization of the plan update. The survey gathered public feedback on concerns about hazards and input on mitigation strategies to reduce their impacts. The survey was released on December 21, 2022, and closed on June 30, 2023 (6-month period). The usual input period for the public survey is one month, but the public survey was left open for an extended



period to allow the County and participating jurisdictions to circulate additional advertisements during public meetings and outreach events to seek more input from the public. The HMPC provided links to the public survey by distributing it using social media, email, and posting the link on websites. Screenshots from the County’s OES Webpage and social media channels can be found in Appendix B.

A total of 92 people filled out the survey online; all participants completed the English version of the survey even though a Spanish version with release materials translated in Spanish were circulated. Results showed that the public perceives the most significant hazards to be drought, dense fog, extreme temperatures, agricultural pests and disease, and power outages. This information was used when developing mitigation actions, particularly those around issues and concerns on Public Safety Power Shutoff (PSPS) events, drought impacts, and dense fog hazards. The public input was also used to prioritize and rank hazards in the final plan. Figure 3-2 shows the results of a question from the survey, which asked the public’s opinion on what mitigation actions should have the highest priority in the updated MJHMP. Water conservation, generators for critical facilities, public education/awareness, aquifer recharge, and improve reliability of communication systems were cited as the most popular mitigation actions. This information was shared with the HMPC during the update of the mitigation strategy and used as a starting point for developing individual mitigation actions.

Figure 3-2 Example of Results from the Online Public Survey



Source: WSP 2022



Additional public comments left in the survey included feedback expressing concern about the COVID-19 pandemic, drought, PSPS shutoffs, and difficulties posed by dense fog in the region. These comments were shared with the HMPC and considered when prioritizing and ranking hazards, as well as determining mitigation actions. A summary of the survey data and documentation of the public feedback can be found in Appendix F.

Online Public Workshops

Three public workshops were held during the planning process to inform the public, receive input to integrate into the plan update and keep the public updated on the progress being made in the planning process. Two workshops were held virtually as webinars followed by question-and-answer sessions (Q&A) and one workshop was held in person during the plan development.

The first workshop took place on February 9, 2023, through Microsoft Teams. The workshop introduced the public to the hazard mitigation planning process for the County's Plan Update and County and WSP staff answered any questions and gather public input to be integrated into the plan update. In addition, it was an opportunity to help staff identify risks, hazards, and vulnerabilities from the public's perspective. The second workshop took place on February 16, 2023, at the Multi-Purpose Room in the County Administrative Building. Members of the public were able to submit comments and ask questions verbally or via the chat function. The HMPC also received various questions and comments from the workshop on the public's priority hazards in their community and possible mitigation ideas to reduce hazard risk. Figure 3-3 is copy of the first and second public workshop press release.

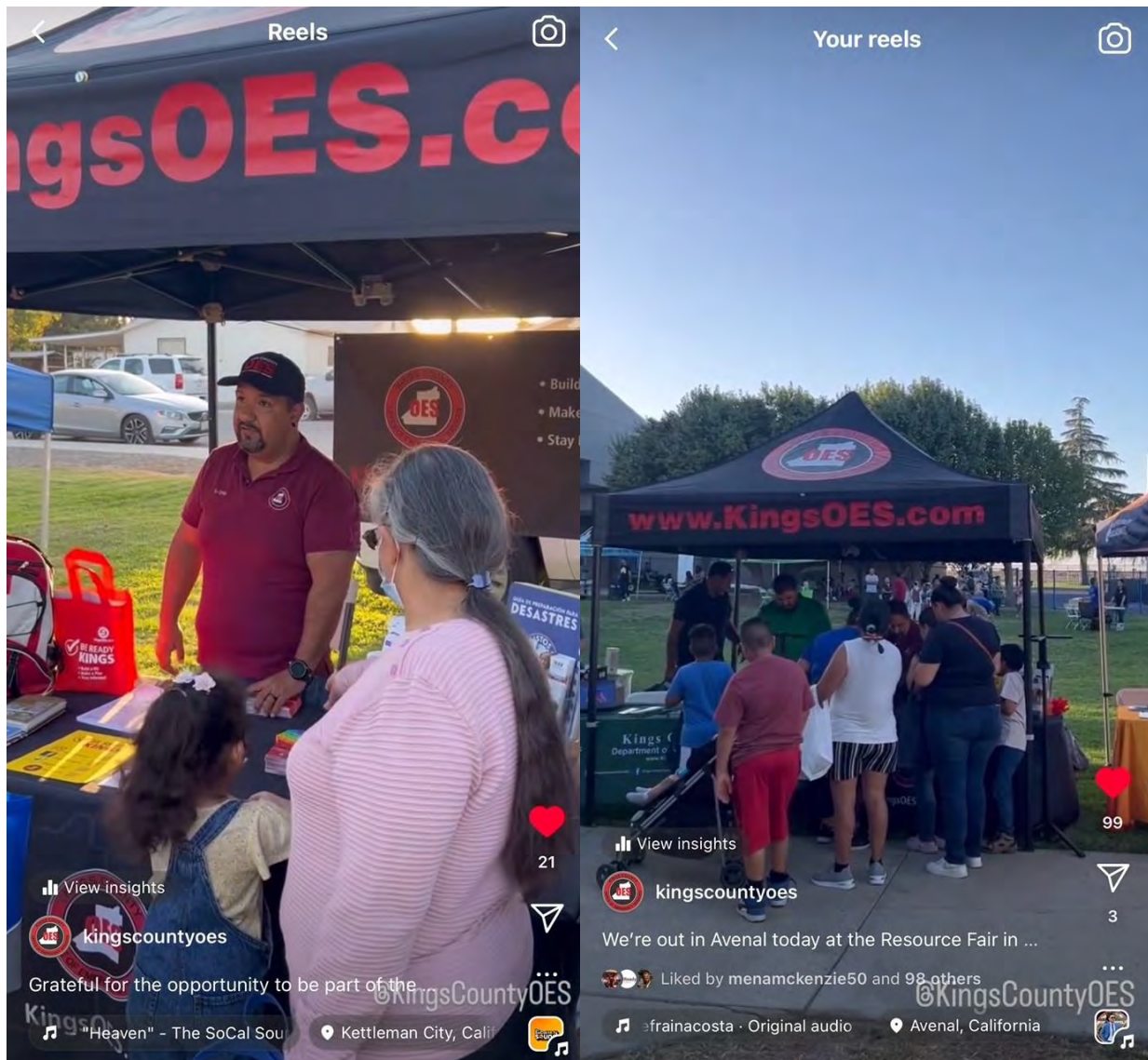
Table Events

Kings County OES did outreach at several local events, as documented in Table 3-5 and Figure 3-3.

Table 3-5 List of Table Events

DATE	LOCATION	EVENT NAME
9/19/23	Tulare, CA	Listos California Disaster Ready Summit
9/28/23	Avenal, CA	Confia Resource Fair
10/03/23	Hanford, CA	Hanford's National Night out
10/10/23	Corcoran, CA	Corcoran National Night Out
10/12/23	Lemoore, CA	Kings County Public Health Fair
10/19/23	Kettleman City, CA	Kings County's Public Safety Event

Figure 3-3 Screenshots from Instagram Reels Showing Table Events



Vulnerable / At-Risk Population Outreach

The Kings Tulare Homeless Alliance (Alliance) was invited to participate in the HMPC through email blasts and through invitations to comment on the draft plan. The Alliance is a consortium of partners that includes homeless service providers, advocacy groups, government agencies, and homeless individuals who are working together to address the housing in the County and support service needs of the homeless in this region of the San Joaquin Valley. According to the Alliance’s 2023 Point in Time Report, there was a 16% increase of individuals experiencing homelessness in Kings and Tulare Counties between 2022 and 2023 (from 1,235 individuals to 1,470 individuals).¹ The Planning Team recognized that this organization possesses extensive connections with the unhoused population, making it a valuable source of crucial insights for shaping the MJHMP update to ensure equitable support for all community members.

The Kings Partnership for Prevention was invited to participate in the HMPC through email blast and invitations to comment on the draft plan. The Kings Partnership, a non-profit organization, collaborates with businesses, service providers, and the community to prioritize prevention and spotlight progress and prosperity for residents. With a focus on health, family, education, and financial stability, the organization

¹ <https://www.kthomelessalliance.org/pit>



aims to build a thriving community. Initiatives spearheaded by the Alliance include substance use response groups, mental health task forces, and financial and stability taskforces. The Planning Team felt that this organization has broad reach across demographic groups and would be able to provide valuable information that would allow this MJHMP access to a broad range of relevant interests.


The Office of Senator Hurtado Senate District 16 (SD 16) covers Kern, Kings, San Bernardino, and Tulare Counties. These areas exhibit rates of adults without high school diplomas and percentages of single-parent households that are nearly double the California state averages. Additionally, their median household and family incomes, as well as per capita incomes, range from three-quarters to half of the state's averages (ACS 2022 5-Year Estimates Data Profiles). The Office of Senator Hurtado was the only organization focusing on supporting vulnerable populations that chose to participate in the drafting of this plan. The Office of Senator Hurtado staff joined the HMPC and provided valuable information during HMPC meetings and workshops.

While the online public survey was distributed in English and Spanish, only English responses were recorded. While links to the survey were distributed across Kings County platforms and email listservs, engagement may have been better if the link was published across strictly Spanish speaking platforms as well. Another effective strategy may involve posting a Spanish press release with a QR code at grocery stores such as El Rey Supermercado, Super Mercado Leon, or Del Valle to gather additional input during the next plan update.

Enhancements can also be made in reaching out to organizations and agencies supporting vulnerable or at-risk populations. This improvement may involve broadening the scope of organizations, both in terms of quantity and diversity; for example, by considering inclusion of those aiding elderly individuals or supporting children in foster care. Furthermore, adopting a more personalized approach, such as one-on-one outreach through personal emails or phone calls or request for focused listening sessions with the organizations, may prove to be a more effective method for encouraging engagement.



Figure 3-4 Press Release for the First and Second Public Workshops



KINGS COUNTY
OFFICE OF EMERGENCY SERVICES

280 North Campus Drive • Hanford, California 93230
Phone: 559-852-2883 • Fax: 559-582-8261

FOR IMMEDIATE RELEASE

Contact: KingsCounty.OES@co.kings.ca.us
Phone: (559) 852-2883
Date of Release: February 3, 2023

**KINGS COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN
PUBLIC WORKSHOP**

HANFORD - Kings County in collaboration with the cities of Avenal, Corcoran, Hanford, and Lemoore is updating the 2012 Local Hazard Mitigation Plan (LHMP). This planning process involves the development of hazard mitigation strategies designed to reduce risks and vulnerabilities posed by natural, man-made, and human health hazards. The plan must be updated and approved by the Federal Emergency Management Agency (FEMA) every five years to keep it current and to maintain eligibility for federal and state mitigation grant assistance. The plan is currently being updated as a Multi-Jurisdictional Hazard Mitigation Plan (MJHMP) in coordination with the four participating jurisdictions and under the guidance of a Hazard Mitigation Planning Committee (HMPC).

The people who live and work in Kings County are vulnerable to a range of natural hazards, including drought, climate change, earthquakes, extreme heat, flooding, severe weather, and wildfires. The MJHMP will provide the County with valuable tools to identify risks and mitigate hazards through future project-specific actions. Hazard mitigation is an investment in the County's future safety, sustainability, and resiliency and results in less vulnerable conditions through pre- and post-disaster actions, projects, and adaptation strategies. The implementation of hazard mitigation actions means building stronger, safer, and smarter communities that will be able to withstand future impacts and damages.

Residents, organizations, businesses, and interested stakeholders are encouraged to contribute to the planning process. Broad public participation is an essential strategy for developing an updated and multi-jurisdictional plan that will be effective, supported by County residents, and ultimately implemented. The Public Workshops will be an opportunity to get involved and learn more about the planning process and the hazards the County, participating jurisdictions, and HMPC plan to assess in the MJHMP. Information on how to participate is provided below:

- Virtual Public Workshop – Thursday February 9, 2023, 6:30 – 8:00 PM
 - The meeting can be accessed virtually here: <https://bit.ly/3l6McXI>
 - [Click here to join the meeting, \(866\) 670-1764,,625914223#, Password: 625 914 223#](https://bit.ly/3l6McXI)
- In-Person Public Workshop – Thursday February 16, 2023, 6:30 – 8:00 PM
 - Emergency Operations Center, 330 Campus Dr. Hanford, CA 93230,
- A Public Survey is available in English and Spanish: <https://forms.office.com/r/rY9vP5Tp3k>.

Questions may be directed to Abraham Valencia, Kings County OES Manager by calling (559) 852-2883.

Visit us online at www.KingsOES.com



Geographic Information System (GIS) Data Collection

During the 2022-2023 plan update, the WSP team prepared a GIS data list to request the GIS data needed for the plan update. The County's GIS staff was then able to compile and provide the WSP team with access to the County's GIS data.

During the project kick-off meeting the County and WSP team discussed the MJHMP update process and schedule, plan review, data, and GIS hazard mapping for the Plan update. In attendance were representatives from the County's Community Development Agency, which is in charge of managing the County's GIS data, Public Works, and the Assessor's Office. The County's GIS Manager reviewed a GIS Data Needs List provided by WSP. The GIS team proceeded to discuss the details of the GIS mapping requirements, such as including inventory and valuation information for public infrastructure for each of the five identified hazards: earthquake, landslide, dam failure, flood, and wildfire. The team also discussed GIS data sources for potential new hazards. Other related comprehensive inventory information that was discussed included: roads, traffic signals, drainage facilities, lighting facilities, bridges, and airports.

Most of the inventory and risk data can be layered to provide aggregation of asset values within specifically identified risk areas. Additional hazard-specific data and layers were acquired and analyzed to quantify the geographic extent as well as the magnitude and severity of hazards for each of the five identified hazards that are assessed quantitatively: earthquake, landslide, dam failure, flood, and wildfire. Data sources include USACE, Department of Water Resources (DWR), Homeland Infrastructure Foundation-Level Data (HIFLD), National Inventory of Dams (NID), FEMA, California Department of Forestry and Fire Protection (CALFIRE), Fire and Resource Assessment Program (FRAP), Department of Conservation (DOC), and California Geological Survey (CGS). Additional GIS spatial data was integrated to assess agricultural pests and diseases (important farmland data from DOC) and severe weather data from NWS and NOAA.

During the HIRA process, to assess hazards' potential impacts on the County's critical facilities, a critical facilities GIS database was needed and then established. While building the critical facilities GIS database, each participating jurisdiction's assistance was requested to validate the critical facilities GIS data. There were two primary aspects of this: data completeness/correctness and alignment/classification with FEMA Lifelines framework. The County and four participating jurisdictions each reviewed the critical facility database and were encouraged to edit descriptive attributes and add new point data for critical facilities. This process further engaged participating jurisdictions that saw the value of the MJHMP and long-term use and maintenance of the critical facility data moving forward. The result was an updated comprehensive critical facilities database with 646 facilities.

Risk Assessment and GIS Methodology

The GIS methodology for the risk assessment is summarized below.

- Identify Structures—buildings, infrastructure, critical facilities, structures that house elderly or disabled and transportation systems—both for present assets and those planned—categorized by FEMA Lifelines.
- Address Repetitive Loss Properties for flood hazard.
- Estimate Potential Property Losses. The development of the MJHMP includes an inventory of assets from each publicly governed jurisdiction, coordinated by Kings County, and an assessment of all the hazard risks: agricultural pest and disease, cyber threats, dam incidents, drought, earthquakes, extreme temperatures, flood, land subsidence, landslide, public health hazards, severe weather hazards and wildfires.
- The asset inventory provided by the County Assessor's Office database includes individual parcels, address points, various lands use codes, and various taxing agencies or districts.
- County property (building asset) inventory and valuation—for both present assets and those planned (within jurisdictions' SOI).
- Each property within this County property inventory has its Assessor's Parcel Number (APN), assessor's use code, government jurisdiction, and valuation data. Property value includes both improved value and estimated content value.
- County property type includes agricultural, commercial, exempt, industrial, multi-family residential, multi-use, and residential.
- From Census data, the number of people that would be affected by each natural hazard is calculated, which is the product of the number of properties that would be affected and the average household size.
- During an update to the risk assessment, local jurisdictions must consider current and expected future vulnerability to all hazards and integrate new hazard data such as flood studies. Local



jurisdictions were asked to incorporate replacement costs for vulnerable buildings and impacts of population growth or loss in vulnerable areas. WSP staff integrated this information, if available from each jurisdiction after the critical facilities assessment was complete. This process helped the jurisdictions understand what facilities were vulnerable to hazards and gather replacement value for these facilities.

- For hazards that are not assessed quantitatively, the vulnerability assessment includes qualitative analysis that addresses the hazard's impact on property, people, critical facilities and infrastructure, economy, natural and cultural resources, and future development.

Public Review Period

The County OES department circulated the Public Review Draft MJHMP for a 20-day period from October 19, 2023, through November 7, 2023. The Public Review Draft was released for comment and made available for download via the County OES website. The Public Review Draft MJHMP was advertised through social media, mass emailing, and an advertisement through the media mechanisms noted previously. An electronic comment form through Microsoft Forms was provided with the draft plan. However, no comments were received on the Public Review Draft MJHMP. As such, the majority of the public input was compiled from the public survey and tabling events.

3.4.2 Planning Step 3: Coordinate with Other Departments and Agencies

Early in the planning process, state and local agencies and organizations were invited to participate as stakeholders in the process through email. Stakeholders include local and regional agencies involved in hazard mitigation activities or those beyond the County and local government that have the authority to regulate development. Kings County worked with the WSP team to come up with a list of potential HMPC participants and stakeholders. Stakeholders could participate in various ways, either by contributing input at HMPC meetings, being aware of planning activities through an email group, providing information to support the effort, or reviewing and commenting on the draft plan. Based on their involvement in other hazard mitigation planning efforts, and status in the County, representatives from the following agencies and organizations were invited to participate as stakeholders in the process by email; an asterisk indicates they participated in HMPC meetings. More specifics on stakeholder agency representatives can be found in Appendix A and documentation in Appendix B.



Table 3-6 All Stakeholders Given An Opportunity To Be Involved In The Planning Process

STAKEHOLDER GROUP	STAKHOLDER AGENCY	OPPORTUNITY			
		INVITED TO PARTICIPATE IN HMPC	INVITED TO COMMENT ON DRAFT	SHARED MEETING SUMMARY MATERIALS	INCLUDED IN SOCIAL MEDIA BLASTS
Agencies involved in hazard mitigation activities	CAL FIRE	✓	✓		
	California DSOD	✓			
	California DWR*	✓	✓	✓	✓
	California Natural Resource Agency	✓			
	California OES*	✓	✓		
	County Agricultural Commissioner*	✓	✓	✓	✓
	FEMA Region IX	✓			
	Kings County Department of Agriculture*	✓	✓	✓	✓
	Kings County OES*	✓	✓		
	Kings County Public Works*	✓	✓	✓	✓
	Kings County Public Health Department*	✓	✓	✓	✓
	NOAA/ NWS	✓	✓		
	NWS Hanford*	✓	✓	✓	✓
	Kings County Office of Education	✓	✓	✓	
	Kings County Water District*	✓	✓	✓	
Mid-Kings River Groundwater Sustainability Agency*	✓	✓	✓		
California Department of Parks and Recreation	✓				
Agencies that have the authority to regulate development:	City of Hanford Fire Department*	✓	✓	✓	✓
	Kings County Board of Supervisors*	✓	✓	✓	✓
	Kings County Community Development Agency*	✓	✓	✓	✓
	Kings County Fire Department*	✓	✓	✓	✓
	Lemoore Police Department*	✓	✓	✓	✓



STAKEHOLDER GROUP	STAKHOLDER AGENCY	OPPORTUNITY			
		INVITED TO PARTICIPATE IN HMPC	INVITED TO COMMENT ON DRAFT	SHARED MEETING SUMMARY MATERIALS	INCLUDED IN SOCIAL MEDIA BLASTS
	USACE	✓			
Neighboring Communities	Tulare County Emergency Management	✓	✓		✓
	Fresno County Emergency Management	✓	✓		✓
	Monterey County Emergency Management	✓	✓		✓
	Kern County Emergency Management	✓	✓		✓
Representatives of business academia, and other private organizations:	Southern California Edison	✓			
	Cross Creek Flood Control District*	✓	✓	✓	
	Kings County Farm Bureau*	✓	✓	✓	✓
	Kings River Conservation District*	✓	✓	✓	✓
	Sequoia Riverlands Trust	✓	✓	✓	✓
	PG&E	✓			
Representatives that provide support to underserved communities	Westland Water District*	✓			
	Office of Senator Hurtado SD 16*	✓	✓	✓	✓
	Kings Partnership	✓	✓	✓	✓
	Kings Tulare Homeless Alliance	✓	✓	✓	✓



Federal, State, and Local Agencies

- California Department of Fire Protection and Forestry
- California Department of Parks and Recreation
- California DSOD
- California DWR*
- California Natural Resource Agency
- California OES*
- City of Hanford Fire Department*
- County Agricultural Commissioner*
- FEMA Region IX
- Kings County Board of Supervisors*
- Kings County Community Development Agency*
- Kings County Department of Agriculture*
- Kings County Fire Department*
- Kings County OES*
- Kings County Public Health Department*
- Kings County Public Works*
- Lemoore Police Department*
- National Oceanic Atmospheric Administration (NOAA)/National Weather Service
- NWS
- NWS Hanford*
- USACE

Businesses, Academia, Utility Providers, Dam Owners and Operators and Non-Profits

- Cross Creek Flood Control District*
- Kings County Farm Bureau*
- Kings County Office of Education
- Kings County Water District*
- Kings River Conservation District*
- Mid-Kings River Groundwater Sustainability Agency*
- PG&E
- Sequoia Riverlands Trust
- Southern California Edison
- Westland Water District*

Incorporation or Existing Plans and Other Information

The coordination and synchronization with other community planning mechanisms and efforts are vital to the success of this plan. To have a thorough evaluation of hazard mitigation practices already in place, appropriate planning procedures should also involve identifying and reviewing existing plans, policies, regulations, codes, tools, and other actions designed to reduce a community’s risk and vulnerability from natural hazards. Kings County uses a variety of mechanisms to guide growth and development. Integrating existing planning efforts, mitigation policies, and action strategies into this plan establishes a credible, comprehensive document that weaves the common threads of a community’s values together. The development and update of this plan involved a comprehensive review of existing plans, studies, reports, and initiatives from Kings County and each participating municipality that relate to hazards or hazard mitigation. A high-level summary of the key plans, studies and reports is summarized in Table 3-7 below. Information on how they informed the update is noted and incorporated where applicable.

Table 3-7 Summary of Review of Key Plans, Studies and Reports

PLAN, STUDY, REPORT NAME	HOW PLAN INFORMED LHMP
Kings County General Plan	The Kings County General Plan was adopted by the Board of Supervisors on January 26, 2010. The County proactively addresses hazards through the General Plan Health and Safety Element and references the MJHMP that was prepared in 2012. One representative from the HMPC is also working on initiating the County’s General Plan update, which would help ensure that



PLAN, STUDY, REPORT NAME	HOW PLAN INFORMED LHMP
	<p>both plans are integrated and contain mutually-reinforcing policies (please note this formal update process will not start before the finalization of the MJHMP). The General Plan and the 2023 MJHMP Update contain complementary actions to achieve the goal of hazard risk reduction. Future updates of the General Plan, including incorporation by reference of the 2023 MJHMP into the Health and Safety Element will continue to ensure consistency between both plans.</p> <p>The General Plan also includes the Housing Element chapter. The 2016-2024 Housing Element is incorporated into the 2023 MJHMP Update to identify development trends.</p>
<p>Kings County Emergency Operations Plan</p>	<p>The purpose of the County of Kings Emergency Operations Plan (EOP) and its Functional Annexes is to provide the basis for a coordinated response before, during and after a disaster incident. This plan is the principal guide for the County's response to, and management of real or potential emergencies and disasters occurring within its designated geographic boundaries.</p> <p>The 2015 Kings County Emergency Operations Plan (EOP) incorporates the FEMA Comprehensive Preparedness Guide (CPG) 101 v. 2.0 and the State of California Emergency Plan best practices. The plan is designed to be read, understood and exercised prior to an emergency and establishes the framework for implementation of the California Standardized Emergency Management System (SEMS) and the NIMS for the County. The County of Kings EOP is intended to facilitate multi-agency and multi-jurisdictional coordination, particularly between the County of Kings and its jurisdictions, as well as special districts, utilities, major businesses, the American Red Cross (ARC), community groups, state agencies, and the federal government. The County is in the process of initiating a formal update to the EOP in late 2023.</p>
<p>Kings County Code, Chapter 5 - Buildings and Structures</p>	<p>The Kings County Code, Chapter 5, provides minimum standards to safeguard life, health, property, and public welfare by regulating and controlling the design, construction, quality of materials, use and occupancy, location, and maintenance of all buildings and structures within the unincorporated areas of the County.</p> <p>This chapter of the County code includes building code, relocation permits, electrical code, and plumbing code.</p>
<p>Kings County Code, Chapter 16.50, Floodplain Management</p>	<p>The purpose of this Chapter is to promote public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas through specific provisions.</p> <p>This ordinance was used as a reference to assess County's mitigation capabilities and design mitigation actions and projects.</p>
<p>Kings County Code, Chapter 16.55, Fire Code</p>	<p>This chapter is enacted for the public need in the extinguishment of fires, and the preventing, eliminating, or minimizing fire hazards for the safety of life and property in the county.</p>
<p>Kings County 2012 MJHMP</p>	<p>The plan was reviewed to provide a basis for the current update.</p>
<p>Assessor for parcel data including Use Codes; assessed categories; and values; address points</p>	<p>Used for quantitative vulnerability assessment for hazards. Parcel information was integrated into each hazard's "Property" section in the vulnerability assessment.</p>
<p>Public Works for current infrastructure list (Bridges, Drainage, Street Lights, and Traffic Lights) and their geographic placement</p>	<p>Used to establish critical facilities GIS database.</p>
<p>GIS for numerous base map shapefiles such as cities, counties, parcels, rivers, and roads</p>	<p>Used as base maps and for establishing critical facilities GIS database.</p>



PLAN, STUDY, REPORT NAME	HOW PLAN INFORMED LHMP
FEMA Flood Insurance Rate Map	1% and 0.2% annual chance floodplain data was acquired to profile flood hazard and carry out the related vulnerability assessment.
USACE Comprehensive Study; DWR Awareness Floodplain Mapping project	USACE 100-year flood event layer and DWR best available maps in 200-year flood event layer were acquired to profile flood hazard and carry out the related vulnerability assessment.
FEMA Technical Bulletin 11-01 Crawlspace Construction for Buildings located in Special Flood Hazard Areas NFIP Interim Guidance	Provides guidance on crawlspace construction; used as a reference to design mitigation actions and projects.
NFIP	This program aims to reduce the impact of flooding on private and public structures by providing affordable insurance to property owners and by encouraging communities to adopt and enforce floodplain management regulations. These efforts help mitigate the effects of flooding on new and improved structures. NFIP data was incorporated into the vulnerability assessment for flood hazard.
NIMS	This system directs the creation of a comprehensive, national approach to incident management by federal, state, territorial, Tribal, and local responders and across all functional disciplines.
Federal Energy Regulatory Commission (FERC)	FERC is an independent agency that regulates interstate transmission of electricity, natural gas, and oil. FERC also reviews proposals to build liquefied natural gas (LNG) terminals and interstate natural gas pipelines as well as licensing hydropower projects and providing regulations for dams.
California Geological Survey, USGS	Data was acquired to profile and carry out vulnerability assessment for earthquake, land subsidence, and landslide hazards.
California Code of Regulations, Title 24, Part 9 (California Building Standards Code) (Fire Code)	CCR Title 24 governs the design and construction of all building occupancies and associated facilities and equipment throughout California and is also known as building standards. It contains requirements for the structural, mechanical, electrical, and plumbing systems, and requires measures for energy conservation, green design, construction and maintenance, fire and life safety, and accessibility. The code is used as a reference to design mitigation actions and projects.
Alquist-Priolo Earthquake Fault Zoning Act	The Alquist-Priolo Earthquake Fault Zoning Act's main purpose is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. Relevant data was acquired to profile earthquake hazard.
California Environmental Quality Act (CEQA)	CEQA is a California statute passed in 1970 (shortly after the United States Federal Government passed the National Environmental Policy Act (NEPA)), to institute statewide policy of environmental protection. The County will complete supporting CEQA documentation prior to board approval and adoption.
California Public Resources Code (PRC) Section 4291 – Structures in Fire Hazard Areas	This code provides direction for persons owning, leasing, controlling, operating, or maintaining any building or structure in, upon, or adjoining any mountainous area of forest-covered lands, brush-covered lands, or grass-covered lands, or any lands which are covered with flammable material. The code is used as a reference to design mitigation actions and projects.
Municipal General Plans (including Safety Elements, Land Use Elements, and Housing Elements)	Informed the municipal annexes and in some cases the community service district annexes on past hazard events, mitigation policies, combining designations and existing and projected development.
Kings County Flood Insurance Study	Reviewed for information on past floods and flood problems to inform risk assessment and consequence analysis (Section 4). Utilized digital flood insurance rate maps effective



PLAN, STUDY, REPORT NAME	HOW PLAN INFORMED LHMP
2018 State of California Multi-Hazard Mitigation Plan	Reviewed information on climate change and hazard assessment data to ensure consistency with this plan update. Reviewed list of hazards to inform risk assessment and consequence analysis (Section 4). Reviewed goals for consistency
CALFIRE and FRAP	Data was acquired to profile and carry out vulnerability assessment for wildfire hazard.
NOAA National Centers for Environmental Information-State Climate Summaries	Reviewed information on climate change to inform risk assessment and consequence analysis. Data was acquired to profile and carry out vulnerability assessment for severe weather hazard.
California DOF/U.S. Census Bureau, ACS, 2015-2019	Informed the background of the community including demographic trends and the calculation of population at risk.
USDA Risk Management Agency Crop Indemnity Reports, 2007-2020	Informed the adverse weather section vulnerability assessment on how crops have been impacted by weather events in the past. Also informed the Drought, Severe Weather and Agricultural Pests and Disease sections of the HIRA.
California Climate Adaptation Strategy, 2018 and California OES Contingency Plan for Excessive Heat Emergencies (2014)	Informed the Extreme Heat profile and climate change considerations in the risk assessment and consequence analysis.
All relevant plans, codes, and ordinances currently in place such as building codes, zoning ordinances, subdivision ordinances, special purpose ordinances, site plan review requirements, growth management ordinances, economic development plans, and emergency response plans were reviewed	Reviewed and used to profile and carry out vulnerability assessment for hazards. Used as references to design mitigation actions and projects.

In the process of preparing this 2023 MJHMP Update, many other existing plans, studies, reports, and technical information were evaluated or used as guidance. The HMPC for the development of the MJHMP Update included representatives who are charged with developing the Kings County General Plan and the Kings County EOP. The Planning Committee members work to ensure that local plans are integrated with the MJHMP and provide expertise for the integration of other local, state, and federal plans, codes, and regulations.

Other technical data, reports and studies were reviewed and considered, as appropriate, during the collection of data to support Planning Steps 4 and 5, which include hazard identification, vulnerability assessment, and capability assessment. Information from the following agencies and groups was reviewed in the development and update of this plan. Specific references relied on in the development of this plan are also sourced throughout the document as appropriate.

- CAL FIRE
- California Department of Parks and Recreation Office of Historic Preservation
- California Department of Transportation
- California Department of Public Health
- California Natural Resources Agency
- California DSOD
- California DWR
- California Geological Survey
- Kings County Agricultural Department
- Kings OES
- California Water Foundation
- FEMA
- NOAA National Climatic Data Center



- National Register of Historic Places
- Natural Resource Conservation Service
- NWS
- U.S. Fish and Wildlife Service
- U.S. Geological Survey
- Western Regional Climate Center
- Center for Western Weather and Water Extremes

Integration of 2012 Plan into Other Plans and Planning Mechanisms

The 2012 MJHMP was referenced in the County's 2015 EOP. However, the 2012 MJHMP was not specifically incorporated or referenced in any other County or municipal plans and planning mechanisms with the exception of the City of Hanford 2035 General Plan Safety Element Policy Document (Goal H1-H2 and Policies H1-H6). A process to do so with the 2023 MJHMP is outlined in Subsection 6.3.3. For example, the County's 2010 General Plan Health and Safety Element extensively referenced the County's 2007 MJHMP, but the current element does not reference the 2012 MJHMP. The 2023 MJHMP update can be incorporated into the Health and Safety Element when the County updates the element. There is a process noted in both Subsection 6.3.3 and corresponding mitigation actions in Subsection 5.3 that outline how the County and municipalities can sustain compliance under AB 2140, which recommends adoption by reference or incorporation of the MJHMP into the Safety Element of the General Plan. The County can also use the Health and Safety Element update process to address compliance with AB 747 and Senate Bill 99 related to evacuation route capacity and the identification of residential neighborhoods that do not have at least two ingress/egress routes.

3.4.3 Phase 2: Assess Risks

Planning Step 4: Identify the Hazards

WSP led the HMPC to review the list of hazards identified in the 2012 plan and document all the hazards that have, or could, impact the Kings County planning area, including documenting recent drought, flood, land subsidence, wildfire and severe storm events that were not included in the 2012 MJHMP. The Plan Update Guide worksheets were used to aid in determining hazards and vulnerabilities and where risk varies across the planning area. The profile of each of these hazards was then updated during the 2022-2023 process with information from the HMPC and additional sources. Web resources, existing reports and plans, and existing GIS layers were used to compile information about past hazard events and determine the location, previous occurrences, probability of future occurrences, and magnitude/severity of each hazard. GIS was used to display, analyze, and quantify hazards and vulnerabilities where data was permitted. The potential for climate change to affect the frequency and intensity of the hazards was summarized based on the latest available science, where applicable. A more detailed description of the HIRA process and the results are included in Section 4: Hazard Identification and Risk Assessment.

Planning Step 5: Assess the Risks

After updating the profiles of the hazards that could affect the County, the HMPC collected information to describe the likely impacts of future hazard events on the participating jurisdictions. This step included two parts: a vulnerability assessment and a capability assessment.

Vulnerability Assessment – Participating jurisdictions updated their assets at risk to natural hazards—overall and in identified hazard areas. These assets included the total number and value of structures; critical facilities and infrastructure; natural, historic, and cultural assets; and economic assets. The HMPC also analyzed development trends in hazard areas. The latest DFIRM was used to refine the estimated flood losses during the update, where available, for the NFIP participating communities.

Population at risk, specifically socially vulnerable populations and underserved communities were also assessed and calculated for dam incidents, earthquake, flood, landslide, and wildfire hazards. These populations include housing-burdened, low-income households, who may not have the resources to prepare for hazards, those with limited water access, who may be more vulnerable to interruptions in access due to hazard events, and those who rely upon electricity-dependent medical equipment.

Capability Assessment – The HMPC conducted a capability assessment update to review and document the planning area's current capabilities to mitigate risk and vulnerability from hazards. By collecting information about existing government programs, policies, regulations, ordinances, and emergency



plans, the HMPC can assess those activities and measures already in place that contribute to mitigating some of the risks and vulnerabilities identified. This information for the County is included in Section 6 and the respective jurisdictional annexes. This addressed FEMA planning task 4: Review community capabilities - 44 CFR 201.6 (b)(2) & (3).

Results of the risk assessment were presented, and comments were discussed at the second HMPC meeting in March 2023. A more detailed description of the risk assessment process and the results are included in Section 4: Hazard Identification and Risk Assessment.

3.4.4 Phase 3: Develop the Mitigation Plan

Planning Step 6: Set Goals

WSP facilitated a discussion session with the HMPC to review the 2012 MJHMP's goals and objectives. The HMPC discussed definitions and examples of goals, objectives, and actions and considered the goals of the 2023 Draft California SHMP and other relevant local plans when reviewing and revising the goals and objectives. The resulting updated goals and objectives are presented in Section 5: Mitigation Strategy. For the 2023 MJHMP, several goals were modified; no objectives specific were added.

Planning Step 7: Review Possible Activities

WSP facilitated a discussion at an HMPC meeting to review the alternatives for mitigating hazards. This included a group activity with the HMPC to identify a comprehensive range of mitigation actions for each identified hazard, and a group activity to select and rank mitigation actions using selection criteria. More specifics on the process and the results of this collaborative process are captured in Section 5: Mitigation Strategy.

As part of the review of mitigation options long-term climate change adaptation strategies were also discussed. HMPC members were encouraged to incorporate climate change adaptation measures into the mitigation strategy of their respective jurisdictions by utilizing resources and guidance available on the Cal-Adapt website and the California Adaptation Planning Guide (APG).

Planning Step 8: Draft an Action Plan

Based on input from the HMPC regarding the draft risk assessment and the goals and activities identified in Planning Steps 6 and 7, WSP produced a complete first draft of the plan. This complete Administrative Draft MJHMP was shared electronically with the HMPC for review and comment. Other agencies were invited to comment on this draft, specifically surrounding counties. HMPC and agency comments were integrated into the second draft, which was advertised and distributed to collect public input and comments. Neighboring county emergency managers and interested stakeholders identified under Step 3 were also solicited to provide comments on the draft plan during the public review period; no comments were received. WSP integrated comments and issues from the public, as appropriate, along with additional internal review comments and produced a final draft for the California OES and FEMA Region IX to review and approve, contingent upon final adoption by the governing boards of each participating jurisdiction.

3.4.5 Phase 4: Implement the Plan and Monitor Progress

Planning Step 9: Adopt the Plan

In order to secure buy-in and officially implement the plan, the plan was adopted by the governing boards of each participating jurisdiction on the dates included in the adoption resolutions in Appendix C. The final plan will be incorporated by reference in the Safety Element of the County General Plan and result in the County's eligibility for Assembly Bill (AB) 2140. This adoption makes the jurisdiction eligible for consideration for part or all its local costs on eligible public assistance to be provided by State share funding through the CDDA.

Planning Step 10: Implement, Evaluate, and Revise the Plan

The true worth of any mitigation plan is in the effectiveness of its implementation. Up to this point in the plan update process, all the HMPC's efforts have been directed at researching data, coordinating input from participating entities, and updating and developing appropriate mitigation actions. Each recommended action includes key descriptors, such as hazard(s) addressed, lead manager and priority, to



help initiate implementation. An overall implementation strategy is described in Section 6: Plan Adoption, Implementation, and Maintenance.

Finally, there are numerous organizations within the Kings County planning area whose goals and interests' interface with hazard mitigation. Coordination with these other planning efforts, as addressed in Planning Step 3, is paramount to the ongoing success of this plan and mitigation in Kings County and is addressed further in Section 6. A plan update and maintenance schedule and a strategy for continued public involvement are also included in Section 6.

Implementation and Maintenance Process: 2012 MJHMP

The 2012 MJHMP included a process for implementation and maintenance which was generally followed, with some variation. Implementation of the plan including the status of mitigation actions is captured in Section 5 and the jurisdictional annexes. In general, the County and participating jurisdictions have made progress in the implementation of the plan. Successes of note are detailed in the mitigation strategy in Section 5. An updated implementation and maintenance section can be referenced in Section 6.



4 HAZARD IDENTIFICATION AND RISK ASSESSMENT

Requirement §201.6(c)(2)(i):

[The risk assessment shall include a] description of the type, location and extent of all natural hazards that can affect the jurisdiction. The plan shall include information on previous occurrences of hazard events and on the probability of future hazard events.

Requirement §201.6(c)(2)(ii):

[The risk assessment shall include a] description of the jurisdiction's vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description shall include an overall summary of each hazard and its impact on the community. All plans approved after October 1, 2008, must also address NFIP insured structures that have been repetitively damaged by floods. The plan should describe vulnerability in terms of:

- *§201.6(c)(2)(ii)(A): The types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas;*
- *§201.6(c)(2)(ii)(B): An estimate of the potential dollar losses to vulnerable structures identified in ... this section and a description of the methodology used to prepare the estimate.*
- *§201.6(c)(2)(ii)(C): Providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.*

Risk to natural hazards is a combination of hazard, vulnerability, and capability. This section of the Multi-Jurisdictional Hazard Mitigation Plan (MJHMP) will look at both hazards and vulnerability. The risk assessment process identifies and profiles relevant hazards and assesses the exposure to lives, property, and infrastructure to these hazards. The goal of the risk assessment table is to estimate the potential losses in Kings County (County) from a hazard event. This process also allows communities in the County to better understand their potential risk to natural hazards and provides a foundation for developing and prioritizing mitigation actions to reduce the risks from future hazard events in Kings County. These mitigation actions can then be designed to reduce damage from natural disasters through increased preparedness and focus resources towards assets that have the greatest vulnerability.

In the early meetings, the County and the Hazard Mitigation Planning Committee (HMPC) reviewed data from the following sources on hazards affecting the County, those sources were: the federal and state disaster declaration history, the State of California Hazard Mitigation Plan (SHMP) (2018) and the Draft SHMP Update (2023), the previous Kings County MJHMP (2012), the Health Safety Element of the Kings County 2035 General Plan (2010), and interviews of staff that live and work in the County.

During the 1st HMPC Meeting (October 31, 2022), the HMPC reviewed the broad set of hazards evaluated in the relevant local and regional hazard planning documents, including the SHMP. Based on this crosswalk process with the other relevant planning documents, the HMPC agreed on the significant natural, human-caused, and human-health hazards in the County that should be evaluated in the risk assessment. The HMPC agreed to address technological or human-caused hazards but not transportation accidents and hazardous material incidents, which are addressed in emergency operations plans for the county and participating jurisdictions. This crosswalk process provided the basis for prioritizing the hazards profiled and evaluated in the risk assessment. The hazards contained in this planning effort are in alphabetical order and listed below. Hazards noted in italics (and with an asterisk) are hazards not previously profiled in the 2012 Kings Count MJHMP; five additional hazards were addressed in the MJHMP update, including two natural hazards, two human-caused hazards, and one public health hazard.

- Agricultural Pests and Disease*
- Cyber-Attack*
- Dam Incidents
- Drought
- Earthquake
- Extreme Temperatures: Freeze and Extreme Heat
- Flood
- Land Subsidence*
- Landslide
- Public Health Hazards: Pandemics/Epidemics*
- Severe Weather: General



- Severe Weather: Dense Fog
- Severe Weather: Heavy Rain, Thunderstorms, Hail, and Lightning*
- Severe Weather: High Wind/Tornado
- Wildfire

4.1 NON-PROFILED HAZARDS

The HMPC reviewed data and discussed several other hazards, which were eliminated from further discussion because they rarely occur and/or their impacts are not significant. The list below details these hazards and provides a brief explanation for their omission from further profiling.

- Avalanche - Snowfall is extremely rare to nonexistent across the County planning area.
- Coastal Erosion/Storm - Coastal hazards do not occur due to distance from coasts and ocean.
- Hurricane - Hazard does not occur due to distance from ocean.
- Terrorism/Civil Unrest/Human-Caused Threats - While terrorism and civil unrest are threats to the County, this risk is best addressed in other plans.
- Tsunami - Hazard does not occur due to distance from ocean.
- Severe Winter Storm - Very little to no snowfall recorded throughout the County; temperatures fall below 32 degrees Fahrenheit only a few days of the year.
- Volcano - The U.S. Geological Survey (USGS) does not include the County in their map of areas identified as subject to hazards from potential volcano eruptions in California. Also, the volcanoes in California near the Mono-Inyo Craters Volcano Chain and the Lassen Volcanic Center are not close to the County and have a limited chance of eruption. There have also not been declared disasters in the County associated with volcanic activity.

The remainder of this section begins with an overview of the history of declared disasters in the County followed by the profiles of identified hazards.

4.2 DISASTER DECLARATION HISTORY

One method to identify hazards is to look at the events that have triggered federal and/or state disaster declarations that included the County. The County received 20 federal and state disaster declarations since 1950, the majority of which consisted of flood and severe storm events. Table 4-1 lists the disaster declarations where the County was designated federal and/or state disaster declarations from 1950 to the present. There have been 21 State declarations and 15 federal declarations.

Table 4-1 Kings County Disaster Declaration History 1950-present

HAZARD TYPE	DISASTER NAME	DISASTER NUMBER	STATE DECLARATION	FEDERAL DECLARATION
Flood	1969 Storms	OEP DR-253	01/29/69	01/26/69
Flood	Heavy Snow Runoff	OEP DR-2270	01/28/69	08/15/69
Severe Storm, Freeze	Freeze / Severe Weather	OEP DR-3086	04/17/72	Not declared
Drought	1976 Drought	EM-3023-CA	02/13/76	01/20/77
Severe Storms	Winter '78 Storms	DR-547	02/27/78	02/15/78
Flood	Winter Storms	DR-682	03/03/83	02/09/83
Severe Storm	Severe Winter Storms	DR-1044	01/17/95	01/13/95
Severe Storm, Flood	Late Winter Storms	DR-1046	01/05/95	01/10/95
Flood	January 1997 Floods	W-145-97	01/31/97	Not declared
Flood	El Nino	W-169-98	02/13/98	Not declared
Freeze	Freeze	DR-1267	02/09/99	02/09/99
Freeze	Severe Freeze	DR-1689	3/13/2007	3/13/07
Severe Storm	08 January Storms	OES 2008-01	1/2008	Not declared
Drought	Central Valley Drought	OES 2008-03	06/12/08	Not declared



HAZARD TYPE	DISASTER NAME	DISASTER NUMBER	STATE DECLARATION	FEDERAL DECLARATION
Flood	December 2010 Statewide Storms	DR-1952 OES 2010-17	12/21/10	01/26/11
Flood	Severe Winter Storms	DR-4308-CA	04/01/2017	04/01/17
Biological	Statewide Covid-19	EM-3428-CA	03/13/2020	03/13/2020
Biological	Covid-19 Pandemic	DR-4482-CA	03/20/2020	03/22/20
Biological	Statewide Monkeypox	NR22-119	09/04/2022	Not declared
Flood	Severe Winter Storms	EM-3591-CA DR-4683-CA	01/24/2023	01/09/23
Flood	Severe Winter Storms	EM-3592-CA, DR-4683-CA	03/10/23	03/09/23

Source: Kings OEM, Cal EMA and FEMA

The majority of declarations and all but two federal disaster declarations were declared for severe storms and flooding. These occurred twice in 1969, once each in 1978 and 1983, and twice in 1995 and again in 2010-2011. A federal disaster declaration for freeze in February was declared in 1999 and in 2007. The remaining declarations were for a state declaration for drought in 1976 and another in 2008.

The federal government may also issue a disaster declaration through the U.S. Department of Agriculture (USDA) and/or the Small Business Administration (SBA), as well as through the Federal Emergency Management Agency (FEMA). The quantity and types of damage are the determining factors. A USDA declaration makes all qualified farm operators in the designated areas eligible for low-interest emergency loans from the USDA's Farm Service Agency. As part of an agreement with the USDA, the SBA offers low interest loans for eligible businesses that suffered economic losses in declared and contiguous counties. The USDA declarations are listed in Table 4-2 since the last plan update in 2012.

Table 4-2 USDA Agricultural Declarations Since 2012 Plan Update

USDA DECLARATION	APPROVAL DATE	DESIGNATION NUMBER
Drought	2/27/2013	S3491
Drought	3/13/2013	S3497
Drought	4/10/2013	S3504
Drought	1/15/2014	S3626
Drought	9/17/2014	S3743
Drought	2/17/2016	S3952
Rain and wind	7/27/2016	S4003
Excessive rainfall and high winds	3/31/2017	S4164
Excessive rain, high winds, cold temperatures, and hail	4/28/2017	S4170
Drought	2/23/2017	S4144
Freeze	7/18/2018	S4350
Drought	3/22/2019	S4467
Excessive rain	3/11/2020	S4656
Excessive rain and hail	3/11/2020	S4657
Drought	3/5/2021	S4916
Drought	5/10/2021	S4969

Source: USDA Disaster Designations, 2012 - 2021

Hazard events that occur outside the County planning area can also directly and indirectly impact the County. These hazard events are commonly associated with dam incidents that result in inundation flooding within the larger watershed and wildfires that affect air quality and downstream post-wildfire erosion. Power outages can also occur due to high wind events and wildfires and because of outages that occur outside the County.



4.3 METHODOLOGY

The HMPC prioritized hazards based on a process that combines criteria on the hazard problem, where the hazard occurs in the planning area, past occurrences, the Likelihood of Future Occurrence, and the magnitude of the hazard if it were to cause damage. Each hazard profile includes the following subsections:

HAZARD DESCRIPTION – This section gives a description of the hazard problem and associated issues followed by details on the hazard specific to the County planning area.

GEOGRAPHIC AREA – This section provides a spatial description of the potential location or areas of the County where the hazard is expected to impact.

- **Limited:** Less than 10% of planning area
- **Significant:** 10-50% of planning area
- **Extensive:** 50-100% of planning area

PAST OCCURRENCES – This section contains information on historical incidents, including impacts where known events occurred. Historical incident worksheets were used to capture information from participating jurisdictions on past occurrences.

LIKELIHOOD OF FUTURE OCCURRENCE – The frequency of past events is used in this section to gauge the likelihood of future occurrences. Where possible, frequency was calculated based on existing data. It is determined by dividing the number of events observed by the number of years on record and multiplying by 100. This gives the percent chance (probability) of an event happening in any given year (e.g., three droughts over a 30-year period equates to a 10 percent chance of a drought in any given year). The likelihood of future occurrences is categorized into one of the following classifications:

- **Highly Likely:** Near 100 percent chance of occurrence in next year or happens every year.
- **Likely:** Between 10 and 100 percent chance of occurrence in next year or has a recurrence interval of 10 years or less.
- **Occasional:** Between 1 and 10 percent chance of occurrence in the next year or has a recurrence interval of 11 to 100 years.
- **Unlikely:** Less than 1 percent chance of occurrence in next 100 years or has a recurrence interval of greater than every 100 years.

CLIMATE CHANGE CONSIDERATIONS – This describes the potential for climate change to affect the frequency and intensity of the hazard in the future. The HIRA describes two GHG emissions scenarios that reflect different projections for how global emissions and atmospheric GHG concentrations may change over time but selects a high emissions scenario (Representative Concentration Pathway [RCP] 8.5) for each natural hazard affected by climate change. The Governor's Office of Planning and Research (OPR) recommends that agencies use RCP 8.5 for analyses considering impacts through 2050 because there are minimal differences between emissions scenarios during the first half of the century. The HIRA also uses Cal-Adapt's default settings that provides outputs for subsets of 10 and 4 global climate models (GCMs) and integrates projections for mid-century (2040-2060) and through the end-of-century (2070-2090); however mapped climate projects using GIS data were only included for the mid-century.

MAGNITUDE AND SEVERITY – This section describes the potential strength or magnitude of the hazard as it pertains to the County. It describes how much damage could occur as a result of a hazard event.

- **Catastrophic:** More than 50 percent of property severely damaged; shutdown of facilities for more than 30 days; and/or multiple deaths
- **Critical:** 25-50 percent of property severely damaged; shutdown of facilities for at least two weeks; and/or injuries and/or illnesses result in permanent disability
- **Limited:** 10-25 percent of property severely damaged; shutdown of facilities for more than a week; and/or injuries/illnesses treatable do not result in permanent disability



- **Negligible:** Less than 10 percent of property severely damaged, shutdown of facilities and services for less than 24 hours; and/or injuries/illnesses treatable with first aid

VULNERABILITY ASSESSMENT – Following the hazard profiles is a vulnerability assessment for each identified hazard. The assessment was conducted through the study of potential impacts on the following specific sectors:

- People
- Property
- Critical Facilities and Lifelines
- Economy
- Cultural, Historic and Natural Resources
- Development Trends

The vulnerabilities are summarized for all natural hazards, including the human-caused and human-health hazards. For example, the vulnerability assessment addresses who or what is vulnerable to natural hazards or climate stressors that influence the hazard, where someone or a critical facility is susceptible to related health impacts or direct damage, and when and why these assets may be vulnerable. The vulnerability assessment is used to inform strategic decision-making by identifying the assets or portions of the planning areas most vulnerable to natural hazards.

RISK SUMMARY – Overall hazard significance is based on a combination of geographic area, probability of future occurrence and magnitude/severity. Each risk summary includes key issues and problems based on threat, vulnerability and impacts to the County planning area and jurisdictions from the specific hazard. Significance rankings are defined by the following:

- **Low:** minimal potential impact
- **Medium:** moderate potential impact
- **High:** widespread potential impact
-

Data used to support this assessment included the following information sources:

- County GIS data (hazards, base layers, and assessor’s data);
- Statewide and nationwide GIS datasets to support mitigation planning;
- California 2018 SHMP and 2013 Draft SHMP;
- Kings County 2012 MJHMP;
- Neighboring Jurisdictional HMPs;
- California Department of Forestry and Fire Protection (CAL FIRE) datasets;
- California’s Fourth Climate Change Assessment;
- Written descriptions of inventory and risks provided by the jurisdictions;
- Online data sources (cited where applicable);
- Data and information from existing plans and studies; and
- Input from the HMPC members and staff from the County and local, state, and federal agencies
- FEMA Flood Insurance Rate Maps (FIRMs)

4.3.1 Hazard Ranking Summary by Jurisdiction

Overall hazard significance is based on a combination of information on how much of the hazard covers the planning areas, historical data, disaster potential and relevance to each jurisdiction, magnitude and severity, and the probability of future occurrences. Each metric was used to identify and prioritize the list of hazards most relevant to Kings County and the individual rankings are based on or interpolated from the analysis of the hazards in the risk assessment. This process helps the County and jurisdictions compare and rank hazards that pose the greatest risk.



Participating agencies were also asked to complete Plan Update Guide worksheets to initiate the process of screening and ranking hazards within the County. The Plan Update Guides require ranking of the hazards based on geographic extent, magnitude/severity of the hazard, past occurrences, the frequency/probability of future occurrences, and overall significance, as shown in Table 4-3. The results of the Plan Update Guides were collected to determine the rankings, and these rankings were reviewed again with the HMPC for further input. Public input was also integrated based on feedback from the bi-lingual survey and two public workshops.

Table 4-3 Kings County Hazard Significance Summary

Hazard	Geographic Extent	Magnitude/Severity (Extent)	Probability of Future Occurrence	Overall Significance
Agricultural Pests and Disease	Extensive	Critical	Likely	Medium
Cyber-Attack	Significant	Critical	Occasional	Medium
Dam Incidents	Significant	Critical	Unlikely	Medium
Drought	Extensive	Critical	Likely	High
Earthquake	Limited	Catastrophic	Occasional	Medium
Extreme Temperatures	Extensive	Limited	Highly Likely	High
Flood	Extensive	Limited	Highly Likely	Medium
Land Subsidence	Extensive	Limited	Likely	Medium
Landslide	Significant	Negligible	Occasional	Low
Public Health Hazards	Extensive	Critical	Highly Likely	Medium
Dense Fog	Extensive	Critical	Highly Likely	Medium
Severe Storms	Extensive	Critical	Highly Likely	Medium
High Wind and Tornado	Extensive	Critical	Highly Likely	Medium
Wildfire	Significant	Negligible	Likely	Medium
Spatial Extent <u>Extensive:</u> 50-100% of planning area <u>Significant:</u> 10-50% of planning area <u>Limited:</u> Less than 10% of planning area Potential Severity <u>Catastrophic:</u> Multiple deaths, shutdown of facilities for 30 days or more, >50% of property is severely damaged <u>Critical:</u> Multiple severe injuries, shutdown of facilities for at least 2 weeks, >25% of property is severely damaged <u>Moderate:</u> Some injuries, shutdown of critical facilities for more than one week, >10% of property is severely damaged <u>Negligible:</u> Minor injuries, minimal quality-of-life impact, interruption of facilities and services for 24 hours or less, less than 10% of property is severely damaged.		Probability of Future Occurrence <u>Highly Likely:</u> Near 100% probability each year. <u>Likely:</u> Between 10 and 100% probability per year or at least one chance in ten years. <u>Occasional:</u> Between 1 and 10% probability per year or at least one chance in next 100 years. <u>Unlikely:</u> Less than 1% probability in next 100 years. Significance <u>High:</u> widespread potential impact <u>Medium:</u> moderate potential impact <u>Low:</u> minimal potential impact		

Table 4-4 summarizes how these hazard rankings vary across jurisdiction, which allows the jurisdictions to compare multiple hazards and priorities, and with a focus on the natural hazards.



Table 4-4 Hazard Ranking Summary in Kings County by Jurisdiction

HAZARD	KINGS COUNTY	AVENAL	CORCORAN	HANFORD	LEMOORE
Agricultural Pest & Disease	Medium	Medium	Medium	Medium	Medium
Cyber-Attack	Medium	Medium	Medium	Medium	Medium
Dam Incidents	Medium	Low	Low	Medium	Medium
Drought	High	High	High	High	High
Earthquake	Medium	High	Medium	Medium	Medium
Extreme Temperatures	Medium	Medium	Medium	Medium	Medium
Flood	High	High	High	High	High
Land Subsidence	Medium	Medium	Medium	Medium	Medium
Landslide	High	Medium	High	Medium	Medium
Public Health	Medium	Medium	Medium	Medium	Medium
Fog	Medium	Medium	Medium	Medium	Medium
Severe Storm	Medium	Medium	Medium	Medium	Medium
Wind &Tornado	Medium	Medium	Medium	Medium	Medium
Wildfire	Medium	Medium	Low	Low	Low

Source: Kings County HMPC

4.4 ASSET SUMMARY

4.4.1 Assets Exposure

As a starting point for analyzing the planning area’s vulnerability to identified hazards, the HMPC used a variety of data to define a baseline against which all disaster impacts could be compared. If a catastrophic disaster was to occur in the planning area, this section describes significant assets exposed or at risk in the planning area. Data used in this baseline assessment included:

- Total assets at risk;
- Critical facility inventory;
- Cultural, historical, and natural resources; and
- Population growth and land use and development trends.

4.4.1.1 Total Assets at Risk

Building value assessments in this plan are based on data from the County’s Assessor’s Office. This data provided the baseline for an inventory of the total exposure of developed properties within the County and helps to ensure that the updated MJHMP reflects changes in development. It is important to note that depending on the nature and type of hazard events or disasters, it is generally the value of the



infrastructure or improvements to the parcels that are of concern or at risk. Generally, the land itself is not a total loss, but may see a reduction in value. Thus, the parcel analysis excludes land value.

4.4.1.2 Parcel & Structure Exposure and Preparations for Analysis

The most up-to-date County Assessor data (2023) and address point data (2022) were used to inventory the total number and types of parcels with improvements, defined as parcels with an improvement value greater than zero in the County, as well as the total number and types of structures on these parcels. Building content values were estimated based on the following formulas derived from FEMA/Hazus methods: a) Residential and Multi-Family Residential properties received content values worth 50% of the improved values; b) Agricultural, Commercial, Exempt, and Multi-Use related properties received content values worth 100% of the improved values; and c) Industrial properties received content values worth 150% of the improved values. Adding up these content and original improved values yields the Total Value of Improved Parcels, which is an estimation of the total property exposure within the County. Table 4-5 summarizes the property inventory for the County and each participating jurisdiction with detail by property type. Table 4-6 shows the total property inventory from the Assessor's Office.

Table 4-5 Total Exposure Summary by Jurisdiction

JURISDICTION	IMPROVED PARCEL COUNT	BUILDING COUNT	IMPROVED VALUE	CONTENT VALUE	TOTAL VALUE
Avenal	1,897	2,514	\$212,728,605	\$118,884,090	\$331,612,695
Corcoran	3,330	3,706	\$411,183,649	\$250,888,988	\$662,072,637
Hanford	17,122	20,749	\$3,636,911,685	\$2,294,089,679	\$5,931,001,364
Lemoore	7,109	10,012	\$1,541,853,696	\$955,326,836	\$2,497,180,532
Unincorporated	10,227	13,561	\$1,913,346,387	\$1,681,807,156	\$3,595,153,543
Total	39,685	50,542	\$7,716,024,022	\$5,300,996,749	\$13,017,020,771

Source: Kings County Assessor's Office, WSP Analysis

Table 4-6 Total Exposure by Jurisdiction and Property Type

JURISDICTION	PROPERTY TYPE	IMPROVED PARCEL COUNT	BUILDING COUNT	IMPROVED VALUE	ESTIMATED CONTENT VALUE	TOTAL VALUE
Avenal	Agricultural	6	6	\$964,105	\$964,105	\$1,928,210
	Commercial	112	134	\$18,337,766	\$18,337,766	\$36,675,532
	Exempt	27	33	\$3,072,688	\$3,072,688	\$6,145,376
	Industrial	9	10	\$849,591	\$1,274,387	\$2,123,978
	Multi-Family Residential	51	564	\$42,930,514	\$21,465,257	\$64,395,771
	Multi-Use	9	12	\$965,833	\$965,833	\$1,931,666
	Residential	1,683	1,755	\$145,608,108	\$72,804,054	\$218,412,162
	Total	1,897	2,514	\$212,728,605	\$118,884,090	\$331,612,695
Corcoran	Agricultural	6	6	\$104,009	\$104,009	\$208,018
	Commercial	155	273	\$39,701,556	\$39,701,556	\$79,403,112
	Exempt	35	41	\$1,388,873	\$1,388,873	\$2,777,746
	Industrial	31	37	\$24,083,922	\$36,125,883	\$60,209,805
	Multi-Family Residential	92	266	\$46,250,891	\$23,125,446	\$69,376,337
	Multi-Use	10	16	\$1,232,045	\$1,232,045	\$2,464,090
	Residential	3,001	3,067	\$298,422,353	\$149,211,177	\$447,633,530
	Total	3,330	3,706	\$411,183,649	\$250,888,988	\$662,072,637
Hanford	Agricultural	28	34	\$2,925,519	\$2,925,519	\$5,851,038
	Commercial	794	1,534	\$714,496,080	\$714,496,080	\$1,428,992,160
	Exempt	96	155	\$26,175,037	\$26,175,037	\$52,350,074
	Industrial	97	130	\$100,067,929	\$150,101,894	\$250,169,823
	Multi-Family Residential	489	3,008	\$239,982,926	\$119,991,463	\$359,974,389



JURISDICTION	PROPERTY TYPE	IMPROVED PARCEL COUNT	BUILDING COUNT	IMPROVED VALUE	ESTIMATED CONTENT VALUE	TOTAL VALUE
	Multi-Use	49	61	\$7,535,179	\$7,535,179	\$15,070,358
	Residential	15,569	15,827	\$2,545,729,015	\$1,272,864,508	\$3,818,593,523
	Total	17,122	20,749	\$3,636,911,685	\$2,294,089,679	\$5,931,001,364
Lemoore	Agricultural	6	6	\$360,817	\$360,817	\$721,634
	Commercial	228	704	\$132,810,700	\$132,810,700	\$265,621,400
	Exempt	26	30	\$6,332,106	\$6,332,106	\$12,664,212
	Industrial	24	32	\$109,777,286	\$164,665,929	\$274,443,215
	Multi-Family Residential	166	2,445	\$152,673,286	\$76,336,643	\$229,009,929
	Multi-Use	21	30	\$9,741,781	\$9,741,781	\$19,483,562
	Residential	6,638	6,765	\$1,130,157,720	\$565,078,860	\$1,695,236,580
Total	7,109	10,012	\$1,541,853,696	\$955,326,836	\$2,497,180,532	
Unincorporated	Agricultural	768	803	\$69,307,835	\$69,307,835	\$138,615,670
	Commercial	261	646	\$80,078,804	\$80,078,804	\$160,157,608
	Exempt	3,874	6,233	\$957,516,751	\$957,516,751	\$1,915,033,502
	Industrial	53	67	\$117,039,604	\$175,559,406	\$292,599,010
	Multi-Family Residential	35	125	\$6,238,179	\$3,119,090	\$9,357,269
	Multi-Use	489	653	\$109,285,327	\$109,285,327	\$218,570,654
	Residential	4,747	5,034	\$573,879,887	\$286,939,944	\$860,819,831
Total	10,227	13,561	\$1,913,346,387	\$1,681,807,156	\$3,595,153,543	
	Grand Total	39,685	50,542	\$7,716,024,022	\$5,300,996,749	\$13,017,020,771

Source: Kings County Assessor's Office, WSP Analysis

4.4.1.3 Critical Facility/Lifeline Inventory

A significant aspect of the 2023 Hazard Identification and Risk Assessment (HIRA) update was the update of critical facilities and an alignment/classification with the FEMA Community Lifelines framework. The critical facilities/lifelines GIS database was based on a combination of County-provided data, Homeland Infrastructure Foundation-Level Data (HIFLD), and local and jurisdiction-specific input. Jurisdictions were able to review critical facility data, edit descriptive attributes and address information, and add new critical facilities. The results are summarized here and provided the basis for GIS-based vulnerability analyses, where data permitted.

For the purposes of this plan, a critical facility is defined as one that is essential in providing utility or direction either during the response to an emergency or during the recovery operation. FEMA sorts critical facilities into seven lifeline categories as shown in Figure 4-1.

Figure 4-1 Lifeline Categories



Source: FEMA 2020.

These lifeline categories standardize the classification of critical facilities and infrastructure that provide indispensable service, operation, or function to a community. A lifeline is defined as providing indispensable service that enables the continuous operation of critical business and government functions, and is critical to human health and safety, or economic security. These categorizations are particularly useful as they:

- Enable effort consolidations between government and other organizations (e.g., infrastructure owners and operators).
- Enable integration of preparedness efforts among plans, easier identification of unmet critical facility needs.
- Refine sources and products to enhance awareness, capability gaps, and progress towards stabilization.
- Enhance communication amongst critical entities, while enabling complex interdependencies between government assets.
- Highlight lifeline related priority areas regarding general operations as well as response efforts.

Table 4-7 shows a summary of the 646 critical facilities inventory grouped by lifeline. Figure 4-2 illustrates the location of critical facilities in the County. The critical facility database includes water infrastructure facilities, such as levees.



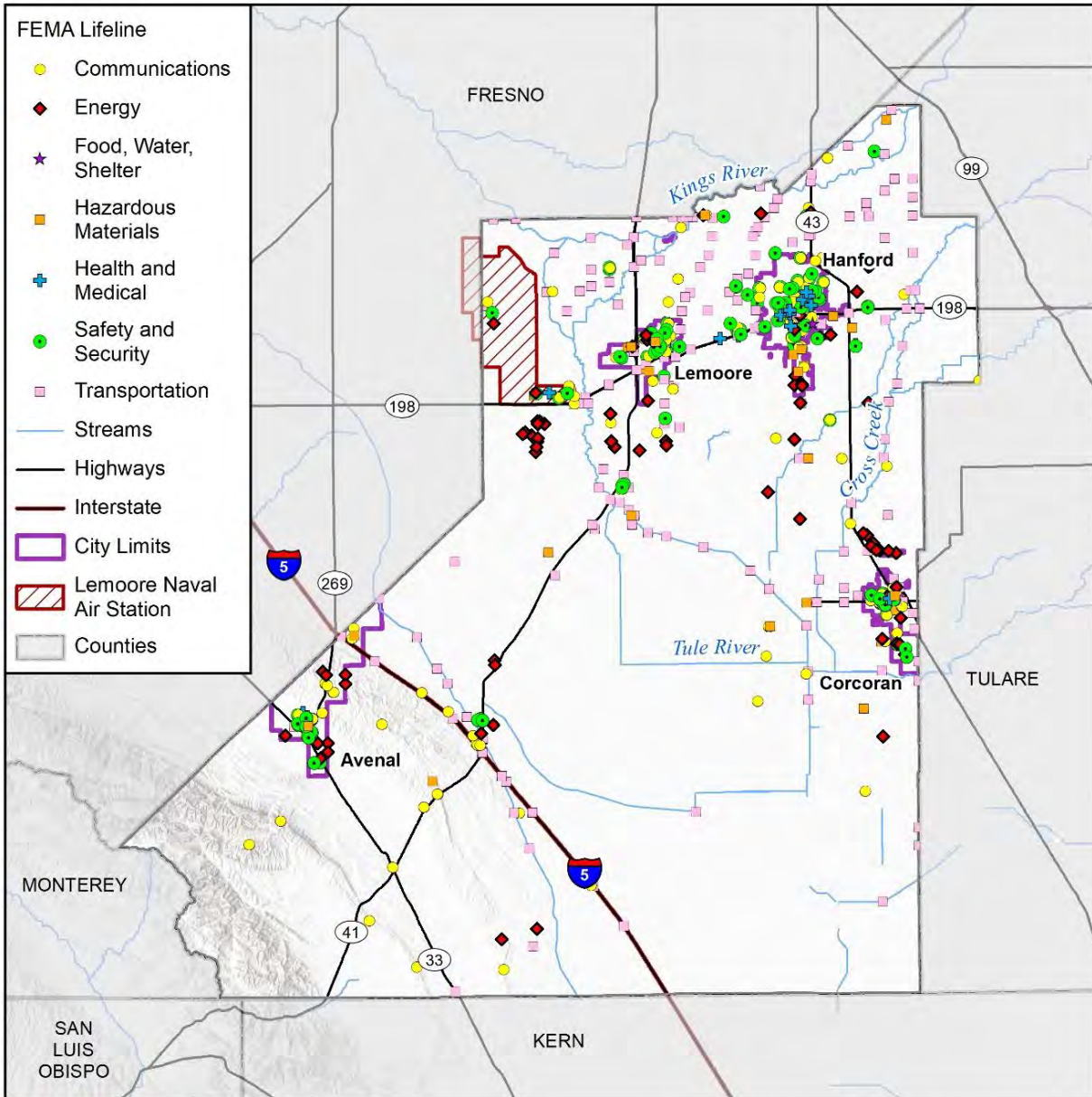
Table 4-7 Summary of Critical Facilities by Jurisdiction and Lifeline

JURISDICTION	COMMUNICATIONS	ENERGY	FOOD, WATER, SHELTER	HAZARDOUS MATERIAL	HEALTH AND MEDICAL	SAFETY AND SECURITY	TRANSPORTATION	TOTAL
Avenal	16	5		2	1	17	2	43
Corcoran	12	5		3	2	17	3	42
Hanford	32	7	6	10	14	54	9	132
Lemoore	11	6		6	1	23	10	57
Unincorporated	94	57		15	5	41	160	372
Grand Total	165	80	6	36	23	152	184	646

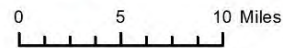
Sources: HIFLD, National Inventory of Dams (NID), National Bridge Inventory, Kings County



Figure 4-2 Kings County Critical Facilities



Map compiled 2/2022;
Intended for planning purposes only.
Data Source: Kings County, DWR, HIFLD





Moreover, during the 2022-2023 planning process, the HMPC mentioned the Corcoran Levee as a critical facility, which is maintained by the Cross Creek Flood Control District and is a protective barrier for the City of Corcoran. The Corcoran Levee is a protective levee system in the southeast portion of the County that protects two State Prisons. The GIS info for Corcoran Levee is added to the critical facilities inventory. The levee is further discussed in Section 4.5.7 Flood.

One other critical facility unique to the County is the California Aqueduct. However, this facility is better addressed in the EOPs for the County and federal emergency plans. The California Aqueduct, part of the California State Water Project, runs through the western part of the County. The State Water Project is a water storage and delivery system of reservoirs, aqueducts, power plants, and pumping plants. Its main purpose is to store water and distribute it to 29 urban and agricultural water suppliers in Northern California, the San Francisco Bay Area, the San Joaquin Valley, the Central Coast, and Southern California. Seventy percent of the contracted water supply goes to urban users and thirty percent goes to agricultural users. The State Water Project makes deliveries to two-thirds of California's population. Earthquakes, landslides, flooding, or other hazard events that disrupt the aqueduct's ability to deliver water could have serious impacts to agriculture in the County and water users in many areas of California.

4.4.1.4 Cultural, Historical and Natural Resources

Assessing the County's vulnerability to disaster also involves inventorying the natural, historical, and cultural assets of the area. This step is important for the following reasons:

- The community may decide that these types of resources warrant a greater degree of protection due to their unique and irreplaceable nature and contribution to the overall economy.
- In the event of a disaster, an accurate inventory of natural, historical, and cultural resources allows for more prudent care in the disaster's immediate aftermath when the potential for additional impacts is higher.
- The rules for reconstruction, restoration, rehabilitation, and/or replacement are often different for these types of designated resources.
- Natural resources can have beneficial functions that reduce the impacts of natural hazards, for example, wetlands and riparian habitat which help absorb and attenuate floodwaters and thus support overall mitigation objectives.

Historic and Cultural Resources

Historical resources are buildings, structures, objects, places, and areas that are eligible for listing in the National Register of Historic Places (NRHP), the California Register of Historic Resources (CRHR), or the County's List of Historic Resources; or that have an association with important persons, events in history, or cultural heritage; or that have distinctive design or construction method.

For purpose of federal actions, a qualified historic resource is defined as a property listed in or formally determined eligible for listing in the NRHP before a disaster occurs. The NRHP is part of a national program to coordinate and support public and private efforts to identify, evaluate, and protect historic and archeological resources. Properties listed include districts, sites, buildings, structures, and objects that are significant in American history, architecture, archeology, engineering, and culture. The National Register is administered by the U.S. Department of the Interior National Park Service. Local and state agencies may consider a broader definition of qualified historic properties in the review, evaluation, and treatment of properties damaged during a disaster.

The State of California Office of Historic Preservation can provide technical rehabilitation and preservation services for historic properties affected by a natural disaster. Depending on the hazard, protection could range from emergency preparedness, developing a fire safe zone around sites susceptible to wildfires, or seismically strengthening or structurally reinforcing structures.

State and local registers of historic resources provide designated Historical Landmarks, Points of Historical Interest, and Historic Buildings. These resources include, but are not limited to:

- The California Register of Historical Resources
- The California Historical Landmarks
- The California Inventory of Historical Resources
- The California Points of Historical Interest

Historical Resources designated on a federal, state, or local level are listed in Table 4-8.



Table 4-8 Kings County Historical Resources

PROPERTY NAME	REGISTER	JURISDICTION	DATE LISTED
El Adobe De Los Robles Rancho (206)	California State Historical Landmark	Lemoore	6/20/1935
Hanford Carnegie Library (N977)	National Register	Hanford	12/17/1981
Kings County Courthouse (N674)	National Register	Hanford	9/21/1978
Kingston (270)	California State Historical Landmark	Laton	9/3/1937
Location Of The Famous Mussel Slough Tragedy (245)	California State Historical Landmark	Hardwick	9/28/1936
Taoist Temple (N173)	National Register	Hanford	6/13/1972
Witt Site (N77)	National Register	Kettleman City	5/6/1971

Source: California Office of Historic Preservation

Other historic sites of local importance also exist. These include the Kings County Museum, the Bastille building in Civic Park, and the Tulare Lake Basin which holds cultural and historical significance for the Yokut Tachi Tribe.

Lists of designated historical resources change periodically, and they may not include those currently in the nomination process and not yet listed. Additionally, as defined by the National Environmental Policy Act (NEPA), any property over 50 years of age is considered a historic resource and is potentially eligible for the National Register. Thus, in the event that the property is to be altered, or has been altered, as the result of a major federal action, the property must be evaluated under the guidelines set forth by NEPA. Structural mitigation projects are considered alterations for the purpose of this regulation.

Cultural resources defined in California Environmental Quality Act (CEQA) Section 15064.5 include prehistoric and historic archeological resources; historic-period resources (buildings, structures, area, place, or objects). Archeological resources reflect past human activity extending from Native American prehistoric cultures throughout the early 20th century. The artifacts left by previous occupants may be encountered in small to large residential sites, or special use areas.

Many cultural and historical resources in the County are vulnerable to several hazards due to location and the nature of their construction. Some of these risks include earthquakes, wildfires, or adverse weather.

Natural Resources

Natural resources are important to include in benefit/cost analyses for future projects and may be used to leverage additional funding for mitigation projects that also contribute to community goals for protecting sensitive natural resources. Inventory and awareness of natural resource assets is vital to meeting conservation objectives. For example, protecting wetland areas provides sensitive habitat protection as well as floodwater conveyance and storage, which further enhances public safety.

To further understand natural resources that may be particularly vulnerable to a hazard event, as well as those that need consideration when implementing mitigation activities, it is important to identify at-risk species (endangered and threatened species) in the planning area. The U.S. Fish and Wildlife Service (USFW) maintains a list of federally listed threatened and endangered species for the country, which can be queried at the state or even county levels through the Information for Planning and Consultation (IPaC) database. The California Department of Fish and Wildlife (CDFW) also maintains species lists and accounts for threatened and endangered species. State and federal laws protect the habitat of these species through the environmental review process. Species of special concern may additionally include species that meet the State definition of threatened or endangered but that have not been formally listed, species that are experiencing serious population or habitat decline, or a species which has a naturally small population that is exhibiting high susceptibility to population decline (CDFW n.d.).



Table 4-9 summarizes Kings County’s special status animal species as indicated in the IPaC database, within the Environmental Conservation Online System.

Table 4-9 Threatened and Endangered Species in Kings County

GROUP	COMMON NAME	SCIENTIFIC NAME	STATUS
Amphibians	California Red-legged Frog	<i>Rana draytonii</i>	Threatened
	California Tiger Salamander	<i>Ambystoma californiense</i>	Threatened
Birds	California Clapper Rail	<i>Rallus longirostris obsoletus</i>	Endangered
	California Condor	<i>Cymnogyps californianus</i>	Endangered
	Western Snowy Plover	<i>Charadrius nivosus nivosus</i>	Threatened
Crustaceans	Conservancy Fairy Shrimp	<i>Branchinecta conservatio</i>	Endangered
	Vernal Pool Fairy Shrimp	<i>Branchinecta lynchi</i>	Threatened
	Vernal Pool Tadpole Shrimp	<i>Lepidurus packardii</i>	Endangered
Flowering Plants	California Jewelflower	<i>Caulanthus californicus</i>	Endangered
	San Joaquin Woolly-threads	<i>Monolopia (=Lembertia) congdonii</i>	Endangered
Insects	Monarch Butterfly	<i>Danaus plexippus</i>	Candidate
Mammals	Buena Vista Lake Ornate Shrew	<i>Sorex ornatus relictus</i>	Endangered
	Fresno Kangaroo Rat	<i>Dipodomys nitratoides exilis</i>	Endangered
	Giant Kangaroo Rat	<i>Dipodomys ingens</i>	Endangered
	San Joaquin Kit Fox	<i>Vulpes macrotis mutica</i>	Endangered
	Tipton Kangaroo Rat	<i>Dipodomys nitratoides nitratoides</i>	Endangered
Reptiles	Blunt-nosed Leopard Lizard	<i>Gambelia silus</i>	Endangered
	Green Sea Turtle	<i>Chelonia mydas</i>	Threatened

Source: US Fish and Wildlife Service - Environmental Conservation Online System

4.4.1.5 Growth and Development Trends

Population and Projected Growth

According to the Department of Finance (DOF) the 2023 population of the County was 157,316. The DOF projects the total population will increase by 7.6% to 169,215 by 2030. While total households in the County are also projected to increase from 44,561 in 2020 to 50,068 in 2030, people per household is projected to slightly decrease from 3.16 in 2020 to 3.06 persons per household in 2030. The cities of Avenal and Corcoran both experienced an increase in population between 2021 and 2022 (3.4% for Avenal and 6% for Corcoran), however, the rest of the cities experienced a slight decrease in population between 2021 and 2022.

Social Vulnerability

Social vulnerability is broadly defined as the susceptibility of social groups to the adverse impacts of natural hazards, including disproportionate death, injury, loss, or disruption of livelihood. Social vulnerability considers the social, economic, demographic, and housing characteristics of a community that influence its ability to prepare for, respond to, cope with, recover from, and adapt to environmental hazards. Social vulnerability considerations were included in the update of this 2023 MJHMP update to identify communities across the County that might be more vulnerable to hazard impacts based on many factors. In California, socially vulnerable populations, also referred to as disadvantaged communities (DACs) are mapped through Federal-developed and State mapping tools, including but not limited to the FEMA’s National Risk Index (NRI) for Natural Hazards, the California Office of Environmental



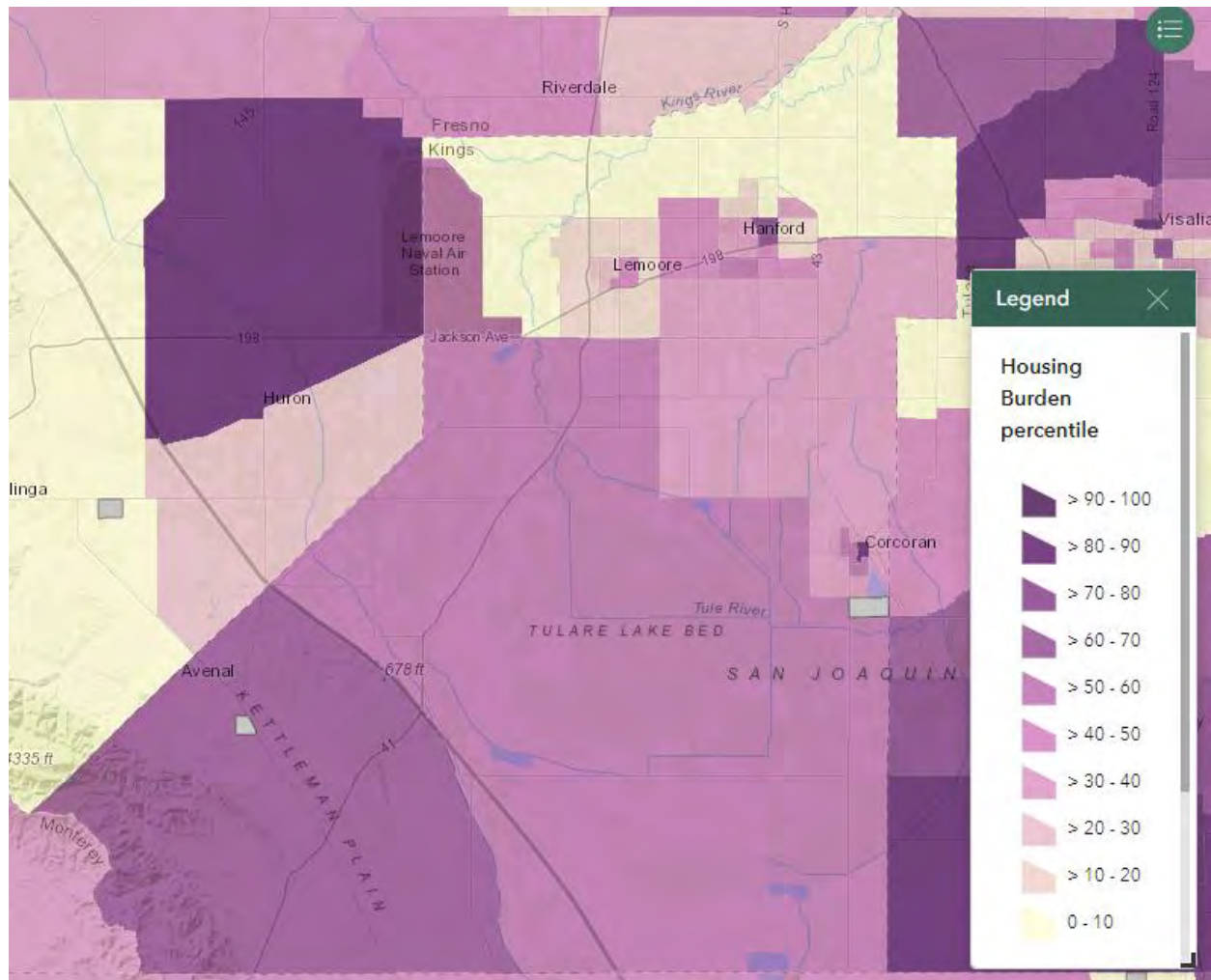
Health Hazard Assessment's (OEHHA) CalEnviroScreen, Department of Water Resources (DWR) Mapping Tools (DAC and Economically Distressed Areas [EDAs]), and the Center for Disease Control and Prevention (CDC) Agency for Toxic Substances and Disease Registry (ATSDR)'s Social Vulnerability Index (SVI). FEMA's NRI and OEHHA's CalEnviroScreen are used to identify and assess socially vulnerable populations in the County's MJHMP update.

The OEHHA CalEnviroScreen tool applies a formula to generate a combined ranking score that considers 21 indicators for each census tract that cover pollution indicators, such as diesel emissions and concentrations of toxic clean-up sites and population indicators, such as poverty and unemployment rates. Census tracts with CalEnviroScreen rankings between 75 and 100 percent (i.e., a combined score in the top 25 percent of all census tracts in the State) are considered to be DACs.

One of the population indicators for the CalEnviroScreen is the Housing Burden Indicator, which identifies housing-burdened communities. Housing-burdened low-income households are households that are both low-income and highly burdened by housing costs. The housing burden indicator measures the percentage of households in a census tract that are both low-income (making less than 80% of its County's median family income) and severely burdened by housing costs (paying greater than 50% of their income to housing costs). California has very high housing costs relative to the rest of the country, which can make it hard for households to afford housing (OEHHA 2022). Households with lower incomes may spend a larger proportion of their income on housing and may suffer from housing-induced poverty (OEHHA 2022). Housing affordability is an important determinant of health and well-being. Low-income households with high housing costs may suffer adverse health impacts. These households are also more likely to be adversely affected during a hazard event and less likely to recover as quickly as other population groups.

Figure 4-3 below shows the overall housing burden indicator for Kings County from the census tract level. As shown in Figure 4-3, there are a few communities within the County with a higher housing burden; these communities are concentrated in the cities of Hanford, Lemoore, Corcoran, and Avenal, as well as the unincorporated area surrounding the City of Avenal. Twenty-three percent of the people in the dark purple census tract near the City of Hanford are housing-burdened low-income households. This percent housing burdened is higher than 75% of the rest of California. In addition, 28% of the people in the dark purple census tract near the City of Corcoran are housing-burdened low-income households. This percent housing burdened is higher than 87% of the rest of California.

Figure 4-3 CalEnviroScreen Housing Burden Indicator - Kings County

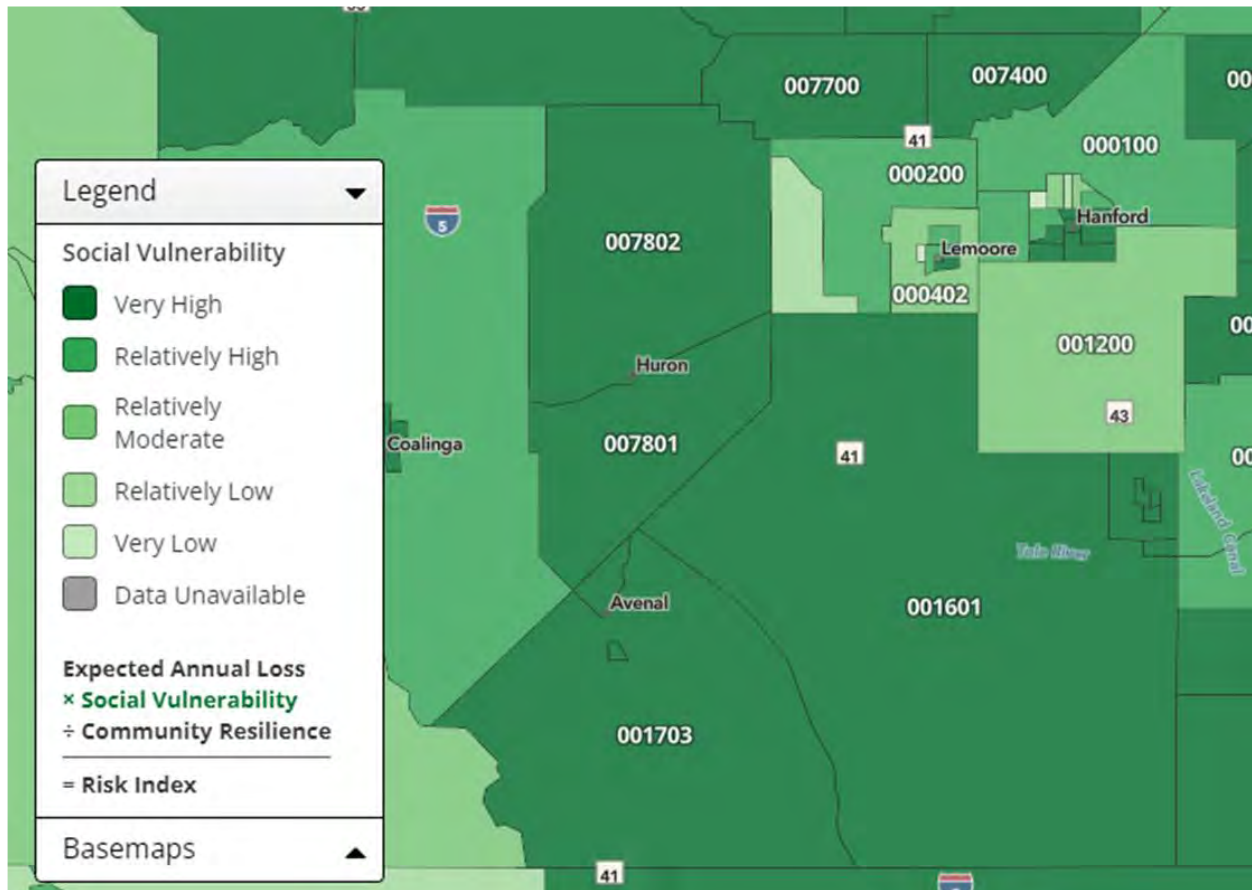


Source: OEHHA 2023

Social vulnerability is also one of the main three components of calculating FEMA’s NRI level. As documented in the March 2023 NRI Technical Documentation, among various social vulnerability indices, the CDC/ATSDR’s Social Vulnerability Index (SVI) was selected to be used in the NRI calculation. SVI is a location-specific assessment of social vulnerability that utilizes 16 socioeconomic variables deemed to contribute to a community’s reduced ability to prepare for, respond to, and recover from hazards. Examples of these variables include racial & ethnic minority status, no high school diploma, and no health insurance.

Figure 4-4 below shows the overall social vulnerability of the County according to FEMA NRI and CDC/ATSDR’s SVI. The darker the color, the higher social vulnerability of the census tract. Many census tracts within the County have very high social vulnerability, such as the areas around Corcoran, Avenal, and the area west of the Lemoore Naval Air Station. The entire southwestern and central portions of the County have very high social vulnerability. Quite a few census tracts near and within the City of Hanford also have very high social vulnerability.

Figure 4-4 FEMA NRI Social Vulnerability – Kings County



Source: FEMA 2023

The County can use the above information about these DACs to understand whether certain socially vulnerable communities have a greater exposure to hazards like dam incidents, earthquakes, droughts, flooding, and wildfire. The County can also use the information to conduct targeted outreach and engage community members to consider what other hazards and mitigation strategies or programs should be considered to meet community needs. The County can also engage these communities to proactively prioritize hazard mitigation projects that benefit them. Additional information on specific DACs is summarized in the specific jurisdictional Annexes.

Development Trends

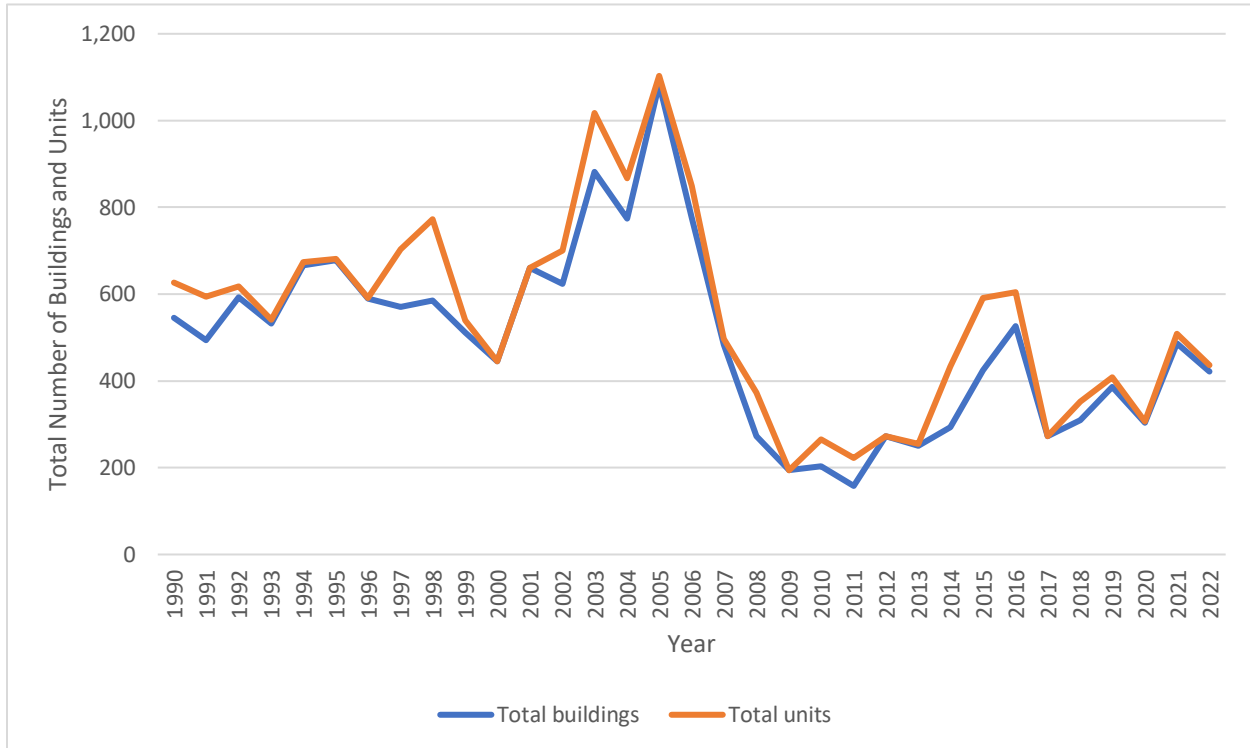
The areas located in the Sphere of Influence (SOI) for each incorporated jurisdiction are areas each city plans to grow into and are areas potentially slated for development. Understanding the potential hazard exposure in each area can help to mitigate the impacts of events before development occurs in those areas. Development trends since the previous 2012 MJHMP update are also addressed. These growth and development trends are assessed in the Development Trends subsection of the vulnerability assessment, each annex, and broadly summarized below. In general, most residential development has occurred or is proposed within the city limits of each jurisdiction or within and around the unincorporated communities.

The County is expected to grow in population over the next five years and growth forecasts project growth will be approximately 2% from 2023 to 2027 (152,340 people to 155,589 people) according to the California Department of Finance County Population Projections from 2020 to 2060 (DOF 2023). To accommodate the growth new residential, commercial, and industrial development will occur, with the most growth occurring for residential land uses and around the communities of Avenal, Corcoran, Hanford, and Lemoore. The U.S. Census Bureau Building Permit Survey provides information and local



statistics on new privately-owned residential construction. Figure 4-5 displays the new privately owned housing unit authorizations by year in Kings County. The data indicates that there was a sharp increase in housing units from 2000 to 2005, and then a sharp decrease from 2006 through 2014. The number of new units has steadily remained around 300 to 400 units per year in the County from 2015 through 2022. An increase in the number of housing unit authorizations in the County could indicate an increase in the total number of buildings exposed to hazard events.

Figure 4-5 New Privately Owned Housing Unit Authorizations



Source: US Census Bureau, https://www.census.gov/construction/bps/data_visualizations/index.html

During this plan update process, an improved parcel & address point analysis was also conducted using the SOI areas for each incorporated jurisdiction and overlaid with available hazard risk layers to determine where development trends may exacerbate the risk of natural hazard events. The results of the spatial analysis have been integrated into the applicable hazard sections: flood, landslide, and wildfire. Table 4-10 is the summary of the SOI total exposure by jurisdiction.

Table 4-10 Total Exposure Summary by Jurisdiction Sphere of Influence Areas

JURISDICTION	IMPROVED PARCEL COUNT	Building COUNT	IMPROVED VALUE	ESTIMATED CONTENT VALUE	TOTAL VALUE
Avenal	2	2	\$340,269	\$340,269	\$680,538
Corcoran	192	203	\$82,400,798	\$88,858,817	\$171,259,615
Hanford	768	970	\$144,542,108	\$143,772,786	\$288,314,894
Lemoore	191	291	\$30,525,548	\$19,548,785	\$50,074,333
Grand Total	1,153	1,466	\$257,808,723	\$252,520,657	\$510,329,380

Source: WSP Analysis 2023

City of Avenal

According to the City's 2035 General Plan Land Use Element that was adopted in 2018, the City aims to preserve and enhance its unique and small-town character. The City aims to minimize urban sprawl and



leap-frog development. The development of vacant, underdeveloped, and/or re-developable land within the boundaries of the existing developed area and where urban services are or can be made available should be prioritized. The City will preserve and protect agricultural use on lands for open space purposes and for the managed production of resources. Open space in the Avenal area should be created and preserved to meet the needs of the community. Additionally, according to the 2016 – 2024 Kings County Housing Element, the Regional Housing Needs Allocation (RHNA) for the City of Avenal is 639 housing units in total, including 73 for extremely low income, 72 for very low income, 108 for low income, 115 for moderate income, and 271 for above moderate income. This means the City will need to provide approximately this many housing units to accommodate new growth in the next five years. Most of this growth is projected to occur within the City's SOI and outside flood zones located to the west of the City. All other growth in the City's SOI is expected to have similar risk and exposure to drought, earthquake, extreme heat, fog, and freeze. All census tracts in the City are designated DACs, or underserved communities, therefore the risk to these communities is expected to be greater for earthquake hazards, drought conditions, and extreme heat hazards. While there are existing hazard mitigation capabilities in place to reduce the impacts from these hazards, additional efforts will be required to address additional population growth and increased exposure to these hazards due to climate change.

City of Corcoran

According to the City's 2008 General Plan Land Use Element, the City aims to preserve and enhance its unique character and achieve an optimal balance of residential, commercial, industrial, and open space land uses. Meanwhile, the City aims to further develop existing gateways and at some future time develop scenic entryways (gateways) and roadway corridors into the City through special setback and landscape standards, entry signage, open space and park development, and/or land use designations. Future gateways include development along State Route (SR) 43, SR 137 and Whitley Avenue/7th avenue. Regarding the City's growth management, the City will minimize urban sprawl and leap-frog development and provide for an orderly and efficient transition from rural to urban land uses. The City will also designate growth areas that can be served by logical infrastructure extensions. On the other hand, according to the 2016 – 2024 Kings County Housing Element, the RHNA for the City of Corcoran is 946 housing units in total, including 108 for extremely low income, 107 for very low income, 161 for low income, 169 for moderate income, and 401 for above moderate income.

As noted by the HMPC during the plan update process, the City experienced minor population growth over the past decade. One major factor contributing to the City not experiencing any significant population growth is the lack of available housing. The City is poised for additional residential and commercial growth. Currently, a 50-unit residential subdivision is in development with three additional subdivisions representing about 200 housing units potentially being approved over the next two years. Commercial infill development is currently taking place within the City's downtown and industrial areas. All this new potential growth is within the already established General Plan development area that historically maintains a compact urban area that avoids the most prominent hazard – flood hazard. New growth within the City's existing urban area will have similar risk and exposure to drought, earthquake, extreme heat, fog, and freeze based on risk exposure summarized in the previous plan. Since the designated FEMA 1% annual chance flood zones are located west and southwest of the City, the added growth of the City avoids this hazard. Therefore, there is no significant change in development in the City that increases the risk or severity of the hazards identified above, nor does the growth pattern compromise the needs of any underserved community.

City of Hanford

According to the City's 2035 General Plan Land Use Element, the City's growth management goals include a well-planned community that grows in an organized fashion, development preference of vacant and underutilized properties and limitation of urban sprawl-style development patterns in new growth areas. The land use element also mentions supporting the continuance of the Home Garden Community Services District (CSD) as an independent special district serving the existing Home Garden Community. The City will also keep supporting, encouraging, and incentivizing, to the extent possible, infill development projects that can effectively utilize existing transportation and utility infrastructure. On the other hand, according to the 2016 – 2024 Kings County Housing Element, the RHNA for the City of Hanford is 4,832 housing units in total, including 549 for extremely low income, 548 for very low income, 821 for low income, 865 for moderate income, and 2,049 for above moderate income. In addition, as noted by the HMPC during the Plan Update, the 2023-2032 Regional Housing Needs Assessment projects the City will add approximately 5,547 residential units over the next decade. Although there are not any specific hazard-related concerns associated with this growth, the City will have to expand services as



growth continues. While growth in the City's SOI is expected to have similar risk and exposure to drought, earthquake, extreme heat, and severe weather hazards, the portions of the City with DACs and other underserved communities may be at a greater risk due to their ability to prepare for, cope with, and recovery from hazard events. There are existing hazard mitigation capabilities in place to reduce the impacts from these hazards due to recent planning efforts related to the City's Climate Action Plan, but further efforts will be required to address gradual population growth and increased exposure to these hazards due to climate change.

City of Lemoore

According to the City's 2030 General Plan Land Use Element, the City aims to preserve its small-town character. Actions are taken to revitalize downtown, prevent sprawl, keep neighborhoods within walking distance of amenities and schools, and provide open space and parks to maintain Lemoore's quality of life. The City intends to maintain a well-defined compact urban form, with a defined urban growth boundary, and development intensities on land designated for urban uses. The Element is explicit in noting that development west of the 21st Avenue alignment should be prevented to protect the Navy from encroachment. Contiguous development within SOI is also required. On the other hand, according to the 2016 - 2024 Kings County Housing Element, the RHNA for the City of Lemoore is 2,985 housing units in total, including 339 for extremely low income, 338 for very low income, 507 for low income, 534 for moderate income, and 1,267 for above moderate income. Given this high number of needed housing in the City, growth in the City would result in increased risk and exposure to drought, earthquake, extreme heat, and severe weather hazards. In addition, as noted by the HMPC during the plan update, growth in the City of Lemoore is continuing to the West side of Lemoore as well as the North side in the coming years. This growth has no impact on hazard-related concerns in the area. However, while the majority of the City is not a designated underserved community, the western edge of the City falls within a census tract designated as a DAC. Therefore, these communities may have greater risk to exposure to drought, earthquake, extreme heat, and severe weather hazards. This risk may also be intensified by the effects of climate change.



4.5 HAZARD ANALYSIS AND RISK SUMMARY

Requirement §201.6(c)(2)(i):

[The risk assessment shall include a] description of the type, location and extent of all natural hazards that can affect the jurisdiction. The plan shall include information on previous occurrences of hazard events and on the probability of future hazard events.]

4.5.1 AGRICULTURAL PESTS AND DISEASE

4.5.1.1 Hazard Description

Agriculture is the dominant land use in the County, accounting for 90.2% of total land use (2023 General Plan 2010). The County was the 8th top-producing agricultural county in California by gross value in 2020, grossing more than \$2.1 billion in 2020 (CFDA 2021). Top commodities in 2021 included milk, pistachios, almonds, and cotton (see Table 4-11 below).

Table 4-11 Top 10 Commodities in Kings County in 2021

RANK	CROP	DOLLAR VALUE
1	Milk, Total	\$722,744,000
2	Pistachios	\$267,900,000
3	Almonds, Total	\$190,674,000
4	Cotton, Total	\$190,079,000
5	Cattle & Calves	\$172,131,000
6	Tomatoes, Processed	\$128,712,000
7	Corn, Silage	\$79,294,000
8	Walnuts	\$61,883,000
9	Livestock, Poultry	\$61,423,000
10	Alfalfa, Hay	\$45,995,000

Source: Kings County Department of Agriculture 2021 Crop Report

Agricultural pests and pathogens (insects, fungi, bacteria, viruses, and invasive plants) can cause injury or severe destruction to crops or livestock. From exotic fruit flies to noxious weeds, California's agriculture can be impacted by a wide variety of invasive pests and pathogens. These pests pose significant threats to the state's agricultural crops, farm workers, economy, food supply and native habitat. They can also result in increases in food prices for consumers. The number of invasive pests and pathogens newly detected in California and the rest of the United States has increased at alarming rates in recent years, and that trend is projected to continue into the future (Morales-Rodríguez et al., 2019).

Insect pests and diseases, such as bark beetles and sudden oak death disease (SOD), can destroy forests and oak woodland habitat located along the north-east and southwest tips of Kings County, which can in turn increase the fuel load and lead to greater fire risk. Agricultural disasters could also occur due to severe weather events, such as extreme heat, freeze cycles, and heavy rainfall, hazards that are covered under Sections 4.5.6 through 4.5.15. Drought events are covered under Section 4.5.4.

Agricultural pest and disease management programs are administered at the state level in California, which provides important existing capacity related to minimizing and managing agricultural pests and diseases. The California Food and Agricultural Code mandates pest prevention programs to prevent the introduction and spread of pests in the state, fund such programs, and direct administration of the programs to the local municipalities. These include the Pest Exclusion Program, Pest Detection Program, Pierce's Disease Control Program, and Federal Phytosanitary Certificate Program. Target pests addressed by each program are listed in Table 4-12, and also include dairy, livestock, and poultry pests and diseases, such as *Mycobacterium bovis* and pathogenic avian influenzas.

Table 4-12 Target Pests Kings County

PEST	TYPE OF TRAP	NUMBER OF TRAPS	NUMBER OF SERVICINGS
All Purpose Fruit Fly	Champ	116	1,030



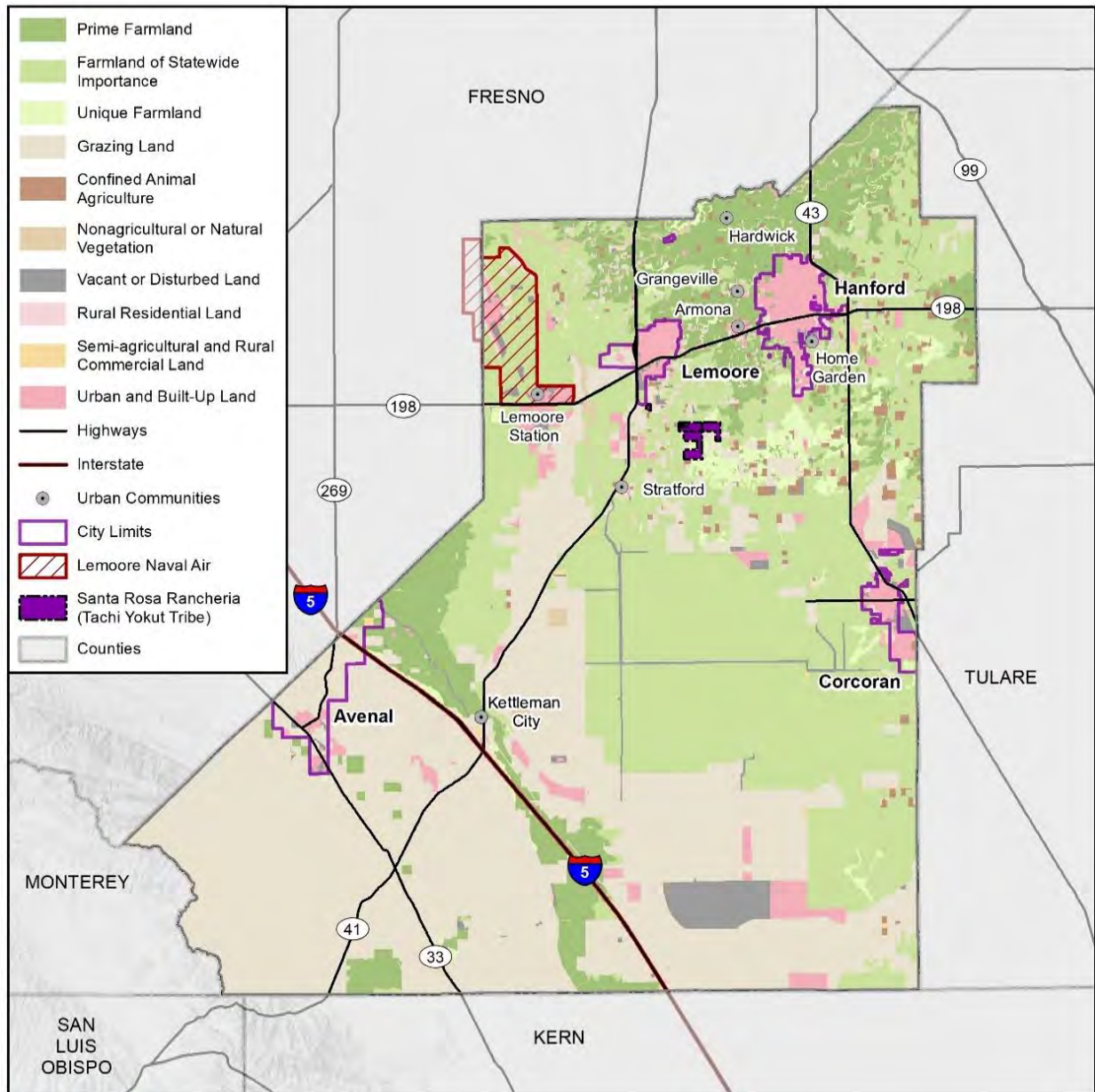
PEST	TYPE OF TRAP	NUMBER OF TRAPS	NUMBER OF SERVICINGS
Asian Citrus Psyllid	Yellow Panel	272	4,007
European Corn Borer	Pherocon II	13	130
European Grape Vine Moth	Delta	501	4,374
European Pine Shoot Moth	Pherocon II	5	12
Glassy-Winged Sharpshooter	Yellow Panel	173	863
Spongy Moth	Delta	76	561
Japanese Beetle	Japanese Beetle	76	561
Light Brown Apple Moth	Jackson	152	810
Mediterranean Fruit Fly	Jackson	152	20,93
Melon Fly	Jackson	152	656
Mexican Fruit Fly	McPhail	98	2,351
Oriental Fruit Fly	Jackson	152	1,983
Total		1,952	24,250

Source: Kings County Department of Agriculture 2021 Crop Report

4.5.1.2 Geographic Area

Extensive - According to the 2017 Census of Agriculture, the County contains 615,958 acres of land in farms. There are approximately 963 farms (as of 2017) in the County. Most of these important farmlands are located within the County's unincorporated area and are currently zoned for agricultural use. Figure 4-6 illustrates the geographic extent of the important farmlands across the County.

Figure 4-6 Kings County Important Farmland



Map compiled 10/2022;
Intended for planning purposes only.
Data Source: Kings County,
CA Dept of Conservation

0 5 10 Miles



4.5.1.3 Past Occurrences

The USDA Risk Management Agency (RMA) tracks insurance payments, or indemnities, made to farmers as a safety net against natural hazards, such as drought and agricultural disease. Between the years of 2007 and 2021, 8,444 acres of USDA insured crops were lost in Kings County due to agricultural pest and disease, resulting in over \$3 million in indemnity payments. Of these payments, \$1.1 million and 3,478 acres were due to insect damage, \$1.9 million and 3,734 acres were due to plant disease, and \$1,231 and 1,232 acres were due to wildlife damage. Table 4-13 summarizes these agricultural losses.



Table 4-13 Crop Losses due to Agricultural Pests and Disease, 2007-2021

COMMODITY YEAR	COMMODITY NAME	DAMAGE CAUSE DESCRIPTION	DETERMINED ACRES	INDEMNITY AMOUNT
2007	Wheat	Wildlife	1,231.9	\$47,681
2007	Tomatoes	Insects	30.4	\$1,997
2007	Plums	Insects	13.0	\$5,718
2008	Cotton	Insects	99.8	\$29,179
2010	Cotton	Insects	73.1	\$29,845
2010	Cotton	Plant Disease	21.0	\$3,522
2013	Tomatoes	Insects	867.3	\$332,940
2013	Tomatoes	Plant Disease	1,221.7	\$488,223
2013	Tomatoes	Plant Disease	1,534.2	\$568,903
2014	Corn	Insects	240.0	\$83,952
2015	Tomatoes	Insects	526.2	\$77,887
2015	Tomatoes	Plant Disease	77.2	\$178,326
2015	Tomatoes	Plant Disease	227.8	\$182,791
2015	Alfalfa Seeds	Insects	160.0	\$50,652
2017	Cotton	Insects	1,075.9	\$357,251
2018	Tomatoes	Plant Disease	146.9	\$36,124
2019	Wheat	Plant Disease	126.4	\$8,342
2020	Onions	Plant Disease	229.3	\$386,723
2020	Tomatoes	Plant Disease	149.3	\$91,078
2021	Cotton	Insects	302.5	\$113,301
2021	Cotton	Insects	90.2	\$7,200
Total			8,443.9	\$3,081,635

Source: USDA RMA Crop Indemnity Reports, 2007-2021

4.5.1.4 Likelihood of Future Occurrence

Likely - Based on past occurrences of economic impacts and implementation of control measures, and the likely increase in pest activity outlined in the Climate Change Considerations section below, pests, disease, and invasive species will continue to present a constant threat to the County and its jurisdictions. These events are anticipated to be influenced by a changing climate and therefore expected to occur on an annual basis or have a 100% chance of occurring each year.

4.5.1.5 Climate Change Considerations

California's Fourth Climate Change Assessment (2018) notes that "climate change impacts terrestrial ecosystems and wildlife in multiple ways, including invasion by exotic species, prevalence of wildlife disease, and loss of native habitats." Changing climate conditions can impact viable living areas of species and cause migration, shifting the spread of pests and disease northward by changing habitat temperatures and making previously undesirable habitats welcoming for new species, while also lengthening habitable seasons (Bedsworth et al, 2018). Longer growing seasons may also allow agricultural pests to persist longer, which can increase the severity of infestations on agricultural operations.

4.5.1.6 Magnitude and Severity

Critical - Pests can impact a multitude of crops in different ways. While there is no scale to define the extent of an infestation, a pest could have a major economic impact on the value of infested crops.



Another large factor that may influence crop yield is the spread of invasive plants, which may compete with crops for resources and, in some cases, also introduce pests. According to the California Invasive Plant Council (Cal-IPC), invasive plants cost California \$82 million every year in control, monitoring, and outreach (Cal-IPC, n.d.). Based on the USDA's RMA Crop Indemnity Reports, in the County between 2007 and 2021, there were 8,443 acres lost due to agricultural pests and disease and \$3.1 million in indemnity payments made. This results in an annualized loss of 603 acres and \$220,116 due to agricultural pests and disease.

4.5.1.7 Vulnerability Assessment

Agricultural losses occur on an annual basis and are usually associated with severe weather events, including heavy rains, floods, hail, freeze, and drought. The California SHMP attributes most of the agricultural disasters statewide to drought, freeze, and insect infestations (Cal OES 2018). Other agricultural hazards include fires, crop and livestock disease, noxious weeds, and contamination of animal food and water supplies.

People

A widespread infestation of livestock and crops could result in severe consequences to the economic base of the County and its communities employed by the agriculture industry. According to the USDA 2017 Census of Agriculture, the County has 963 farms, which is a -9% change from the previous census in 2012 (USDA 2017). While agricultural production in the County can enhance the economy, improve human health, and ensure stable food prices in California and the U.S., certain habitats established for irrigation and agricultural output can also threaten human health by increasing the risk of vector-borne diseases (e.g. mosquitos, etc.). Agricultural pests and disease, or significant crop losses, can also impact communities if they result in limited food supplies and rises in food prices. Widespread crop losses due to contamination issues (foreign agents, biological disease) could also decrease the public's confidence in food safety. Rural communities residing closest to these agricultural operations may be most vulnerable to these diseases.

Agricultural jobs could be negatively impacted during an agriculture emergency, including jobs tangentially tied to the agriculture industry. According to *The Impacts of Climate Change on Human Health in the United States: A Scientific Assessment*, rising temperatures and drought conditions could lead to increases in the occurrence and transport of pathogens in agricultural environments, which will increase the risk of food contamination and direct human exposure to pathogens and toxins (USGCRP 2016). In turn, this will increase health risks and require greater vigilance in food safety practices and regulation.

Property

An infestation of agriculture pests or disease can lead to a range of negative consequences on property, including decreased crop yields and the potential destruction of entire fields along with farmland property. However, the impact of damaged crops and plants goes beyond these direct effects and may exacerbate the impacts of other hazards, such as severe weather. For instance, dead branches resulting from pest or disease damage can easily be broken by high winds during a storm, posing a risk of property damage and harm to people.

Critical Facilities and Lifelines

Critical facilities assessed in this plan would not be directly impacted by agricultural pests or diseases; however, the food and agriculture industry are considered critical infrastructure in the County and California. Impacts to this infrastructure, such as farms, dairy operations, and processing facilities would have debilitating effects on food security, the economy, and public health and safety. The County farms and dairies, and the associated food processing facilities, would be directly impacted economically by long-term disruptions in the food supply associated with crop losses due to agricultural pests and disease.

Economy

Economic impacts include both prevention, response, and recovery costs. Given the contribution of agriculture to the local economy, pest impacts could be significant. The value of agricultural commodities noted at the beginning of this hazard profile is \$2,424,497,000 (\$2 billion). Based on a hypothetical loss of 5% due to agricultural pest or disease, Kings County could equate to approximately \$121 million in total economic losses to agricultural pests and disease.



Cultural, Historic and Natural Resources

Invasive species typically harm native species through predation, habitat degradation and competition for shared resources. They can outcompete native species and are a leading cause of population decline and extinction in animals. Tree mortality raises the wildfire threat in healthy forests, increasing the vulnerability, strength, speed, and destruction of fires in the area. Significant crop failures can also result in impacts on the environment if they result in contamination or the need for groundwater or surface water monitoring.

Development Trends

While the USDA RMA has made several indemnity payments for damaged crops in the County, there have been no USDA disaster declarations due to agricultural pests or disease. Good development practices and the ongoing implementation of policies included in the County’s Resource Conservation Element and Open Space Element have had a positive impact on the County’s vulnerability to agricultural pests, plant diseases, and tree mortality.

4.5.1.8 Risk Summary

- Kings County’s farming and agricultural industry is ranked as one of the top agriculture-producing counties in California and the country.
- Agriculture is the dominant land use in Kings County, accounting for 90.2% of all land.
- Invasive plants cost California \$82 million every year in control, monitoring, and outreach.
- Over 14 years, there were 8,443 acres lost due to agricultural pests and disease and \$3.1 million in indemnity payments made in Kings County.
- Changes in weather patterns can have dramatic impacts on the ecosystem, including agriculture systems, and more severe impacts associated with agricultural pests and disease can be expected in the future.
- Changing climate conditions can shift the spread of pests and disease northward by changing habitat temperatures and making previously undesirable habitats welcome new species through longer growing seasons. This may increase the severity of pest infestations on agricultural operations.
- Related hazards – Drought, Severe Weather

JURISDICTION	GEOGRAPHIC AREA	PROBABILITY OF FUTURE OCCURRENCE	MAGNITUDE/ SEVERITY	OVERALL SIGNIFICANCE	PRIORITY HAZARD?
Kings County	Extensive	Likely	Critical	Medium	No
City of Avenal	Extensive	Likely	Critical	Medium	No
City of Corcoran	Extensive	Likely	Critical	Medium	No
City of Hanford	Extensive	Likely	Critical	Medium	No
City of Lemoore	Extensive	Likely	Critical	Medium	No

4.5.2 CYBER-ATTACK

4.5.2.1 Hazard Description

The 2018 California SHMP defines cyber-attacks as “attempts by cyber criminals to attack a government, organization, or private party by damaging or disrupting a computer or computer network, or by or stealing data from a computer or computer network for malicious use.” Cyber-attacks use malicious code to alter computer operations or data. The vulnerability of computer systems to attack is a growing concern as people and institutions become more dependent upon networked technologies. The Federal Bureau of Investigation (FBI) reports that “cyber intrusions are becoming more commonplace, more dangerous, and more sophisticated,” with implications for private- and public-sector networks. Cyber threats can take many forms, including:



- **Phishing attacks:** Phishing attacks are fraudulent communications that appear to come from legitimate sources. They typically come through email but may come through text messages as well. Phishing may also be considered a type of social engineering meant to exploit individuals into paying fake invoices, providing passwords, or sending sensitive information.
- **Malware attacks:** Malware is malicious code that may infect a computer system. It typically gains a foothold when a user visits an unsafe site, downloads untrusted software, or may be downloaded in conjunction with a phishing attack. Malware can remain undetected for years and spread across an entire network.
- **Ransomware:** Ransomware typically blocks access to a jurisdiction's/agency's/business' data by encrypting it. Perpetrators will ask for a ransom to provide the security key and decrypt the data, although many ransomware victims never get their data back even after paying the ransom.
- **Distributed Denial of Service (DDoS) attack:** Perhaps the most common type of cyber-attack, a DDoS attack seeks to overwhelm a network and causes it to either be inaccessible or shut down. A DDoS typically uses other infected systems and internet-connected devices to "request" information from a specific network or server that is not configured or powerful enough to handle the traffic.
- **Data breach:** Hackers gaining access to large amounts of personal, sensitive, or confidential information has become increasingly common in recent years. In addition to networked systems, data breaches can occur due to the mishandling of external drives.
- **Critical Infrastructure/SCADA System attack:** There have been recent critical infrastructure Supervisory Control and Data Acquisition (SCADA) system attacks aimed at taking down lifelines such as power plants and wastewater facilities. These attacks typically combine a form of phishing, malware, or other social engineering mechanisms to gain access to the system.

Cyber-attacks are rapidly increasing in the United States. The FBI Internet Crime Complaint Center (IC3) was developed to provide the public with a direct way to report cyber-crimes to the FBI. In 2021, the FBI IC3 reported a record number of cyber-attacks, with a 7% increase from 2020 (FBI, 2022). The events reported to the FBI are used to track the trends and threats from cyber criminals to combat cyber threats and protect U.S. citizens, businesses, and government from future attacks.

In a recent attempt to combat this threat, the State adopted Senate Bill (SB) 327 in September 2018. This bill seeks to improve information privacy, specifically pertaining to connected devices. Existing laws in California require businesses to take all reasonable steps to dispose of customer records within their custody containing personal information and require businesses that own, license, or maintain personal information about a California resident to implement and maintain reasonable security procedures. Moreover, beginning on January 1, 2020, SB 327 further requires the manufacturer of connected devices to equip the device with a reasonable security feature to protect user information.

4.5.2.2 Geographic Area

Significant – Cyber-attacks can and have occurred in every location regardless of geography, demographics, and security posture. Anyone with information online is vulnerable to a cyber-attack. Incidents may involve a single location or multiple geographic areas. A disruption can have far-reaching effects beyond the location of the targeted system; disruptions that occur far outside the state can still impact people, businesses, and institutions within the County. All servers in the County are potentially vulnerable to cyber-attacks. Businesses, industries, and even individuals are susceptible to cyber-attacks. Therefore, the geographic extent of cyber-attack is significant.

4.5.2.3 Past Occurrences

According to the FBI's *2021 Internet Crime Report*, the FBI received 2.76 million complaints with \$18.7 billion in losses over the last five years due to cyber-attacks (FBI 2022). The *Crime Report* also noted a trend of increasing cybercrime complaints and losses each year. Nationwide losses in 2021 alone exceeded \$6.9 billion, a 393% increase since 2017. According to the 2021 Report, California ranked the top among all US territories in both the total number of victims (67,095 victims) and total victim losses (\$1,227,989,139) in total losses (FBI 2022).

Data on past cyber-attacks impacting California was gathered from The Privacy Rights Clearinghouse. The Privacy Rights Clearinghouse, a non-profit organization based in San Diego, maintains a timeline of 9,741 data breaches resulting from computer hacking incidents in the United States from 2005-2021. The database lists 1,338 data breaches against systems located in California totaling almost 10.4 billion impacted records; it is difficult to know how many of those affected residents in the County. According to



Privacy Rights Clearinghouse, there is one specific incident that happened to the Yanez Dental Corporation located in the City of Hanford on September 19, 2011: an office burglary resulted in the loss of three computers with patient information such as patient names, social security numbers, dates of birth, addresses, telephone numbers, and other personal information being exposed.

Moreover, attacks happening outside of the County and California can also impact local businesses, personal identifiable information, and credit card information. Figure 4-7 shows several of the most significant cyber-attacks in California in recent years. All top five cyber-attack events are businesses hacked by an outside party or infected by malware. The data aims to provide a general understanding of the impacts of cyber-attacks by compiling an up-to-date list of incidents but is limited by the availability of data: "This is an incomplete look at the true scope of the problem due in part to varying state laws", as noted by The Privacy Rights Clearinghouse. Table 4-14 shows major cyber-attacks impacting California from 2005 through 2021.

Table 4-14 Major Cyber Attacks Impacting California (10,000,000,000+ Records), 2005-2021

DATE REPORTED	TARGET	CITY	ORG.TYPE	TOTAL RECORDS	TYPE OF ATTACK
12/14/2016	Yahoo	Sunnyvale	Business	3 billion	Hacked by an Outside Party or Infected by Malware
9/22/2016	Yahoo	Sunnyvale	Business	500 million	Hacked by an Outside Party or Infected by Malware
11/16/2016	FriendFinder	Sunnyvale	Business	412 million	Hacked by an Outside Party or Infected by Malware
5/31/2016	MySpace	Santa Monica	Business	360 million	Hacked by an Outside Party or Infected by Malware
6/6/2012	LinkedIn	Mountain View	Business	167 million	Hacked by an Outside Party or Infected by Malware

Source: The Privacy Rights Clearinghouse

In addition to the incident with the City of Hanford, a data breach incident happened with Kings County's Public Health Department regarding COVID-19 data and individuals' information. The County determined via investigation that the breach was due to an error made by an external contractor. The error existed on the County's public web server from February 15, 2021, until it was fully corrected on December 2021. The Department did not exclude the possibility that some individuals' data also ended up online as a result of the breach. That data could include names, dates of birth, addresses, and COVID-19 related information (Zhadan, 2022).

Moreover, recent years have seen an increase in ransomware attacks, particularly against local government systems. The City of Atlanta was hit by a major ransomware attack in 2018, recovery from which ended up costing a reported \$2.6 million, significantly more than the \$52,000 ransom demand. A similar attack against the City of Baltimore in 2019 affected the city government's email, voicemail, property tax portal, water bill, and parking ticket payment systems, and delayed more than 1,000 pending home sales. In March 2019, Orange County, North Carolina was attacked with a ransomware virus, causing slowdowns and service problems at key public offices such as the Register of Deeds, the Sheriff's Office, and County libraries. The attack impacted a variety of county services, including disrupting the County's capability to process real estate closings, issue marriage licenses, process fees or permits, process housing vouchers, and verify tax bills. These past events are examples of the range of risks posed to county and municipal governments by various cyber-attacks.

4.5.2.4 Likelihood of Future Occurrence

Occasional - Small-scale cyber-attacks such as DDoS attacks occur daily, but most have negligible impacts at the local or regional level. Data breaches are also extremely common, but again most have only minor impacts on government services. Additionally, the FBI *Internet Crime Report 2021* found that there is a trend of increasing cyber-attacks over the past 5 years. These trends are shown in Figure 4-7

Figure 4-7 Trends of the Frequency of Cyber-attacks, 2017-2021



Source: The FBI Internet Crime Report 2021

Perhaps of greatest concern to the County are ransomware attacks, which are becoming increasingly common. It is difficult to calculate the odds of the County or one of its jurisdictions being hit with a successful ransomware attack in any given year, but it is likely to be attacked in the coming years. The possibility of a larger disruption affecting systems within the County and even California is a constant threat, but it is difficult to quantify the exact probability due to such highly variable factors as the type of attack and intent of the attacker. Major attacks specifically targeting systems or infrastructure in Kings County cannot be ruled out. Therefore, the probability of future cyber-attack is Occasional.

4.5.2.5 Climate Change Considerations

There are no known effects of climate-induced impacts on cyber-attacks.

4.5.2.6 Magnitude and Severity

Critical - There is no universally accepted scale to explain the severity of cyber-attacks. The strength of a DDoS attack is often explained in terms of a data transmission rate. One of the largest DDoS disruptions ever, known as the Dyn Attack which occurred on October 21, 2016, peaked at 1.2 terabytes per second and impacted some of the internet’s most popular sites, including Amazon, Netflix, PayPal, Twitter, and several news organizations.

Data breaches are often described in terms of the number of records or identities exposed. The largest data breach ever reported occurred in August 2013, when hackers gained access to all three billion Yahoo accounts. The hacking incidents associated with California in the Privacy Rights Clearinghouse database mentioned above are also showing big-scale incidents, where billions of records have been stolen.

Ransomware attacks are typically described in terms of the amount of ransom requested, or the amount of time and money spent to recover from the attack. One report from cybersecurity firm Emsisoft estimates the average successful ransomware attack costs \$8.1 million and can take 287 days to recover from (Emsisoft, 2022). Therefore, the Magnitude and Severity of cyber-attack is Critical.

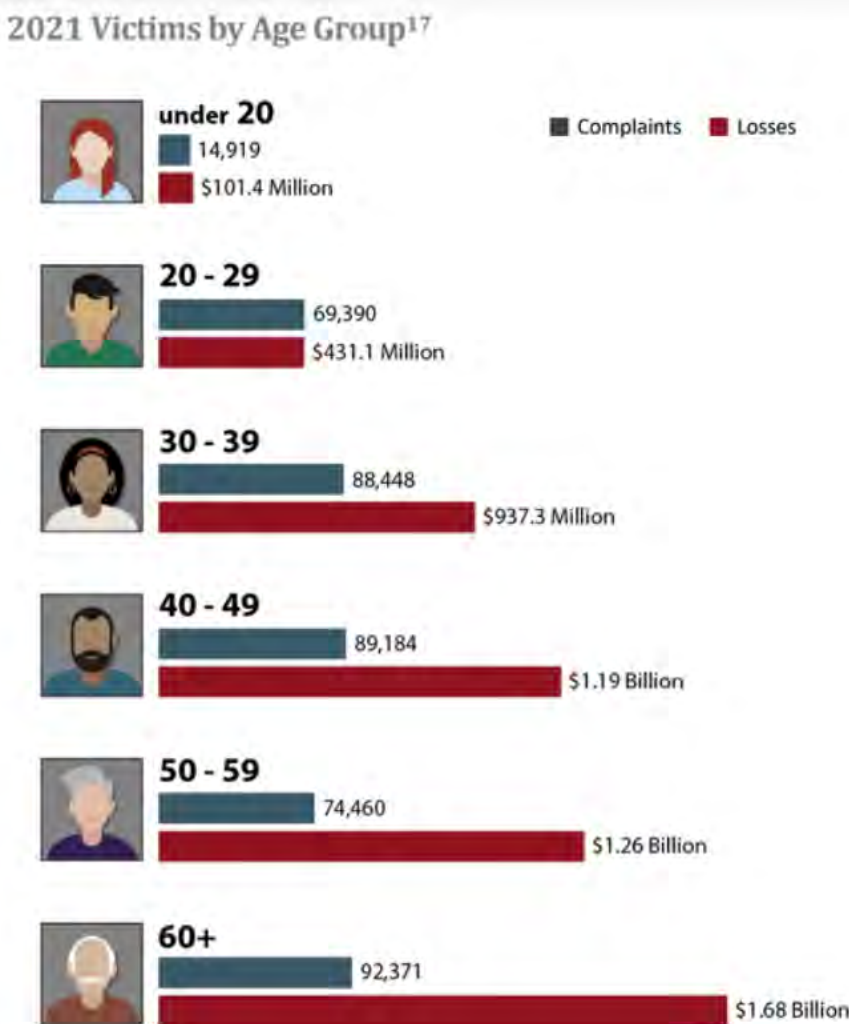
4.5.2.7 Vulnerability Assessment

People

Injuries or fatalities from cyber-attacks would generally only be possible from a major cyber-terrorist attack against critical infrastructure. More likely impacts on the public are financial losses and an inability to access systems such as public websites and permitting sites. Indirect impacts could include interruptions to traffic control systems or other infrastructure.

The FBI IC3 reports on the victims of cyber-attack by age group. While the number of cyber-attack complaints is comparable across age groups, the losses increase significantly as age group increases, with individuals 60 years and older experiencing the greatest losses. This is likely due to seniors being less aware of cyber threats, lacking the tools to identify cyber threats, and "Grandparent Scams", which is a cyberattacks where criminals impersonate a loved one in need, such as a grandchild, and ask for money. In the County, 15.4% of the population was reported to be 60+ in 2021 according to the U.S. Census. Figure 4-8 displays the breakdown of victims by age group in 2021.

Figure 4-8 Victims by Age Group in 2021



Source: The FBI Internet Crime Report 2021

Property

Most cyber-attacks affect only data and computer systems and have minimal impact on general property. However, sophisticated attacks have occurred against the SCADA systems of critical



infrastructure, which could potentially result in system failures on a scale equal to natural disasters. Facilities and infrastructure such as the electrical grid could become unusable. A ransomware attack on the Colonial Pipeline in 2021 caused temporary gas shortages on the East Coast (Colonial Pipeline Company 2021). A cyber-attack took down the power grid in Ukraine in 2015, leaving over 230,000 people without power (Zetter 2016). The 2003 Northeast Blackout, while not the result of a cyber-attack, caused 11 deaths and an estimated \$6 billion in economic loss (Owens 2020).

Critical Facilities and Lifelines

A Government Technology article posted on July 31, 2022, highlights the increasing global cyber battles, despite the lack of major cyber-attacks against U.S. critical infrastructure in 2022 (Lohrmann 2022). This is a growing concern as cyber actions worldwide become less covert. IBM's 2022 *Cost of a Data Breach* reveals that almost 80 percent of critical infrastructure organizations studied do not adopt zero-trust strategies, resulting in an average breach cost of \$5.4 million, a \$1.17 million increase compared to those that do. Additionally, 28 percent of breaches amongst these organizations were ransomware or destructive attacks (IBM 2022).

The impact of cyber-attacks on critical infrastructure can be devastating. For example, emergency response communications, access to mobile data terminals, and access to critical pre-plans and response documents can be disrupted. According to the Cyber & Infrastructure Security Agency (CISA), cyber risks to 911 systems can have severe impacts, including loss of life or property, job disruption for affected network users, and financial costs for the misuse of data and subsequent resolution. CISA has compiled a recent list of attacks on 911 systems, including a DDoS attack in Arizona, unauthorized access with stolen credentials in Canada, a network outage in New York, and a ransomware attack in Baltimore (CISA 2019).

Governments rely heavily on the electronic delivery of services, which can be significantly impacted by cyber-attacks. Most agencies rely on server backups, electronic backups, and remote options for Continuity of Operations and the Continuity of Government. Access to documents on the network, OneDrive access, and other operations that require collaboration across the County could be significantly impacted.

Furthermore, if systems such as permitting, Department of Motor Vehicles (DMV), voting, or public websites are down for a prolonged amount of time, public confidence in the government will likely suffer. An attack could raise questions regarding the security of using electronic systems for government services. Therefore, it is crucial to prioritize cyber security measures and adopt a zero-trust strategy to ensure the protection of critical infrastructure and electronic government services.

Economy

Data breaches and subsequent identity thefts can have huge impacts on the public. The FBI *Internet Crime Report 2021* reported losses in California due to cyber-attacks totaled over \$1.2 billion in 2021 alone (FBI 2021).

Economic impacts from a cyber-attack can be debilitating. The cyber-attack in 2018 that took down the City of Atlanta cost at least \$2.5 million in contractor costs and an estimated \$9.5 million in additional funds to bring everything back online. The attack in Atlanta took more than a third of the 424 software programs offline and recovery lasted more than 6 months (Newman 2018). The 2018 cyber-attack on the Colorado Department of Transportation cost an estimated \$1.5 million (Chuang 2018). None of these statistics consider the economic losses to businesses and ongoing IT configuration to mitigate a future cyber-attack.

Additionally, a 2016 study by Kaspersky Lab found that roughly one in five ransomware victims who pay their attackers never recover their data. A 2017 study found ransomware payments over a two-year period totaled more than \$16 million (Huang et al. 2017). Even if a victim is perfectly prepared with full offline data backups, recovery from a sophisticated ransomware attack typically costs far more than the demanded ransom.

Cultural, Historic and Natural Resources

Most cyber incidents have little to no impact on historic, cultural, or natural resources. A major cyber terrorism attack could potentially impact the environment by triggering a release of hazardous materials, or by causing an accident involving hazardous materials by disrupting traffic control devices.



Most cyber-attacks would have a limited impact on natural resources. There are cases, such as a cyber-attack on a hydroelectric dam, that could result in catastrophic consequences to natural and human-built environments in the case of a flood. If a cyber-attack occurred on several upstream dams and released significant amounts of water downstream, the additional pressure put on downstream dams could fail, resulting in massive flood events. This would not only jeopardize the energy system that relies on these dams but also cause significant damage to the natural environment.

Development Trends

Changes in development have no impact on the threat, vulnerability, and consequences of a cyber-attack. Cyber-attacks can and have targeted small and large jurisdictions, multi-billion-dollar companies, small mom-and-pop shops, and individual citizens. The decentralized nature of the internet and data centers means that the cyber threat is shared by all, regardless of new construction and changes in development.

4.5.2.8 Risk Summary

- The overall significance of cyber-attacks in Kings County is Medium. These incidents occur frequently, with California being the State with by far the most reported incidents. The possibility of an attack of any scale impacting the County is almost certain.
- There have been 9,741 data breaches statewide over a 17-year period, averaging approximately 573 incidents per year, or up to 48 incidents each month.
- Nationwide the increase in cyber-attacks has been dramatic year over year. As this trend continues it is safe to assume there is a threat to Kings County.
- People ages 60+ are the most likely age group to experience the greatest monetary losses, although anyone of any age can be a victim of a cyber-attack.
- The vast majority of attacks do not affect properties or cause casualties.
- Economic impacts from a cyberattack can be debilitating, sometimes costing local governments millions of dollars.
- The vast majority of attacks target only computer systems, however sophisticated attacks against utilities and infrastructure, such as electrical grids, have occurred.
- Related hazards: None

JURISDICTION	GEOGRAPHIC AREA	PROBABILITY OF FUTURE OCCURRENCE	MAGNITUDE/ SEVERITY	OVERALL SIGNIFICANCE	PRIORITY HAZARD?
Kings County	Significant	Occasional	Critical	Medium	Yes
City of Avenal	Significant	Occasional	Critical	Medium	Yes
City of Corcoran	Significant	Occasional	Critical	Medium	Yes
City of Hanford	Significant	Occasional	Critical	Medium	Yes
City of Lemoore	Significant	Occasional	Critical	Medium	Yes

4.5.3 DAM INCIDENTS

4.5.3.1 Hazard Description

Dam failure is the breakdown, collapse or other failure of a dam structure characterized by the uncontrolled release of impounded water that results in downstream flooding. In the event of a dam failure, the energy of the water stored behind even a small dam is capable of causing loss of life and severe property damage to development downstream. An uncontrolled breach is the unintentional discharge from the impounded water body and is considered a failure. Dam failure can result from natural events or human-induced events. Dams have received more attention recently in the emergency management community as a potential target for terrorist acts.



Dams are built for a variety of uses, including flood protection, power generation, agriculture, water supply, and recreation. When dams are constructed for flood protection, they usually are engineered to withstand a flood with a computed risk of occurrence. For example, a dam may be designed to contain a flood at a location on a stream that has a certain probability of occurring in any one year. If prolonged periods of rainfall and flooding occur that exceed the design requirements, that structure may be overtopped and fail. Overtopping is the primary cause of earthen dam failure in the United States (Jamal 2017). Dam failures can also result from any one or a combination of the following causes:

- Earthquake
- Inadequate spillway capacity resulting in excess overtopping flows
- Internal erosion caused by embankment or foundation leakage or piping or rodent activity
- Improper design
- Improper maintenance
- Negligent operation
- Failure of upstream dams on the same waterway

Water released by a failed dam generates tremendous energy and can cause a flood that is catastrophic to life and property. A catastrophic dam failure could challenge local response capabilities and require evacuations to save lives. Impacts on life safety will depend on the warning time and the resources available to notify and evacuate the public. Major loss of life could result as well as potentially catastrophic effects on roads, bridges, and homes. Associated water quality and health concerns could also be issues. Factors that influence the potential severity of a full or partial dam failure are the amount of water impounded; the density, type, and value of development and infrastructure located downstream; and the speed of failure. The best way to mitigate dam failure is through the proper construction, inspection, maintenance, and operation of the dam.

Spillways are designed to relieve pressure on dams and prevent dam failures. Flooding downstream often results when spillways flow, though the potential for flooding as a result of discharge from dam outlet structures can also result from excessive rain events. However, controlled releases of water from dams is a measure that can prevent or minimize spillway flooding or structure failure, by regulating capacity in a managed way. Even controlled releases can lead to unwanted or unpredicted flooding, depending on environmental and weather conditions, or even human error.

In general, there are three types of dams: concrete arch or hydraulic fill, earth-rockfill, and concrete gravity. Each type of dam has different failure characteristics. A concrete arch or hydraulic fill dam can fail almost instantaneously: the flood wave builds up rapidly to a peak and then gradually declines. An earth-rockfill dam fails gradually due to erosion of the breach: the downstream flood wave will build gradually to a peak and then decline until the reservoir is empty. And a concrete gravity dam can fail instantaneously or gradually with a corresponding buildup and decline of the flood wave.

4.5.3.2 Geographic Area

Significant – According to the California Department of Water Resources' (DWR) Jurisdictional Dams and the National Inventory of Dams (NID) databases, as well as the 2035 Kings County General Plan Safety Element and input received from the HMPC, there are 10 dams of concern to the County; seven of which



are in the County and three are upstream of the County.

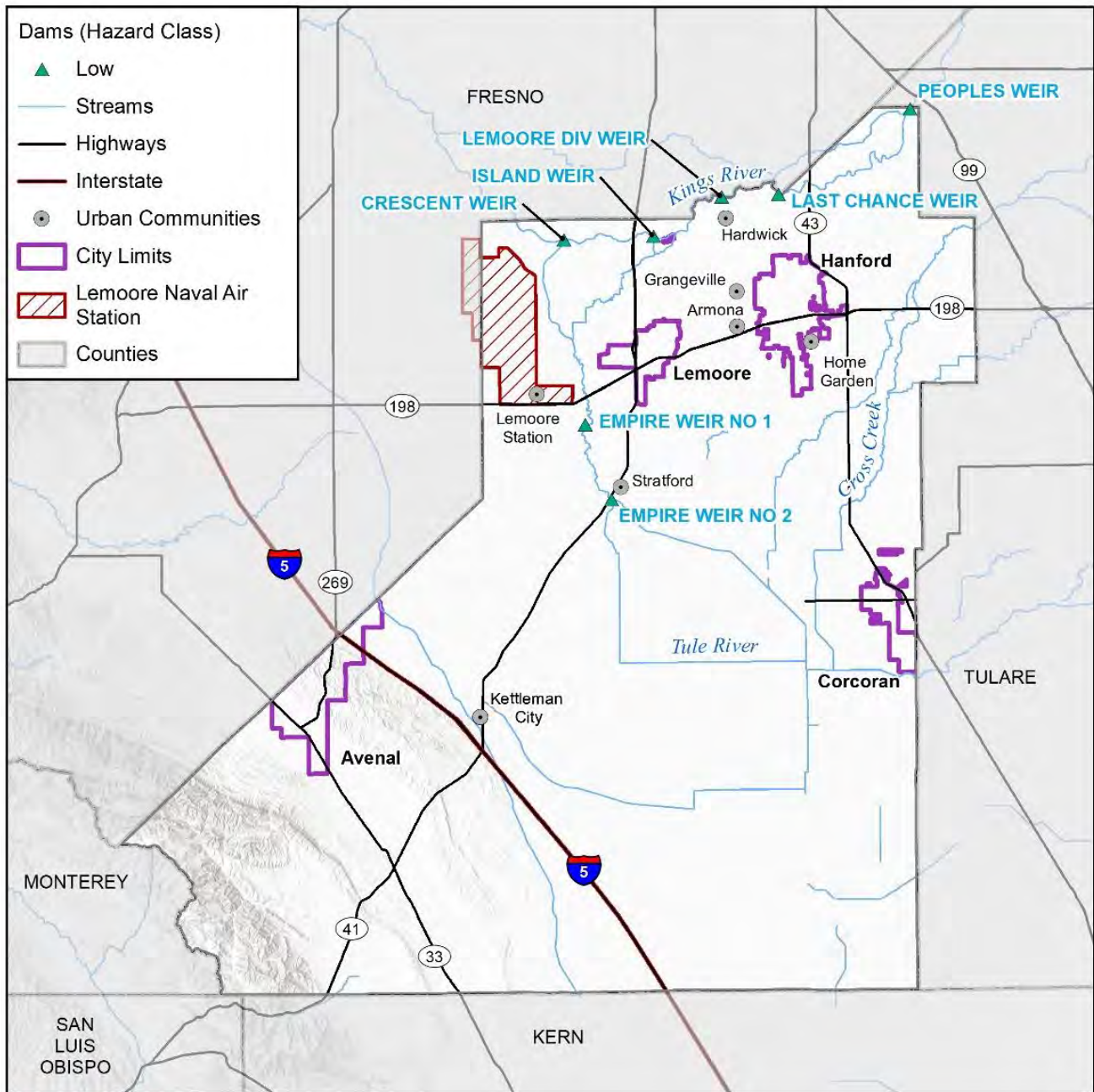
As shown in Figure 4-9, Pine Flat, Terminus and Schafer dams are high hazard dams; however, these three dams are not located within Kings County. The rest of the dams are low hazard dams. Figure 4-9 shows the location of these dams, except Terminus, Schafer, Pine Flat dams due to data confidentiality and the fact that they are located within Tulare and Fresno County. The potential inundation areas for all dams are not available, as the data is either not available in GIS or not allowed for release in a public document. Figure 4-10 is extracted from the 2035 Kings County General Plan Safety Element given information on Pine Flat Dam is no longer publicly available. As mentioned in the Safety Element, if Pine Flat Dam failed while at full capacity, its floodwaters would arrive in the County within approximately five hours. If Terminus Dam failed while at full capacity, its floodwaters would arrive in Kings County within approximately twelve hours. However, the chances of any of these dams failing while at full capacity are considered remote. As shown in Figure 4-8 Pine Flat Dam could inundate the majority of the County's northeastern portion, including the cities of Hanford and Lemoore, as well as urban communities including Hardwick, Grangeville, Armona, Home Garden and Stratford. Terminus Dam's inundation area is relatively smaller - a small portion to the northeast of the County would be inundated. In addition, according to the HMPC's input during the 2022 Plan Update, the City of Corcoran mentioned that the Schafer dam on Lake Success in Tulare County has the potential to cause dam inundation flooding in the City of Corcoran. However, the dam inundation data is not available for Schafer dam to be shown on a map or used for vulnerability assessment.

Table 4-15 lists other dams of concern within or upstream of Kings County.

DRAFT



Figure 4-9 Dams within Kings County



Map compiled 2/2022;
Intended for planning purposes only.
Data Source: Kings County, DWR,
National Inventory of Dams

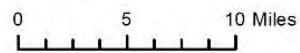
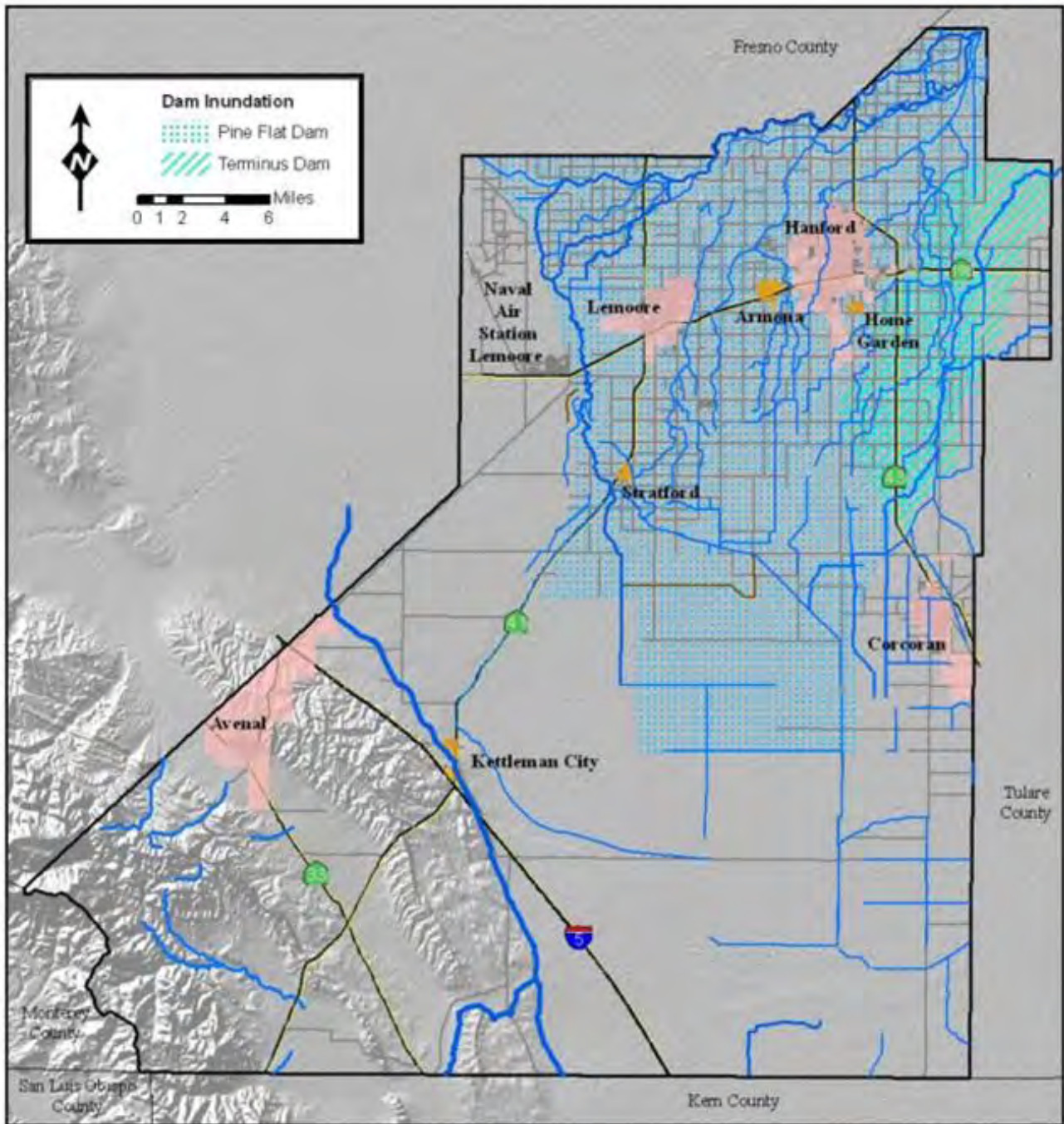


Figure 4-10 Pine Flat Dam and Terminus Dam Inundation Areas within Kings County



Source: Kings County 2010



Table 4-15 Dams of Concern Within and Upstream of Kings County

COUNTY	DAM NAME	DAM OWNER/OPERATOR	RIVER	DOWNSTREAM CITY	NORMAL STORAGE CAPACITY (ACRE- FEET)	EMERGENCY ACTION PLAN (EAP)?	NID HAZARD RATING	CA DSOD HAZARD RATING
Kings	Crescent Weir	Crescent Canal Company	-	-	50	Not Required	Low	Low
	Empire Weir No.1	Empire Westside Irrigation District	-	-	50	Not Required	Low	Low
	Empire Weir No.2	Tulare Lake Basin Water Storage District	-	-	480	Not Required	Low	Low
	Island Weir	Laguna Irrigation District	-	-	230	Not Required	Low	Low
	Last Chance Weir	Last Chance Water Ditch Company	-	-	50	Not Required	Low	Low
	Lemoore Diversion Weir	Lemoore Canal and Irrigation Company	-	-	50	Not Required	Low	Low
	Peoples Weir	Peoples Ditch Company	-	-	120	Not Required	Low	Low
Tulare	Terminus (in GP)	USACE - Sacramento District	-	-	235,205	Yes	High	N/A
	Schafer (Success Dam)	USACE - Sacramento District	Tule River	Porterville	65,473	Yes	High	N/A
Fresno	Pine Flat (in GP)	USACE - Sacramento District	Kings River	Hanford and Lemoore	1,000,000	Yes	High	N/A

Sources: California DSOD and the NID



As mentioned above, due to data limitations, analysis using inundation data and mapping associated with all dams was not possible for the plan, per communication with the Kings County Office of Emergency Services (OES) and the dam owners. As a result, the dam risk assessment does not quantify the entire risk to the County and the four participating jurisdictions in the event of a dam incident. However, these deficiencies have been noted and a qualitative summary of risk is provided instead.

4.5.3.3 Past Occurrences

There is no history of dam failure affecting the County. However, according to the HMPC's input during the 2023 MJHMP update, the City of Corcoran stated that Kings County has been a party of interest in Schafer dam and this dam has undergone retrofit and reinforcement for public safety. The March 2023 atmospheric river (AR) flash flooding demonstrated that flooding from Schafer dam can and did directly impact the City of Corcoran along the southeast portion of the City, including the directly adjacent two State Prison facilities that were protected by a portion of the Corcoran Levee along 4th Avenue between Quebec and Santa Fe Avenues.

4.5.3.4 Likelihood of Future Occurrence

Unlikely – The County remains at risk of dam failures from numerous dams under a variety of ownership and control and of varying ages and conditions. However, based on historical experience, dam failure is unlikely in the area based on the frequency of past dam incidents. Dams are regulated and inspected by either the State of California's DSOD or the Federal Energy Regulatory Commission (FERC) or both with follow-up written inspection reports. All the dams within the County have received satisfactory condition assessments. There have been no findings that would raise concern for a potential dam failure. Nevertheless, given the number of dams of concern in the County, the potential exists for future dam failures in the County, but the likelihood of this is low. Uncontrolled or controlled release flooding as well as spillway flooding below dams due to excessive rain or runoff are more likely to occur than failures. For example, the March 2023 atmospheric river (AR) flash flooding resulted in flooding from Schafer dam over the southeast portion of the City of Corcoran.

In addition, the potential for climate change to affect the likelihood of dam failure is not fully understood. However, climate change will impact the traditional operation measures and flow regimes used for dams because river conditions and water levels will be fluctuating due to climate change.

4.5.3.5 Climate Change Considerations

As noted in an academic journal Combined Effects of Reservoir Operations and Climate Warming on the Flow Regime of Hydropower Bypass Reaches of California's Sierra Nevada, which was published on March 24, 2014, climate warming will measurably alter some aspects of the flow regime (Rheinheimer and Viers, 2015). An article published at the Yale School of the Environment also notes that more evidence shows that climate change undermines the case for hydroelectric dams. Drought has caused reservoirs on five continents to drop below the levels needed to maintain hydroelectric production. Moreover, the article points out that climate change has caused vast uncertainty in flow assumptions, which resonates with the conclusions drawn by the 2014 journal article (Leslie 2021). Climate change may worsen drought conditions, which lessen the water available while climate change can also produce intense sudden storms that cause water levels to suddenly increase. Therefore, reservoir operators may need to change operations to mitigate climate change's impact on rivers and overall water levels.

However, the universal consensus is that the potential for climate change to affect the likelihood of dam failure is not fully understood. With a potential for more extreme precipitation events as a result of climate change, this could lead to large inflows into reservoirs. However, this could be offset by generally lowering reservoir levels if storage water resources become more limited or stretched in the future due to climate change, drought and/or population growth.

4.5.3.6 Magnitude and Severity

Critical – Standard practice among federal and state dam safety offices is to classify a dam according to the potential impact a dam failure (breach) or mis-operation (unscheduled release) would have on downstream areas. The hazard potential classification system categorizes dams based on the probable loss of human life and the impacts on economic, environmental and lifeline facilities. The U.S. Army Corps of Engineers uses three categories to classify a dam's potential hazard to life and property:

- High hazard indicates that a failure would most probably result in the loss of life.
- Significant hazard indicates that a failure could result in appreciable property damage.



- Low hazard indicates that failure would result in only minimal property damage and loss of life is unlikely.
- Undetermined hazard dams have not been rated or their hazard rating is not known.

In addition to these, high, significant, and low hazard classifications the California Division of Safety of Dams (DSOD) adds the fourth category of “*Extremely High*”. The DSOD defines this fourth category as “expected to cause considerable loss of human life or would result in an inundation area with a population of 1,000 or more” (DSOD 2020). As shown in Table 4-15 none of the dams are classified as “Extremely High”. However, it is important to note that there is no DSOD rating available for Terminus and Pine Flat dams.

Although most of the dams are rated low significance and can only result in minimal property damage and loss of life, Pine Flat dam can inundate a significant portion of the County. The extent of the impact depends on the nature of the failure. The largest populations potentially at risk would be in the cities of Hanford and Lemoore, as well as urban communities including Hardwick, Grangeville, Armore, Home Garden and Stratford.

A severe storm, earthquake or erosion of the embankment and foundation leakage may cause the collapse and structural failure of dams in the County or other nearby counties. Seismic activity may also cause inundation by the action of a seismically induced wave that overtops the dam without causing failure of the dam, but significant flooding downstream. Landslides flowing into lakes and reservoirs may also cause dams to fail or overtop.

4.5.3.7 Vulnerability Assessment

A dam incident can range from a small, uncontrolled release to a catastrophic failure. Vulnerability to dam failures is confined to the areas and populations subject to inundation downstream of the facility. Secondary losses would include the loss of the multi-use functions of the dam itself and the associated revenues that accompany those functions.

Property

In the unlikely event of a complete dam failure, the majority of the populated areas within the northeastern portion of Kings County would be impacted. Inundation due to dam failure within the San Joaquin Valley is a low probability but high-risk hazard. The potential risk for the inundation of property is present in nearly all of the developed areas in the County’s northeastern portion. However, this potential risk is limited to only Pine Flat dam. The other low-significance dams may cause localized flooding events if they were to breach.

In general, communities located below a high or significant hazard dam and along a waterway are potentially exposed to the impacts of a dam failure. Inundation maps that identify anticipated flooded areas (which may not coincide with known floodplains) are typically produced for all high significant dams and included in the Emergency Action Plan (EAP) required for each dam. The FERC also requires annual training and exercises for each individual EAP. This would apply to both Terminus and Pine Flat dams.

Given that a GIS layer containing inundation maps for the dams of concern to Kings County is not available, a quantitative dam inundation exposure analysis was not performed. However, based on properties located within the cities of Hanford and Lemoore, urban communities including Hardwick, Grangeville, Armore, Home Garden and Stratford, as well as the overall northeastern portion of the unincorporated County would be inundated if Pine Flat dam were to breach.

People

Persons located underneath or downstream of a dam are at risk of a dam failure, though the level of risk can be tempered by topography (specifically where populations are located within the inundation path of a dam), amount of water in the reservoir and time of day of the breach. Injuries and fatalities can occur from debris, bodily injury, and drowning. Once a dam has breached, standing water presents all the same hazards to people as floodwater from other sources. People in the inundation area may need to be evacuated, cared for, and possibly permanently relocated. Impacts could include thousands of evacuations and likely hundreds of casualties, depending on the dam involved.

The populations most vulnerable are those that have the least time to evacuate and need assistance. Populations that may need assistance to evacuate include the elderly, disabled and young. The vulnerable population also includes those who may not have adequate warning about evacuation from



emergency notification systems. The loss of life is impacted by the amount of early warning time first responders and the public have prior to the incident.

Given that Pine Flat dam could inundate the cities of Hanford and Lemoore, urban communities including Hardwick, Grangeville, Armona, Home Garden and Stratford, as well as the overall northeastern portion of the unincorporated County, people that live in these areas are then at risk of potential breaching events. Many of these communities were also identified as socially vulnerable due to income levels and higher housing burdens. Additionally, the southeast portion of the City of Hanford, western portion of the City of Lemoore, and the urban communities of Armona and Stratford are designated DACs.

The central and southern portions of the County have the highest level of social vulnerability, while the central and southeastern portions of the County are located within Pine Flat and Terminus dams' inundation areas (FEMA 2023). There are also socially vulnerable census tracts located within the cities of Hanford and Lemoore, which are located within Pine Flat dam's inundation area. Given these communities may require more assistance to respond to, cope with, and recovery from dam-related incidents, these socially vulnerable populations who live in these areas are exposed to a higher risk of dam inundation incidents.

Critical Facilities and Infrastructure

A total dam failure can cause catastrophic impacts to areas downstream of the water body, including critical infrastructure. Any critical asset located under the dam in an inundation area would be susceptible to the impacts of a dam failure. Of particular risk would be roads and bridges that could be vulnerable to washouts, further complicating response and recovery by cutting off impacted areas. Impacts on cities would affect key infrastructure including hospitals, fire stations, clinics, and businesses.

Given that Pine Flat dam could inundate the cities of Hanford and Lemoore, urban communities including Hardwick, Grangeville, Armore, Home Garden and Stratford, as well as the overall northeastern portion of the unincorporated County, critical facilities, such as water and wastewater infrastructure and electrical utilities located within these areas are then exposed to potential dam inundation events. In addition, as discussed above and mentioned by the HMPC, the two State Prison facilities located in the City of Corcoran and were protected by a portion of the Corcoran Levee along 4th Avenue between Quebec and Santa Fe Avenues, could be impacted if Schafer dam were to breach. The HMPC also expressed concern over the City of Corcoran's water treatment and wastewater treatment facilities that are not protected along the east from potential flooding events, which can result from Schafer Dam's potential overflow.

Economy

Extensive and long-lasting economic impacts could result from a major dam failure including the long-term loss of water in a reservoir after a failure event. As mentioned in the previous Agricultural Pests and Disease section, agriculture is the dominant land use in Kings County, accounting for 90.2% of total land use in the County. A major dam incident and loss of water from the associated reservoir could include direct business impacts on the agricultural industry, resulting in damages and indirect disruption of the local economy. Economic impacts related to agriculture in the unincorporated areas of the County would be the most severe. According to the *Kings County Agriculture Report (2021)*, the value of agricultural commodities produced in Kings County was over \$2.3 billion (Kings County 2021).

Cultural, Historic and Natural Resources

Dam failure effects on the environment would be similar to those caused by flooding from other causes. Water could erode stream channels and topsoil and cover the environment with debris. For the most part, the environment is resilient and would be able to rebound from whatever damages occurred, though this process could take years. However, historic and cultural resources could be affected just as housing or critical infrastructures would, were a dam to fail and cause downstream inundation that could further erode surfaces or cause scouring of structural foundations.

Development Trends

The areas located in the SOI for each incorporated jurisdiction are areas each city plans to grow into and are potentially slated for Development Trends. These areas should take into consideration potential impacts from dam failure risk upstream and should attempt to overlay the existing dam inundation maps with proposed Development Trends.



In the case of a dam failure, inundation would likely follow some existing FEMA-mapped floodplains, which contain development restrictions for areas in the 1% annual chance floodplain, but it could exceed those floodplains and affect areas that are not regulated for flood hazards. Also, of note is that development below a low or undetermined hazard dam could increase its hazard rating, while there are quite a few low hazard dams in the County. Finally, added development could compromise dams and reservoir resources if populations depend on them for critical needs such as potable water during or after a dam failure event.

The County Board of Supervisors has maintained support for the preservation of agricultural resources through the adoption of the Open Space Element and Resource Conservation Element of the County's General Plan (2010). The County has implemented a "Right to Farm Ordinance" to recognize the right of farming operations to conduct necessary farming practices and activities throughout the County (Hanford Municipal Code 2001). The County General Plan also continues to maintain a priority for directing urban growth to the existing cities and community districts where urban-type development is better suited and can receive municipal services. This directive helps to promote coordinated orderly urban growth within the County and reduces the potential for premature conversion of agricultural land to other uses.

There has been no significant change in development in the unincorporated areas impacted by dam failure within the County since the last MJHMP update. According to the existing SOI data, the Development Trends areas of the cities of Lemoore and Hanford, as well as urban communities including Stratford, Armona and Home Garden are exposed to potential inundation events if Pine Flat and Terminus Dams were to breach. The Development Trends areas of the City of Corcoran are also exposed to potential inundation events if Schafer dam were to breach.

4.5.3.8 Risk Summary

- There are 10 dams of concern for the County. Seven are within the County (all are low significant) and three dams are upstream of the County (all are high hazard).
- Pine Flat, Terminus and Schafer Dams, which are located in Fresno and Tulare Counties, are rated high hazard potential and can inundate Kings County if they were to breach.
- Pine Flat Dam would inundate the cities of Hanford and Lemoore, urban communities including Hardwick, Grangeville, Armore, Home Garden and Stratford, as well as the overall northeastern portion of the unincorporated County if it were to breach. Properties and critical facilities that are located within these areas, as well as populations that reside in these areas, are exposed to the potential breaching event. Schafer dam could potentially inundate the eastern portion of the City of Corcoran. The majority of these cities and communities contain designated DACs, or underserved and socially vulnerable populations that are at a greater risk of exposure and vulnerability to dam incidents due to a lack of resources.
- **Related Hazards** - Drought, Flood, Earthquake, Landslide, and Severe Weather.

JURISDICTION	GEOGRAPHIC AREA	PROBABILITY OF FUTURE OCCURRENCE	MAGNITUDE/ SEVERITY	OVERALL SIGNIFICANCE	PRIORITY HAZARD?
Kings County	Significant	Unlikely	Critical	Medium	Yes
City of Avenal	Limited	Unlikely	Negligible	Low	No
City of Corcoran	Extensive	Unlikely	Critical	Medium	Yes
City of Hanford	Extensive	Unlikely	Critical	Medium	Yes
City of Lemoore	Extensive	Unlikely	Critical	Medium	Yes



4.5.4 DROUGHT

4.5.4.1 Hazard Description

A drought is a prolonged period of abnormally low rainfall or precipitation that causes a shortage of water, leading to a deficiency in water supply for plants, animals, and human activities in a particular region. It can also be defined as a condition of water scarcity that results from a lack of precipitation, high evaporation rates, and increased water usage, leading to a depletion of water resources in an area. Droughts can vary in severity and duration, and can have significant impacts on agriculture, ecosystems, and human communities.

According to the California DWR, a single year of dry weather typically does not qualify as a drought in California due to the state's comprehensive water supply infrastructure, which includes reservoirs, groundwater basins, and inter-regional conveyance facilities (DWR 2015). These systems help alleviate the effects of short-term dry periods for most users of water.

Identifying the onset of a drought is determined by how it impacts water users. Most natural disasters, such as floods or forest fires, occur relatively rapidly and afford little time for preparing for disaster response. Droughts occur slowly, many times over a multi-year period, and it is often not obvious or easy to quantify when a drought begins and ends. What qualifies as a drought for some water users in a particular area may not be considered a drought for others in different regions or with alternative water sources. Water suppliers may determine their water supply conditions using criteria such as rainfall and runoff, the amount of water in storage, or anticipated supply from a water wholesaler.

Drought can often be defined regionally based on its causes or effects:

- **Meteorological drought** is defined as a period of substantially diminished precipitation duration and/or intensity. The commonly used definition of meteorological drought is an interval of time, generally on the order of months or years, during which the actual moisture supply at a given place consistently falls below the climatically appropriate moisture supply.
- **Agricultural drought** occurs when there is inadequate soil moisture to meet the needs of a particular crop at a particular time. Agricultural drought usually occurs after or during meteorological drought, but before hydrological drought and can affect livestock and other dry-land agricultural operations.
- **Hydrological drought** refers to deficiencies in surface and subsurface water supplies. It is measured as stream flow, snowpack, and lake, reservoir, and groundwater levels. There is usually a delay between a lack of rain or snow and noticeable water shortages in streams, lakes, and reservoirs. Therefore, hydrological measurements tend to lag other drought indicators.
- **Socioeconomic drought** occurs when physical water shortages start to affect the health, well-being, and quality of life of people, or when the drought starts to affect the supply and demand of an economic product.

Drought can have secondary impacts. For example, drought is a major determinant of wildfire hazard, in that it creates a greater propensity for fire starts and larger, more prolonged conflagrations fueled by excessively dry vegetation, along with reduced water supply for firefighting purposes. Drought is also an economic hazard. Significant economic impacts on California's agriculture industry can occur as a result of short- and long-term drought conditions; these include hardships to farmers, farm workers, packers, and shippers of agricultural products. The loss of hydroelectrical power generation may also occur during drought events due to the loss of hydroelectrical supply associated with lower reservoir levels and fewer water releases. In some cases, droughts can also cause significant increases in food prices for consumers due to shortages.

Sustainable Groundwater Management Act (SGMA) of 2014

In January 2014, Governor Brown declared an emergency proclamation due to multiple years of drought. The proclamation called on citizens to reduce water use by 20 percent, with a subsequent Executive Order in April 2015 that directed urban water agencies to reduce water use by 25 percent. In September 2014, the Governor signed a three-bill package (California SBs 1168 and 1319, and Assembly Bill [AB] 1739), known as the Sustainable Groundwater Management Act of 2014 (SGMA). SGMA provides for the establishment of local Groundwater Sustainability Agencies (GSAs) to manage groundwater sustainably within the groundwater subbasins defined by the California DWR. Within the County, there are portions of four groundwater subbasins, Tulare Lake, Kaweah, Kings, and Westside Subbasins, that are required



under SGMA to conduct sustainable groundwater management. Each of the four subbasins is required to develop and implement a Groundwater Sustainable Plan (GSP) by 2020 or 2022. Table 4-16 lists the GSAs in the County as well as their associated subbasins.

Table 4-16 Groundwater Sustainability Agencies in Kings County

SUBBASIN	GROUNDWATER SUSTAINABILITY AGENCY
Tulare Lake Subbasin	Southwest Kings GSA
	Tri-County Water Authority GSA
	El Rico GSA
	South Fork Kings GSA
	Mid-Kings River GSA
Kaweah Subbasin	Greater Kaweah GSA
Kings Subbasin	North Fork Kings GSA
Westside Subbasin	Westlands Water District GSA

Source: County of Kings Division of Water and Natural Resources

Drought Planning for Small Water Suppliers and Rural Communities

In September 2021, Governor Gavin Newsom signed Senate Bill 552, Drought Planning for Small Water Suppliers and Rural Communities (SB 552), into law. Under the bill, the State, its counties, and small water suppliers must meet requirements to ensure shared responsibility in preparing and acting in case of a drought event. The requirements of the law are as follows:

- Small water providers (those with fewer than 3,000 connections and serving fewer than 3,000-acre feet) are required to:
 - Have an abridged water shortage contingency plan by July 1, 2023,
 - Submit an annual report detailing their water supply conditions and usage by month, and
 - Upgrade their infrastructure to drought-resilient standards if necessary.
- DWR and the State Water Board have developed templates for abridged contingency plans for small suppliers on DWR’s website: Drought Planning for Small Water Suppliers and Rural Communities (SB 552) (ca.gov)
- Counties are required to have a standing Drought Task Force that facilitates drought and water shortage preparedness for domestic wells, privately supplied homes within the county’s jurisdiction(s), and small state water systems.² Additionally, the county is required to develop a plan that demonstrates potential drought and water shortage risks along with proposed short- and long-term solutions for small state and domestic wells within the county. Both of these requirements may be implemented as part of other existing committees and/or planning processes.
- The State is required to maintain and update the Water Shortage Vulnerability Tool to assist small water providers and counties in accessing information about drought, water shortage vulnerabilities, and risks. Additionally, DWR will coordinate with other state agencies to establish a standing drought and water shortage task force for California.

Urban Water Suppliers

Water suppliers who provide potable water for municipal purposes to more than 3,000 customers, or who supply more than 3,000 acre-feet of water annually, are defined as “urban water suppliers.” Urban water suppliers in Kings County, summarized in Table 4-17, are subject to the Urban Water Management Planning Act and other requirements but are not subject to SB 552.

² Section 116275 (n) of the Health and Safety Code (Water Code §10609.51 subd. (m)): A state small water system is a system for the provision of piped water to the public for human consumption that serves at least five, but not more than 14, service connections and does not regularly serve drinking water to more than an average of 25 individuals daily for more than 60 days out of the year. Kings County does not currently have any state small water systems.



Table 4-17 Urban Water Suppliers in Kings County

WATER SUPPLIER	SOURCE	# OF CONNECTONS	ACRE-FEET ANNUALLY	POPULATION SERVED
City of Hanford	Groundwater	18,438	11,714	62,127
City of Lemoore	Groundwater	7,305	7,413	27,038
City of Corcoran	Groundwater	3,548	5,708	21,835
City of Avenal	Surface water from the California aqueduct	2,080	3,500	13,819
Lemoore Naval Air Station	Surface water from the CA aqueduct and groundwater	1,396	3,055*	14,000

Sources: <https://sdwis.waterboards.ca.gov/>, City of Hanford 2020 UWMP, City of Lemoore 2020 UWMP, City of Corcoran 2020 UWMP, City of Avenal 2016 USBR Water Management Plan

* 2004 data, from <https://energy.wsu.edu/Documents/LemooreREMCasestudy.pdf>

Small Water Suppliers

SB 552 defines a small water supplier as a community water system³ that serves 15 to 2,999 service connections and provides less than 3,000 acre-feet of water per year. It considers several categories of small water suppliers: Suppliers with 15 to 999 Connections, Suppliers with 1,000 to 2,999 Connections and NTNC Systems That Are Schools. SB 552 does not explicitly apply to transient, noncommunity water systems or NTNC water systems that are not schools.

Under SB 552, all small water suppliers are required to have:

- Drought resiliency measures,
- Annual reporting of water supply condition information to the State Water Board, and
- Annual water demand reporting to the State Water Board.

Suppliers with 15 to 999 Connections

Health and Safety Code §116460 requires all community water systems to have an Emergency Notification Plan (ENP) or Emergency Response Plan (ERP) approved by the State Water Board that describes process and methods for meeting the public notification requirements when any primary drinking water standard is not complied with, when a monitoring requirement is not performed, or when the conditions of any variance or exemption are not complied with.

Under SB 552, suppliers with 15 to 999 connections must incorporate drought planning elements (including, but not limited to, drought-planning contacts and standard water shortage levels) into their ENP or ERP. The ENP or ERP is to be submitted to the State Water Board and updated every five years or when significant changes occur. Subject to funding availability, the State Water Board will offer technical assistance to support water suppliers with less than 1,000 connections in implementing this requirement.

Table 4-18 lists the small water suppliers in Kings County with 15 to 999 connections.

Table 4-18 Small Water Suppliers in Kings County with 15 to 999 Connections

NAME	SOURCE	CONNECTIONS	ACRE-FEET SUPPLIED	POPULATION SERVED	DROUGHT ELEMENT ADDED TO ENP OR ERP
Home Garden CSD	Groundwater	467	389	1,750	Yes

³ Section 116275 of the Health and Safety Code (Water Code §10609.51 subd. (a)) defines a community water system as a public water system that serves at least 15 service connections used by yearlong residents or regularly serves at least 25 yearlong residents of the area served by the system.



NAME	SOURCE	CONNECTIONS	ACRE-FEET SUPPLIED	POPULATION SERVED	DROUGHT ELEMENT ADDED TO ENP OR ERP
Stratford PUD	Groundwater	364	301*	1,277	Yes
Kettleman City CSD	Groundwater	348	263	1,136	Yes
Sunset Vista Estates MHP	Groundwater	109	Unknown	400	Unknown, likely yes
Hardwick Water Company	Groundwater	40	Unknown	69	Unknown, likely yes
Azcal Management Co	Surface water from CA aqueduct	21	Unknown	73	Unknown, likely yes

Sources: <https://sdwis.waterboards.ca.gov/>,
https://www.waterboards.ca.gov/conservation/docs/2016_small_supplier_dataset.xlsx, Data from 2015 to 2016 self-reporting,
* Data from 2013 self-reporting

Suppliers with 1,000 to 2,999 Connections and NTNC Systems That Are Schools

Small water sources in Kings County include non-transient non-community water systems (NTNCWS). NTNCWS are public water systems that regularly supply water to at least 25 of the same people at least six months per year. Some examples are schools, factories, office buildings, and hospitals which have their own water systems. NTNCWS that are not schools are not explicitly subject to SB 552.

All small water suppliers and non-transient non-community (NTNC) water systems that are schools must implement the following drought resilience measures, subject to funding availability:

- No later than January 1, 2023, implement monitoring systems sufficient to detect production well groundwater levels.
- Beginning no later than January 1, 2023, maintain membership in the California Water/Wastewater Agency Response Network (CalWARN) or similar mutual aid organization.
- No later than January 1, 2024, to ensure continuous operations during power failures, provide adequate backup electrical supply.
- No later than January 1, 2027, have at least one backup source of water supply, or a water system intertie, that meets current water quality requirements and is sufficient to meet average daily demand.
- No later than January 1, 2032, meter each service connection and monitor for water loss due to leakages.
- No later than January 1, 2032, have source system capacity, treatment system capacity if necessary, and distribution system capacity to meet fire flow requirements.

Abridged Water Shortage Contingency Plans

Suppliers in this category, listed in Table 4-19, must develop, adopt, and maintain on-site an abridged water shortage contingency plan (WSCP) that covers a subset of drought-planning elements included in the plans that urban water suppliers submit as part of their Urban Water Management Plan. The first plan must be developed by July 1, 2023, and posted on the supplier's website, if any, or made available upon request. This abridged WSCP must be updated at least every 5 years. The required elements must include:

- Drought-planning contacts, including all the following:
 - At least one contact at the Water System for water shortage planning and response and the development of the plan.
 - Contacts for local public safety partners and potential vendors that can provide repairs or alternative water sources, including but not limited to, local CBOs that work with the



- o population in and around areas served by the water system, contractors for drilling wells, vended water suppliers, and emergency shower vendors.
 - o State and local agency contacts who should be informed when a drought or water shortage emergency is emerging or has occurred.
 - o Regional water planning groups or mutual aid networks, to the extent they exist.
- Triggering mechanisms and levels for action, including both of the following
 - o Standard water shortage levels corresponding to progressive ranges based on the water supply conditions. Water shortage levels shall also apply to catastrophic interruption of water supplies, including, but not limited to, a regional power outage, an earthquake, a fire, and other potential emergency events.
 - o Water shortage mitigation, response, customer communications, enforcement, and relief actions that align with the water shortage levels.

As part of the technical assistance, DWR and the State Water Board have created a template for this abridged WSCP for small water suppliers serving 1,000 to 2,999 service connections and NTNC systems that are schools, located on DWR’s website. In addition, subject to funding availability, the State Water Board will offer technical assistance to support NTNC systems that are schools in implementing this new requirement for improving drought and water shortage resiliency.

Table 4-19 Small Water Suppliers with 1,000 to 2,999 Connections and NTNC School Systems in Kings County

NAME	SOURCE	CONNECTIONS	POPULATION SERVED	ABRIDGED WATER SHORTAGE CONTINGENCY PLAN	DROUGHT ELEMENT ADDED TO ENP OR ERP
Armona Community Services District	Groundwater	1,297	4,143	Yes	Yes
Island Union School	Groundwater	17	416	Yes	No
Hanford Christian School	Groundwater	14	175	Yes	No
Kings River Hardwick School	Groundwater	7	908	Yes	No
Pioneer Elementary School	Groundwater	6	750	Yes	No
Lakeside Elementary School	Groundwater	5	388	Yes	No

Source: <https://sdwis.waterboards.ca.gov/>

In addition, America’s Water Infrastructure Act of 2018 requires community water systems serving populations greater than 3,300 to develop or update an ERP that incorporates findings of their risk assessment. This requirement is not based on number of connections, although the number of connections, therefore, there may be a small number of small water suppliers with less than 1,000 connections who are required to develop and maintain an ERP. While the Armona CSD as a small water supplier with 1,000 to 2,999 connections is not required to have a drought element added to their ENP or ERP, they are required to as a community water system that serves greater than 3,300 customers.

A summary of the requirements for small water suppliers is provided in Table 4-20.



Table 4-20 Summary of Small Water Supplier Requirements for Implementation of Senate Bill 552

SUMMARY OF REQUIREMENT	COMMUNITY WATER SYSTEM 1,000-2,999 CONNECTIONS	COMMUNITY WATER SYSTEM 15-999 CONNECTIONS	NTNC WATER SYSTEMS THAT ARE SCHOOLS
Drought Resiliency Measures	Yes	Yes	Yes
Abridged Water Shortage Contingency Plan	Yes	No	No
Drought Element added to Emergency Notification or Response Plan	No	Yes	No
Annual reporting of water supply condition information to the State Water Board	Yes	Yes	Yes
Annual water demand reporting to the State Water Board	Yes	Yes	Yes

Source: https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Water-Use-And-Efficiency/Urban-Water-Use-Efficiency/SB-552/Primer-of-SB-552-052522_final.pdf

County Requirements

SB 552 places the drought and water shortage planning responsibility on counties for state small water systems and domestic well communities within the county's jurisdiction. SB 552's language allows for flexibility in how the County implements new requirements. Plans and response arrangements could be developed by GSAs that cover the County, in which case the County would need to formally recognize its agreement and adoption or deference to these plans as part of its compliance with SB 552.

County Drought and Water Shortage Task Force

By January 1, 2022, each county must establish a standing County Drought and Water Shortage Task Force to facilitate drought and water shortage preparedness for state smalls and domestic wells within the county's jurisdiction. Counties must solicit task-force membership from representatives of State and other local governments, including GSAs, community-based organizations (CBOs), local water suppliers, and residents.

As an alternative, the County may implement a different process that facilitates drought and water shortage preparedness for state smalls and domestic wells within the county's jurisdiction. The alternative process will provide opportunities for coordinating and communicating with the state and other local governments, CBOs, local water suppliers, and residents on a regular basis and during drought or water shortage emergencies.

County Drought and Water Shortage Risk Mitigation Plan

The County will develop a plan that includes potential drought and water shortage risks and proposed interim and long-term solutions for state smalls and domestic wells within the County's jurisdiction. The plan may be a stand-alone document or may be included as an element in an existing county plan, such as a LHMP, EOP, climate action plan or CAP, or general plan. The plan must include:

- Potential drought and water shortage risk
- Proposed interim and long-term solutions for state smalls and domestic wells in the County.

The plan must also consider the following, at a minimum:

- Consolidations for existing water systems and domestic wells.
- Domestic well drinking water mitigation programs.
- Provision of emergency and interim drinking water solutions.
- An analysis of the steps necessary to implement the plan.
- An analysis of local, state, and federal funding sources available to implement the plan.



As outlined in Table 4-21, there are ten small water suppliers, supplementing the previously identified ten water districts. Within this subset, five meet the criteria for NTNCWS. All ten of these smaller suppliers, as depicted below, meet the requirements under the SB 552 legislation. These entities are mandated to draft WSCPs, with Kings County providing dedicated support for their development.

Table 4-21 Small Water Suppliers in Kings County

WATER UTILITIES	SYSTEM TYPE	ADDRESS	JURISDICTION
Kings River Hardwick School	Non-Transient Non-Community Water System	10300 Excelsior Ave	Hanford
Hanford Christian School	Non-Transient Non-Community Water System	11948 Flint Ave	Hanford
Island Union School	Non-Transient Non-Community Water System	7799 21st Ave	Lemoore
Pioneer Union Elem School	Non-Transient Non-Community Water System	8810 14th Ave	Hanford
Lakeside Union School	Non-Transient Non-Community Water System	9100 Jersey Ave	Hanford
Kings Ranch Ministries	State Small	13787 Kansas Ave	Hanford
Villa Terrace Apartments	State Small	13940 Hackett St	Hanford
Rollerland Co	State Small	18167 Medford Ave	Stratford
Westlake Farms Hqts/Cotton Gin	State Small	23311 Newton Ave	Stratford
Couture Farms	State Small	30650 Quebec Ave	Kettleman City

Source: Kings County Department of Public Health, Division of Environmental Health Services 2023

As part of compliance with the SB 552 requirements, the County will develop a drought resiliency plan, either as a stand-alone plan or as part of another plan, like the MJHMP that includes a risk assessment and action plan for all of the water districts and small water suppliers in the County. A drought resiliency plan is a structured strategy developed by governments, communities, and organizations to proactively address drought impacts. Its primary goal is to build long-term capacity for effective drought management. The plan includes a risk assessment, water conservation actions, diversifying water sources, early warnings, legal frameworks, community engagement, ecological considerations, emergency response, research, and adaptive management components. These plans are crucial, especially in drought-prone regions or areas facing water scarcity due to factors like climate change and population growth. They aim to balance stakeholder needs with sustainable water resource management in the face of drought challenges.

4.5.4.2 Geographic area

Extensive - Drought is a regional hazard, and at its worst can affect the entire State of California with varying levels of dryness and drought activity. It is safe to assume that unless the drought event is at its very beginning or very end, if any area of the County is affected by any level of drought, other areas of the County are experiencing varying effects as well.

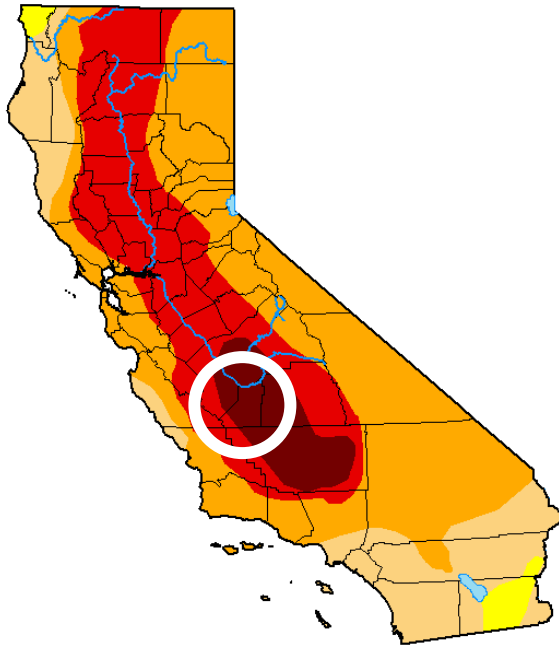
The U.S. Drought Monitor is a widely used site for obtaining and summarizing drought information, as it integrates data from several other sources including the Palmer Drought Index, Soil Moisture Models, U.S. Geological Survey Weekly Stream Flows, Standardized Precipitation Index, and the Satellite Vegetation Health Index. It includes drought intensity categories for measuring dry conditions across counties, states, and regions of the U.S., so that drought can be quantified. These categories range from “abnormally dry” to “exceptional drought.” Figure 4-11 provides “snapshots in time” of the drought conditions in California. The snapshots selected are instrumental in depicting both the historic and potential change in drought’s geographic range and severity in the County (circled).



Figure 4-11 U.S. Drought Monitor for California: December 27, 2022 and April 20, 2023

U.S. Drought Monitor California

December 27, 2022
(Released Thursday, Dec. 29, 2022)
Valid 7 a.m. EST



Intensity:

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

Author:

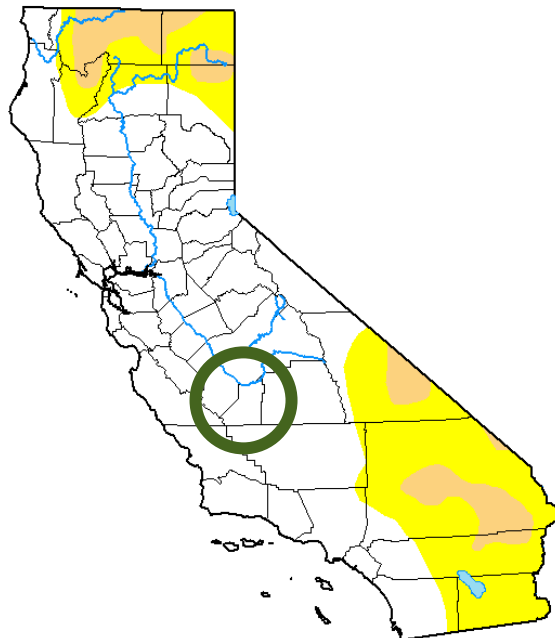
Richard Heim
NCEI/NOAA



U.S. Drought Monitor California

April 18, 2023

(Released Thursday, Apr. 20, 2023)
Valid 8 a.m. EDT



Intensity:

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

Author:

Richard Tinker
CPC/NOAA/NWS/NCEP



Source: Drought Monitor 2023

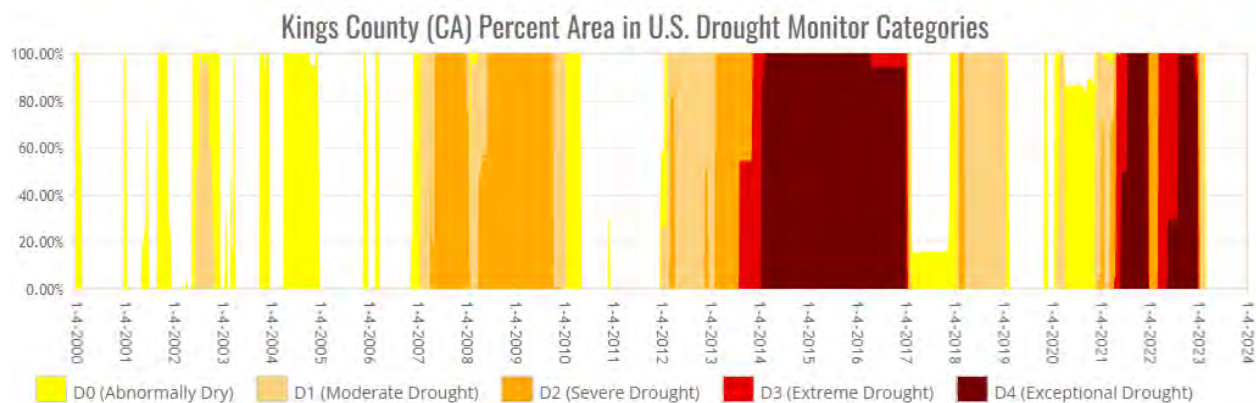


4.5.4.3 Past Occurrences

Historically, California has experienced severe drought conditions. The state’s available record for determining hydrologic risks is short, only going back about 100 years. Recent droughts affecting Kings County are summarized below.

- 1928-1937—This drought affected the entire state and is the longest, most severe drought on record with a recurrence interval of greater than 80 years (Paulson et al, 1991).
- 1947-1950—Drought affected the entire state but was most extreme in Southern California. The drought in the winter of 1950 affected the area from the Kern River basin north to the American River basin. The drought caused two deaths and \$33 million in damages (Paulson et al, 1991).
- 1976-1977—This drought was most severe in Northern and Central California, but the impact was experienced statewide because of the dependence of southern California on water transfers from the north. FEMA declared an emergency declaration for the County due to the effects of the drought. The water year 1977 was the driest year of record at almost all gauging stations in the affected area in California, and the water year 1976 was among the five driest in the central and northern Sierra Nevada. The two-year deficiency in runoff accumulated during the drought is unequalled at gauging stations in the affected area, and this deficiency has a recurrence interval that exceeds 80 years. Crop damages statewide were \$2.67 billion (Paulson et al 1991).
- 1987-1992—During this multiyear, multi-county drought, the runoff from the San Joaquin Valley was 47 percent of the average. In 1991, the U.S. Department of Agriculture Economic Research Report Agricultural Outlook reported that the Kings River flow would be inadequate to provide sufficient water for agricultural uses for the fifth consecutive year. A USDA drought disaster declaration was declared (Economic Research Service 1992).
- 2004-2005—On January 26, 2005, the USDA designated the County a primary disaster area due to drought that had occurred since January 1, 2004 (USDA 2005).
- 2008-2009—On June 12, 2008, The Governor proclaimed the County as a state disaster area due to the Central Valley Drought (Schwarzenegger 2008).
- 2012-2017 - The County was designated a disaster area in 2012 due to drought, prompting a state of emergency proclamation by the Governor in 2014 (Brown 2014). Severe impacts were felt, including widespread crop damage, dry wells, and land subsidence. The drought cost the agriculture industry \$1 billion in lost revenue and caused \$2.2 billion in statewide economic damage, with a one-third reduction in water for agriculture (NCICS 2019). The groundwater situation in California is described as a "slow-moving train wreck" (NCICS 2019). The state expended \$6.6 billion in response and mitigation efforts by 2017, according to the 2018 California SHMP.
- The USDA drought monitor compiles time series to communicate the extent and severity of drought over time. Figure 4-12 shows this data for Kings County.

Figure 4-12 USDA Drought Monitor Timeseries



Source: Drought Monitor 2023



Kings County has experienced 15 USDA disaster declarations due to drought between 2012 and 2021 as detailed in Table 4-22 below.

Table 4-22 USDA Drought Declarations by Year in Kings County, 2012 - 2021

DECLARATION TYPE	YEAR	NUMBER OF DECLARATIONS
Drought	2012	2
	2014	1
	2015	1
Drought-FAST TRACK	2012	1
	2013	3
	2014	1
	2015	1
	2016	1
	2017	1
	2019	1
	2021	2
	Grand Total	15

Source: USDA

4.5.4.4 Likelihood of Future Occurrence

Likely – Historical drought data for the County indicates there have been seven significant multi-year droughts, equating to roughly 30 years in drought conditions, in the last 100 years. This equates to a roughly 30% chance of a major drought in any given year. Given the historical occurrence of severe drought impacts throughout the County and across the State, drought is likely to continue to pose a high degree of risk to the entire planning area, potentially impacting crops, livestock, water resources, the natural environment, buildings, and infrastructure (from subsidence and compound hazards), and local economies. Drought will also intensify based on climate change trends associated with precipitation variability and increased temperatures.

4.5.4.5 Climate Change Considerations

Water resources in California are already experiencing stresses related to population growth, increased water demand, poor water quality, groundwater overdraft, and aging infrastructure. As temperatures warm, heat waves become more frequent, and precipitation becomes increasingly variable, drought conditions in California are likely to become more frequent and persistent. Recent drought conditions have underscored the need to examine water supply and distribution management, conservation, and use policies.

According to *California's Climate Adaptation Strategy*, climate change is likely to significantly diminish California's future water supply. In an average year, approximately 40 percent of the State's total water supply comes from groundwater, and during a dry year, this increases to more than half of the State's water supply, with groundwater acting as a critical buffer against the impacts of drought and climate change.

Table 4-23 details how climate change induced drought will impact multiple sectors.

Table 4-23 Climate Change, Droughts, and Impacts

CHALLENGE	OBSERVED AND OR PROJECTED CHANGE
Agriculture and outdoor watering	Increasing temperatures raise evapotranspiration by plants, lower soil moisture, alter growing seasons, and thus increase water demand.
Water supply infrastructure	Changes in snowpack, streamflow timing, and hydrograph evolution may affect reservoir operations including flood control and storage. Changes in the timing



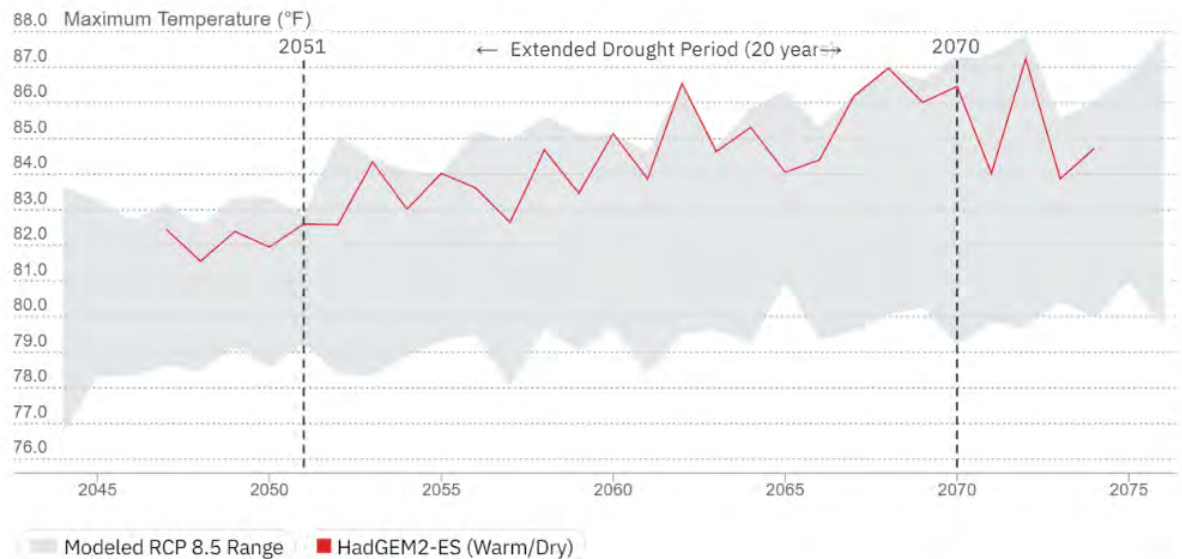
CHALLENGE	OBSERVED AND OR PROJECTED CHANGE
	and magnitude of runoff may affect the functioning of diversion, storage, and conveyance structures.
Legal water systems	Earlier runoff may complicate prior appropriation systems and interstate water compacts, affecting which rights holders receive water and operations plans for reservoirs.
Water quality	Although other factors have a large impact, “water quality is sensitive both to increased water temperatures and changes in patterns of precipitation” (US Climate Change Science Program Synthesis and Assessment Products 4.3, p. 149). For example, changes in the timing and hydrograph may affect sediment load and pollution, impacting human health.
Energy demand and Operating Costs	Warmer air temperatures may place higher demands on hydropower reservoirs for peaking power. Warmer lake and stream temperatures may affect water use by cooling power plants and other industries.
Interplay among forests, hydrology, wildland fires, and pests	Changes in air, water, and soil temperatures may affect the relationships between forests, surface and groundwater, wildland fire, and insect pests. Water-stressed trees, for example, may be more vulnerable to pests.
Soil moisture	Increasing temperatures lead to increased evaporation of water from soil. Parched soil dries out and becomes hardened, increasing flood risk when precipitation does occur, decreasing the likelihood of groundwater recharge.
Stream conditions	Decreases in snowpack that melt earlier in the season will result in less stream water throughout the year, decreasing a critical water source for forests, agriculture, and the economy.
Groundwater resources	Changes in long-term precipitation and soil moisture can affect groundwater recharge rates; coupled with demand issues, this may mean greater pressure on groundwater resources.

Source: Ray et al., 2008

California has a highly variable climate and projections from Cal-Adapt suggest that extended drought occurrence could become more pervasive in future decades (Cal-Adapt 2023). Cal-Adapt provides data for two 20-year drought scenarios derived from the downscaled simulations. Under a maximum temperature by water year under a drought from 2051-2070 (scenario that represents a late century dry spell from 2051-2070 identified from the RCP 8.5 simulation based on the average annual precipitation over 20 years), average temperatures will increase from 76.5 °F to 84.5°F. Figure 4-13 shows the projected extended drought from 2051 to 2070 based on maximum temperatures by water year.



Figure 4-13 Projected Changes in Maximum Temperature by Water Year under 2051-2070 Drought



Source: Cal-Adapt 2023

4.5.4.6 Magnitude and Severity

Critical - Drought impacts are wide-reaching and may be economic, environmental, and/or societal. The most significant impacts associated with drought in the planning area are those related to water-intensive activities such as agriculture and wildlife preservation. During a drought, water allocations may go down, resulting in reduced water availability. Voluntary water conservation measures may also be implemented during extended droughts.

A reduction in electric power generation and water quality deterioration are also potential problems that can occur as a result of drought conditions. The reduced demand for electrical power generation is commonly linked to higher electricity costs due to the loss of hydropower supplies. Water quality deterioration is due to lower levels of precipitation which allow pollutants to concentrate and limit water storage supply. Table 4-24 summarizes the historically observed impacts by category. Figure 4-14 provides the drought statistics for the County.

Table 4-24 Historically Observed Impacts by Drought Monitor Category in California

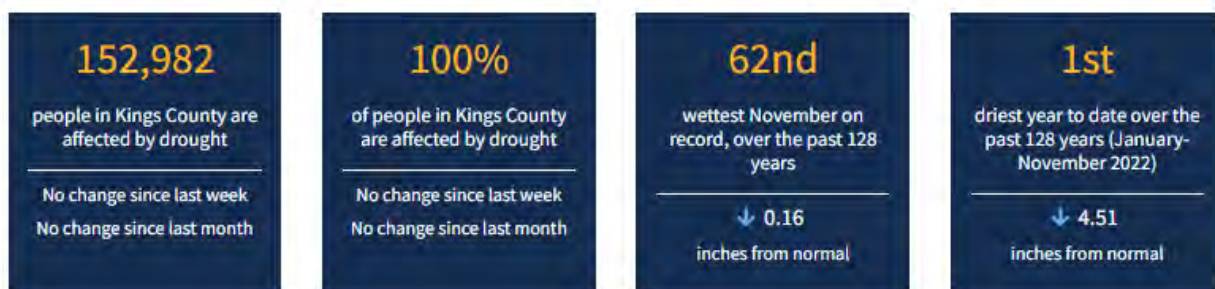
CATEGORY	HISTORICALLY OBSERVED IMPACTS
D0 - Abnormally Dry	<ul style="list-style-type: none"> • Soil is dry; irrigation delivery begins early • Dryland crop germination is stunted • Active fire season begins
D1 - Moderate Drought	<ul style="list-style-type: none"> • Dryland pasture growth is stunted; producers give supplemental feed to cattle • Landscaping and gardens need irrigation earlier; wildlife patterns begin to change • Stock ponds and creeks are lower than usual
D2 - Severe Drought	<ul style="list-style-type: none"> • Grazing land is inadequate • Fire season is longer, with high burn intensity, dry fuels, and large fire spatial extent



CATEGORY	HISTORICALLY OBSERVED IMPACTS
D3 – Extreme Drought	<ul style="list-style-type: none"> Trees are stressed; plants increase reproductive mechanisms; wildlife diseases increase Livestock need expensive supplemental feed; cattle and horses are sold; little pasture remains; fruit trees bud early; producers begin irrigating in the winter Fire season lasts year-round; fires occur in typically wet parts of the State; burn bans are implemented Water is inadequate for agriculture, wildlife, and urban needs; reservoirs are extremely low; hydropower is restricted
D4 – Exceptional Drought	<ul style="list-style-type: none"> Fields are left fallow; orchards are removed; vegetable yields are low; honey harvest is small Fire season is very costly; number of fires and area burned are extensive Fish rescue and relocation begins; pine beetle infestation occurs; forest mortality is high; wetlands dry up; survival of native plants and animals is low; fewer wildflowers bloom; wildlife death is widespread; algae blooms appear

Source: U.S. Drought Monitor

Figure 4-14 Drought Statistics in Kings County: January 11, 2023



Source: U.S. Drought Monitor, NOAA National Center for Environmental Information, U.S. Geological Survey; drought.gov

4.5.4.7 Vulnerability Assessment

Impacts include water restrictions associated with domestic supplies, agricultural and livestock losses and economic impacts, hydroelectric power reductions, and increased costs for water. Secondary effects include susceptibility to wildfires and increased groundwater pumping that can contribute to land subsidence and degraded water quality.

People

Drought is one of the few hazards with the potential to impact all the citizens of the County through water restrictions, economic losses, and increased energy costs. The historical and potential impacts of drought on populations include agricultural sector job loss, secondary economic losses to local businesses and public recreational resources, increased cost to the local and state government for large-scale water acquisition and delivery, water rationing, and water wells running dry for individuals and families.

Droughts are often accompanied by high temperatures, which can cause heat stress and dehydration, especially in vulnerable populations such as the elderly, children, and those with pre-existing medical conditions. Additionally, droughts can increase the risk of wildfires, which can release large amounts of smoke and pollutants into the air, leading to respiratory problems such as asthma, bronchitis, and



pneumonia. Droughts can also lead to crop failures, food shortages, and rising food prices, resulting in malnutrition and undernutrition, especially in low-income populations. Finally, droughts can cause significant stress and anxiety, especially for those who rely on agriculture for their livelihoods, and drought-related economic losses can also lead to social and psychological stress.

Communities in Kings County most likely to experience the range of these hazard impacts and vulnerabilities will include underserved communities, and DACs located within the rural communities around the northeast portion of the County. These unincorporated communities consist of Armona, Grangeville, Hardwick, Home Garden, Kettleman City, Lemoore Station, and Stratford. Socially vulnerable communities are also located in the cities of Avenal and Corcoran, and portions of the City of Hanford. Of the socially vulnerable populations, those households who receive water from smaller water suppliers, such as Community Service Districts (CSDs) or private water companies, and faculty and students at school facilities dependent on NTCWS may be most vulnerable because these suppliers may not have WSCPs or procedures in place to monitor and track groundwater levels. Agricultural farmers and workforce housing on private groundwater wells may also be most susceptible to drought conditions.

Property

Between the years of 2007 and 2021, over 785,000 acres of USDA-insured crops were lost in the County due to drought, resulting in over \$5 million in indemnity payments. Table 4-25 summarizes the total agricultural losses.

Table 4-25 Crop Loss Due to Drought, 2007 - 2021

YEAR	CROP	NET ACRES	IDEMNITY AMOUNT
2007	Barley	1,082.68	\$ 9,774.00
	Wheat	15,351.79	\$334,260.00
2008	Barley	2,248.90	\$44,655.00
	Wheat	4,546.66	\$128,883.00
2009	Barley	1,912.74	\$30,184.00
	Wheat	5,200.18	\$387,907.00
2010	Wheat	2,065.18	\$98,314.00
2012	Barley	4,527.36	\$336,738.00
	Wheat	16,769.36	\$1,416,535.00
2013	Barley	1,470.36	\$68,899.00
	Wheat	5,700.98	\$560,696.00
2014	Barley	5,011.43	\$293,190.10
	Wheat	9,279.79	\$869,086.53
2016	Cotton	182.50	\$189,546.00
2021	Wheat	3,228.04	\$416,938.80
Total		785,77.948	\$5,185,606.43

Source: USDA RMA Crop Indemnity Reports, 2007-2021

Critical Facilities and Infrastructure

Severe to exceptional droughts can have significant consequences for water supply, water quality, firefighting, navigation, recreation, and other critical facilities. In some cases, when groundwater levels substantially decline, groundwater wells may need to be deepened in response. Subsidence related to groundwater withdrawal can impact linear infrastructure such as pipelines, roads, and levees. Additionally, a higher demand on the water system infrastructure can lead to disruption of service due to line breakage. Possible losses to infrastructure include the loss of potable water.

Small water suppliers and rural communities were the hardest hit during the five-year drought that ended in 2016. In some of the rural communities, wells went dry and State and county authorities



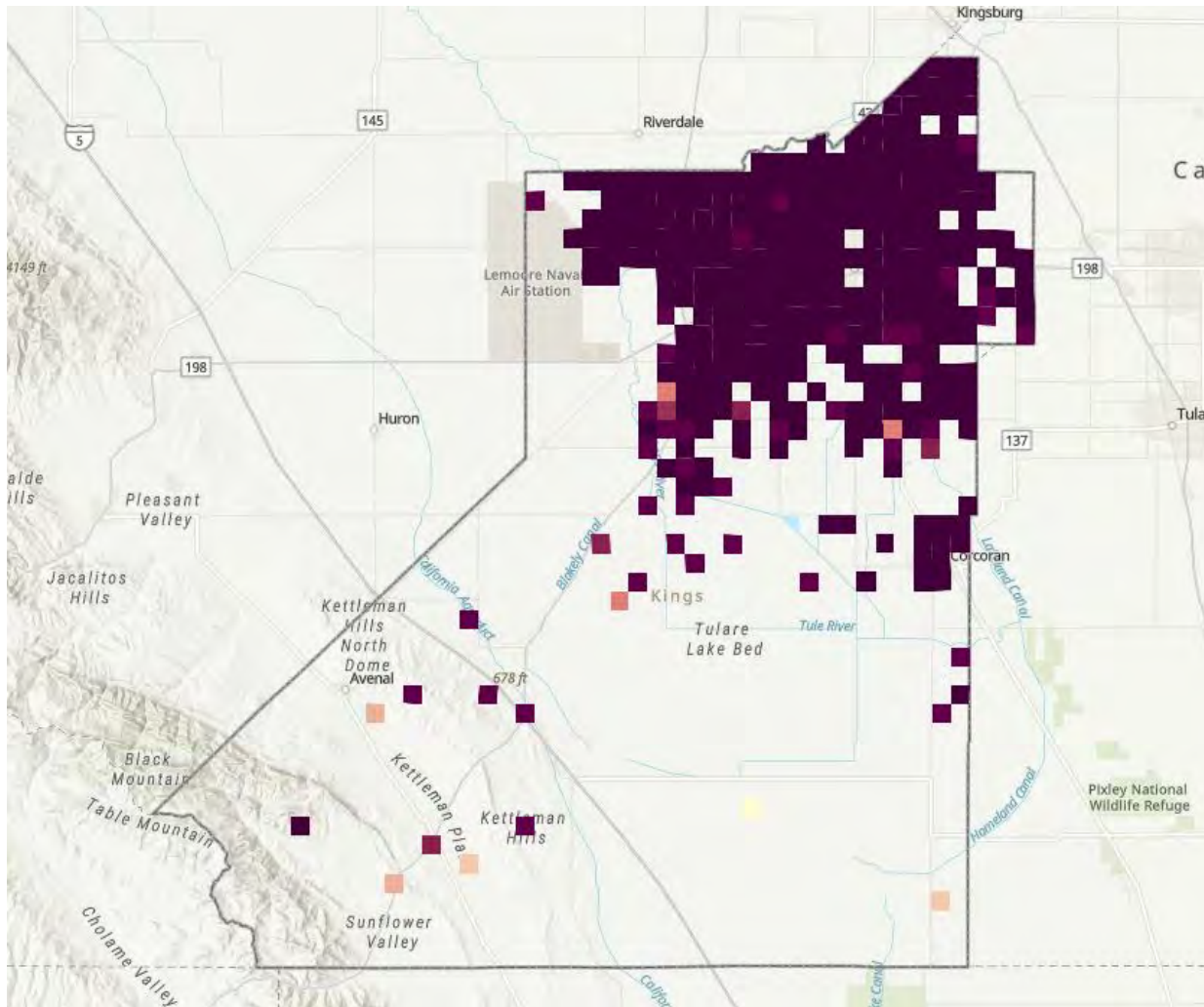
provided bottled water and installed large water storage tanks for homes that went dry. Smaller water systems can therefore be more vulnerable to higher costs and water quality issues during prolonged dry periods. Unlike the larger water districts in Kings County, small water systems do not need to maintain drought contingency plans, and the lack of these plans have left small and rural water systems, rural water systems, and their stakeholders unaware of how to seek assistance. DWR publishes an online tool called the Drought and Water Shortage Risk Explorer Tool for small water suppliers and rural communities to use to identify and understand drought vulnerabilities.

According to the Drought and Water Shortage Vulnerability Explorer Tool for Small Water Suppliers, there are 11 water systems vulnerable to drought, which closely aligns with the 10 water systems identified by Kings County's Public Health Department:

- Stratford Public Utility District
- Home Garden Community Service District
- Armona Community Service District
- Hardwick Water Company
- Island Union School
- Champions - Samuel House
- Kettleman City Community Service District
- City of Avenal
- Azcal Management Company
- Sunset Vista Estates
- Lemoore Naval Air Station

Based on the vulnerability profiles for these small water systems, many had high vulnerability scores (scores greater than 40 depicted by a dark purple color). The physical vulnerabilities are associated with dry years, groundwater overdraft, lack of emergency interties, and the fact that these small water systems rely on single and small water sources for supply. Similarly, based on the water shortage vulnerability scores, the water suppliers located in the northeast portion of Kings County had the highest physical vulnerability scores above 40, and Kings County had an average physical vulnerability score of 57.71. The physical vulnerability scores for Kings County's state small and domestic wells are shown in Figure 4-15.

Figure 4-15 Kings County State Small and Domestic Wells Water Shortage Physical Vulnerability Scores



Source: DWR Water Shortage Vulnerability Explorer 2023

The Water Shortage Vulnerability Explorer tools are designed to support small water suppliers and rural communities identify and understand their risk. These vulnerabilities are also intended to support drought task force discussions around water shortage preparedness for domestic wells and privately supplied homes and small state water systems. The information is also intended to support risk assessments as Kings County and the small water suppliers develop their Water Shortage Contingency Plans and the County Drought Resilience Plan that meet the requirements of SB 552.

Economy

Drought impacts on the local or regional economy can be difficult to quantify due to the extent to which most industries rely upon water. Many of the major industries in the County, such as grain and dairy farming, rely heavily on water and can be affected due to a lack of, or reduced quality of, water resources.

When water resources are limited, effects are more severe for industries that rely on large amounts of water, and prolonged droughts intensify these impacts. Agriculture often suffers the most financial losses from drought. Researchers at the University of California at Merced estimate that the 2020-2021 drought cost farms \$1.2 billion in losses, with an additional \$845 million loss incurred by the State's food processing and manufacturing industries (UC Merced date). An estimated 12,000 agricultural jobs were also lost due to the drought (Medellín-Azuara et al. 2022). Based on USDA indemnity payments, the County loses are just over \$343,000 in annualized average loss.



Cultural, Historic and Natural Resources

In addition to groundwater, the County receives water from the Kings River. Sustained drought reduces waterflow in the river, depriving the region of valuable agricultural and recreational resources. Water-dependent habitats such as freshwater marshes and vernal pools native to the area suffer losses from droughts.

The Tulare Lake region contains numerous archeological artifacts important to the Yokut Tachi Tribe (Kings County MJHMP, 2012). It is unknown how drought will affect these resources.

In general, environmental impacts from drought are more likely at the interface of the human and natural world. The loss of crops or livestock due to drought can have far-reaching economic effects on communities. Wind and water erosion can alter the visual landscape, and dust can damage property. Water-based recreational resources are also heavily affected by drought conditions.

Development Trends

Because Development Trends encompasses all forms of industry, infrastructure, critical facilities and all related populations and their functions, drought impacts on Development Trends will align with the historical and potential impacts on populations, property, natural environment, and critical facilities discussed above. With the County's population projected to continue to steadily increase while climate change projections are showing an increase in the duration and intensity of drought events, it will be important for each new development application to be reviewed with existing and future water supplies in mind.

4.5.4.8 Risk Summary

- Due to widespread impacts in the area, drought is considered a high-significance hazard.
- There have been seven significant multi-year droughts, equating to roughly 30 years in drought conditions, in the last 100 years. This equates to a roughly 30% chance of a major drought in any given year.
- 15 USDA Disaster Designations due to drought have been declared between 2012 and 2021.
- Between the years of 2007 and 2021, over 785,000 acres of USDA-insured crops were lost in Kings County due to drought, resulting in over \$5 million in indemnity payments.
- Climate change projections show that extreme prolonged drought is likely to continue and will exacerbate existing water supply challenges. Under a maximum temperature scenario that represents a late century dry spell from 2051-2070, average temperatures will increase from 76.5 °F to 84.5°F.
- Underserved communities, and DACs located within the unincorporated communities of Armona, Grangeville, Hardwick, Home Garden, Kettleman City, Lemoore Station, and Stratford and those households who receive water from smaller water suppliers and faculty and students at school facilities dependent on NTNCWS are most vulnerable to drought because these suppliers may not have WSCPs or procedures in place to monitor and track groundwater levels.
- **Related Hazards** – Extreme Heat, Land Subsidence, Wildfire, Agricultural Pest Infestation and Disease

JURISDICTION	GEOGRAPHIC AREA	PROBABILITY OF FUTURE OCCURRENCE	MAGNITUDE/ SEVERITY	OVERALL SIGNIFICANCE	PRIORITY HAZARD?
Kings County	Extensive	Likely	Critical	High	Yes
City of Avenal	Extensive	Likely	Critical	High	Yes
City of Corcoran	Extensive	Likely	Critical	High	Yes
City of Hanford	Extensive	Likely	Critical	High	Yes
City of Lemoore	Extensive	Likely	Critical	High	Yes

4.5.5 EARTHQUAKE

4.5.5.1 Hazard Description

An earthquake is caused by a sudden slip on a fault. Stresses in the earth's outer layer push the sides of the fault together. Stress builds up and the rocks slip suddenly, releasing energy in waves that travel through the earth's crust and cause the shaking that is felt during an earthquake. The amount of energy released during an earthquake is usually expressed as a magnitude and is measured directly from the earthquake as recorded on seismographs. The magnitude of earthquakes is usually measured using the Richter Scale, a logarithmic scale calculated from the amplitude of the largest seismic wave recorded for the earthquake.



Another measure of earthquake severity is intensity. Intensity is an expression of the amount of shaking at any given location on the ground surface. Seismic shaking is typically the greatest cause of damage to structures during earthquakes. Seismologists have developed the Mercalli scale to quantify the shaking intensity of an earthquake's effects, which is measured by how an earthquake is felt by humans and the damage to buildings.

Earthquakes can cause structural damage, injury, and loss of life, as well as damage to infrastructure networks such as water, power, gas, communication, and transportation lines. Other damage-causing effects of earthquakes are surface rupture, fissuring, settlement, and permanent horizontal and vertical shifting of the ground. Secondary impacts can include landslides, seiches, liquefaction, and dam failure. Liquefaction occurs when ground shaking causes the mechanical properties of some fine-grained, saturated soils to liquefy and act as a fluid. It is the result of a sudden loss of soil strength due to a rapid increase in soil pore water pressures caused by ground shaking, in areas of shallow groundwater (within 10' of the surface or less). Liquefaction that produces surface effects generally occurs in the upper 40 to 50 feet of the soil column, although the phenomenon can occur deeper than 100 feet. The duration of ground shaking is also an important factor in causing liquefaction to occur. The larger the earthquake magnitude, and the longer the duration of strong ground shaking, the greater the potential for liquefaction to occur.

In populated areas, the greatest potential for loss of life and property damage can come as a result of ground shaking from a nearby earthquake. The degree of damage depends on many interrelated factors. Among these are the moment magnitude, focal depth, distance from the causative fault, duration of shaking, type of surface deposits or bedrock, presence of high ground water, topography, and finally, the design, type, and quality of building construction.

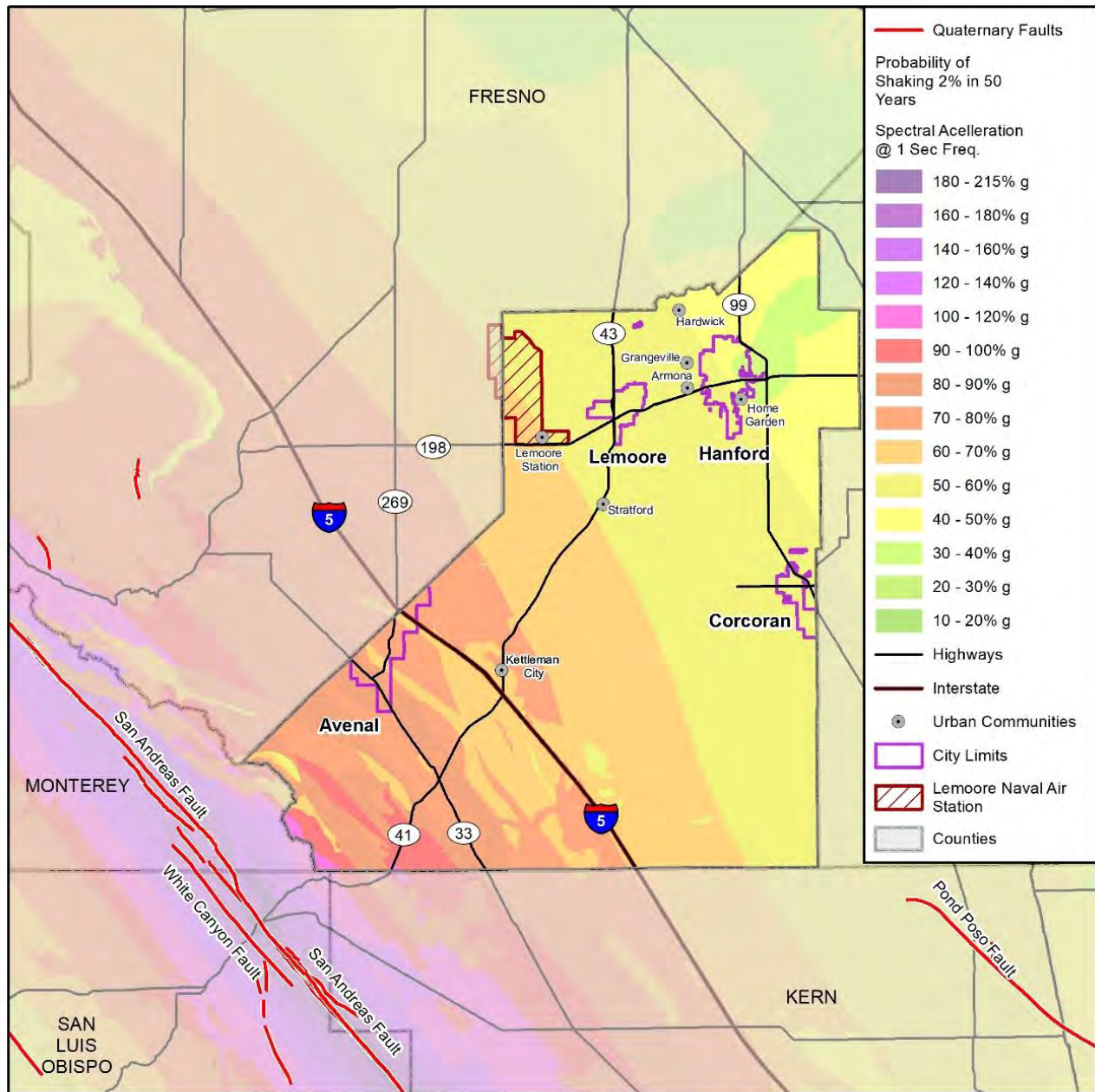
4.5.5.2 Geographic Area

Limited - As mentioned in the County's 2012 MJHMP, no major fault systems are known to exist in the County. Therefore, the potential for extensive surface rupture within the County is minimal. However, minor surface ruptures could occur in areas of minor faulting, which occur primarily in the southwestern part of the County along the Kettleman Hills. Ground shaking is the most likely damaging effect of an earthquake. During the preparation of the County's 2012 MJHMP, the HMPC reported that shaking was felt during the Coalinga earthquake of magnitude 6.4 in 1983. The epicenter of the Coalinga earthquake was located approximately 20 miles from the County's western border.

As shown in Figure 4-16, the San Andreas Fault is located less than four miles west of the Kings County line. The San Andreas occurs where the North American and Pacific plates come together and grind in a side - by - side motion relative to each other. The San Andreas Fault also falls within a Alquist-Priolo Earthquake Fault Zone. As defined by California Department of Conservation, Alquist-Priolo earthquake fault zones are regulatory zones surrounding the surface traces of active faults in California (CGS, n.d.). Wherever an active fault exists, if it has the potential for surface rupture, a structure for human occupancy cannot be placed over the fault and must be a minimum distance from the fault (generally fifty feet). Moreover, the Pond Poso fault is to the southeast of the County - about 8 miles from the Countyline.

Figure 4-16 shows the known faults and potential for ground shaking resulting from earthquakes in and near Kings County based on USGS probabilistic ground shaking with a 2% in 50-year occurrence, which is also known as 2500-year probabilistic ground shaking. In addition, as documented in the County's 2012 MJHMP, another large known fault, the White Wolf fault, is located to the south near Arvin and Bakersfield and produced a severe M 7.7 earthquake in 1952. This fault is not shown in Figure 4-16 due to the extent of the map.

Figure 4-16 Kings County Earthquake Ground Shaking Potential and Nearby Faults



Map compiled 2/2023;
Intended for planning purposes only.
Data Source: Kings County, USGS
California Geological Survey

0 5 10 Miles



The potential for ground shaking is discussed in terms of the 2% percent probability of exceeding peak ground acceleration (% g) in the next 50 years. It varies from 30-70% g in the northeastern and central portions of the County, including the cities of Hanford, Lemoore, Corcoran, and the central primary agricultural part of the County. Earthquake hazard is more severe in the southwest of the County and the City of Avenal. The potential for ground shaking in this area ranges from 60-100% g. The potential for ground shaking is particularly high at the southwestern County line, reaching 100% g and above.

Earthquakes can occur at any time of the day or night and any time of the year. Earthquakes are particularly dangerous due to their rapid onset, generally without warning. Aftershocks can occur for days, weeks, and even months following a major earthquake. This additional damage to structures already weakened by the main earthquake increases the danger to rescue and recovery personnel.



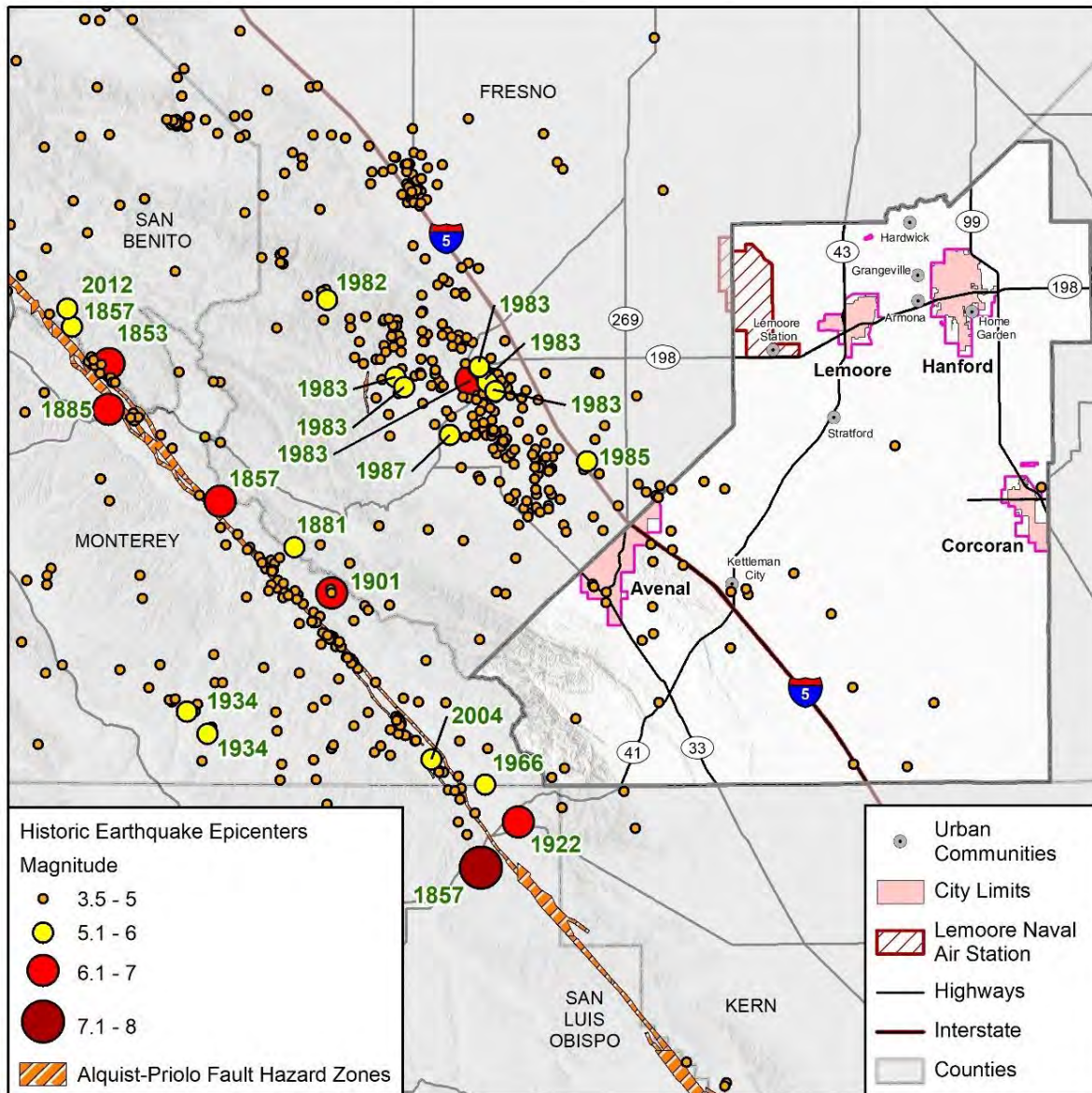
Earthquakes can result in many secondary effects, including fires and landslides, which are covered in separate sections of this plan. Ground settlement and soil compaction also may occur as a result of seismic ground shaking. When unconsolidated valley sediments are saturated with water, water from voids is forced to the ground surface, where it emerges in the form of mud spouts or sand boils. If soil liquefies in this manner (liquefaction), it loses its supporting capacity, which can result in the minor displacement to the total collapse of structures. These types of unconsolidated sediments represent the poorest kind of soil condition for resisting seismic shock waves. However, according to California Department of Conservation's most recent liquefaction data, there is no liquefaction zone located within or near Kings County.

4.5.5.3 Past Occurrences

Figure 4-17 depicts the epicenters of the historic earthquakes that occurred in Kings County from 1855 through 2021. As shown in the figure, most of the epicenters have occurred along the San Andreas fault, which falls within the Alquist-Priolo Fault Hazard Zone and is to the west of the County.

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Figure 4-17 Kings County Historic Earthquake Epicenters: 1855 - 2021



Map compiled 10/2022;
Intended for planning purposes only.
Data Source: Kings County, California
Geological Survey, USGS

0 5 10 Miles



As noted in the County's 2012 MJHMP, there have not been any damaging earthquakes greater than M 6.0 recorded in Kings County in over 200 years, though several have been close. The most recent large earthquake near Kings County was the Kettleman Hills earthquake of magnitude 5.6 on August 4, 1985, whose epicenter was located four miles from the Kings County border just north of Avenal. This earthquake was the third in a sequence of moderate earthquakes that occurred along a shallowly dipping thrust fault on the eastern border of the San Joaquin Basin. It was preceded by two earthquakes located approximately 20 miles from Kings County, the 1982 New Idria earthquake (M 5.4) and the 1983 Coalinga (M 5.2). The Kettleman Hills earthquake did not result in any surface rupture. There was a low level of ground shaking and low local magnitude reported, according to the 2012 Kings County MJHMP.

Major earthquakes have occurred near Kings County and resulted in ground shaking felt in the county. The Fort Tejon earthquake in 1857 of M 7.9 was one of the greatest earthquakes ever recorded in the United States and the largest in California. It left an amazing surface rupture scar over 215 miles in length along the San Andreas Fault. The epicenter is now thought to have been located near Cholame, approximately 34 miles northwest of the Kings County border near Avenal. During the Fort Tejon

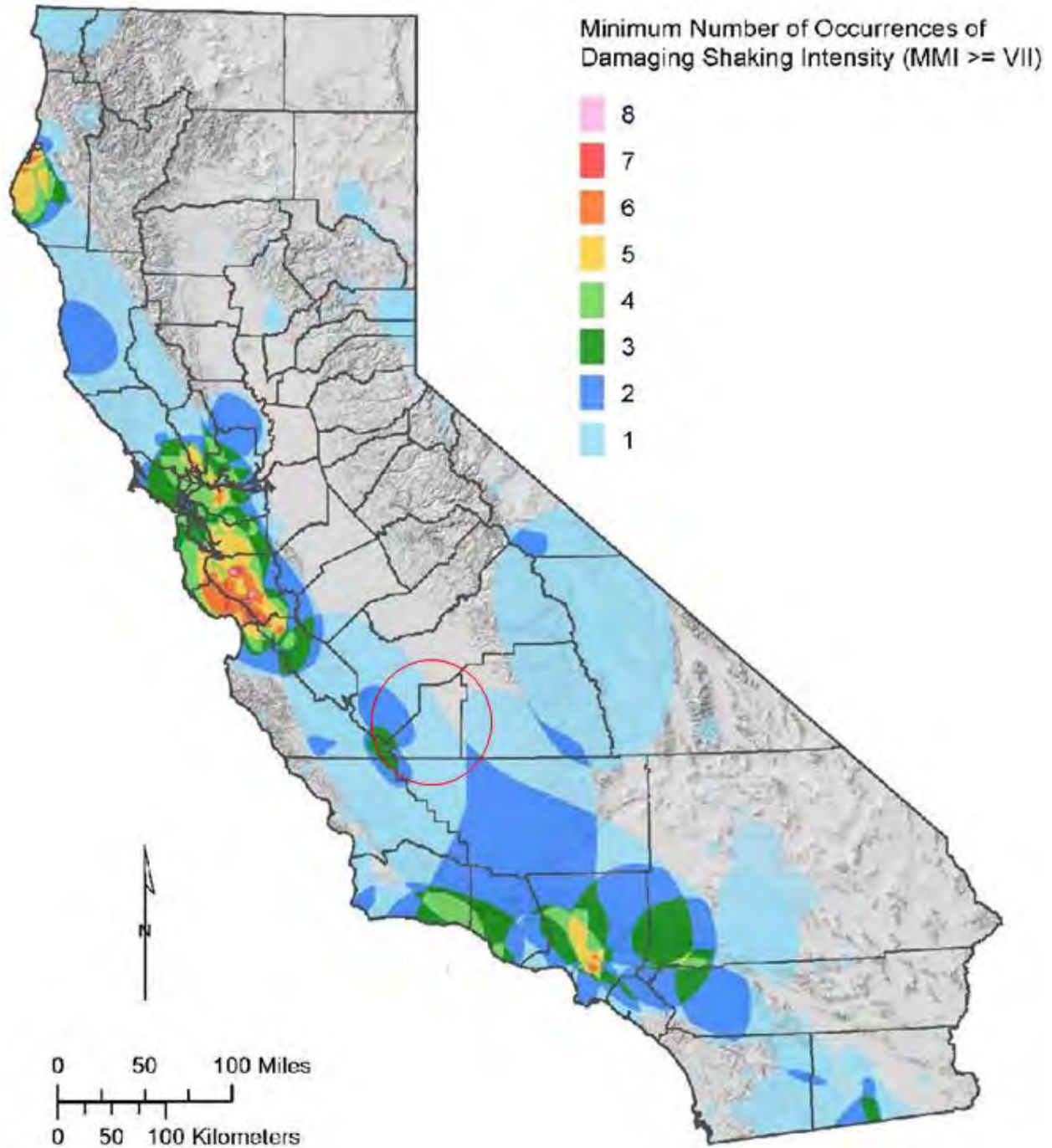


earthquake, strong shaking lasted from one to three minutes. As a result of the shaking, the current of the Kern River was turned upstream, and water ran four feet deep over its banks (SCEDC, 2012). The waters of Tulare Lake were thrown upon its shores, stranding fish miles from the original lakebed. Property loss was heavy at Fort Tejon, one of the only settlements at the time, an Army post in south-central Kern County about four miles from the San Andreas fault. In 1857, two buildings were declared unsafe, three others were damaged extensively but were habitable, and still, others sustained moderate damage. One person was killed in the collapse of an adobe house at Gorman.

Figure 4-18 below is from the 2018 California State Hazard Mitigation Plan, which displays the common areas damaged by earthquakes based on historic evidence dating back to the year 1800. The occurrences are color-coded by damaging shaking intensity across California, and Kings County is enclosed within a red circle. The figure shows that per the MMI scale noting occurrences equal to or greater than an Intensity of VII, the County has experienced 1 to 2 earthquake events of this kind, mostly affecting the southwestern portion of the County, particularly the area encompassing the City of Avenal.

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Figure 4-18 Areas Damaged by Earthquakes from 1800 to 2017



Source: California SHMP, 2018

4.5.5.4 Likelihood of Future Occurrence

Occasional – The National Earthquake Information Center (U.S.) reports 12,000-14,000 earthquakes a year around the world, or 35 a day. Throughout the world, there are one "great" (magnitude 8.0 or more), 18 "major" (7.0-7.9), 120 "large" (6.0-6.9) and 1,000 "moderate" (5.0-5.9) earthquakes in an average year (CA Department of Conservation, n.d.). Each year, California generally gets two or three earthquakes large enough to cause moderate damage to structures (magnitude 5.5 and higher). Moreover, earthquakes can occur at any time of the year. A strong earthquake can cause major damage depending on the epicenter's location with regards to populated areas, and can lead to billions of dollars in disasters, deaths, injuries, and disruptions in services and communities' way of life.



Along the San Andreas Fault, segments exist where no large earthquakes have occurred for long intervals of time. These areas accumulate potential energy and provide clues as to where the next earthquake may occur and when. Scientists term these segments “seismic gaps” and, in general, have been successful in forecasting the time when some of the seismic gaps will produce large earthquakes. As noted by USGS, geologic studies show that over the past 1,400 to 1,500 years, large earthquakes have occurred at about 150-year intervals on the southern San Andreas Fault. Based on the earthquake shaking potential mapped for Kings County, the proximity to the San Andreas Fault and the history of shaking but no surface rupture, the probability of damaging seismic ground shaking in Kings County is occasional.

4.5.5.5 Climate Change Considerations

Climate change is not expected to directly affect earthquake frequency or intensity, nor the Likelihood of Future Occurrence of seismic activity.

4.5.5.6 Magnitude and Severity

Catastrophic - For extent, the severity of an earthquake, or the amount of energy released during an earthquake is usually expressed in terms of intensity or magnitude as described further below.

Magnitude - Magnitude represents the amount of seismic energy released at the hypocenter of an earthquake. It is based on the amplitude of the earthquake waves recorded. Seismologists have developed several magnitude scales; one of the first was the Richter Scale, developed in 1932 by the late Dr. Charles F. Richter of the California Institute of Technology. The Richter Scale is numeric and has a logarithmic relationship between scale factors so that a difference of one scale number represents a tenfold increase in measured amplitude, which in turn corresponds to an approximate 31x energy release difference when compared to the next whole number value. The Moment Magnitude scale (M_w or M) is a measurement of energy released by the movement of a fault and is the modern method used by seismologists to measure earthquakes. Overall, as the amount of energy released by an earthquake increases, the potential for ground-shaking impacts also increases.

Intensity - Intensity represents the observed effects of ground shaking at any specified location and earthquake shaking decreases with distance from the earthquake epicenter. Intensity is an expression of the amount of shaking at any given location on the ground surface based on felt or observed effects. Seismic shaking is typically the greatest cause of losses to structures during earthquakes. Intensity is measured with the Modified Mercalli Intensity (MMI) scale. The intensity of ground shaking at a particular site or structure is a function of many factors including 1) earthquake magnitude, 2) distance from the epicenter, 3) duration of strong ground motion, 4) local geologic conditions (soil type and topography), and 5) the fundamental period of the structure. A brief description of those factors is presented below. The MMI scale and associated magnitude scales are summarized in Table 4-26, along with the effects associated with the MMI scale. Damage typically occurs in MMI of scale VII or above.

Table 4-26 Earthquake Magnitude and Intensity Measurements and Intensity Characteristics

MAGNITUDE	MERCALLI INTENSITY	EFFECTS	FREQUENCY
Less than 2.0	I	Microearthquakes, not felt or rarely felt; recorded by seismographs.	Continual
2.0-2.9	I to II	Felt slightly by some people; damages to buildings.	Over 1M per year
3.0-3.9	II to IV	Often felt by people; rarely causes damage; shaking of indoor objects noticeable.	Over 100,000 per year
4.0-4.9	IV to VI	Noticeable shaking of indoor objects and rattling noises; felt by most people in the affected area; slightly felt outside; generally, no to minimal damage.	10K to 15K per year
5.0-5.9	VI to VIII	Can cause damage of varying severity to poorly constructed buildings; at most, none to slight damage to all other buildings. Felt by everyone.	1K to 1,500 per year
6.0-6.9	VII to X	Damage to a moderate number of well-built structures in populated areas; earthquake-resistant structures survive with slight to moderate damage; poorly designed structures receive moderate to severe damage; felt in wider areas; up to hundreds of	100 to 150 per year



MAGNITUDE	MERCALLI INTENSITY	EFFECTS	FREQUENCY
		miles/kilometers from the epicenter; strong to violent shaking in epicentral area.	
7.0-7.9	VIII<	Causes damage to most buildings, some to partially or completely collapse or receive severe damage; well-designed structures are likely to receive damage; felt across great distances with major damage mostly limited to 250 km from epicenter.	10 to 20 per year
8.0-8.9	VIII<	Major damage to buildings, structures likely to be destroyed; will cause moderate to heavy damage to sturdy or earthquake-resistant buildings; damaging in large areas; felt in extremely large regions.	One per year
9.0 and Greater	VIII<	At or near total destruction - severe damage or collapse to all buildings; heavy damage and shaking extends to distant locations; permanent changes in ground topography.	One per 10-50 years

Source: USGS Volcanic Hazards Program

Distance from Epicenter – Earthquake energy generally dissipates (or attenuates) with distance from a fault. Over long distances, this loss of energy can be significant, resulting in a significant decrease in ground shaking with increased distance from the epicenter.

Duration of Strong Shaking – The duration of strong ground shaking constitutes a major role in determining the amount of structural damage and the potential for ground failure that can result from an earthquake. Larger magnitude earthquakes have longer durations than smaller earthquakes.

Local Geologic Conditions – The geologic and soil conditions at a particular site have the potential to substantially increase the effects of ground shaking. The thickness, density, and consistency of the soil, as well as shallow groundwater levels, have the potential to amplify the effects of ground shaking depending on the characteristics of the earthquake. In general, the presence of unconsolidated soils above the bedrock surface can amplify the ground shaking caused by an earthquake.

Fundamental Periods – Every structure has its fundamental period or natural vibration. If the vibration of ground shaking coincides with the natural vibration period of a structure, damage to the structure can be greatly increased. The extent of damage suffered during an earthquake can also depend on non-geologic factors. The type of building and its structural integrity will influence the severity of the damage suffered. Generally, small, well-constructed, one- and two-story wood and steel frame buildings have performed well in earthquakes because of their light weight and flexibility. Reinforced concrete structures will also usually perform well. Buildings constructed from non-flexible materials, such as unreinforced brick and concrete, hollow concrete block, clay tile, or adobe, are more vulnerable to earthquake damage.

Effects of Ground Shaking – The primary effect of ground shaking is the damage or destruction of buildings, infrastructure, and possible injury or loss of life. Building damage can range from minor cracking of plaster to total collapse. Disruption of infrastructure facilities can include damage to utilities, pipelines, roads, and bridges. Ruptured gas and water lines can result in fire and produce scour/inundation damage to structures, as can fire from other causes, such as electrical damages. Secondary effects can include geologic impacts such as co-seismic fault movement along nearby faults, seismically induced slope instability, liquefaction, lateral spreading, and other forms of ground failure and seismic response. These secondary effects were demonstrated in Oceano by the San Simeon 2003 earthquake (Hardebeck et al, 2004).

4.5.5.7 Vulnerability Assessment

Earthquake loss estimation for the 2023 MJHMP update utilized FEMA's Hazus-MH 6.0 natural hazard loss estimation software. Hazus is a GIS-based, standardized, nationally applicable multi-hazard loss estimation methodology and software. Local, state, and federal government officials use Hazus for preparedness, emergency response, and mitigation planning. A Level 1 Hazus analysis was performed, which estimates damage based on an inventory database compiled at a national level aggregated to 2020 Census Tracts. As with any model, there are uncertainties, and the results should be considered approximate for planning purposes.



To evaluate potential losses associated with earthquake activity in the County's planning area, two Hazus scenarios were run for the County, including a Hazus 2,500-year probabilistic scenario and the ShakeMap Magnitude 7.2 – Great Valley 14 (Kettleman Hills) Scenario. The 2,500-year scenario considers multiple faults in the region. The methodology utilizes probabilistic seismic hazard contour maps developed by the USGS for the 2018 update of the National Seismic Hazard Maps that are included with Hazus-MH. The USGS maps provide estimates of potential ground acceleration and spectral acceleration at periods of 0.3 second and 1.0 second, respectively. The 2,500-year return period analyzes ground shaking estimates from the various seismic sources in the area with a 2 percent probability of being exceeded in 50 years. The International Building Code uses this level of ground shaking for building design in seismic areas.

The Magnitude 7.2 – Great Valley 14 (Kettleman Hills) is a deterministic earthquake analysis that was modeled using Hazus for the County. A deterministic scenario predicts the outcome of a specific earthquake event. This deterministic scenario used USGS-provided ShakeMap datasets to model what a Magnitude 7.2 earthquake of the Great Valley Fault Thrust System would generate in terms of damages and losses for the chosen area of interest (i.e. Kings County). The datasets used to import into Hazus 6.0 for the scenario included four USGS-provided data layers in geospatial format: peak ground velocity, peak ground acceleration, peak spectral acceleration for 0.3 seconds (0.3 % g, or gravitational velocity), and peak ground acceleration for 1.0 seconds (1.0 % g).

Hazus estimates the number of people displaced, the number of buildings and facilities/infrastructure damaged, the number of casualties, and the damage to transportation systems and utilities. Results produced by Hazus are reported at the census tract level. These results and the estimated impacts are summarized below in the vulnerability assessment.

People

Loss of utility service would have major impacts on the people of the County, including socially vulnerable populations. The following tables indicate the number of projected households that would experience power and water loss, and the number of days the loss would last. As shown by Table 4-27 and Table 4-28 the 2,500-Year Probabilistic Scenario is expected to cause a longer delay in the recovery of potable water and electric power systems as well as cause more people to be without potable water or electric power compared to the Great Valley ShakeMap Scenario.

Table 4-27 Expected Potable Water and Electric Power System Performance – 2,500-Year Probabilistic Scenario

AFFECTED SERVICE	TOTAL NUMBER OF HOUSEHOLDS	NUMBER OF HOUSEHOLDS WITHOUT SERVICE				
		AT DAY 1	AT DAY 3	AT DAY 7	AT DAY 30	AT DAY 90
Potable Water	44,100	36,567	36,100	35,057	24,608	0
Electric Power		36,801	27,393	14,104	2,168	44

Source: Hazus-MH 6.0

Table 4-28 Expected Potable Water and Electric Power System Performance – Great Valley ShakeMap Scenario

Affected Service	TOTAL NUMBER OF HOUSEHOLDS	NUMBER OF HOUSEHOLDS WITHOUT SERVICE				
		AT DAY 1	AT DAY 3	AT DAY 7	AT DAY 30	AT DAY 90
Potable Water	44,100	8,513	6,254	2,238	0	0
Electric Power		3,315	2,451	1,222	157	4

Source: Hazus-MH 6.0

Sheltering is another concern during an earthquake – people may be displaced from their homes due to the earthquake, and those displaced people may need accommodations in temporary public shelters. Table 4-29 shows the projected total displacement and projected shelter needs for each scenario. The 2,500-Year Probabilistic Scenario is expected to result in many more displaced households and also people seeking shelter than the Great Valley ShakeMap Scenario.



Table 4-29 Shelter Requirements

	TOTAL POPULATION	TOTAL DISPLACED HOUSEHOLDS	TOTAL SEEKING SHELTER
2,500-YEAR PROBABILISTIC SCENARIO	152,486	2,371	1,588
GREAT VALLEY SHAKEMAP SCENARIO	152,486	121	96

Source: Hazus-MH 6.0

The Hazus modeled potential casualty numbers vary based on the magnitude and time of occurrence of the earthquake. Casualties are broken out by occupancy class, and severity is separated into one of four categories.

- **Level 1** – Injuries will require medical attention, but hospitalization is not needed
- **Level 2** – Injuries will require hospitalization but are not considered life-threatening
- **Level 3** – Injuries will require hospitalization and can become life-threatening if not promptly treated
- **Level 4** – Victims are killed by the earthquake

Hazus estimates are provided for three times of day: 2 AM, 2 PM, and 5 PM. These times represent the periods of the day when different sectors of the community are at their peak occupancy loads. The 2 AM estimate considers that the residential occupancy load is maximum, the 2 PM estimate considers that the educational, commercial, and industrial sector loads are maximum, and 5 PM represents peak commute time. Table 4-30 shows casualty estimates for the different times of day for each scenario. The 2,500-Year Probabilistic Scenario is expected to result in much more casualties and also more severe casualties than the Great Valley ShakeMap Scenario, shown in Table 4-31.

Table 4-30 Casualty Estimates – 2,500-Year Probabilistic Scenario

		LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4
2 AM	Commercial	6.42	1.78	0.28	0.56
	Commuting	0.06	0.07	0.13	0.03
	Educational	0.00	0.00	0.00	0.00
	Hotels	0.07	0.02	0.00	0.01
	Industrial	9.53	2.65	0.42	0.82
	Other- Residential	294.52	72.12	9.25	17.88
	Single Family	210.24	32.87	1.67	2.86
	Total	521	110	12	22
2 PM	Commercial	574.36	158.59	25.16	49.05
	Commuting	0.54	0.67	1.20	0.23
	Educational	230.38	62.92	10.17	19.90
	Hotels	0.01	0.00	0.00	0.00
	Industrial	70.21	19.45	3.07	5.99
	Other- Residential	126.17	31.09	4.21	7.84
	Single Family	66.67	10.43	0.62	0.90
	Total	1,068	283	44	84
5 PM	Commercial	446.20	122.91	19.53	37.54
	Commuting	9.31	11.45	20.50	3.91
	Educational	20.32	5.64	0.93	1.81
	Hotels	0.02	0.01	0.00	0.00
	Industrial	43.88	12.15	1.92	3.75
	Other- Residential	113.14	27.77	3.65	6.79
	Single Family	81.95	12.92	0.78	1.12
	Total	715	193	47	55

Source: Hazus-MH 6.0



Table 4-31 Casualty Estimates – Great Valley ShakeMap Scenario

		LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4
2 AM	Commercial	0.29	0.06	0.01	0.01
	Commuting	0.00	0.00	0.00	0.00
	Educational	0.00	0.00	0.00	0.00
	Hotels	0.00	0.00	0.00	0.00
	Industrial	0.29	0.05	0.01	0.01
	Other- Residential	42.29	8.89	1.04	2.01
	Single Family	16.09	1.56	0.06	0.10
	Total	59	11	1	2
2 PM	Commercial	26.94	5.46	0.71	1.38
	Commuting	0.02	0.02	0.03	0.01
	Educational	14.37	3.13	0.45	0.88
	Hotels	0.00	0.00	0.00	0.00
	Industrial	2.16	0.36	0.04	0.08
	Other- Residential	18.01	3.89	0.49	0.92
	Single Family	4.29	0.39	0.02	0.02
	Total	66	13	2	3
5 PM	Commercial	24.66	5.23	0.71	1.35
	Commuting	0.22	0.28	0.49	0.09
	Educational	0.34	0.04	0.00	0.00
	Hotels	0.00	0.00	0.00	0.00
	Industrial	1.35	0.23	0.02	0.05
	Other- Residential	16.09	3.42	0.41	0.77
	Single Family	6.07	0.61	0.03	0.04
	Total	49	10	2	2

Source: Hazus-MH 6.0

Populations most vulnerable to earthquake hazards would also be those that rely on specific services or electrical power which may not be available during or after an earthquake. Over three million Medicare beneficiaries rely on electricity-dependent durable medical and assistive equipment and devices to live independently in their homes (DHHS 2023). Severe weather, earthquakes, and other emergencies that result in prolonged power outages can be life threatening for these individuals. For example, of the 18,207 total beneficiaries in Kings County, 1,059 (5.8%) are at risk beneficiaries depending on medical equipment (DHHS 2023) Populations that are homeless, would also have a difficult time evacuating due to age or disability, in addition to those that cannot communicate easily because of limited English proficiency. Given there are numerous underserved and DACs throughout the County’s unincorporated communities in the northeast and within portions of most of the four cities in the County, earthquake hazards are expected to have the greatest impact on the disadvantaged households that rely on electrical power for medical conditions.

Property

Unreinforced Masonry Building (URM)s – Unreinforced masonry building type structures consist of buildings made of unreinforced concrete and brick, hollow concrete blocks, clay tiles, and adobe. Buildings constructed of these materials are heavy and brittle, and typically provide little earthquake resistance. In small earthquakes, unreinforced buildings can crack, and in strong earthquakes, they have a tendency to collapse. These types of structures pose the greatest structural risk to life and safety of all general building types. Due to the public safety risks that are posed by URM buildings, the California legislature passed SB 547 (Government Code Section 8875 et seq.). This legislation went into effect on January 1, 1987, and required all cities and counties located in Seismic Zone 4 to conduct an inventory of potentially hazardous structures, including unreinforced masonry buildings. The County is located within Zone 4.

Hazus estimates the number of buildings that will be damaged during a modeled earthquake, and these estimates are provided in the figures and tables below. According to Hazus results, under the 2,500-year

probabilistic scenario, the total building-related losses were \$4.5 billion. By far, the largest loss was sustained by the residential occupancies which made up over 41% of the total loss. Under the Great Valley 14 (Kettleman Hills) ShakeMap Scenario, total building-related losses were \$396 million. Here, the largest loss was also sustained by the residential occupancies, which made up over 41% of the total loss. Figure 4-19 and Figure 4-20 below provide summaries of the losses associated with the building damage under the two scenarios. The 2,500-Year Probabilistic Scenario is expected to result in much more economic losses than the Great Valley ShakeMap Scenario.

Figure 4-19 Earthquake Losses by Loss Type and Occupancy Type - 2,500 Probabilistic Scenario (in Millions of Dollars)

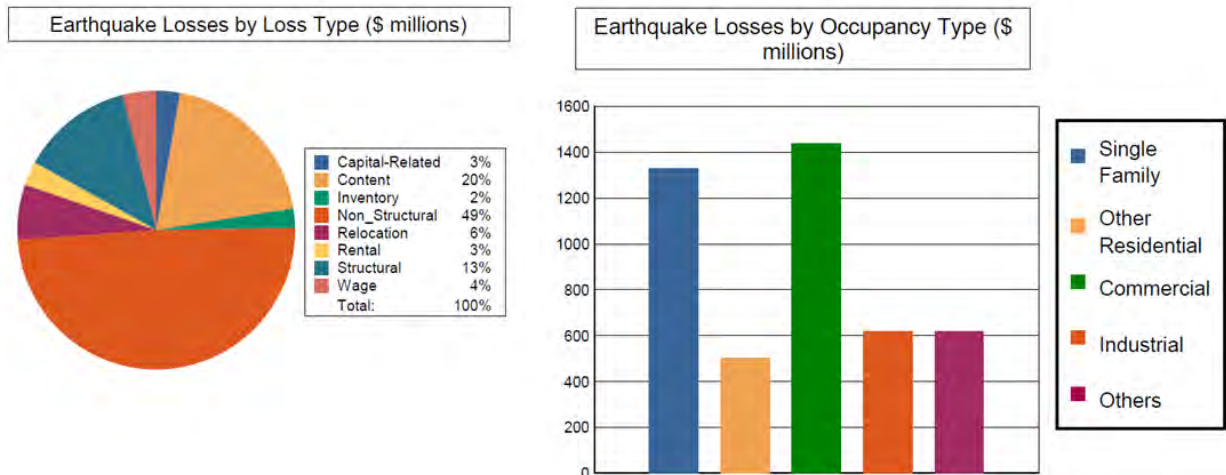


Figure 4-20 Earthquake Losses by Loss Type and Occupancy Type - Great Valley ShakeMap Scenario (in Millions of Dollars)

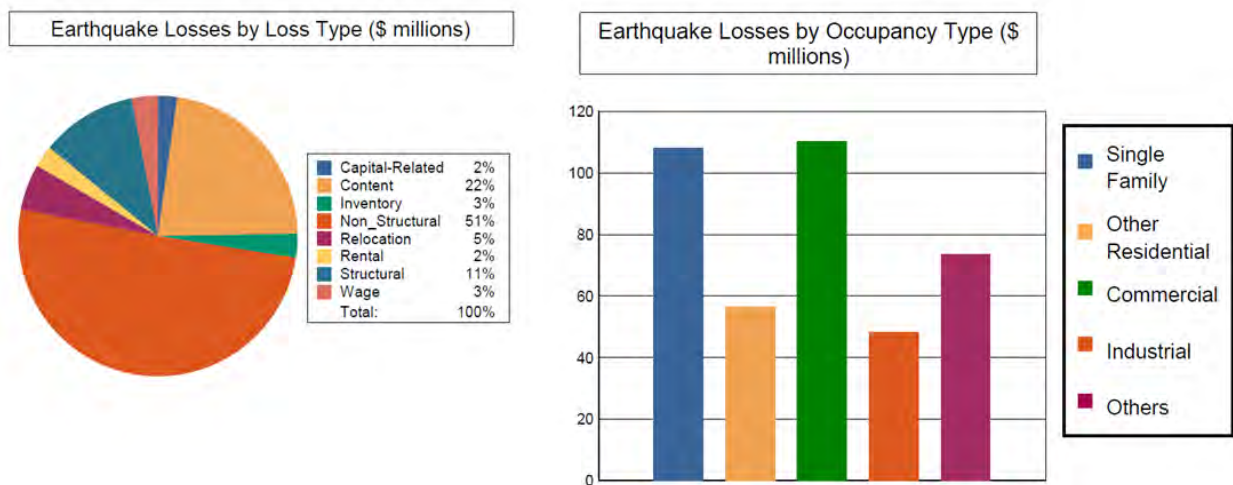


Table 4-32 and Table 4-33 show the expected building damage categorized by both building type and the degree of the expected damage. For each scenario, the majority of structures will either not be damaged or suffer slight to moderate damage. The 2,500-Year Probabilistic Scenario is expected to produce more severe building damage than the Great Valley ShakeMap Scenario.



Table 4-32 Expected Building Damage by Occupancy – 2,500-Year Probabilistic Scenario

	NONE		SLIGHT		MODERATE		EXTENSIVE		COMPLETE	
	COUNTY	(%)	COUNTY	(%)	COUNTY	(%)	COUNTY	(%)	COUNTY	(%)
Agriculture	44.19	0.43	77.52	0.44	99.84	0.81	56.94	2.10	27.50	2.74
Commercial	288.25	2.80	481.07	2.71	799.30	6.47	529.91	19.52	219.47	21.85
Education	18.98	0.18	28.24	0.16	33.12	0.27	17.02	0.63	5.63	0.56
Government	10.07	0.10	15.52	0.09	23.61	0.19	16.26	0.60	6.54	0.65
Industrial	57.02	0.55	99.97	0.56	195.95	1.59	141.07	5.20	61.00	6.07
Other Residential	759.39	7.37	1404.03	7.90	1278.72	10.35	612.66	22.57	287.20	28.60
Religion	30.92	0.30	49.54	0.28	67.86	0.55	43.78	1.61	17.91	1.78
Single Family	9089.21	88.26	15624.33	87.87	9855.83	79.78	1296.67	47.77	378.95	37.74
Total	10,298		17,780		12,354		2,714		1,004	

Source: Hazus-MH 6.0

Table 4-33 Expected Building Damage by Occupancy – Great Valley ShakeMap Scenario

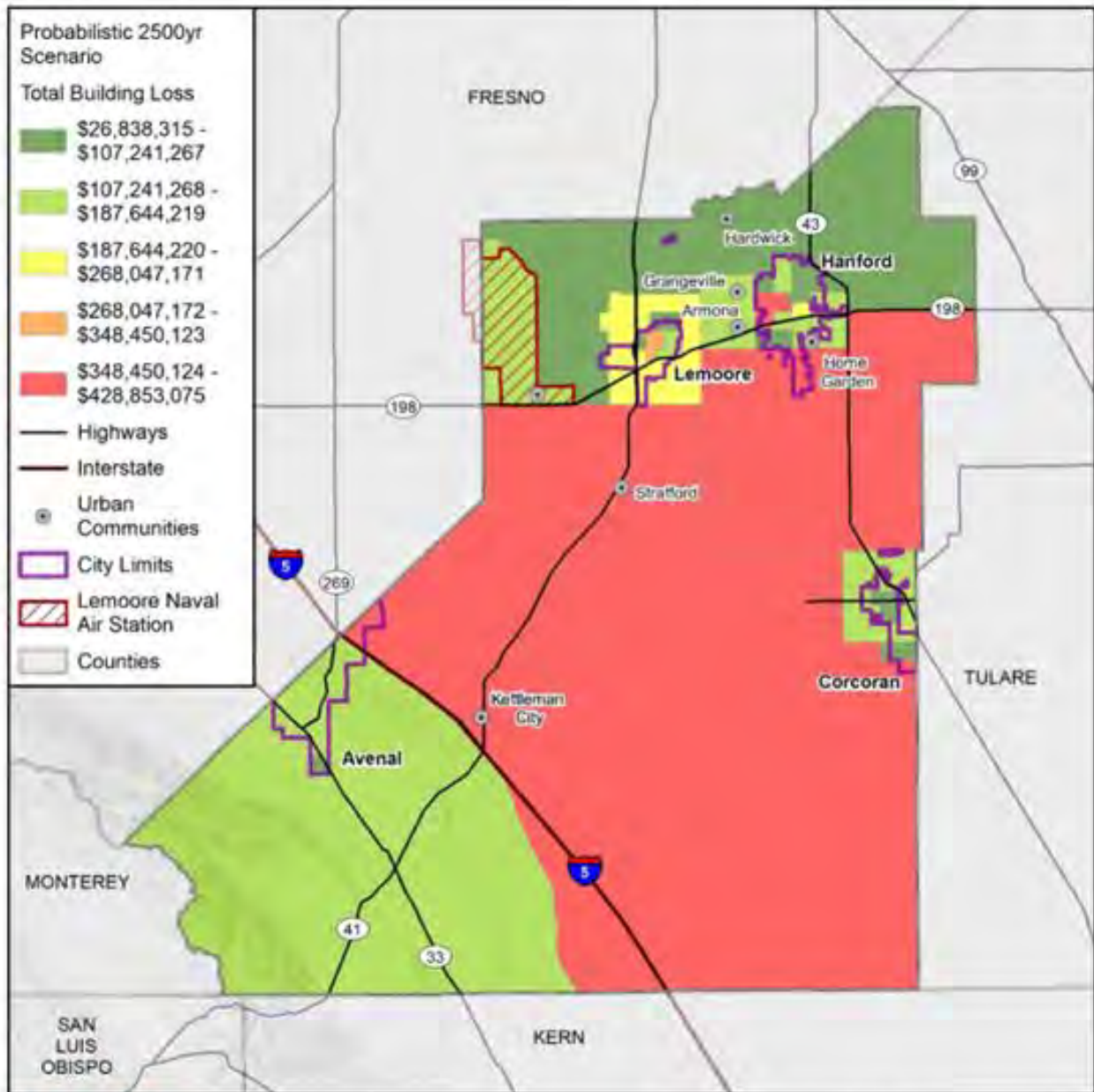
	NONE		SLIGHT		MODERATE		EXTENSIVE		COMPLETE	
	COUNTY	(%)	COUNTY	(%)	COUNTY	(%)	COUNTY	(%)	COUNTY	(%)
Agriculture	228.77	0.60	42.91	0.89	24.87	2.18	7.42	4.10	2.04	4.42
Commercial	1916.27	6.04	237.34	4.94	124.09	10.89	32.57	18.00	7.73	16.79
Education	86.63	0.23	10.40	0.22	4.57	0.40	1.15	0.63	0.26	0.55
Government	58.47	0.15	7.63	0.16	4.19	0.37	1.32	0.73	0.39	0.84
Industrial	448.84	1.18	62.01	1.29	34.77	3.05	7.74	4.28	1.64	3.56
Other Residential	3402.40	8.96	574.57	11.97	259.24	22.75	82.89	45.81	22.90	49.74
Religion	171.49	0.45	22.96	0.48	11.46	1.01	3.27	1.81	0.81	1.77
Single Family	31671.46	83.38	3842.34	80.05	676.35	59.35	44.57	24.63	10.27	22.32
Total	37,984		4,800		1,140		181		46	

Source: Hazus-MH 6.0

Figure 4-21 and Figure 4-22 below display the census tracts within the County that were analyzed in the two scenarios, color-coded by the amount of total building loss each tract experienced.



Figure 4-21 Kings County Hazus 2,500-Year Probabilistic Scenario Total Building Loss (in Thousands of Dollars)



Map compiled 2/2023;
Intended for planning purposes only.
Data Source: Kings County,
Hazus 6.0, USGS ShakeMap

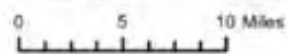
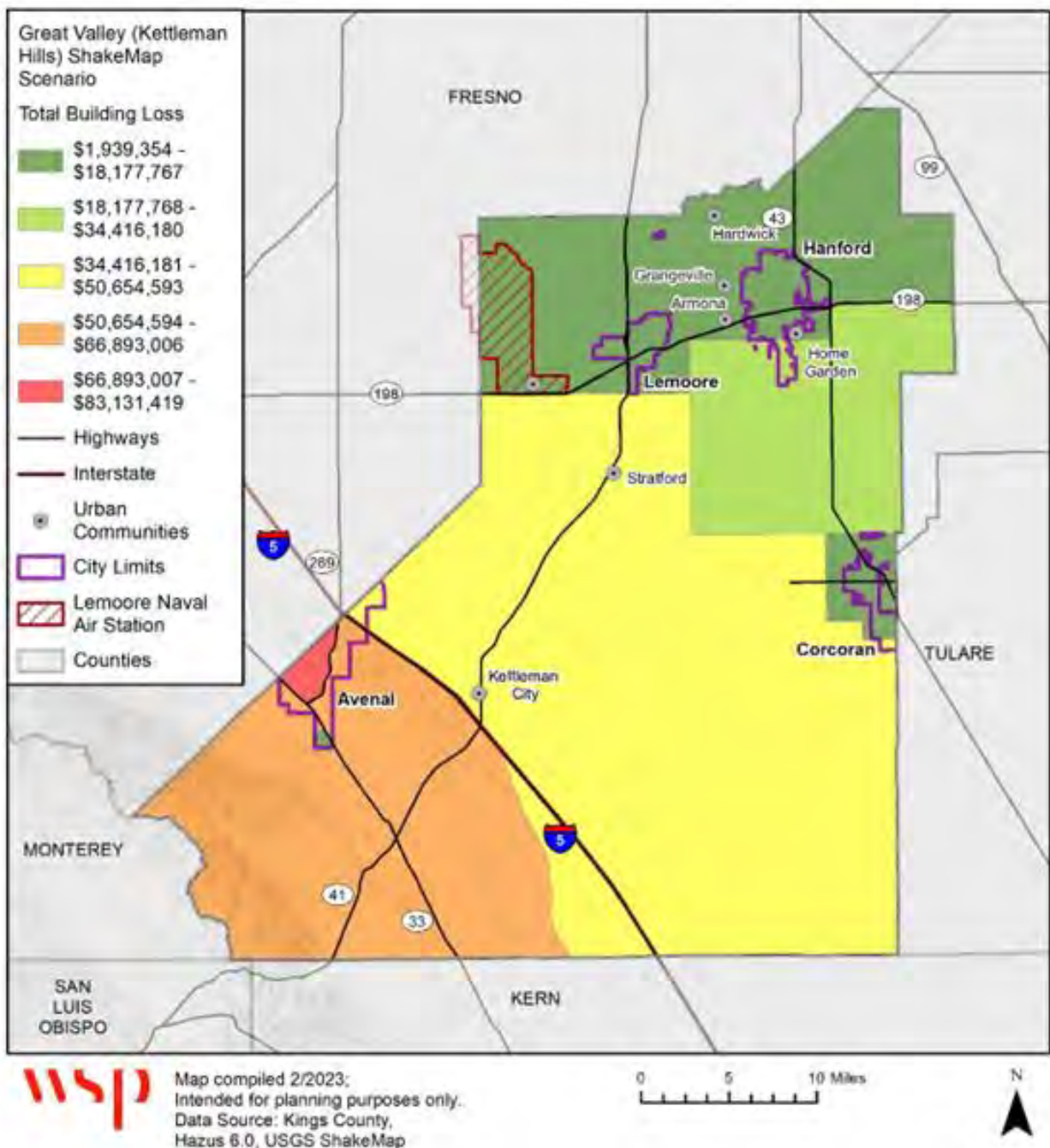


Figure 4-22 Kings County Great Valley ShakeMap Scenario Total Building Loss (in Thousands of Dollars)



Economy

Depending on its location and magnitude, an earthquake could have a devastating impact on the County's economy. Impacts would be related to debris cleanup and management, building and infrastructure damage, and losses related to business and infrastructure interruption. Hazus estimates the economic impacts of earthquakes. Losses estimated include building-related losses, and transportation and utility lifeline losses. The model estimates loss over a 15-year span after the incident.

Building losses are broken into two categories – direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. Business interruption losses are the losses associated with the inability to operate a business because of the damage sustained during the earthquake. Business interruption losses also



include the temporary living expenses for those people displaced from their homes because of the earthquake. Table 4-34 shows the economic losses under the two scenarios broken down by loss categories and occupancy types. The 2,500-year probabilistic scenario is expected to cause much more economic losses.

Table 4-34 Economic Losses (Millions of Dollars)

2,500-YEAR PROBABILISTIC SCENARIO						
Category	Single Family	Other Residential	Commercial	Industrial	Others	Total
Income Losses	132.51	70.22	403.1	35.6	75.57	717
Capital Stock Losses	1,195.44	432.9	1,035.41	584.42	543	3,791.17
Total	1,327.95	503.12	1,438.51	620.02	618.57	4,508.17
GREAT VALLEY SHAKEMAP SCENARIO						
Income Losses	6.9	6.09	28.87	2.54	6.98	51.37
Capital Stock Losses	101.28	50.41	81.43	45.81	66.63	345.57
Total	108.18	56.5	110.3	48.36	73.6	396.94

Source: Hazus-MH 6.0

Moreover, the economic losses associated with the disruption of lifeline systems, specifically transportation and utility lifelines are shown in Table 4-35 and Table 4-36.

Table 4-35 Lifeline System Losses for 2,500-Year Probabilistic Scenario - Transportation and Utility (Millions of Dollars)

2,500-YEAR PROBABILISTIC SCENARIO		
System	Inventory Value	Economic Loss
Highway	\$2,452	\$5.24
Railways	\$1,162.69	\$1.22
Light Rail	\$0	\$0
Bus	\$4.3	\$0.59
Ferry	\$0	\$0
Port	\$0	\$0
Airport	\$135	\$14.69
Potable Water	\$130.34	\$26.78
Wastewater	\$78.2	\$13.45
Natural Gas	\$602.59	\$70.2
Oil Systems	\$0.12	\$0.03
Electrical Power	\$1,634.4	\$1,338.7
Communication	\$0.47	\$0.59

Source: Hazus-MH 6.0

Table 4-36 Lifeline System Losses for Great Valley ShakeMap Scenario - Transportation and Utility (Millions of Dollars)

GREAT VALLEY SHAKEMAP SCENARIO		
SYSTEM	INVENTORY VALUE	ECONOMIC LOSS
Highway	\$3,898.68	\$15.2
Railways	\$1,052.92	\$4.28
Light Rail	\$0	\$0
Bus	\$7.32	\$0.79
Ferry	\$0	\$0
Port	\$0	\$0
Airport	\$158.47	\$3.48
Potable Water	\$130.34	\$6.06



GREAT VALLEY SHAKEMAP SCENARIO		
Wastewater	\$78.2	\$3.05
Natural Gas	\$602.59	\$41.47
Oil Systems	\$0.12	\$0
Electrical Power	\$1,634.4	\$392.76
Communication	\$0.47	\$0.03

Source: Hazus-MH 6.0

The 2,500-Year Probabilistic Scenario is also expected to result in much more lifeline system losses than the Great Valley ShakeMap Scenario.

Critical Facilities and Infrastructure

Hazus breaks critical facilities into two groups: essential facilities and high potential loss (HPL) facilities. Essential facilities include hospitals, medical clinics, schools, fire stations, police stations and emergency operations facilities. HPL facilities include dams, levees, military installations, nuclear power plants and hazardous material sites. There are 12 hospitals in Kings with a total bed capacity of 142 beds. There are also 71 schools, 18 fire stations, 9 police stations and one emergency operation facility. The inventory also includes no hazardous material sites, no military installations, and no nuclear power plants.

On the day of the earthquake in the 2,500-Year Probabilistic Scenario, the model estimates that only 24 hospital beds (17%) would be available for use by patients already in the hospital and those injured by the earthquake. After one week, 49% of the beds would be back in service. By 30 days, 83% will be operational. The expected damages from the earthquake event are provided in Table 4-37.

Table 4-37 Expected Damage to Essential Facilities – 2,500-Year Probabilistic Scenario

Classification	Total	# Facilities		
		At Least Moderate Damage > 50%	Complete Damage > 50%	With Functionality > 50% on day 1
Hospitals	2	1	0	0
Schools	71	32	0	0
EOCs	1	1	0	0
PoliceStations	9	2	0	0
FireStations	18	1	0	0

Source: Hazus-MH 6.0

On the day of the earthquake for the Great Valley ShakeMap Scenario, the model estimates that 126 hospital beds (89%) would be available for use by patients already in the hospital and those injured by the earthquake. After one week, 98% of the beds would be back in service. By 30 days, 100% will be operational. The expected damages from the earthquake event are provided in Table 4-38.



Table 4-38 Expected Damage to Essential Facilities – Great Valley ShakeMap Scenario

Classification	Total	# Facilities		
		At Least Moderate Damage > 50%	Complete Damage > 50%	With Functionality > 50% on day 1
Hospitals	2	0	0	2
Schools	71	0	0	62
EOCs	1	0	0	1
PoliceStations	9	0	0	7
FireStations	18	0	0	15

Source: Hazus-MH 6.0

Within Hazus, the lifeline inventory is divided between transportation and utility lifeline systems. There are seven transportation systems that include highways, railways, light rail, bus, ports, ferry, and airports. There are also six utility systems that include potable water, wastewater, natural gas, crude & refined oil, electric power, and communications. The transportation systems inventory and expected damages from the earthquake, in terms of the number of structures and locations affected, are provided in Table 4-39 and Table 4-40 for the two scenarios, while losses in millions of dollars are summarized in Table 4-41 and Table 4-42. The total value of the lifeline inventory is over \$6.2 billion. This inventory includes over 300 miles of highways, 166 bridges, and 6,554 miles of pipes.



Table 4-39 Expected Damage to the Transportation Systems - 2,500-Year Probabilistic Scenario

System	Component	Locations/ Segments	Number of Locations			
			With at Least Mod. Damage	With Complete Damage	With Functionality > 50 %	
					After Day 1	After Day 7
Highway	Segments	109	0	0	109	109
	Bridges	166	15	3	152	158
	Tunnels	0	0	0	0	0
Railways	Segments	11	0	0	11	11
	Bridges	32	0	0	32	32
	Tunnels	0	0	0	0	0
	Facilities	5	5	0	5	5
Light Rail	Segments	0	0	0	0	0
	Bridges	0	0	0	0	0
	Tunnels	0	0	0	0	0
	Facilities	0	0	0	0	0
Bus	Facilities	2	2	0	0	2
Ferry	Facilities	0	0	0	0	0
Port	Facilities	0	0	0	0	0
Airport	Facilities	4	4	0	3	4
	Runways	5	0	0	5	5

Source: Hazus-MH 6.0



Table 4-40 Expected Damage to the Transportation Systems - Great Valley ShakeMap Scenario

System	Component	Locations/ Segments	Number of Locations			
			With at Least Mod. Damage	With Complete Damage	With Functionality > 50 %	
					After Day 1	After Day 7
Highway	Segments	109	0	0	109	109
	Bridges	166	4	0	162	166
	Tunnels	0	0	0	0	0
Railways	Segments	11	0	0	11	11
	Bridges	32	0	0	32	32
	Tunnels	0	0	0	0	0
	Facilities	5	0	0	5	5
Light Rail	Segments	0	0	0	0	0
	Bridges	0	0	0	0	0
	Tunnels	0	0	0	0	0
	Facilities	0	0	0	0	0
Bus	Facilities	2	0	0	2	2
Ferry	Facilities	0	0	0	0	0
Port	Facilities	0	0	0	0	0
Airport	Facilities	4	0	0	4	4
	Runways	5	0	0	5	5

Source: Hazus-MH 6.0



Table 4-41 Transportation System Economic Losses (Millions of dollars) - 2,500-Year Probabilistic Scenario

System	Component	Inventory Value	Economic Loss	Loss Ratio (%)
Highway	Segments	2163.4977	0.0000	0.00
	Bridges	288.5037	39.8261	13.80
	Tunnels	0.0000	0.0000	0.00
	Subtotal	2452.0014	39.8261	
Railways	Segments	967.2941	0.0000	0.00
	Bridges	182.0800	14.3146	7.86
	Tunnels	0.0000	0.0000	0.00
	Facilities	13.3150	5.1899	38.98
	Subtotal	1162.6891	19.5045	
Light Rail	Segments	0.0000	0.0000	0.00
	Bridges	0.0000	0.0000	0.00
	Tunnels	0.0000	0.0000	0.00
	Facilities	0.0000	0.0000	0.00
	Subtotal	0.0000	0.0000	
Bus	Facilities	4.2978	2.0739	48.25
	Subtotal	4.2978	2.0739	
Ferry	Facilities	0.0000	0.0000	0.00
	Subtotal	0.0000	0.0000	
Port	Facilities	0.0000	0.0000	0.00
	Subtotal	0.0000	0.0000	
Airport	Facilities	37.3120	14.6894	39.37
	Runways	97.6853	0.0000	0.00
	Subtotal	134.9973	14.6894	
	Total	3,753.99	76.09	

Source: Hazus-MH 6.0



Table 4-42 Transportation System Economic Losses (Millions of dollars) - Great Valley ShakeMap Scenario

System	Component	Inventory Value	Economic Loss	Loss Ratio (%)
Highway	Segments	2163.4977	0.0000	0.00
	Bridges	288.5037	5.2373	1.82
	Tunnels	0.0000	0.0000	0.00
	Subtotal	2452.0014	5.2373	
Railways	Segments	967.2941	0.0000	0.00
	Bridges	182.0800	0.0128	0.01
	Tunnels	0.0000	0.0000	0.00
	Facilities	13.3150	1.2061	9.06
	Subtotal	1162.6891	1.2189	
Light Rail	Segments	0.0000	0.0000	0.00
	Bridges	0.0000	0.0000	0.00
	Tunnels	0.0000	0.0000	0.00
	Facilities	0.0000	0.0000	0.00
	Subtotal	0.0000	0.0000	
Bus	Facilities	4.2978	0.5863	13.64
	Subtotal	4.2978	0.5863	
Ferry	Facilities	0.0000	0.0000	0.00
	Subtotal	0.0000	0.0000	
Port	Facilities	0.0000	0.0000	0.00
	Subtotal	0.0000	0.0000	
Airport	Facilities	37.3120	3.3081	8.87
	Runways	97.6853	0.0000	0.00
	Subtotal	134.9973	3.3081	
Total		3,753.99	10.35	

Source: Hazus-MH 6.0

The replacement value of the transportation and utility lifeline systems is estimated to be \$3.76 billion and \$2.45 billion, respectively. The expected utility system facility damages in terms of total structures or systems affected, along with the inventory of this dataset, are summarized Table 4-43 and Table 4-44 for the two scenarios respectively. Economic losses in millions of dollars are found in Table 4-45 and Table 4-46.



Table 4-43 Expected Utility System Facility Inventory and Damages - 2,500-Year Probabilistic Scenario

System	Component	# Locations / Segments	Replacement value (millions of dollars)
Potable Water	Distribution Lines	NA	130.3350
	Facilities	0	0.0000
	Pipelines	0	0.0000
	Subtotal		130.3350
Waste Water	Distribution Lines	NA	78.2010
	Facilities	0	0.0000
	Pipelines	0	0.0000
	Subtotal		78.2010
Natural Gas	Distribution Lines	NA	52.1340
	Facilities	2	124.2883
	Pipelines	22	429.1636
	Subtotal		605.5859
Oil Systems	Facilities	1	0.1180
	Pipelines	0	0.0000
	Subtotal		0.1180
Electrical Power	Facilities	23	1634.4347
	Subtotal		1634.4347
Communication	Facilities	4	0.4720
	Subtotal		0.4720
		Total	2,449.10

System	# of Locations				
	Total #	With at Least Moderate Damage	With Complete Damage	with Functionality > 50 %	
				After Day 1	After Day 7
Potable Water	0	0	0	0	0
Waste Water	0	0	0	0	0
Natural Gas	2	2	0	0	0
Oil Systems	1	1	0	0	1
Electrical Power	23	23	7	0	2
Communication	4	4	0	3	4

Source: Hazus-MH 6.0



Table 4-44 Expected Utility System Facility Inventory and Damages - Great Valley ShakeMap Scenario

System	Component	# Locations / Segments	Replacement value (millions of dollars)
Potable Water	Distribution Lines	NA	130.3350
	Facilities	0	0.0000
	Pipelines	0	0.0000
	Subtotal		130.3350
Waste Water	Distribution Lines	NA	78.2010
	Facilities	0	0.0000
	Pipelines	0	0.0000
	Subtotal		78.2010
Natural Gas	Distribution Lines	NA	52.1340
	Facilities	2	124.2883
	Pipelines	22	429.1636
	Subtotal		605.5859
Oil Systems	Facilities	1	0.1180
	Pipelines	0	0.0000
	Subtotal		0.1180
Electrical Power	Facilities	23	1634.4347
	Subtotal		1634.4347
Communication	Facilities	4	0.4720
	Subtotal		0.4720
Total			2,449.10

System	# of Locations				
	Total #	With at Least Moderate Damage	With Complete Damage	with Functionality > 50 %	
				After Day 1	After Day 7
Potable Water	0	0	0	0	0
Waste Water	0	0	0	0	0
Natural Gas	2	2	0	0	2
Oil Systems	1	0	0	1	1
Electrical Power	23	10	0	16	19
Communication	4	0	0	4	4

Source: Hazus-MH 6.0



Table 4-45 Utility System Economic Losses in Millions of Dollars - 2,500-Year Probabilistic Scenario

System	Component	Inventory Value	Economic Loss	Loss Ratio (%)
Potable Water	Pipelines	0.0000	0.0000	0.00
	Facilities	0.0000	0.0000	0.00
	Distribution Lines	130.3350	26.7795	20.55
	Subtotal	130.3350	26.7795	
Waste Water	Pipelines	0.0000	0.0000	0.00
	Facilities	0.0000	0.0000	0.00
	Distribution Lines	78.2010	13.4520	17.20
	Subtotal	78.2010	13.4520	
Natural Gas	Pipelines	429.1636	0.0000	0.00
	Facilities	124.2883	65.5907	52.77
	Distribution Lines	52.1340	4.6086	8.84
	Subtotal	605.5859	70.1993	
Oil Systems	Pipelines	0.0000	0.0000	0.00
	Facilities	0.1180	0.0333	28.22
	Subtotal	0.1180	0.0333	
Electrical Power	Facilities	1634.4347	1049.1264	64.19
	Subtotal	1634.4347	1049.1264	
Communication	Facilities	0.4720	0.1848	39.15
	Subtotal	0.4720	0.1848	
	Total	2,449.15	1,159.78	

Source: Hazus-MH 6.0



Table 4-46 Utility System Economic Losses in Millions of Dollars – Great Valley ShakeMap Scenario

System	Component	Inventory Value	Economic Loss	Loss Ratio (%)
Potable Water	Pipelines	0.0000	0.0000	0.00
	Facilities	0.0000	0.0000	0.00
	Distribution Lines	130.3350	6.0639	4.65
	Subtotal	130.3350	6.0639	
Waste Water	Pipelines	0.0000	0.0000	0.00
	Facilities	0.0000	0.0000	0.00
	Distribution Lines	78.2010	3.0461	3.90
	Subtotal	78.2010	3.0461	
Natural Gas	Pipelines	429.1636	0.0000	0.00
	Facilities	124.2883	40.4247	32.52
	Distribution Lines	52.1340	1.0436	2.00
	Subtotal	605.5859	41.4683	
Oil Systems	Pipelines	0.0000	0.0000	0.00
	Facilities	0.1180	0.0036	3.05
	Subtotal	0.1180	0.0036	
Electrical Power	Facilities	1634.4347	392.7571	24.03
	Subtotal	1634.4347	392.7571	
Communication	Facilities	0.4720	0.0259	5.49
	Subtotal	0.4720	0.0259	
	Total	2,449.15	443.36	

Source: Hazus-MH 6.0

Site specific expected utility system pipeline damages (including their inventory) are included in Table 4-47 and Table 4-48, while the potable water and electric power system performance limitations, damages, and inventory will be in Table 4-49 and Table 4-50.



Table 4-47 Expected Utility System Pipeline Damage (Site Specific) – 2,500-Year Probabilistic Scenario

System	Total Pipelines Length (miles)	Number of Leaks	Number of Breaks
Potable Water	4,049	5951	1488
Waste Water	2,430	2989	747
Natural Gas	76	54	13
Oil	0	0	0

Source: Hazus-MH 6.0

Table 4-48 Expected Utility System Pipeline Damage (Site Specific) – Great Valley ShakeMap Scenario

System	Total Pipelines Length (miles)	Number of Leaks	Number of Breaks
Potable Water	4,049	1348	337
Waste Water	2,430	677	169
Natural Gas	76	0	0
Oil	0	0	0

Source: Hazus-MH 6.0

Table 4-49 Expected Potable Water and Electric Power System Performance – 2,500-Year Probabilistic Scenario

	Total # of Households	Number of Households without Service				
		At Day 1	At Day 3	At Day 7	At Day 30	At Day 90
Potable Water	44,100	36,567	36,100	35,057	24,608	0
Electric Power		36,801	27,393	14,104	2,168	44

Source: Hazus-MH 6.0

Table 4-50 Expected Potable Water and Electric Power System Performance – Great Valley ShakeMap Scenario

	Total # of Households	Number of Households without Service				
		At Day 1	At Day 3	At Day 7	At Day 30	At Day 90
Potable Water	44,100	8,513	6,254	2,238	0	0
Electric Power		3,315	2,451	1,222	157	4

Source: Hazus-MH 6.0



In summary, a major earthquake would result in serious impacts on critical infrastructure. Hazus estimates impacts to critical facilities including hospitals, schools, Emergency Operation Centers (EOCs), police stations and fire stations. These impact estimates are shown in Table 4-51 and Table 4-52. As shown in the two tables, the 2,500-Year Probabilistic Scenario is expected to cause more damage and also more severe damage to critical facilities, as well as result in delays for the critical facilities to recover than the Great Valley ShakeMap Scenario. Major impacts on the critical facilities in the County will in turn result in significant impacts to socially vulnerable populations, particularly those communities in the northeast portion of the County and the unincorporated rural communities of Armona, Grangeville, Hardwick, Hanford, Kettleman City, Laton, and Stratford and portions of Avenal, Corcoran, and Lemoore that contain underserved communities and DACs that lack access to transportation or support systems and need to evacuate to neighboring counties for support. Any prolonged loss of power would also indirectly impact those at-risk populations that depending on electricity to operate medical and life-saving equipment.

Table 4-51 Expected Damage to Critical Facilities – 2,500-Year Probabilistic Scenario

Classification	Total	Number of Facilities		
		At Least Moderate Damage > 50%	Complete Damage > 50%	With Functionality > 50% on Day 1
Hospitals	2	1	0	0
Schools	71	32	0	0
EOCs	1	1	0	0
Police Stations	9	2	0	0
Fire Stations	18	1	0	0
Total	101	37	0	0

Source: Hazus-MH 6.0

Table 4-52 Expected Damage to Critical Facilities – Great Valley ShakeMap Scenario

Classification	Total	Number of Facilities		
		At Least Moderate Damage > 50%	Complete Damage > 50%	With Functionality > 50% on Day 1
Hospitals	2	0	0	2
Schools	71	0	0	0
EOCs	1	0	0	62
Police Stations	9	0	0	0
Fire Stations	18	0	0	1
Total	101	0	0	65

Source: Hazus-MH 6.0

Cultural, Historic and Natural Resources

Earthquake effects on the environment, natural resources, and historic and cultural assets could be very destructive depending on the type of seismic activity experienced and secondary/cascading effects from an event (e.g., wildfire). The biggest impact would likely be on older properties such as wooden or masonry buildings, though reinforced masonry structures would be much more resilient during earthquakes.

Development Trends

Development Trends in the County is not anticipated to significantly affect vulnerability to earthquakes when new construction is designed according to modern building codes. However, development will result in a slight increase in exposure of the population, building stock, and related infrastructure to earthquakes. Because all new development will be built to current California Building Code (CBC) requirements, development is not anticipated to increase the vulnerability of the community to earthquake hazards. However, older unreinforced masonry structures not inventoried in the County of four cities may be susceptible to seismic events.



4.5.5.8 Risk Summary

- The County is located in a geologically complex and seismically active region, albeit less so than other areas of California. There is a couple of active and potentially active faults close to the County. The County does not have a history of significant damaging earthquakes.
- The overall significance of earthquakes is High.
- A moderate earthquake occurring in or near Kings County could result in deaths, casualties, property damage, agricultural and environmental damage, and disruption of normal government and community services and activities.
- The location of the epicenter as well as the time of day and season of the year would have a profound effect on the number of deaths and casualties, as well as property damage.
- The hazard of earthquakes varies from place to place, dependent upon the regional and local geology.
- Effects on people - Hazus 2,500-year probabilistic scenario modeling results in estimates of 122 to 317 people needing hospitalization and between 22 to 84 deaths depending on the time of day the earthquake hits; Hazus Great Valley ShakeMap Scenario modeling results in estimates of 12 to 15 people needing hospitalization and between 2 to 3 deaths depending on the time of day the earthquake hits.
- At-risk populations, particularly DACs in the northeast portion of the County; the unincorporated rural communities of Armona, Grangeville, Hardwick, Hanford, Kettleman City, Laton, and Stratford; and portions of Avenal, Corcoran, and Lemoore would be at most risk to major earthquakes, particularly those that lack access to transportation or support systems and dependent on electricity to operate medical and life-saving equipment.
- Effects on property - Hazus 2,500-year probabilistic scenario modeling indicates about 16,072 buildings will be at least moderately damaged, with approximately \$4.51 billion in losses; Hazus Great Valley ShakeMap Scenario modeling indicates about 6,167 buildings will be at least moderately damaged, with approximately \$0.4 billion in losses.
- Effects on economy - The total economic loss estimated under Hazus 2,500-year probabilistic scenario is over \$5.7 billion, which includes building and lifeline related losses based on the region's available inventory. The total economic loss estimated under Hazus Great Valley ShakeMap Scenario is almost \$0.9 billion, which includes building and lifeline related losses based on the region's available inventory.
- Effects on critical facilities and infrastructure - Under the Hazus 2,500-year probabilistic scenario essential facility damage (police, fire, school, medical) is predicted to be medium; only 24 hospital beds (17%) would be available during the earthquake. Under the Hazus Great Valley ShakeMap Scenario, essential facility damage (police, fire, school, medical) is predicted to be very low; 126 hospital beds (89%) would be available during the earthquake.
- Cascading and Secondary Effects - Earthquakes can cause many cascading effects such as fires, flooding, hazardous materials spills, utility disruptions, liquefaction, landslides, and transportation emergencies. Ground shaking may cause seiches, the rhythmic sloshing of water in lakes or bays.
- **Related Hazards** - Urban Fires, Landslides, Seiches

JURISDICTION	GEOGRAPHIC AREA	PROBABILITY OF FUTURE OCCURRENCE	MAGNITUDE/ SEVERITY	OVERALL SIGNIFICANCE	PRIORITY HAZARD?
Kings County	Limited	Occasional	Catastrophic	Medium	Yes
City of Avenal	Significant	Occasional	Catastrophic	High	Yes
City of Corcoran	Limited	Occasional	Critical	Medium	Yes
City of Hanford	Limited	Occasional	Critical	Medium	Yes
City of Lemoore	Limited	Occasional	Critical	Medium	Yes



4.5.6 EXTREME TEMPERATURES: FREEZE AND HEAT

4.5.6.1 Hazard Description

Extreme temperature events, both cold and hot, can have severe impacts on human health and mortality, natural ecosystems, agriculture, and other economic sectors.

Freeze

Extreme cold temperatures pose significant risks to human health and safety, including hypothermia, frostbite, carbon monoxide poisoning, and slips and falls. In addition, extreme cold can cause damage to infrastructure, such as frozen pipes and power outages, as well as agriculture through crop and livestock damage. Furthermore, extreme cold can disrupt transportation and shipping, leading to economic losses.

In 2001, the NWS implemented an updated Wind Chill Temperature index shown in Figure 4-23. This index was developed to describe the relative discomfort/danger resulting from the combination of wind and temperature. Wind chill is based on the rate of heat loss from exposed skin caused by wind and cold. As the wind increases, it draws heat from the body, driving down skin temperature and eventually the internal body temperature. Overall, freeze impacts would likely be limited in the planning area, with the greatest impact being on the agricultural industry.

Figure 4-23 NWS Wind Chill Chart

Temperature ° F		20	15	10	5	0	-5	-10	-15	-20
Wind (mph)	5	13	7	1	-5	-11	-16	-22	-28	-34
	10	9	3	-4	-10	-16	-22	-28	-35	-41
	15	6	0	-7	-13	-19	-26	-32	-39	-45
	20	4	-2	-9	-15	-22	-29	-35	-42	-48
	25	3	-4	-11	-17	-24	-31	-37	-44	-51
	30	1	-5	-12	-19	-26	-33	-39	-46	-53
	35	0	-7	-14	-21	-27	-34	-41	-48	-55
	40	-1	-8	-15	-22	-29	-36	-43	-50	-57
	45	-2	-9	-16	-23	-30	-37	-44	-51	-58
	50	-3	-10	-17	-24	-31	-38	-45	-52	-60
	55	-3	-11	-18	-25	-32	-39	-46	-54	-61
60	-4	-11	-19	-26	-33	-40	-48	-55	-62	

- = Extreme Danger – Heatstroke stroke highly likely
- = Danger – Heat cramps or heat exhaustion likely, and heat stroke possible with prolonged exposure and/or physical activity
- = Extreme Caution – Heat stroke, heat cramps, or heat exhaustion possible with prolonged exposure and/or physical activity

Source: The National Weather Service

Extreme Heat

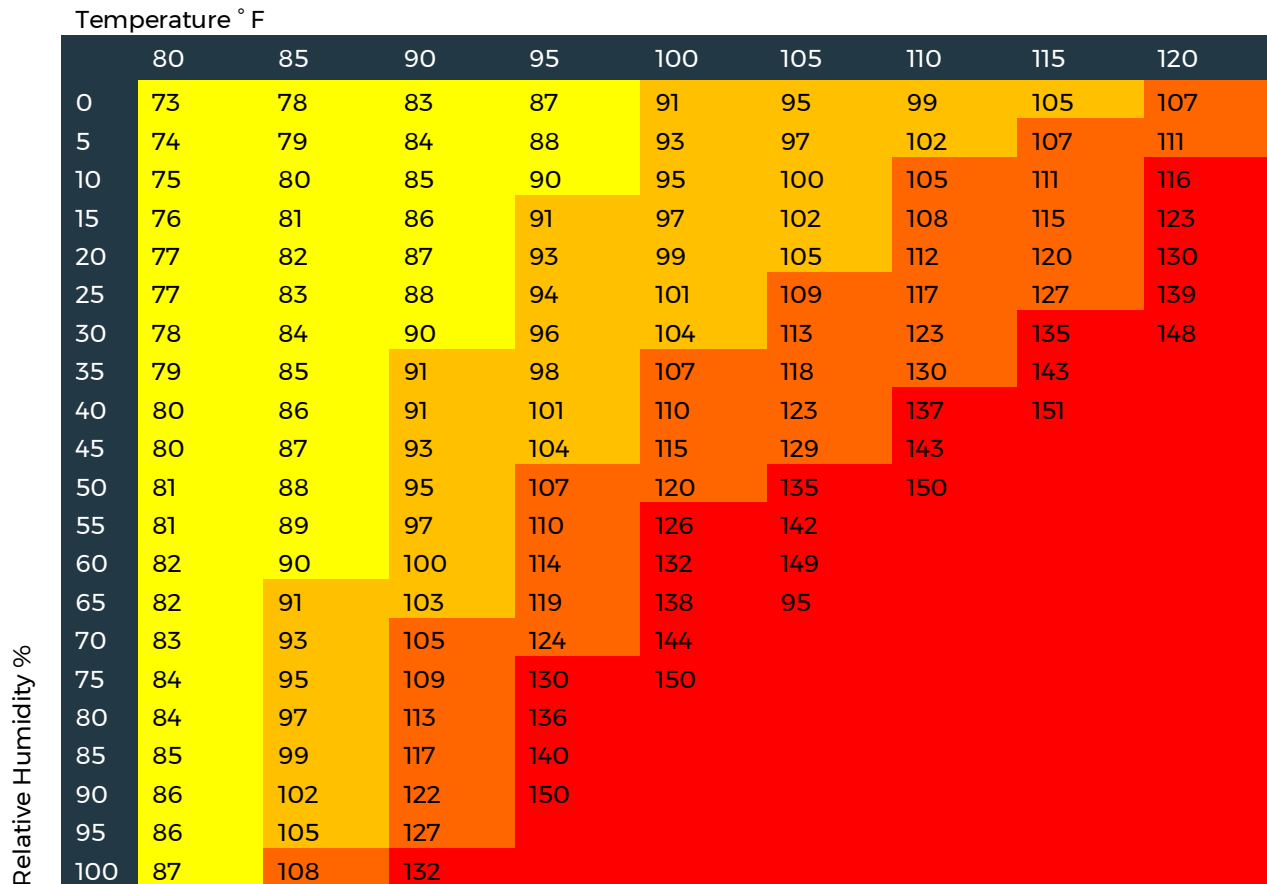
Extreme heat can pose serious risks to human health and safety. The most common risks associated with exposure to extreme heat include dehydration, heat exhaustion, and heat stroke. In addition to the risks to human health and safety, extreme heat can have significant impacts on infrastructure, the economy, and agriculture. For example, high temperatures can cause power outages and damage to roads and other infrastructure. In agriculture, extreme heat can damage crops and livestock, leading to lower yields and economic losses for farmers.

Figure 4-24 shows the Heat Index (HI) as a function of heat and relative humidity. The Heat Index describes how hot the heat-humidity combination makes the air feel. As relative humidity increases, the



air seems warmer than it actually is because the body is less able to cool itself via evaporation of perspiration. As the Heat Index rises, so do health risks.

Figure 4-24 NWS Heat Index



- = Extreme Danger - Heatstroke stroke highly likely
- = Danger - Heat cramps or heat exhaustion likely, and heat stroke possible with prolonged exposure and/or physical activity
- = Extreme Caution - Heat stroke, heat cramps, or heat exhaustion possible with prolonged exposure and/or physical activity
- = Caution - Fatigue possible with prolonged exposure and/or physical activity

Source: The National Weather Service

Table 4-53 summarizes temperature normals in the County with data from the National Weather Service (NWS).

Table 4-53 Kings County Temperature and Precipitation Summary

METRIC	HANFORD 1S (043747)
Period of Record	1899-2016
Winter Average Minimum Temperature*	36.2°F
Winter Mean Temperature *	46.7°F
Summer Average Maximum Temperature**	95.1°F



METRIC	HANFORD 1S (043747)
Summer Mean Temperature**	60.4°F
Average Annual Number of Days >90°F	105.1
Average Annual Number of Days <32°F	0.0
Mean Total Precipitation (in.)	8.38
Mean Snow Depth (in.)	0.0
Maximum Temperature	116°F on July 28, 1933
Minimum Temperature	14°F on January 6, 1913

Source: Western Regional Climate Center (WRCC)

*Winter = Dec., Jan., and Feb.

**Summer = Jun., Jul., and Aug

4.5.6.2 Geographic Area

Extensive - One of the defining features of temperature hazards is that they tend to be regional in nature, impacting a large geographical area simultaneously. This is due to the limited geographical extent of the County, which means that temperature hazards have the potential to affect most, if not all, of the planning area at the same time.

4.5.6.3 Past Occurrences

A search of records from 2000 to 2022 in the National Centers for Environmental Information (NCEI) Storm Events Database showed 161 extreme cold events and 52 extreme heat events in Kings County. These events are broken down by event type in Table 4-54 below.

Table 4-54 Extreme Temperature Events, 2017-2021

EVENT TYPE	EVENT COUNT (# OF DAYS)	TOTAL DEATHS	TOTAL INJURIES	PROPERTY DAMAGE	CROP DAMAGE
Cold/Wind Chill	4	-	-	-	-
Extreme Cold/Wind Chill	4	-	-	-	-
Excessive Heat	7	-	-	\$1,000,000	-
Frost/Freeze	150	-	-	-	\$216,720,000
Heat	45	-	-	-	\$106,600,000
Winter Weather	3	-	-	-	-
Total	213	0	0	\$1,000,000	\$323,320,000

Source: NCEI, 2023

Since 1950, there have been three State emergency declarations in the County for freeze events (refer to Table 4-1) although there have been no events since 2017. There have been no State or federal emergency declarations for extreme heat. The SHELDUS database recorded six incidents of freezes and severe cold between 1970 and 2005 (Kings County 2012). No injuries or deaths are recorded but millions of dollars in crop damage have occurred.

There have been 4 USDA disaster designations due to extreme temperatures in Kings County since 2012. They are summarized in Table 4-55.

Table 4-55 USDA Extreme Temperature Disaster Declarations, 2012-2021

YEAR	DESCRIPTION OF DISASTER
2012	Freezing temperatures, high winds, excessive rain



	Hailstorm, rain, cold temperatures
2016	excessive rain, high winds, cold temperatures, and hail
2018	Freeze

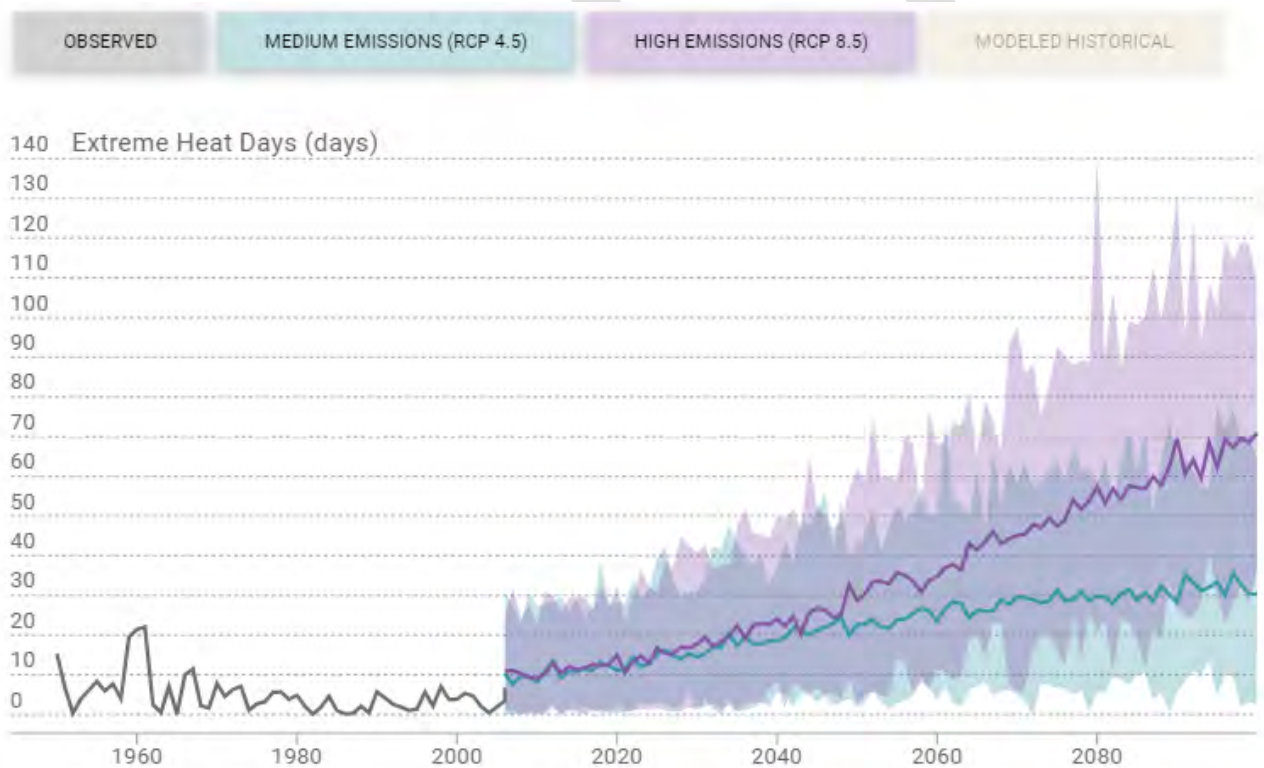
Source: USDA

4.5.6.4 Likelihood of Future Occurrence

Highly Likely - In the past, severe freezes have occurred every few years. Based on the NCEI data, 161 extreme cold events have occurred over a 23-year period, which equates to seven major events every year. This makes it highly likely that an extreme cold event will happen during any given year. Based on the NCEI data, 52 extreme heat events have occurred over a 23-year period, which equates to over two extreme heat events annually. This makes it highly likely that an extreme heat event will happen during any given year.

As climate change progresses, these events are likely to become more common. Future temperature estimates from Cal-Adapt for the County under high and low emission scenarios are shown in Figure 4-25. The graph shows the number of days per year when daily maximum temperature is above the extreme heat threshold of 104.4 °F. Note: The threshold temperature used in Cal-Adapt is location specific, and in this case for the County. It is defined as the 98th percentile value of historical daily maximum/minimum temperatures (from 1961-1990, between April and October) observed in the County.

Figure 4-25 Future Extreme Heat Days in Kings County



Source: Cal-Adapt 2023

Regarding extreme cold temperatures, a study funded by NOAA's Climate Program Office's Modeling, Analysis, Predictions and Projections (MAPP) program, which used machine learning techniques to link extreme cold weather in the United States to Arctic warming, suggests that extreme cold events may increase as well (Cohen et al 2021). Accelerated Arctic warming has been evident since the 1990s as one of the more robust signs of global warming. MAPP program's researchers concluded that Arctic warming and climate change are likely contributing to the increasing frequency of Arctic polar vortex stretching events, which deliver extreme cold from the north pole to the lower United States. One such event occurred in 2021 in Texas when a cold wave caused the collapse of the state's infrastructure and resulted in approximately \$80-130 billion in direct and indirect economic losses (Cohen et al 2021).



4.5.6.5 *Climate Change Considerations*

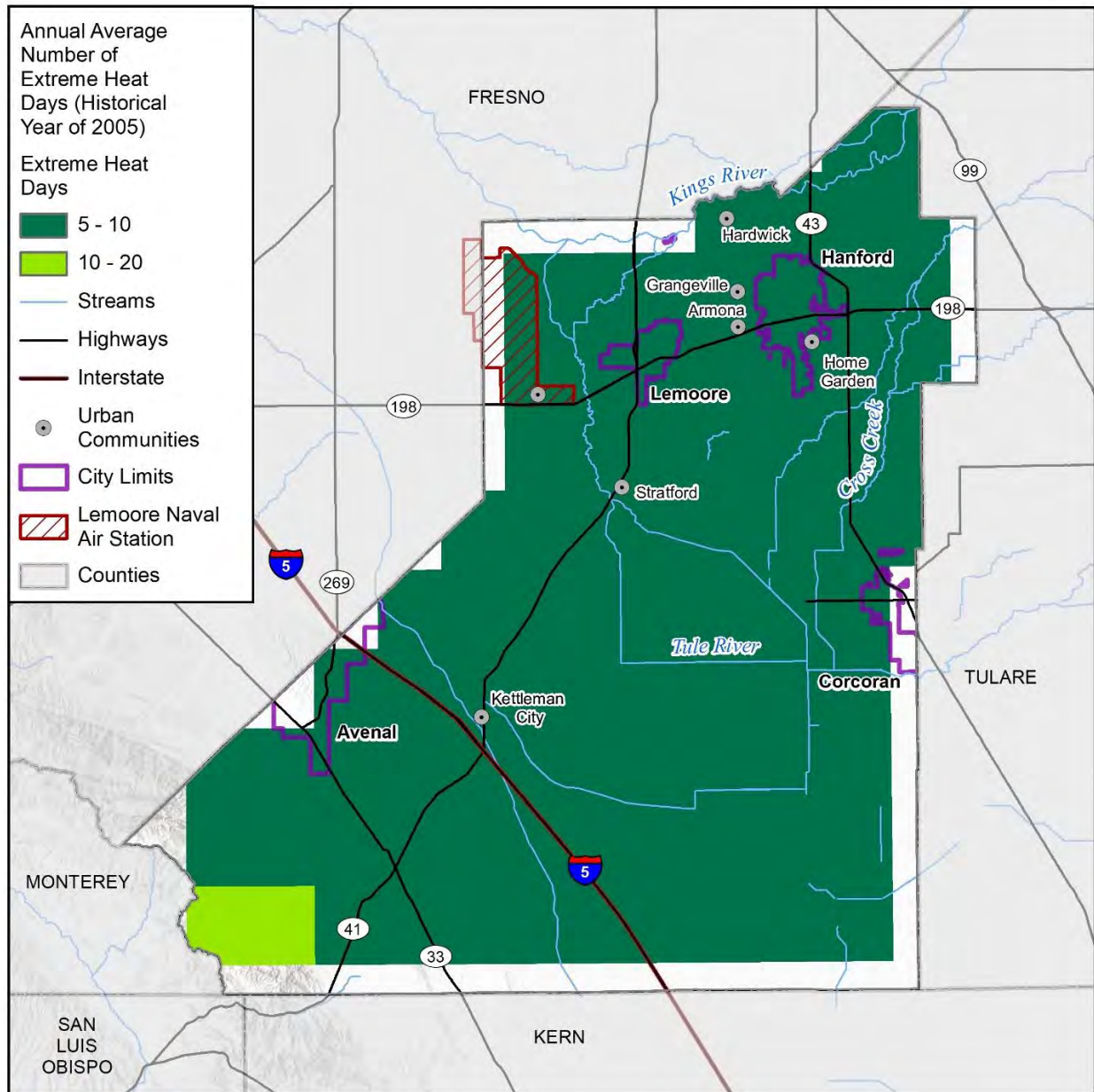
Temperatures in California have risen almost 3°F since the beginning of the 20th century (Frankson et al, 2022). Under RCP 8.5, the average temperature is likely to be about 9°F hotter than the hottest year on record (Frankson et al, 2022). Increasing temperatures are likely to have the secondary effects of raising the snow line and increasing earlier snowpack melt, resulting in an increased likelihood that precipitation will fall as rain rather than snow, reducing water storage in the snowpack. Reduced snowpack availability has forced many agricultural producers to utilize groundwater, and over pumping has caused significant land subsidence in parts of the County.

Figure 4-26 below show the historic number of extreme heat days in the County, and Figure 4-27 shows the projected number of extreme heat days under the RCP 8.5 scenario anticipated by mid-century. As shown, approximately 10 to 20 additional extreme heat days are anticipated by mid-century.

DRAFT



Figure 4-26 Historical Number of Extreme Heat Days

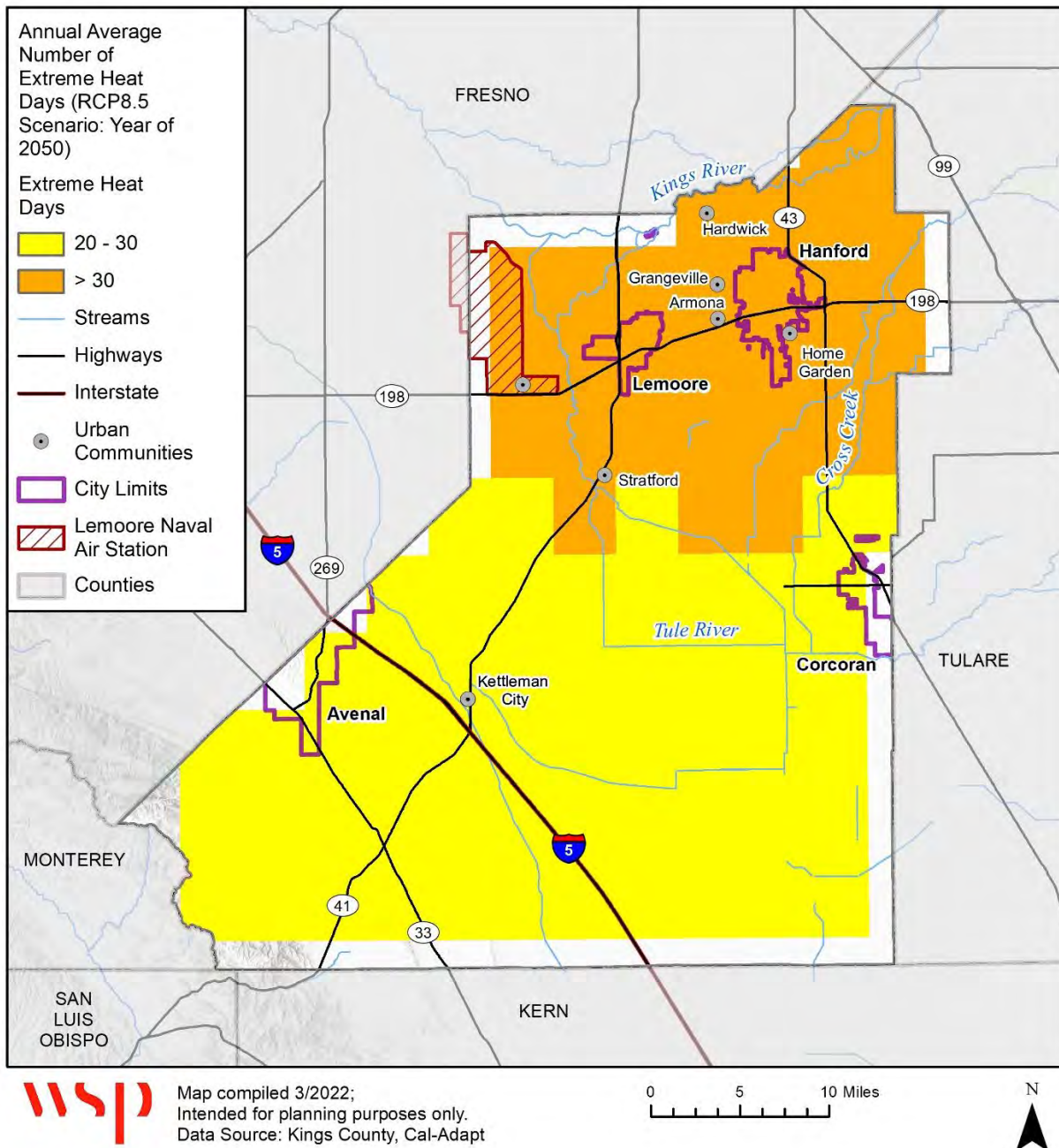


Map compiled 3/2022;
Intended for planning purposes only.
Data Source: Kings County, Cal-Adapt

0 5 10 Miles



Figure 4-27 Projected Mid-Century Number of Extreme Heat Days



4.5.6.6 Magnitude and Severity

Limited - Extreme temperatures occur often in the County. According to the NCEI database, in the years between 2000 and 2022, extreme temperatures caused at least \$1 million in property damage and over \$323 million in crop damage. This equates to about \$14 million in direct annualized loss due to extreme temperatures.

While there were no recorded deaths or injuries associated with these events, there are potential secondary impacts associated with lost time, maintenance costs, and damaged building contents. Even a minor event of extreme temperatures can have a significant impact on city resources, necessitating the activation of shelters, severe weather plans, and other measures.



4.5.6.7 Vulnerability Assessment

People

Heat kills by taxing the human body beyond its abilities, usually from heat stroke. In a normal year, more than 600 people in the United States are killed by extreme heat (CDC 2022). The average annual temperature increases in California have already exceeded 3°F in some places (Frankson et al 2022). The daily maximum average temperature, an indicator of extreme temperature shifts, is expected to rise 4.4°F – 5.8°F by 2050 and 5.6°F – 8.8°F by 2100 (Bedsworth et al, 2018). Heat waves that result in public health impacts, also referred to as heat-health events, are projected to worsen. By 2050, average heat-health events are projected to last two weeks longer in the Central Valley (Bedsworth et al 2018).

Heat disorders refer to a range of conditions that occur when the body's ability to regulate its temperature through circulation and sweating becomes compromised, or when there is an imbalance in the body's salt levels caused by excessive sweating. This imbalance may result from an inability to compensate for fluids and salt lost through perspiration or when heat gain exceeds the body's ability to remove it. When the core temperature of the body rises due to these factors, heat-related illnesses may develop. The 2018 California SHMP notes the 2006 heat wave led to 650 deaths in a 13-day period and in the past 15 years heat waves have claimed more lives in California than all other declared disaster events combined (CRNA 2018). Heat waves are projected to cause two to three times more heat-related deaths by mid-century (CNRA 2021).

Extreme cold temperatures can be very dangerous for human health and safety. The most common risks associated with exposure to extreme cold include hypothermia, frostbite, carbon monoxide poisoning, and slips and falls. Hypothermia can occur when the body loses heat faster than it can produce it, which can result in a dangerous drop in body temperature that may lead to unconsciousness or even death if left untreated. Frostbite is a condition in which the skin and underlying tissues freeze due to prolonged exposure to cold temperatures, and it can cause permanent tissue damage and even require amputation in severe cases. Carbon monoxide poisoning is also a danger, as people may use fuel-burning heaters or generators to stay warm in extreme cold, but if these appliances are not used properly or ventilated correctly, they can release dangerous levels of CO. Slips and falls are also a risk due to snow and ice on the ground, which can make walking and driving more difficult.

In the United States, cold weather-related deaths are more common than deaths from lightning, hurricanes, tornadoes, floods, or earthquakes (NWS, n.d.). Overall, a total of more than 19,000 Americans have died from cold-related causes since 1979, according to death certificates (EPA 2022). In recent years, U.S. death rates in winter months have been 8 to 12 percent higher than in non-winter months (EPA 2022). Much of this increase relates to seasonal changes in behavior and the human body, as well as increased exposure to respiratory diseases. Cold temperatures can also worsen pre-existing medical conditions such as cardiovascular and respiratory diseases.

Traditionally, the very young and very old are considered at higher risk of the effects of extreme temperatures, as are people in poor physical health; but any populations outdoors in the weather are exposed, including otherwise healthy adults and persons experiencing homelessness. Arguably, the young-and-otherwise-healthy demographic may be more exposed and experience a higher vulnerability because of the increased likelihood that they will be out in the extreme temperatures, whether due to commuting for work or school, working outdoors such as construction, utilities, snow removal, or for recreational reasons.

While everyone is vulnerable to extreme temperature incidents, some at-risk populations are more vulnerable than others. For example, extreme heat poses the greatest danger for the County's outdoor laborers, who support the County's agriculture economy and are exposed to extreme temperatures and are at higher risk of heat-related illnesses than other populations of the County. At-risk populations or DACs that rely on electricity-dependent medical equipment and devices are also greater risk during prolonged power outages associated with heat waves. In short, climate-vulnerable communities will experience the worst of these effects.

Additionally, according to the Extreme Heat Action Plan prepared by the State, heat risk is associated and correlated with physical, social, political, and economic factors (CNRA 2021). When combined with existing health inequities and poverty, linguistic isolation, and housing insecurities, this hazard puts these individuals at a disproportionately high risk of heat-related illness. These socially vulnerable communities are dispersed throughout the County, but a higher concentration is located in the northeastern, southern, and central portions of the County within the northeast portion of the County around Lemoore and the unincorporated communities of Armona, Grangeville, Hardwick, Hanford, Kettleman City, Laton, and Stratford.



Property

All property is vulnerable during severe weather events, but property and buildings are less likely to be vulnerable to extreme temperature events the same way as other severe weather events, like wind and hail. However, as temperature variances occur separate from larger hazards or outside of the expected seasons, it is important to examine them as stand-alone hazards.

Extreme heat may overload demands for electricity due to the need to run air conditioners in homes and businesses during prolonged periods of exposure. Problems with power loss and water distribution also occur during periods of extreme heat. Power outages and rolling brownouts can result when high temperatures increase air conditioner use. Power outages can prevent water-pumping stations from operating.

Extreme cold temperatures impact structures when pipes or water mains freeze and burst, causing damage. Cold temperatures can also, in the most extreme of circumstances, make materials more fragile and breakable. Extreme cold temperatures may also lead to higher electricity and natural gas demands to maintain appropriate indoor heating levels combined with damages caused to the delivery infrastructure such as frozen lines and pipes.

Critical Facilities and Lifelines

Extreme heat has direct impacts on critical infrastructure, including road surfaces, power lines, and water pumping stations. During extreme heat events, road infrastructure may become damaged and buckle, while power lines may sag and experience power surges. Water pumping stations that rely on public utility systems may also be affected, leading to impacts on critical infrastructure. In addition, extreme heat can accelerate wear and tear on natural gas and electrical infrastructure (CNRA 2018a). As temperatures continue to rise, projected increases in summer demand may exceed the capacity of existing energy infrastructure, including substations and distribution line infrastructure and systems. This may result in peak demand exceeding the local utility's capacity for supply, which can lead to blackout conditions or Public Safety Power Shutoffs (PSPS).

Extreme cold events can have secondary impacts on a community's infrastructure, similar to those of extreme heat events. When extreme cold is accompanied by high winds or ice storms, power lines can be downed, causing a disruption in the transmission of power and shutting down electric furnaces, which may lead to frozen pipes in homes and businesses. Cold temperatures can also affect transportation, with exposed populations at risk while waiting for public transportation, particularly when combined with wind chill. In addition, some vehicles may not start, affecting the commute of the workforce and, in worst-case scenarios, the movement of emergency services personnel. Moreover, the loss of utilities or power outages during extreme cold events can have adverse secondary impacts on sensitive and at-risk populations. Hospitals and clinics may experience a reduction in response or care capabilities due to electrical power outages. Medicare beneficiaries that rely on electricity-dependent medical equipment and devices to live independently in their homes may also be at risk, as any extreme heat or extreme cold event that results in a prolonged power outages can be life-threatening.

Economy

The County has a large agricultural economy. As noted previously, outdoor laborers who are exposed to extreme heat are at a high risk of heat-related illnesses, and a long-term heat event could cause work interruptions. Crops are also impacted by heat events and could have an impact on the overall economy in the County. Prolonged freezing temperatures can also damage or destroy crops, affecting the economy and agricultural jobs in the County.

Between the years of 2017 and 2021, 12,972.9 acres of USDA-insured crops were lost in the County due to extreme heat and freeze events, resulting in over \$13 million in indemnity payments. Of these payments, \$8.8 million and 10,041.2 acres were due to heat, and \$4.8 million and 2,931.7 acres were due to frost, freeze, and cold winter. This results in an annualized loss of \$2.7 million for extreme weather events. Table 4-56 summarizes these agricultural losses.

Table 4-56 Crop Loss Due to Extreme Temperatures, 2017 - 2021

ROW LABELS	SUM OF DETERMINED ACRES	SUM OF INDEMNITY AMOUNT
Heat	10,041.2	\$8,874,778.14
2017	1,757.5	\$2,827,625.35
2018	676.2	\$365,000.10



ROW LABELS	SUM OF DETERMINED ACRES	SUM OF INDEMNITY AMOUNT
2019	104.2	\$73,516.60
2020	1,091.3	\$169,330.49
2021	6,412.0	\$5,439,305.60
Frost/Freeze/Cold Winter	2,931.7	\$4,837,850.97
2017	300.8	\$315,462.00
2018	2,165.0	\$3,536,578.31
2019	111.2	\$210,005.56
2020	26.4	\$497,612.10
2021	328.3	\$278,193.00
Grand Total	12,972.9	\$13,712,629.11

Source: USDA RMA Crop Indemnity Reports, 2017-2021

Cultural, Historic and Natural Resources

Extreme cold can have significant effects on environmental resources, including water, soil, plant, and wildlife resources. In water bodies such as lakes, rivers, and ponds, extreme cold can cause ice cover to form, which can limit the amount of oxygen that is available for aquatic organisms and negatively impact aquatic ecosystems and wildlife. Soil can also freeze during extreme cold temperatures, affecting its health and nutrient availability, which can impact agricultural production. Furthermore, cold temperatures can damage or kill plants, particularly sensitive crops, leading to decreased growth rates and affecting agricultural production. Frost and freeze damage can also impact trees and other vegetation, potentially causing dieback. Wildlife can also be impacted by extreme cold events, with food availability limited, migration patterns altered, and physiological stress caused. In some cases, extreme cold events could lead to mass die-offs of wildlife populations.

Extreme heat can cause an increase in water temperatures in streams, rivers, and lakes. During storm events, increased and warmer runoff from impervious surfaces into streams can lead to a degradation of habitat. This impairs water quality and compromises aquatic species' metabolism and reproduction. Elevated water temperatures can inhibit aquatic life, especially if a species can only survive in a small range of water temperatures. The effects of thermal pollution are highly dependent upon air temperature conditions before the storm, suggesting that as temperatures rise, the impacts from heat pollution will also rise (Herb et al, 2008). Increasing temperatures may also cause species to shift habitats in elevation and latitude, and extended periods of extreme heat can stress both flora and fauna species. Extreme heat may cause temporary drought-like conditions. Several weeks of extreme heat will increase evapotranspiration and reduce moisture content in vegetation, leading to higher wildfire vulnerability for that time period even if the rest of the season is relatively moist.

Development Trends

Since structures are not usually directly impacted by extreme temperature fluctuations, continued development is less impacted by this hazard than others in the plan. However, all structures in the planning area will be exposed to extreme weather events. Facilities with back-up generators are better equipped to handle a severe weather situation should the power go out. Additionally, pre-emptive measures such as construction of green buildings that require less energy to heat and cool, use of good insulation on pipes and electric wirings, and smart construction of walkways, parking structures, and pedestrian zones that minimize exposure to severe temperatures may help increase the overall durability of the buildings and the community to temperature variations. Continued development also implies continued population growth, which raises the number of individuals potentially exposed to variations in temperature. Public education efforts should continue to help the population understand the risks and vulnerabilities of outdoor activities, property maintenance, and regular exposures during periods of extreme temperature events.

4.5.6.8 Risk Summary

- Extreme temperatures can have considerable impacts on human health, the natural environment, and the economy.
- On average there are 105.1 days per year above 90°F. The highest recorded temperature for the County was 116°F, while the lowest recorded temperature was 14°F.



- Overall temperatures are expected to rise substantially throughout this century. The daily maximum average temperature is expected to rise by as much as 8.8°F by 2100.
- Climate change is expected to result in higher average temperatures and more extreme heat events in the Central Valley. Climate change is also expected to result in more extreme cold events in the US.
- The County’s agriculture economy is at risk of extreme temperatures from outdoor laborers being vulnerable to heat illnesses as well as crop losses due to heat, freeze, and frost.
- From 2017 to 2021, there were 12,973 acres of crop lost to extreme temperatures and a combined \$13 million indemnity payments made for insured crop loss due to freeze/frost and heat events.
- The very young, the very old, people with poor physical health and those experiencing homelessness are more susceptible to the impacts of extreme temperatures.
- Medicare beneficiaries that rely on electricity-dependent medical equipment and devices to live independently in their homes are also at risk, as any extreme heat or extreme cold event that results in a prolonged power outages can be life-threatening.
- The significance of extreme temperatures in the County is **High**.
- **Related hazards** – Agricultural Pest and Disease, Drought, Severe Weather, Wildfire

JURISDICTION	GEOGRAPHIC AREA	PROBABILITY OF FUTURE OCCURRENCE	MAGNITUDE/ SEVERITY	OVERALL SIGNIFICANCE	PRIORITY HAZARD?
Kings County	Extensive	Highly Likely	Limited	High	Yes
City of Avenal	Extensive	Highly Likely	Limited	High	Yes
City of Corcoran	Extensive	Highly Likely	Limited	High	Yes
City of Hanford	Extensive	Highly Likely	Limited	High	Yes
City of Lemoore	Extensive	Highly Likely	Limited	High	Yes

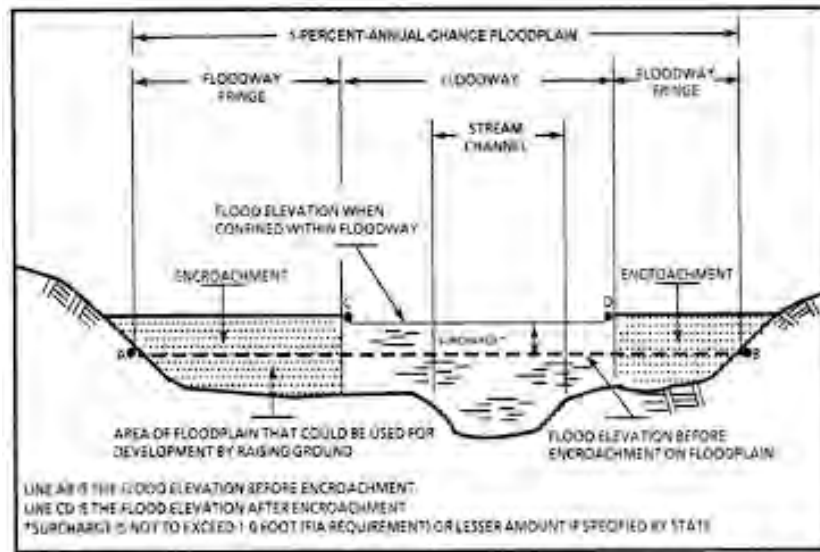
4.5.7 FLOOD

4.5.7.1 Hazard Description

A flood is the temporary inundation of water or mud on normally dry land. Heavy or prolonged rain or dam collapse can cause inundation, as can flash floods. Urban flooding occurs in developed areas where the amount of water generated from rainfall and runoff exceeds the stormwater systems’ capacity. As land is converted from agricultural to urban uses, it often loses its ability to absorb rainfall. Rain flows over impervious surfaces such as concrete and asphalt and into nearby storm sewers and streams. This runoff can result in the rapid rise of floodwaters. During urban floods, streets can become inundated, and storm drains often back up because of the volume of water and become blocked by vegetative debris, like yard waste, which can cause additional flooding. Flooding is one of the primary hazards in California, in addition to earthquakes and wildfire.

Floodplains are defined as the areas immediately adjacent to a channel from a river, stream, or other waterway. The area between the floodway and 1% annual chance floodplain boundaries is termed the floodway fringe. The floodway fringe encompasses the portion of the floodplain that could be completely obstructed without increasing the water-surface elevation of the base flood elevation by more than 1 foot at any point. The areas between a waterway and the floodplain are most apparent during and after a flood event. Typical relationships between the floodway, the floodway fringe, and their significance to floodplain development are illustrated in Figure 4-28 below.

Figure 4-28 Floodway Schematic



Source: Guidance for Flood Risk Analysis and Mapping – FEMA, 2019

Floodplains are illustrated on inundation maps, which show areas of potential flooding and water depths. In its common usage and based on FEMA guidelines, the floodplain most often refers to the area that is inundated by the 1% annual-chance flood. The 1% floodplain is also referred to as the “100-year floodplain,” meaning that it is an area that has a 1% chance of experiencing a flood of a certain magnitude or greater in any given year. Similarly, the 0.2% floodplain is also known as the “500-year floodplain,” meaning that it is an area that has a 0.2% chance of experiencing a flood of a certain magnitude or greater in any given year. The 1%-annual-chance flood is the national minimum standard by which communities regulate their floodplains through the FEMA National Flood Insurance Program (NFIP). The floodway is the channel of the tributary and the land adjacent to it, whereas the flood fringe (shown above) is the remaining portion of the 100-year floodplain, excluding the floodway.

There are three types of flood events in the County planning area: riverine flooding (which includes flash flooding that can occur along intermittent creeks and channels called arroyos), localized flooding (urban stormwater flooding), and dam and levee incident flooding. These three types of flooding area summarized below.

Riverine flooding – Riverine flooding is a type of flooding that occurs when water levels in a river, stream, or other watercourse rise and overflow their banks, causing water to spread out and flood adjacent areas. This type of flooding is typically caused by heavy rainfall, snowmelt, or a combination of the two, and can be exacerbated by factors such as deforestation, urbanization, and poor land use practices that increase the amount of runoff entering waterways. Riverine flooding can be particularly dangerous and destructive, as it can cause rapid and unpredictable increases in water levels and currents, and can result in extensive property damage, loss of life, and economic disruption. Riverine flooding in the County can occur in Tulare Lake Basin and also occurs along intermittent creeks and drainages called arroyos, such as the Arroyo Esquinado and Arroyo del Camino near the City of Avenal, that periodically convey water and during storm events runoff from these waterways can also cause flooding.

Localized flooding – Localized flooding is a type of flooding that occurs in a specific area, such as a neighborhood or street, rather than over a large geographic region. This type of flooding is typically caused by heavy rainfall that overwhelms drainage systems or by other local factors that impede the flow of water, such as blocked culverts or poorly designed stormwater infrastructure. Localized flooding can be sudden and intense, and can cause damage to homes, businesses, and infrastructure in the affected area. In some cases, localized flooding can also lead to flash flooding, a particularly dangerous and rapid form of flooding that occurs when water rises rapidly in a short period of time, often with little warning.

Levee Failure – Levees are raised areas along rivers or canals that prevent flooding by confining the water flow. They can be natural or manmade, and are usually made of dirt or concrete. While they provide strong flood protection, they are not failsafe and can be overtopped during severe flood events. Flooding from the failure of levees throughout the County or upstream is also of concern, as there are levees that



have breached along the Kings River (Serna 2017). The HMPC notes that the Cross Creek and Tule River channels were breached in early 2023. Dam failures or breaches also can result in flooding.

4.5.7.2 Geographic Area

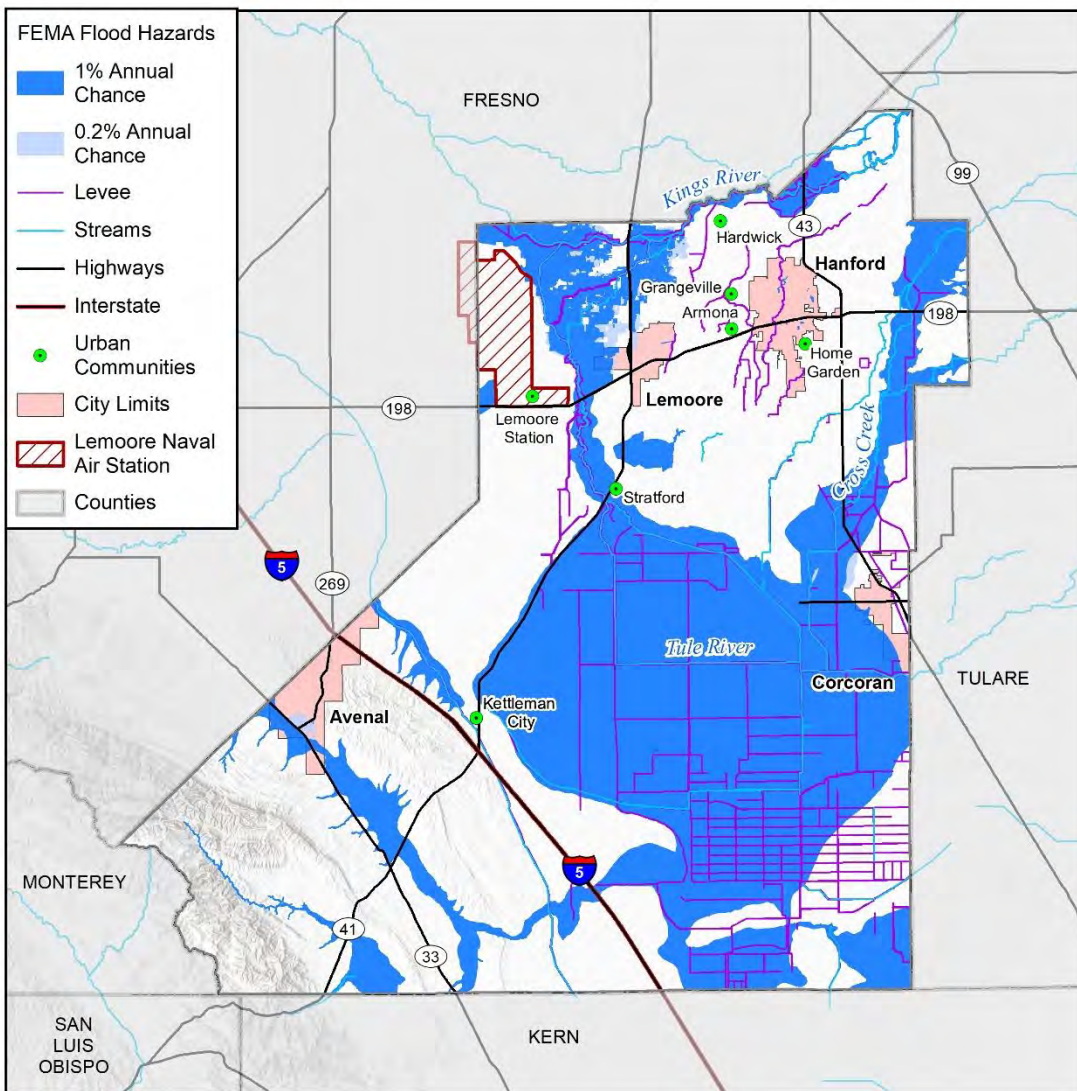
Significant – The County, and in particular the Tulare Lake Basin, once served as the natural drainage of the Kings River, Cross Creek, Kern River, and Tule River as a part of the hydrologic watershed of the Sierra Nevada Mountains along the east side of the San Joaquin Valley. Canal and flood control development in the late 1800s and early 1900s redirected water flow and managed waterways through a series of canals, water storage and agricultural levies (Kings County 2010). This led to the conversion of thousands of acres of lake basin into farmable land.

These waterways and the lake basin remain the predominant flood prone areas as defined by FEMA Flood Insurance Rate Maps (FIRMs). Historically, floods have been a major cause of disaster in the County, and past flooding events have shown that the lake basin has been turned to as a default emergency overflow for extreme incidences of floodwater (Cassidy, 2023). The primary cause of local flooding is due to the drainage patterns that flow towards the Tulare Lake Basin, in southern Kings County. This area has no outlet to the ocean unless the water is pumped by artificial means out of the Tulare Lake Basin.

FEMA and the Federal Insurance Administration have assessed flood hazards for major streams in Kings County. Projected geographic areas and the extent of flooding are shown in the map on the following page. Figure 4-29 shows the extent of flooding from both a 100-year (1% annual chance) and 500-year (0.2% annual chance) flood event. As noted in the County's 2012 MJHMP, the average flooding season in Kings County occurs from November through June with the rainy season occurring between November and April and snowmelt in the nearby mountainous area occurring from April to June.

DRAFT

Figure 4-29 Kings County FEMA 1% & 0.2 Annual Chance Floodplain



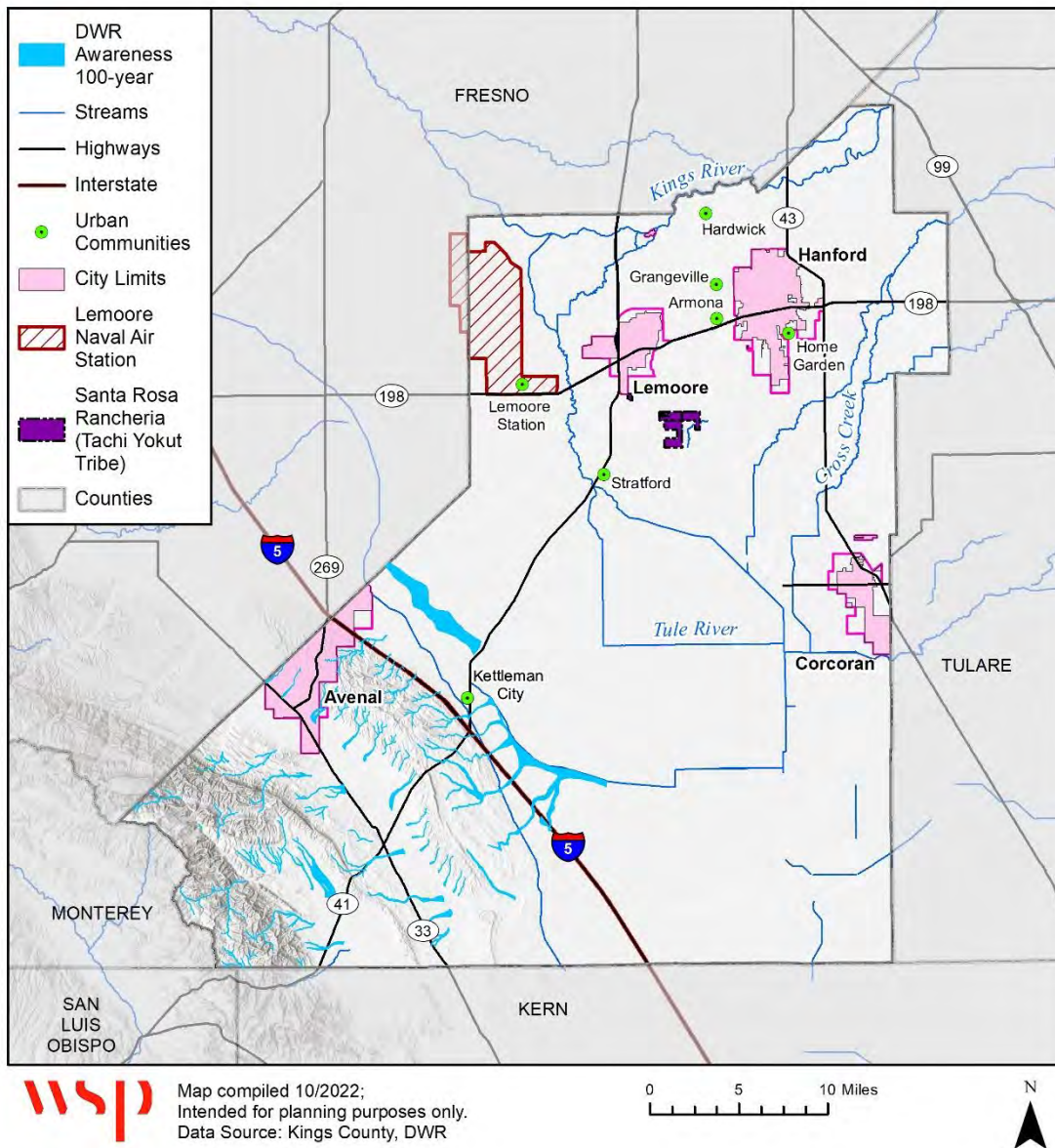
Map compiled 10/2022;
Intended for planning purposes only.
Data Source: Kings County,
FEMA NFHL 6/17/2019

0 5 10 Miles



Moreover, Figure 4-30 below shows the extent of a 100-year event based on data compiled by DWR's Awareness Floodplain Mapping project, which comes from DWR's Best Available Maps (BAM). These floodplains complement the FEMA 1% & 0.2% annual chance floodplains shown in Figure 4-30 above. According to DWR's BAM, no 200-year floodplains based on USACE's Comprehensive Study are located within the County.

Figure 4-30 Kings County DWR Awareness 100-Year Floodplains



4.5.7.3 Past Occurrences

California has a chronic and destructive flood history. Half of the 72 federally declared disasters in California between 1950 and 2000 were flood-related events. Between 1992 and 2002, every county in California was declared a federal disaster area at least once for a flooding event. Historically, floods have been the most frequent cause of disaster in the County. The primary cause of local flooding is the drainage pattern in the Tulare Lake Basin (Kings County MJHMP, 2012).

Significant flooding occurs in Kings County approximately every five years. Kings County was declared a disaster area by the federal government eight times between 1955 and 2012. FEMA's Flood Insurance Study (FIS) listed flooding events in 1950, 1952, 1955, 1958, 1962, 1963, 1969, 1970, 1971, 1973, 1978, 1980, 1982, 1985, 1986, 1995, 1997 and 2010. Heavy snow runoff caused flooding in the County in January of 1969.



Kings was the only county designated in this federal disaster declaration. Damage included \$1.56 million in public costs and \$1.25 million in private costs for a total of \$2.81 million (Kings County MJHMP, 2012)

There have been 11 NCEI recorded flooding events in Kings County since 2012, detailed in Table 4-57 below. Significant flooding also occurred at the beginning of 2023, during the development of this plan. The extent of the damage from this recent flooding event is currently being assessed, but it necessitated the activation of the County's Emergency Operation Center (EOC) and is likely to have caused significant damage to agricultural lands, County roads, bridges, other critical infrastructure, and substantial disruption to the local community. The flooding may have also caused damage to homes and businesses, which may require extensive repairs and reconstruction efforts.



Many tomato, cotton, and hay farms and orchards within the historically dry Tulare Lake outside of the City of Corcoran flooded in March 2023. Following a series of historically powerful and severe storms and increased runoff from the Sierra Nevada into the San Joaquin Valley through waterways and canals, thousands of acres of cropland in the County became inundated with flood waters for the first time in decades. Tulare Lake was once one of the largest freshwater lakes west of the Mississippi and was largely drained in the late 19th and early 20th centuries, as rivers that fed it were dammed and diverted for agriculture.

Source: San Francisco Chronicle, March 25, 2023

Table 4-57 NCEI Recorded Flood Events in Kings County since 2012

DATABASE	DECLARATION NUMBER	DECLARED DATE	DESCRIPTION
NCEI	442261	3/8/2013	Flood
	586928	6/5/2015	Flash Flood
	677961	1/8/2017	Flood
	675398	1/18/2017	Flood
	708242	6/22/2017	Flood
	779399	10/3/2018	Flash Flood
	815477	5/26/2019	Flood
	815480	5/26/2019	Flood
	816572	6/1/2019	Flash Flood
	930572	1/27/2021	Flood
FEMA	4308	4/1/2017	Flood

Source: National Centers for Environmental Information; FEMA

4.5.7.4 Likelihood of Future Occurrence

Highly Likely - Due to the history of past flooding events and the natural drainage pattern of the planning area, flooding in the County is likely to continue to occur in the future. The potential for failure of one of the many levees throughout the County could create more risk for flooding. The 1% annual chance flood is the flood that has a one percent chance in any given year of being equaled or exceeded. Based on past events, flooding events less severe than a 1% annual chance flood and those outside of the 1% annual chance floodplain occur frequently during periods of heavy rain or snowmelt. According to the NCEI Storm Events Database, there have been 10 flood events recorded for Kings County between 2012 and 2022. This means it is highly likely a flood event will occur in a given year.



4.5.7.5 Climate Change Considerations

California's Fourth Climate Assessment indicated shifts in California's precipitation regime to more dry days, more dry years, and a longer dry season, with increases in sporadic, heavy precipitation events and floods that are expected to exceed the State's flood control system capacity (CNRA 2018). With wildfires already being a problem in California, an increase in dry periods is expected to prime conditions for fires to occur, which will in turn worsen the potential for runoff and flooding associated with burned areas. Greater storm intensity is also projected with climate change, resulting in more direct runoff and flooding (CNRA 2018). The *San Joaquin Valley Regional Summary Report from the Fourth Climate Assessment* indicates that the frequency of catastrophic floods will increase in the coming years. This in turn will lead to increased stress on agriculture, natural ecosystems, water resources, land use and community development, transportation, energy, public health, and climate justice.

4.5.7.6 Magnitude and Severity

Critical - A portion of the County continues to be subject to inundation during flood events, as approximately 353,391 acres have been determined to be in the 1% & 0.2% annual chance floodplains, which combined cover 39.6% of the County. Therefore, a potential flood hazard would threaten a significant geographic area (10% - 50%) of the County. On the other hand, WSP analysis shows that if a flood event would occur, the damage associated with flooding could impact around 9% of the County's total improved parcels.

The occurrence of a flood can lead to life and property loss, damage to agricultural land, road and bridge closures and disruption of communication systems, resulting in significant disturbances to regular processes. Individuals living in low-lying trailer parks along the rivers and those experiencing homelessness are particularly vulnerable to such disasters. However, sufficient time is generally available to alert and warn those who might be affected. In the event of a catastrophic flood control structural failure, local response capabilities may be overwhelmed, necessitating mass evacuations to save lives. The impact on life safety will be determined by the warning time and the resources available to notify and evacuate the public. Loss of life is a possibility, and there may be associated health concerns, as well as negative effects on local buildings and infrastructure.

4.5.7.7 Vulnerability Assessment

Development in or near the floodplain puts lives and property at risk. Flood damage can include structure inundation, erosion of stream banks, road embankments, foundations footings for bridges, impact damage from debris, blockage of infrastructure, cropland destruction, sewage releases from damaged tanks, and economic loss to agriculture.

Certain health hazards are common in flood events. Standing water and wet materials in structures can become breeding grounds for microorganisms such as bacteria, mold, and viruses. This can cause disease, trigger allergic reactions, and damage materials long after the flood. When floodwaters contain sewage or decaying animal carcasses, infectious disease becomes a concern. Direct impacts, such as drowning, can be limited with adequate warning and public education about what to do during floods. Where flooding occurs in populated areas, warning and evacuation will be of critical importance to reduce life and safety impacts.

While there are some benefits associated with flooding, such as the replenishment of sediments and nutrients to agricultural lands, it is considered a hazard to develop in floodplains. Floods can cause many cascading effects. Flooding can damage infrastructure, and fire can break out as a result of dysfunctional electrical equipment. Hazardous materials can also get into floodways, causing health concerns and polluting water supplies. In many instances during a flood, the drinking water supply will become contaminated.

People

The total people at risk to flooding in the County was estimated by multiplying the average number of persons per household in Kings County (3.17) and each applicable incorporated jurisdiction (Avenal - 3.59, Corcoran - 3.31, Hanford - 3.09, and Lemoore - 2.95) times the number of residential parcels in each floodplain to estimate the population residing in flood hazard areas. The average number of persons per household data was acquired from the 2021 ACS 5-Year Estimates.

Based on this analysis, which accounts for residents only and not workers, there are 1,126 residents living in the 1% annual chance flood zone throughout the County. Of all study areas, the unincorporated County has the most residents living in the 1% annual chance flood area (941), followed by the City of Corcoran (132). Of the unincorporated population, the majority living in the central portion of the County that floods consist of at-risk socially vulnerable and DACs. Many of these particular households consist of farm



workers or people that live on farms or work within the agricultural industry in the region. These particular at-risk communities are at even greater risk to flooding based on direct impacts flooding poses to their properties but also the indirect impacts flooding affects their livelihood and local economy. Table 4-58 below details population estimates by jurisdiction, followed a table for the 0.2% annual chance floodplain.

Table 4-58 Population Living in the 1% Annual Chance Flood Hazard Zone

JURISDICTION	POPULATION
Avenal	22
Corcoran	132
Hanford	31
Lemoore	-
Unincorporated County	941
Total	1,126

Source: WSP Analysis 2023

The same analysis was conducted for the 0.2% annual chance floodplain, indicating that there are 7,181 residents living in the 0.2% annual chance flood zone throughout Kings County. The majority of people living in this floodplain are residents of the City of Avenal, with 5,529 people in the 0.2% annual chance floodplain. This population distribution is shown in Table 4-59.

Table 4-59 Population Living in the 0.2% Annual Chance Flood Hazard Zone

JURISDICTION	POPULATION
Avenal	5,529
Lemoore	1,437
Unincorporated County	216
Total	7,183

Source: WSP 2023

Property

Historically, Kings County has been at risk of flooding primarily during the winter and spring months when river systems swell with heavier rainfall and runoff from winter snowmelt. Normally, storm floodwaters are kept within defined limits by a variety of storm drainage and flood control measures. But occasionally, extended heavy rains result in floodwaters that exceed normal high-water boundaries and cause damage. Flooding has occurred in the past within the 100-year floodplain and in other localized areas in the County.

A flood vulnerability assessment was performed for the County using GIS overlay methodology. The County's parcel layer and associated assessor's building improvement valuation data were provided by the County and were used as the basis for the inventory. Kings County's effective FEMA Digital FIRM (DFIRM) dated June 17, 2019, was used as the hazard layer. A DFIRM is FEMA's flood risk data that depicts the 1% annual chance (100-year) and the 0.2% annual chance (500-year) flood events; this data is incorporated into the National Flood Hazard Layer (NFHL). Figure 4-29 summarizes the flood zones included on these maps.

Kings County Assessor Parcel data was used to estimate flood hazard impacts to parcels with improvement values greater than zero. An address point data layer provided by the County's GIS department was also used in combination to assess not only parcels' but also structures' exposure to flood hazard. FEMA's NFHL flood zones, with an effective date of June 17, 2019, were overlaid in GIS on the address points to identify structures/parcels that would likely be inundated during a 1% annual chance and 0.2% annual chance flood event.

Building improvement values and counts for those parcels and structures were then extracted from the assessor's parcel data and address point data, and subsequently summed for the unincorporated county and jurisdictions. Results of the overlay analysis are shown in Table 4-60 for the 1% annual chance flood and Table 4-61 for 0.2% annual chance flood. The jurisdictional annexes provide more detailed information based on assessor property types. Property type refers to the land use of the parcel and includes Agricultural, Commercial, Exempt, Industrial, Multi-Family Residential, Multi-Use and



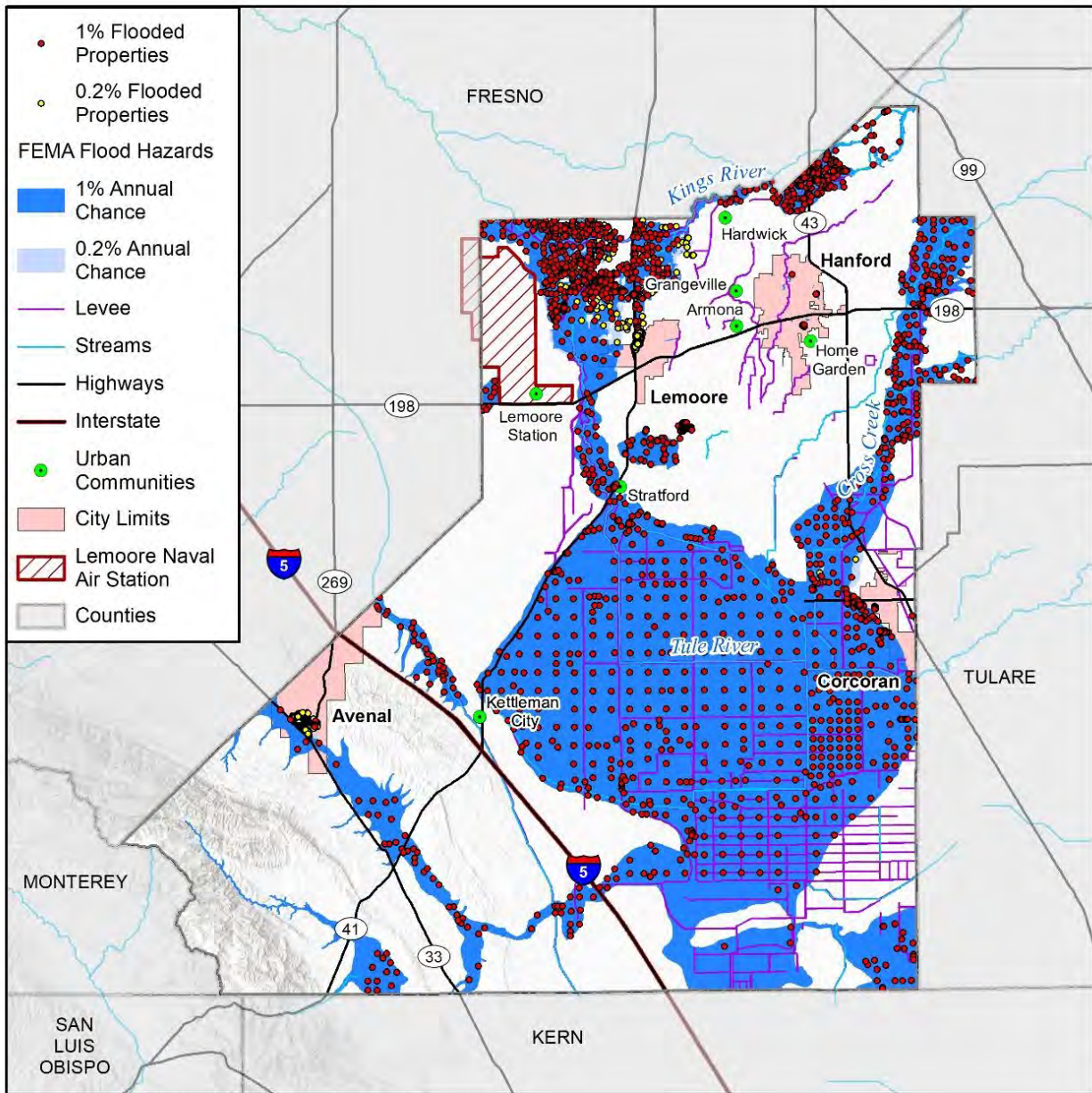
Residential. Content values were estimated as a percentage of improved values based on their occupancy type, using FEMA/Hazus estimated content replacement values. This includes 100% of the improved value for agricultural, commercial, exempt, and multi-use parcels; 50% for multi-family residential and residential parcels; and 150% for industrial parcels. Improved and content values were then totaled to obtain total exposure. The locations of these parcels are displayed in Figure 4-31 below.

A loss estimate analysis was also performed based on depth damage functions developed by the Army Corp of Engineers and FEMA. The loss curves depict the expected flood losses associated with the depth of flooding at a structure. There are different depth damage curves for structure and content losses. For this analysis, an average flood depth of two feet is assumed. A depth damage ratio of 25% was used for structural loss by multiplying it by the total values, based on the FEMA damage curves, assuming a 2-foot-deep flood. This means that the estimated loss of a parcel is 25% of its total value. The results are shown in the loss estimate columns in Table 4-60 for the 1% annual chance flood and Table 4-61 for the 0.2% annual loss properties.

The result is an inventory of the number and types of improved parcels and structures subject to flooding. Results are organized by unincorporated County and incorporated jurisdictions. Detailed tables show counts of parcels by jurisdictions and land use type (Agricultural, Commercial, Exempt, Industrial, Multi-Family Residential, Multi-Use and Residential) within each flood zone. It is important to note that there could be more than one structure or building on an improved parcel (i.e., a condo complex occupies one parcel but might have several structures). The flood loss analysis does not account for business disruption, emergency services, environmental damages, or displacement costs, thus actual losses could exceed the estimate shown. Conversely, this analysis does not differentiate parcels that may have been developed since the County and cities adopted floodplain regulations, which would be mitigated to the 1% annual chance flood if developed in accordance with local floodplain regulations. Table 4-60 and Table 4-61 also do not include publicly owned parcels that contain critical facilities and infrastructure; these vulnerable community lifelines are listed in Table 4-65.



Figure 4-31 Kings County FEMA Flood Hazards



Map compiled 10/2022;
Intended for planning purposes only.
Data Source: Kings County,
FEMA NFHL 6/17/2019

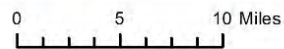




Table 4-60 1% Annual Chance Floodplain Exposure and Loss by Jurisdiction

JURISDICTION	PROPERTY TYPE	IMPROVED PARCEL COUNT	BUILDING COUNT	IMPROVED VALUE	ESTIMATED CONTENT VALUE	TOTAL VALUE	ESTIMATED LOSS	POPULATION
Avenal	Agricultural	2	2	\$103,539	\$103,539	\$207,078	\$51,770	
	Commercial	1	1	\$11,386	\$11,386	\$22,772	\$5,693	
	Exempt	2	2	\$342,024	\$342,024	\$684,048	\$171,012	
	Residential	5	6	\$170,357	\$85,179	\$255,536	\$63,884	22
	Total	10	11	\$627,306	\$542,128	\$1,169,434	\$292,358	22
Corcoran	Exempt	3	3	\$225,007	\$225,007	\$450,014	\$112,504	
	Residential	40	40	\$5,726,687	\$2,863,344	\$8,590,031	\$2,147,508	132
	Total	43	43	\$5,951,694	\$3,088,351	\$9,040,045	\$2,260,011	132
Hanford	Agricultural	1	1	\$4,325	\$4,325	\$8,650	\$2,163	
	Commercial	1	1	\$6,900	\$6,900	\$13,800	\$3,450	
	Exempt	1	1	\$751,205	\$751,205	\$1,502,410	\$375,603	
	Multi-Family Residential	1	9	\$2,986,560	\$1,493,280	\$4,479,840	\$1,119,960	28
	Residential	1	1	\$269,146	\$134,573	\$403,719	\$100,930	3
	Total	5	13	\$4,018,136	\$2,390,283	\$6,408,419	\$1,602,105	31
Lemoore	Agricultural	1	1	\$11,954	\$11,954	\$23,908	\$5,977	
	Exempt	1	1	\$-	\$-	\$-	\$-	
	Total	2	2	\$11,954	\$11,954	\$23,908	\$5,977	-
Unincorporated	Agricultural	147	151	\$16,079,220	\$16,079,220	\$32,158,440	\$8,039,610	
	Commercial	14	14	\$9,450,042	\$9,450,042	\$18,900,084	\$4,725,021	
	Exempt	1,243	1,338	\$261,919,205	\$261,919,205	\$523,838,410	130,959,603	
	Industrial	2	2	\$78,858	\$118,287	\$197,145	\$49,286	
	Multi-Use	50	60	\$14,465,996	\$7,232,998	\$21,698,994	\$5,424,749	190
	Residential	221	237	\$25,257,607	\$12,628,804	\$37,886,411	\$9,471,603	751
	Total	1,677	1,802	\$327,250,928	\$307,428,556	\$634,679,484	\$158,669,871	941
Grand Total	1,737	1,871	\$337,860,018	\$313,461,271	\$651,321,289	\$162,830,322	1,126	

Sources: Kings County Assessor's Office; NFHL Effective date 6/17/2019, FEMA; GIS analysis



Table 4-61 0.2% Annual Chance Floodplain Exposure and Loss by Jurisdiction

JURISDICTION	PROPERTY TYPE	IMPROVED PARCEL COUNT	BUILDING COUNT	IMPROVED VALUE	ESTIMATED CONTENT VALUE	TOTAL VALUE	ESTIMATED LOSS	POPULATION
Avenal	Agricultural	1	1	\$163,000	\$163,000	\$326,000	\$81,500	
	Commercial	97	119	\$17,116,938	\$17,116,938	\$34,233,876	\$8,558,469	
	Exempt	7	9	\$109,198	\$109,198	\$218,396	\$54,599	
	Industrial	9	10	\$849,591	\$1,274,387	\$2,123,978	\$530,994	
	Multi-Family Residential	29	112	\$22,639,837	\$11,319,919	\$33,959,756	\$8,489,939	402
	Multi-Use	6	9	\$749,775	\$749,775	\$1,499,550	\$374,888	32
	Residential	1,363	1,419	\$114,303,823	\$57,151,912	\$171,455,735	\$42,863,934	5,094
	Total	1,512	1,679	\$155,932,162	\$87,885,128	\$243,817,290	\$60,954,322	5,529
Lemoore	Commercial	3	4	\$1,542,712	\$1,542,712	\$3,085,424	\$771,356	
	Industrial	1	1	\$399,406	\$599,109	\$998,515	\$249,629	
	Multi-Family Residential	2	274	\$34,356,891	\$17,178,446	\$51,535,337	\$12,883,834	808
	Multi-Use	1	1	\$3,821,051	\$3,821,051	\$7,642,102	\$1,910,526	3
	Residential	212	212	\$41,915,687	\$20,957,844	\$62,873,531	\$15,718,383	625
	Total	219	492	\$82,035,747	\$44,099,161	\$126,134,908	\$31,533,727	1,437
Unincorporated	Agricultural	21	22	\$1,511,667	\$1,511,667	\$3,023,334	\$755,834	
	Exempt	66	71	\$12,319,035	\$12,319,035	\$24,638,070	\$6,159,518	
	Multi-Use	10	12	\$3,312,255	\$3,312,255	\$6,624,510	\$1,656,128	38
	Residential	52	56	\$7,408,259	\$3,704,130	\$11,112,389	\$2,778,097	178
	Total	149	161	\$24,551,216	\$20,847,087	\$45,398,303	\$11,349,576	216
Grand Total		1,880	2,332	\$262,519,125	\$152,831,375	\$415,350,500	\$103,837,625	7,181

Sources: Kings County Assessor's Office; NFHL Effective date 6/17/2019, FEMA; GIS analysis



Significant areas of Kings County are at risk of being inundated by a 1% annual chance flood event. The unincorporated areas of the County are predominantly inundated by the 1% annual chance floodplain and have the greatest percentages of total loss from a 1% annual chance flood. The sites of Avenal, Corcoran and Lemoore are all somewhat exposed to both 1% and 0.2% annual chance flood events. The City of Hanford is the least vulnerable to flood events.

Based on this analysis, the County Planning Area has 1,737 parcels with 1,871 structures on them valued at over \$651 million in the 1% annual chance floodplain. An additional 1,880 parcels with 2,332 structures on them valued at more than \$415 million within the 0.2% annual chance floodplain. As a result, the total value of these exposed parcels and structures is approximately \$1.07 billion. When factoring in FEMA’s estimated loss ratio, the estimated total losses from both 1% and 0.2% annual chance flood events is over \$266 million. However, development in the 500-year floodplain is typically not regulated, thus a large flood event could be extremely damaging in the County.

Kings County joined the NFIP in 1980; each jurisdiction also participates in the NFIP. Table 4-62 below shows the NFIP entry dates of Kings County and its jurisdictions.

Table 4-62 NFIP Entry Date - Kings County & Jurisdictions

JURISDICTION	NFIP ENTRY DATE
Kings County	August 4, 1988
City of Avenal	April 5, 1989
City of Corcoran	November 28, 1997
City of Hanford	March 18, 1987
City of Lemoore	April 3, 1987

Source: Community Information System (CIS) 2023

As of April 18, 2023, in the unincorporated County, there are 173 flood insurance policies in force, of which there are 125 single family units and 48 non-residential. The number of policies in force by jurisdiction and flood zone are shown in Table 4-63. In the unincorporated County, there are 173 flood insurance policies in force, of which there are 241 single-family units, 3 2-4 family units, zero in all other residential, and 59 non-residential.

Table 4-63 Community Information System Policies in Force by Flood Zone and Jurisdiction

FLOOD ZONE	KINGS COUNTY	CITY OF AVENAL	CITY OF CORCORAN	CITY OF HANFORD	CITY OF LEMOORE
A01-30 & AE Zones	33	1	0	0	0
A Zones	51	0	0	2	0
AO Zones	0	0	0	0	0
AH Zones	0	0	0	0	0
atmospheric river (AR) Zones	0	0	0	0	0
A99 Zones	0	0	0	0	0
VO1-30 & VE Zones	0	0	0	0	0
V Zones	0	0	0	0	0
D Zones	0	0	0	0	0
B, C & X Zone					
- Standard	89	0	4	13	9
- Preferred	0	1	0	0	0
Total	173	1	4	15	9

Source: Community Information System (CIS) 2023

NFIP data indicates that there are 202 insurance policies in the County representing \$49,959,000 of insurance coverage in force. Since 1978 there have been 9 paid losses, totaling \$18,946. This results in approximately \$412 in annualized losses. Most of the losses have been in the unincorporated County. Table 4-64 provides details on flood insurance policies for each individual jurisdiction.



Table 4-64 Kings County Flood Insurance Policy Information

JURISDICTION	POLICIES	INSURANCE IN FORCE	NO. OF PAID LOSSES	TOTAL LOSSES PAID
Avenal	1	\$277,000	1	\$0
Corcoran	4	\$1,202,000	0	\$0
Hanford	15	\$4,667,000	2	\$2,246
Lemoore	9	\$3,034,000	0	0
Unincorporated Kings County	173	\$40,779,000	173	\$16,700
Total	202	\$49,959,000	9	\$18,946

Source: FEMA NFIP Community Information System

FEMA insures properties against flooding losses through the NFIP. As part of the process to reduce or eliminate repetitive flooding to structures across the United States, FEMA has developed an official Repetitive Loss Strategy. The purpose behind the national strategy is to identify, catalog, and propose mitigation measure to reduce flood losses to the relatively few numbers of structures that absorb the majority of the premium dollars from the national flood insurance fund.

A repetitive loss property is defined by FEMA as “a property for which two or more NFIP losses of at least \$1,000 each have been paid within any 10-year period since 1978”. A repetitive loss property may or may not be currently insured by the NFIP. There are no repetitive loss properties or severe repetitive loss properties located within the County, based on NFIP data retrieved on April 18, 2023.

Critical Facilities and Lifelines

Key support facilities and structures most necessary to withstand the impacts of, and respond to, natural disasters are referred to as critical facilities. Examples of these critical facility types include utilities, transportation infrastructure, and emergency response and services facilities, given failures of components along major lifelines or even closures or inaccessibility to key emergency facilities could limit if not completely cut off transmission of commodities, essential services, and other potentially catastrophic repercussions. Floods and levee failure can disrupt, damage, or destroy these critical facilities, which in turn can impede the ability of Kings County to respond to and recover from a major flood event.

A GIS analysis of exposed critical facilities was conducted, similar to the parcel analysis, using HIFLD. The results of critical facilities throughout the County which are exposed to the various flood hazards are shown in Table 4-65 below and organized by the jurisdiction they are located in and the FEMA Lifeline category into which they are classified. The locations of these facilities are displayed in Figure 4-32 below.

Table 4-65 Critical Facilities Within the 1% and 0.2% Annual Chance Flood Hazard by FEMA Lifeline and Jurisdiction

FLOOD HAZARD ZONE	JURISDICTION	COMMUNICATIONS	ENERGY	FOOD, WATER, SHELTER	HAZARDOUS MATERIAL	HEALTH AND MEDICAL	SAFETY AND SECURITY	TRANSPORTATION	TOTAL
1% Annual Chance	Avenal	-	1	-	-	-	-	1	2
	Corcoran	-	3	-	-	-	1	-	4
	Hanford	-	-	-	-	-	1	-	1
	Unincorporated	20	12	-	5	-	-	71	108
	Total	20	16	-	5	-	2	72	115
0.2% Annual Chance	Avenal	2	-	-	1	-	8	-	11
	Corcoran	-	-	-	-	-	-	-	-



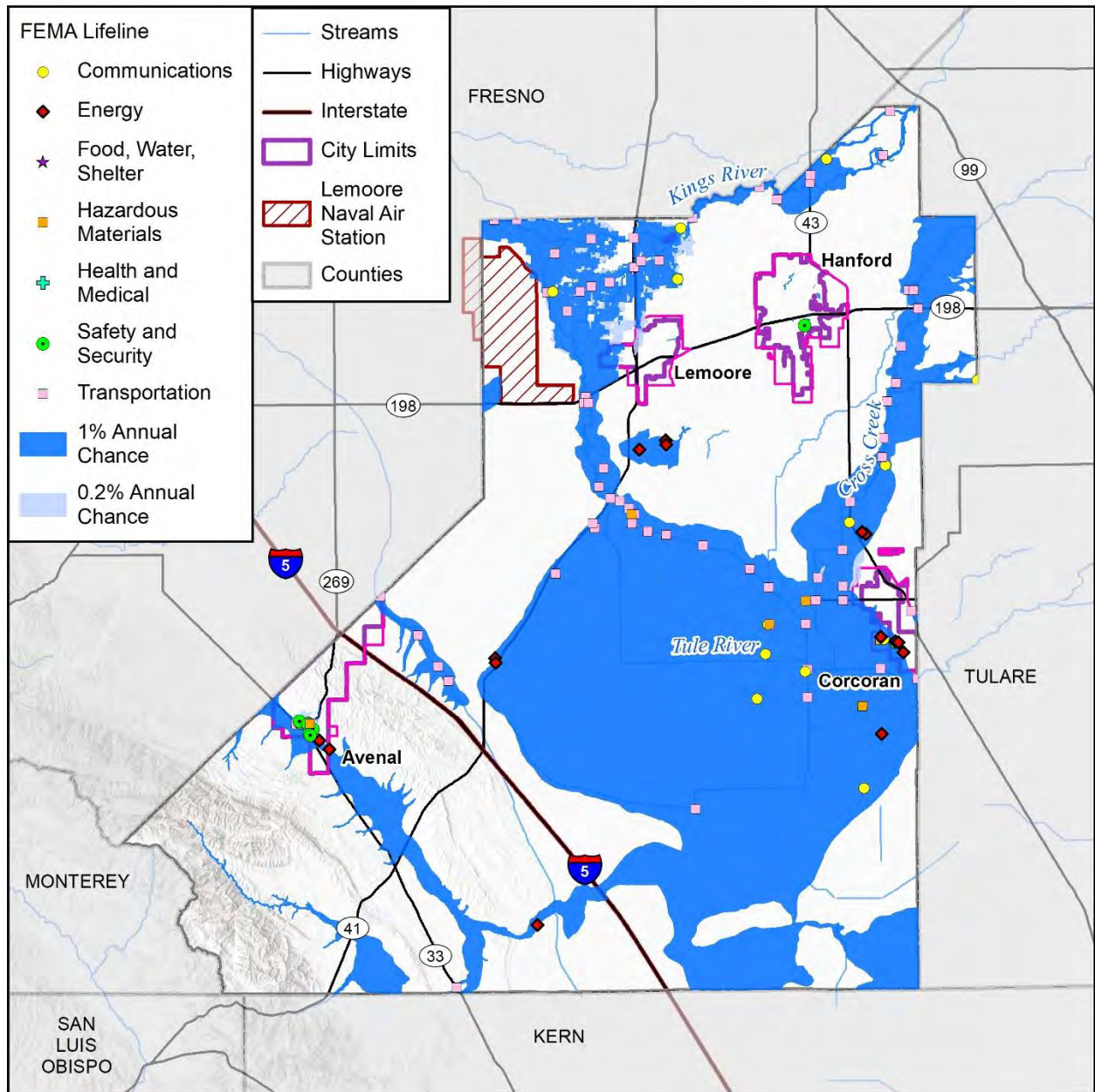
FLOOD HAZARD ZONE	JURISDICTION	COMMUNICATIONS	ENERGY	FOOD, WATER, SHELTER	HAZARDOUS MATERIAL	HEALTH AND MEDICAL	SAFETY AND SECURITY	TRANSPORTATION	TOTAL
	Hanford	-	-	-	-	-	-	-	-
	Unincorporated	-	-	-	-	-	-	-	-
	Total	2	-	-	1	-	8	-	11

Source: HIFLD, Kings County, WSP GIS Analysis

DRAFT



Figure 4-32 Kings County Critical Facilities & FEMA Flood Hazards



Map compiled 2/2022;
Intended for planning purposes only.
Data Source: Kings County, DWR. HIFLD

0 5 10 Miles



Economy

Flooding can have a major economic impact on the economy. Based on the flood loss analysis, there are 16 commercial structures worth an estimated \$18.9 million in total value directly at risk of flooding in the 1% annual chance zone. Based on the loss analysis this could result in approximately \$4.7 million in direct losses. In addition, there are 123 commercial structures worth an estimated \$37.3 million in total value directly at risk of flooding in the 0.2% annual chance zone. Based on the loss analysis this could result in approximately \$9.3 million in direct losses. This does not account for other indirect losses such as business interruption, lost wages, and other downtime costs.



Effects on the agricultural economy can be devastating, and a large amount of area at risk to flooding in the County is agricultural and lies within the Tulare Lake basin. Flooding can damage crops and livestock. In addition to the obvious impacts on crops and animals, flooding can have deleterious effects on soil and the ability to reinvigorate the agricultural activities impacted once the flood waters recede. Damage to water resources such as underground irrigation systems, water storage reservoirs, springs and other natural water bodies could have a serious effect on agriculture operations.

Cultural, Historic and Natural Resources

Natural areas within the floodplain often benefit from periodic flooding as a naturally recurring phenomenon. These natural areas often reduce flood impacts by allowing absorption and infiltration of floodwaters. Natural resources are generally resistant to flooding except where natural landscapes and soil compositions have been altered for human development or after periods of previous disasters such as drought and fire. Wetlands, for example, exist because of natural flooding incidents. These areas provide natural and beneficial functions to hold and absorb floodwaters. Areas recently suffering from wildfire damage may erode because of flooding, which can temporarily alter an ecological system.

Development Trends

The potential or likelihood of a flood event in the County increases with the annual onset of heavy rains in winter and spring months. Much of the historical growth in the problem areas connected with flooding and stormwater runoff include erosion, sedimentation, degradation of water quality, losses of environmental resources, and certain health hazards. For NFIP participating communities, floodplain management practices implemented through local floodplain management ordinances should mitigate the flood risk to new development in the 1% annual chance floodplains. As noted previously, a large amount of development has occurred in the 0.2% annual chance floodplain and these areas are not regulated or require flood mitigation, thus flood risk is increasing to a degree, although to the less frequent flood events.

The development trend in the County planning area consists of steady growth. Much of this growth is occurring in the urban and SOI areas; such growth can result in more impervious surfaces due to buildings and infrastructure and increase stormwater runoff. The California DOF projects that Kings County's population will increase by 3.0% by the year 2025 when compared to the year of 2021. The County's population is also projected to continue to grow through the year 2060. Such growth may consume previously undeveloped acres, and the increase in impervious surfaces could affect existing drainage and flood control facilities.

Changes in municipal boundaries such as annexations into the SOI may change the flood risk profile for certain communities. A GIS analysis of 1% and 0.2% annual chance flood exposure within SOI boundaries is summarized in the tables below. These parcels are included in Table 4-66 and Table 4-67, and they fall under "Unincorporated" in terms of their jurisdiction. Parcels shown below in these tables are also those that fall within each jurisdiction's SOI and are exposed to potential flood hazard events. As shown, only parcels located in the SOI of the Cities of Corcoran and Lemoore are exposed to 1% annual chance flood hazards. In addition, only two parcels located in the SOI of the City of Lemoore are exposed to 0.2% annual chance flood hazards.

Table 4-66 Sphere of Influence Risk to FEMA 1% Annual Chance Flood Hazard

	CORCORAN	LEMOORE	GRAND TOTAL
Improved Parcel Count	40	2	42
Building Count	44	2	46
Improved Value	\$38,205,152	\$25,742	\$38,230,894
Estimated Content Value	\$37,338,575	\$25,742	\$37,364,317
Total Value	\$75,543,727	\$51,484	\$75,595,211
Population	96	-	96

Source: Kings County; WSP Analysis 2023



Table 4-67 Sphere of Influence Risk to FEMA 0.2% Annual Chance Flood Hazard

	LEMOORE	GRAND TOTAL
Improved Parcel Count	2	2
Building Count	2	2
Improved Value	\$63,970	\$63,970
Estimated Content Value	\$47,370	\$47,370
Total Value	\$111,340	\$111,340
Population	3	3

Source: Kings County; WSP Analysis 2023

4.5.7.8 Risk Summary

The overall significance of the flood hazard in the County is **High**

- Eleven flood events were recorded for Kings County between 2012 and 2022, which makes it is highly likely that a flood event occurs in a given year. Significant flooding also occurred during plan development in early 2023.
- Significant flooding occurs in the County through snowmelt, arroyos, and significant rainfall events. Flooding risks are present among the Tulare Lake Basin and several creeks and rivers, including the Kings River, the Arroyo Esquinado, and the Arroyo del Camino.
- The Tulare Lake Basin once served as the natural drainage of the Kings River, Cross Creek, Kern River, and Tule River as a part of the hydrologic watershed of the Sierra Nevada Mountains along the east side of the San Joaquin Valley. Canal and flood control development turned the area into farmable land, although the Basin is still subject to flooding during significant precipitation events.
- Key findings from the 2022 CVFPP indicate shifts in California’s precipitation regime, which show more dry days, more dry years, a longer dry season, and increases in occasional heavy precipitation events and floods. These same studies project greater storm intensity with climate change, resulting in more direct runoff and flooding and as a result, high frequency flood events in conjunction with heavy precipitation and extreme storm events.
- Countywide there are 4,203 structures at risk within the limits of the 100-year and 500-year floodplain zones worth over \$1.06 billion, with a loss estimate of over \$578 million.
- Countywide approximately 8,307 persons live in the 100-year floodplain and 500-year floodplains. Of this population, 941 residents live within the 100-year floodplain in the unincorporated County and 132 residents live in 500-year floodplain in the City of Corcoran. Of this population, the majority living in the central portion of the County’s floodplain consists of socially vulnerable populations living on farms or working within the agricultural industry, many of which are designated DACs. These at-risk communities are at greater risk to flooding based on direct impacts flooding poses to their properties but also how the indirect impacts flooding affects their livelihood and local economy.
- Levees and flood control dam infrastructure provide some protection, but also pose potential levee and dam failure risks.
- In March 2023, a series of AR events caused extensive flooding that rendered almost all emergency access routes in and out of the City of Corcoran unusable. As a consequence, State Route (SR) 43 to the north of Corcoran became the sole accessible route connecting Kings County to the City. Another alternative, SR 137, was available but located in Tulare County. The significance of these emergency access routes during flooding cannot be overstated, as they play a vital role in facilitating resource mobilization, emergency response efforts, and ensuring the overall safety of the public.
- **Related hazards** – Severe weather: Heavy Rain, Wildfire, Landslide and Debris Flow.

JURISDICTION	GEOGRAPHIC AREA	PROBABILITY OF FUTURE OCCURRENCE	MAGNITUDE/ SEVERITY	OVERALL SIGNIFICANCE	PRIORITY HAZARD?
Kings County	Extensive	Highly Likely	Critical	High	Yes
City of Avenal	Extensive	Highly Likely	Critical	High	Yes
City of Corcoran	Extensive	Highly Likely	Critical	High	Yes
City of Hanford	Extensive	Highly Likely	Critical	High	Yes



City of Lemoore	Extensive	Highly Likely	Critical	High	Yes
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4.5.8 LAND SUBSIDENCE

4.5.8.1 Hazard Description

Land subsidence is defined as the vertical sinking of the land over natural or manmade underground voids. Subsidence is common in several areas of California, usually as a result of groundwater pumping, peat loss, or oil and gas extraction. Fluctuations in the level of underground water caused by pumping or by injecting fluids into the earth can initiate sinking to fill the empty space previously occupied by water or soluble minerals. Weight, including surface developments such as roads, reservoirs, and buildings, and manmade vibrations from such activities as blasting and heavy truck or train traffic can accelerate the natural processes of subsidence, or induce subsidence over manmade voids.

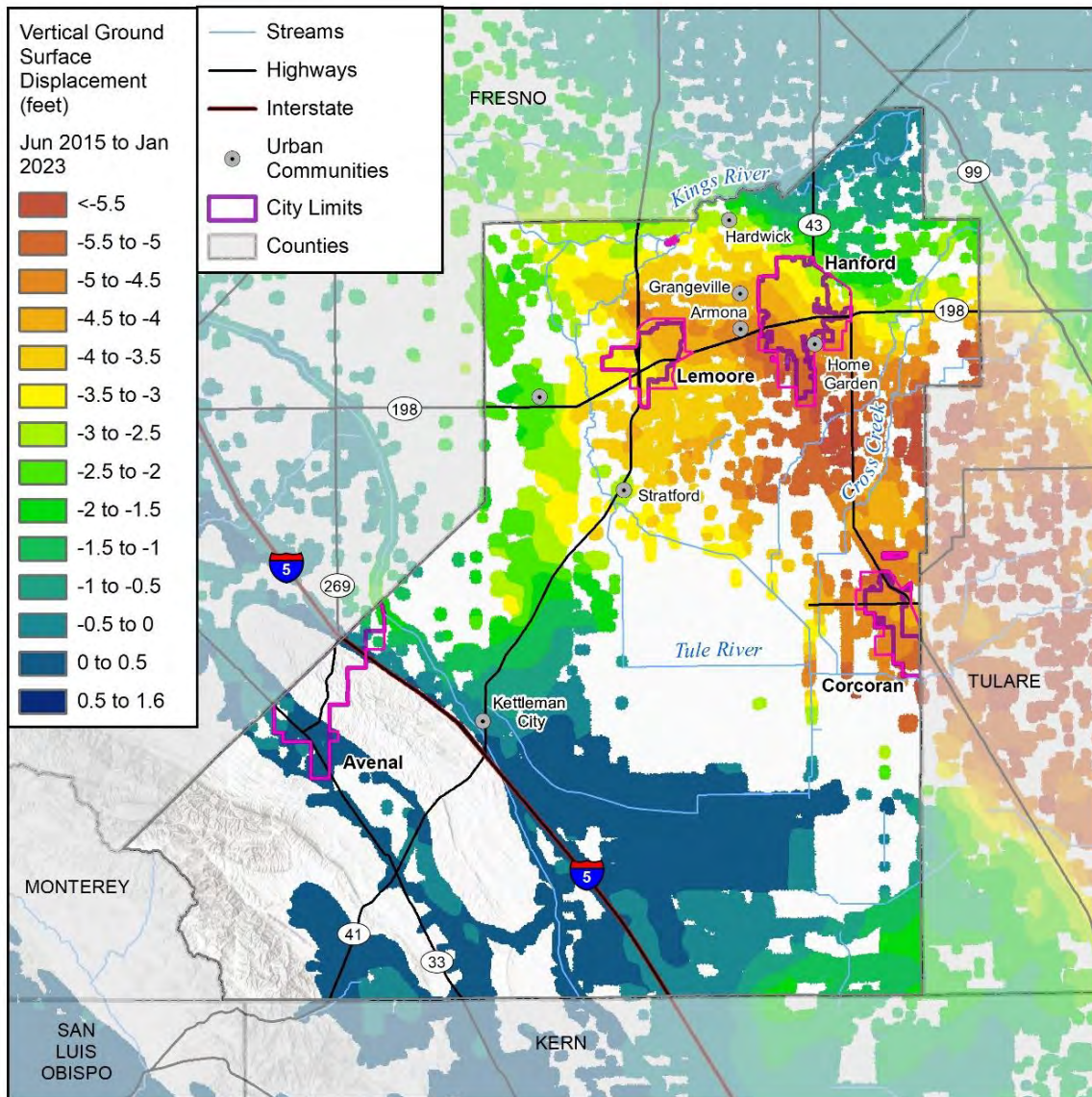
The 2018 California SHMP profiles subsidence as a secondary impact of drought associated with the reduced availability of surface water and increased groundwater pumping in order to meet water needs. According to Smith, et al. (2018), approximately 1 million people in the San Joaquin Valley rely on groundwater pumping for drinking water, and thousands of farmers rely on groundwater to irrigate crops. While groundwater pumping occurs in both drought and non-drought years to support urban, rural, and agricultural water needs, the SHMP notes that it is greatly increased during dry years.

The primary source of water for the County is groundwater (Kings County, n.d.). As groundwater is extracted faster than the aquifers can recharge, significant subsidence of soil layers may occur. Often, once an aquifer has been compressed by subsidence, the deformation of shape is permanent, resulting in a decreased capacity to store water. In addition to the direct damage subsidence may cause to infrastructure, as foundations are warped subsidence also increases the risk of flooding as ground elevation changes.

4.5.8.2 Geographic Area

Extensive – Figure 4-33 below shows the vertical ground surface displacement measured in feet for Kings County and the surrounding areas. This DWR dataset represents measurements of vertical ground surface displacement in more than 200 of the high-use and populated groundwater basins across the State of California between January 2015 and January 2023. Vertical displacement estimates are derived from Interferometric Synthetic Aperture Radar (InSAR) data that are collected by the European Space Agency (ESA) Sentinel-1A satellite and processed by TRE ALTAMIRA Inc. (TRE), under contract with the California DWR as part of DWR’s SGMA technical assistance to provide important SGMA-relevant data to GSAs for Groundwater Sustainability Plan (GSP) development and implementation. As shown in Figure 4-33, the red/orange areas experienced the most (negative) vertical ground surface displacement between June 2015 to January 2023, meaning that these areas have experienced the most land subsidence during this period of time. These areas include the northern and eastern portions of the County, including the cities of Corcoran, Hanford, and Lemoore. Due to gaps in spatial coverage, the map below shows the approximate subsidence using the average of all reported values within each square grid area. Reported values are not evenly distributed within each square, and each square may have a different number of measurements.

Figure 4-33 Kings County Vertical Ground Surface Displacement (Jun 2015 - Jan 2023)



Map compiled 2/2022;
Intended for planning purposes only.
Data Source: Kings County, DWR

0 5 10 Miles



Source: DWR 2023

4.5.8.3 Past Occurrences

Land subsidence from groundwater extraction in the San Joaquin Valley has been called the greatest human alteration of the Earth's surface (Galloway et al, 1999). This phenomenon is closely tied to the growth of agriculture and the accessibility of water in the region. Due to the semi-arid nature of the valley and the variation in streamflow on the east and west sides of the San Joaquin Valley, agriculture has become heavily dependent on the aquifer system. A brief history of land subsidence in the San Joaquin Valley from *Land Subsidence from Groundwater Use in California* by Borchers and Carpenter (2014) is summarized below.

The sinking of land caused by the removal of groundwater started in the 1920s, but accelerated during the post-World War II period when the demand for irrigation water increased, leading to the drilling of numerous wells. In 1955, the San Joaquin Valley supplied a



quarter of all irrigation groundwater in the United States. By 1970, more than half of the valley, an area covering 5,200 square miles, had experienced subsidence of over one foot.

Although the connection between the decline of groundwater levels and subsidence in the Delano City area was identified early on, a comprehensive study of the regional impact of groundwater overdraft on subsidence was not conducted until the early 1950s. At that time, government agencies expressed worry about how subsidence could affect the Delta-Mendota Canal (which was under construction at the time) and the California Aqueduct (which was still in the planning stages).

The year 1954 saw the start of research into land subsidence through the collaboration of a Federal-State interagency committee and the USGS "Mechanics of Aquifers Project." Through field monitoring and research, the studies were able to determine the extent and magnitude of subsidence and its correlation to groundwater overdraft. The findings provided valuable information that enabled the strategic placement of the California Aqueduct, which, together with the Delta-Mendota Canal and the Friant-Kern Canal, brought surface water into the valley to reduce the dependence on groundwater.

By 1974, the importation of surface water had resulted in groundwater levels recovering by over 200 feet in certain regions on the west side of the valley. While this helped to decelerate the rate of subsidence, subsidence still persisted due to the slow drainage of water from the compacting clayey aquitards, especially in the Los Banos-Kettleman City area of the mid-valley and the Wasco-Tulare area of the southern valley.

The droughts that occurred after 1975 led to a rapid decline in groundwater levels despite lower pumping volumes than those in the 1960s. This was due to a reduction in storage space within the aquifer system and decreased hydraulic conductivity of the compacted aquitards, which restrict the drainage of water to the more permeable parts of the system. Despite water levels being notably higher than those in the 1960s, the observations indicated renewed land subsidence during drought periods.

The present drought, combined with a shift in cropping patterns from row crops and range land to permanent crops such as trees, has again led to increased dependence on aquifer systems for agricultural irrigation in the San Joaquin Valley. Currently, an area spanning about 2,700 square miles west of Tulare and east of Kettleman City is continuing to experience subsidence. The Lemoore Naval Air Station, located at the northwest edge of this area, has seen a total subsidence of over 10 feet between 1925 and 2010. The conversion to permanent crops and orchards that require year-round irrigation has been linked to increased groundwater extraction and changes in land use, which have contributed to the subsiding area. The sagging of canals, rivers, and flood bypass channels in these regions has led to a loss of freeboard and flow capacity.

4.5.8.4 Likelihood of Future Occurrence

Likely – Land subsidence has been a recurring issue in Kings County for decades and can be expected to continue in the future. The frequency of future land subsidence incidents in the County will largely be dependent on the mitigation actions and pumping regulations initiated by the State, the County, and local regulations. Based on past trends of gradual subsidence throughout the entire San Joaquin Valley and the continued dependence on groundwater pumping, it can be assumed that subsidence will continue in the future, with increased rates of subsidence during drought years.

The HMPC notes that at times agricultural operations are subjected to 0% - 5% allocations of surface water deliveries, which forces agriculture to rely upon groundwater to remain viable. This has resulted in some years of over drafting amounts of approximately 820,000 acre-feet per year (Bittle, 2023). The SGMA also helped establish local GSAs to manage groundwater sustainably within the four groundwater subbasins in the region: Tulare Lake, Kaweah, Kings, and Westside Subbasins. Further, the development and implementation of each GSA's GSP should further mitigate the amount of over drafting in the future and help reduce subsidence rates. See Section 4.5.4, Drought for additional information on the Tulare Lake, Kaweah, Kings, and Westside Subbasin GSPs.



4.5.8.5 *Climate Change Considerations*

Climate change is expected to result in increased temperatures and changes in precipitation patterns, which can lead to both extreme precipitation variability and prolonged periods of drought. Drought conditions can cause a reduction in soil moisture content while increasing the demand for water resources. In response, people may increase their use of groundwater, which can lead to increased land subsidence risk through the compaction of soil layers and the depletion of underground water resources.

Extreme precipitation variability present both challenges and opportunities. Extreme flooding occurred in the County following the series of AR events that hit the State in early 2023. The HMPC noted that these events could be beneficial if excess flood water were captured and used to enhance groundwater recharge. However, such strategic recharge projects require extensive knowledge of the soil, geology, and aquifer properties, as well as planning, permits, and infrastructure. These projects are eligible for funding through the DWR's Sustainable Groundwater Management Grant Program.

However, during periods of extended drought, water levels in aquifers may be drawn down to levels that are too low, which can cause the soil and rock layers to compress and settle. Once this occurs, the water cannot recharge the layers, leading to permanent subsidence and the permanent loss of groundwater storage capacity. This can have significant economic and environmental impacts, including damage to infrastructure, decreased agricultural productivity, and reduced access to water resources.

4.5.8.6 *Magnitude and Severity*

Limited - The rate of subsidence is difficult to predict, and it is also uncertain where exactly it will occur. This unpredictability makes it hard to assess the potential magnitude and severity of the subsidence's impact. As the County's different areas continue to sink at varying rates that range from approximately 0.5 feet to 2.5 feet of vertical ground surface displacement in the area south of Kettleman City in the County to 4.5 to 5.5 feet of vertical ground surface displacement in the area between the cities of Hanford and Corcoran, the impacts on infrastructure could become more evident (see Figure 4-31). It is likely that continued subsidence in the County could lead to further harm to infrastructure such as buildings, roads, and water storage and management systems, such as canals and aqueducts.

4.5.8.7 *Vulnerability Assessment*

Land subsidence due to groundwater pumping can permanently damage or collapse underground aquifers, increase flood risk in low-lying areas, and pose hazards to buildings, infrastructure, and water storage facilities. Subsidence can result in serious, localized structural damage to buildings, roads, irrigation ditches, canals, streams, underground utilities, and pipelines. It can disrupt and alter the flow of surface or underground water. The consequences of improper use of land subject to ground subsidence can be excessive economic losses, including the high costs of repair and maintenance for buildings, irrigation works, highways, utilities, and other structures. This results in direct economic losses to citizens as well as indirect economic losses through decreased property values.

Property

The lack of detailed data on property damage due to land subsidence in Kings County makes it difficult to quantify past or potential future losses. Most subsidence instances result in relatively minor damage and settling of buildings. But in some cases, subsidence can result in serious structural damage to buildings, roads, irrigation ditches, underground utilities, and pipelines, potentially resulting in the complete loss of the structure.

People

This hazard typically results in property damage, not risk to human life. In the event of modest subsidence over time, property that people rely on like buildings, roads, rail lines, and underground infrastructure, such as sewer, electrical power, and water lines could be impacted. These impacts may also be due to related erosion or flooding hazards. Land subsidence is also not expected to have a disproportionate impact on socially vulnerable populations.

Critical Facilities and Lifelines

Land subsidence is a threat to critical infrastructures, including groundwater wells, levees, and aqueducts. As land sinks, it can cause the casings of wells to collapse and require repair. Water that had previously been advanced by gravity may require lift stations or pumps to be moved over distorted landscapes.



Economy

Damage resulting from land subsidence can cause direct economic losses in the form of needed structural repairs to affected buildings and facilities, as noted above. It can also result in indirect losses, such as from increased taxes and decreased property values. The HMPC notes that as a result of media coverage of subsidence in the area, lending institutions have applied higher interest rates due to perceived higher risk, placing greater financial burdens on lower-income communities. Subsidence may also impact agricultural industries and livelihoods dependent on those industries if transportation routes are affected.

Cultural, Historic and Natural Resources

Historic and cultural facilities are just as susceptible to subsidence related damage as other structures. However, there is not sufficient data to identify specific historical or cultural facilities at increased risk from this hazard.

Development Trends

While vulnerability to this hazard is not anticipated to increase with new development, increased water pumping resulting from the demand of new development has the potential to increase the frequency and severity of subsidence. Increased efforts to monitor and manage groundwater pumping, increased accuracy of mapping, and emphasis on appropriate grading and ground compaction during development will help alleviate vulnerability for future development in unknown areas of risk.

4.5.8.8 Risk Summary

- A significant portion of Kings County is at risk from ongoing land subsidence, and despite the gradual nature of this hazard, the observed and potential impacts to critical infrastructure makes the overall significance of this hazard Medium.
- The entire Kings County is vulnerable to land subsidence due to its dependence on agriculture and groundwater pumping; however, increased efforts on sustainable groundwater management and the implementation of the Tulare Lake, Kaweah, Kings, and Westside Subbasins GSPs should alleviate this hazard risk in the future.
- Increased drought conditions resulting from climate change will likely result in more groundwater pumping, which could lead to more human-induced subsidence; groundwater sustainability planning and management could help offset future subsidence.
- Land subsidence can alter the flow of surface or underground water, an impact that may not be noticed until long after the fact.
- **Related Hazards** - Drought, Flood

JURISDICTION	GEOGRAPHIC AREA	PROBABILITY OF FUTURE OCCURRENCE	MAGNITUDE/ SEVERITY	OVERALL SIGNIFICANCE	PRIORITY HAZARD?
Kings County	Extensive	Likely	Limited	Medium	Yes
City of Avenal	Extensive	Likely	Limited	Medium	Yes
City of Corcoran	Extensive	Likely	Limited	Medium	Yes
City of Hanford	Extensive	Likely	Limited	Medium	Yes
City of Lemoore	Extensive	Likely	Limited	Medium	Yes



4.5.9 LANDSLIDE

4.5.9.1 Hazard Description

Landslides can refer to a wide variety of processes that result in the perceptible downward and outward movement of soil, rock, and vegetation under the gravitational influence. Common names for landslide types include slump, rockslide, debris slide, lateral spreading, debris avalanche, earth flow, and soil creep. Although landslides are primarily associated with steep slopes (i.e., greater than 15 percent), they may also occur in areas of generally low relief and occur as cut-and-fill failures, river bluff failures, lateral spreading landslides, collapse of mine-waste piles, and failures associated with quarries and open-pit mines.

The force of gravity acting upon a steep or moderately steep slope is the primary cause of a landslide. Slope failure occurs when the force of gravity pulling the slope downward exceeds the strength of the earth materials that comprise the slope to hold it in place. In addition to the force of gravity, other contributing factors to landslides can include rainfall, earthquakes, changes in groundwater, and human-induced modifications to existing slopes.

The potential for a landslide to occur exists anywhere weak or fractured materials rest upon a moderate to steep slope. The severity of a landslide depends in large part on the degree of development in the area in which it occurs and the geographic area of the slide itself. Generally speaking, landslides result in devastating consequences, but in very localized areas. A landslide occurring in an undeveloped area would be less severe because lives and property would not be affected; the only impacts would be to land, vegetation, and wildlife. However, a landslide occurring in a developed area could have devastating effects, ranging from structure and infrastructure damage to injury and loss of life.

Mudslides are a mass of water and fine-grained earth that flows down a stream, ravine, canyon, arroyo, or gulch. If more than half of the solids in the mass are larger than sand grains (rocks, stones, boulders), the event is called a debris flow. A debris fan is a conical landform produced by successive mud and debris flow deposits, and the likely spot for a future event. Mud and debris flow problems can be exacerbated by wildfires that remove vegetation that serves to stabilize soil from erosion. Heavy rains on the denuded landscape can lead to the rapid development of destructive mudflows.

A rockfall is the falling of a detached mass of rock from a very steep to horizontal slope. Rockfalls are caused by the loss of support from underneath through erosion, or triggered by ice wedging, root growth, or ground shaking. Rockfalls and landslides are influenced by seasonal patterns, precipitation, and temperature patterns. Weathering and decomposition of geologic materials produce conditions favorable to rockfalls. Changes to an area or slope, such as cutting and filling activities, can also increase the risk of a rockfall. Rockfalls can threaten human life, impact transportation corridors, and communication systems and cause other property damage.

There are predictable relationships between local geology and landslide events. The downslope movement of earth material, either as a landslide, debris flow, mudslide, or rockslide, is part of the continuous, natural process of erosion. This process, however, can be influenced by a variety of causes that change the stability of the slope. Slope instability may result from natural processes, such as the erosion of the toe of a slope by a stream, or by ground shaking caused by an earthquake. Slopes can also be modified artificially by grading, or by the addition of water or structures to a slope. Development that occurs on a slope can substantially increase the frequency and extent of potential slope stability hazards. Knowledge of these relationships can improve planning and reduce vulnerability.

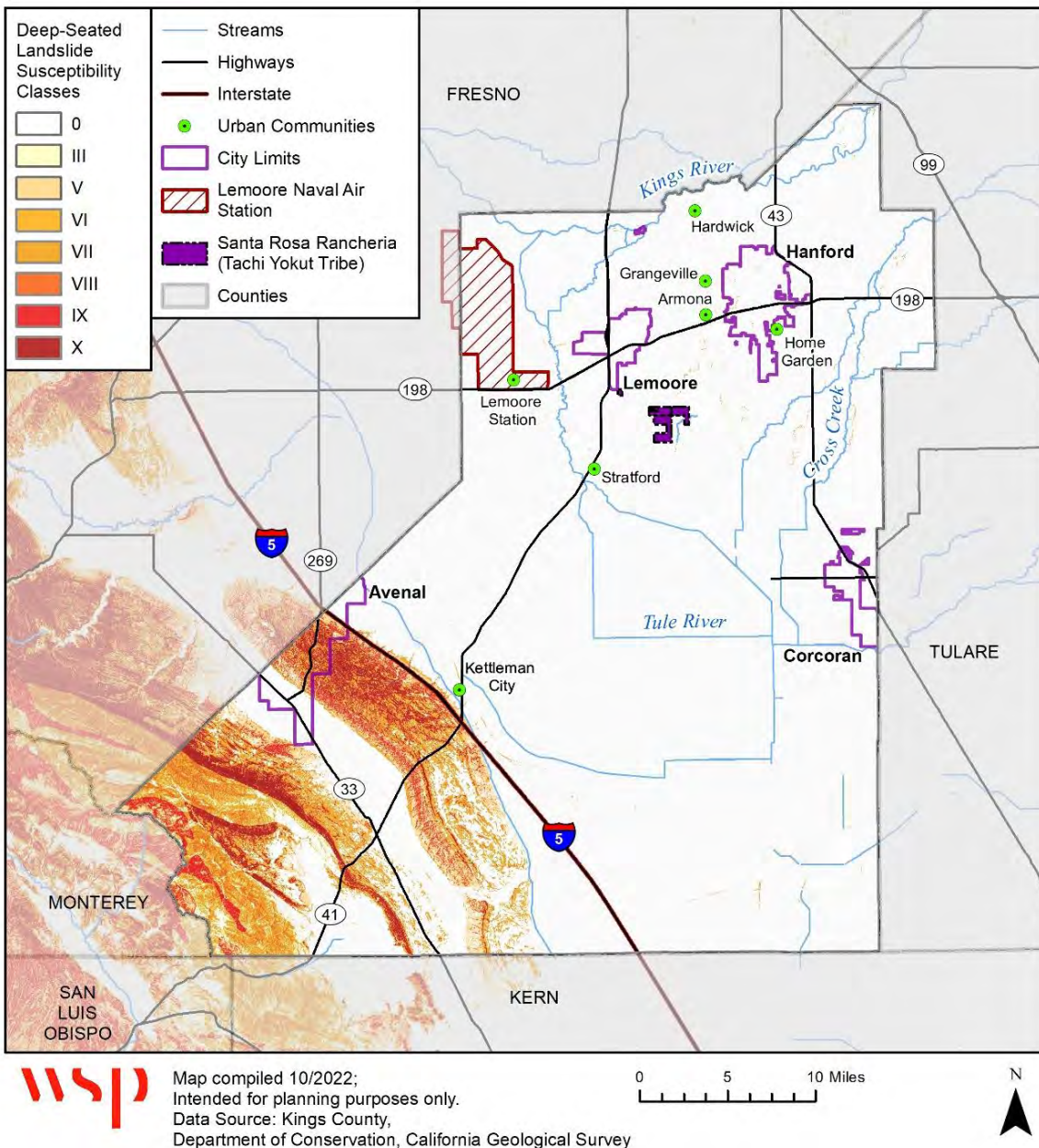
4.5.9.2 Geographic Area

Significant – As mentioned in the County’s 2012 MJHMP, landslide hazards are uncommon throughout much of the county due to the flat topography. The southwestern County intersects with the Kettleman Hills and the Southern California Coastal Range. These areas of the County that are the most susceptible to landslides, and there are few past occurrences. Areas near rivers and streams are also subject to natural erosion, which may be increased during flood events.

Deep-seated landslide susceptibility in the County is depicted in Figure 4-34; areas in darker red colors have a higher susceptibility to landslide and most of these areas are concentrated west of SR 33. This map shows the relative likelihood of deep-seated land sliding based on regional estimates of rock strength and steepness of slopes. On the most basic level, weak rocks and steep slopes are most likely to generate landslides. The map uses detailed information on the location of past landslides, the location and relative strength of rock units, and steepness of slope to estimate susceptibility to deep-seated land sliding (0 to X, low to high, as shown in the Figure’s legend). On very low slopes, landslide susceptibility is low even if there are weak rock and geologic materials, and that susceptibility increases with slope and

weaker rocks. High landslide susceptibility classes (VIII, IX, and X) include very steep slopes with hard rocks and moderate to very steep slopes with weak rocks (Wills et al. 2011).

Figure 4-34 Kings County Deep – Seated Landslide Susceptibility



4.5.9.3 Past Occurrences

There have not been any disaster declarations associated with landslides or California Geological Survey (CGS) records of landslides in Kings County. However, the County's 2012 LHMP noted that landslides have occurred in the western part of the county, particularly in burn areas and after heavy rains. Heavy rain events caused a slope failure around a water line for Avenal in 1995, 1998, 2008 and 2010.

4.5.9.4 Likelihood of Future Occurrence

There is limited data on past events, but occasional landslides and debris flows are likely to occur in the western part of the county in the future. As mentioned in the County's 2012 MJHMP, winter and spring are typically the landslide/rock-fall seasons in California as rain falls and snow melts and saturates soils and temperatures enter into freeze/thaw cycles. Debris and mud flows generally occur during summer cloudbursts. Debris and mudslides and rock-fall can occur rapidly with little warning during torrential



rains. Landslides typically have a slower onset and can be predicted to some extent by monitoring soil moisture levels and ground cracking or slumping in areas of previous landslide activity.

On the other hand, projected climate change-associated variance in rainfall events may result in more high-intensity rain events, which may increase landslide frequency. In addition, the increased potential of wildfire occurrence also escalates the risk of landslide and debris flows in the period following a fire. Refer to the Climate Change Considerations subsection below for more details on climate change's impact on landslide events.

4.5.9.5 Climate Change Considerations

Landslides can result from intense rainfall and runoff events. Projected climate change-associated variance in rainfall events may result in more high-intensity events, which may increase landslide frequency. In addition, the increased potential of wildfire occurrence also escalates the risk of landslide and debris flows in the period following a fire, when slopes lack vegetation to stabilize soils and burned soil surfaces allow more rainfall runoff. As climate change affects the length of the wildfire season, it is possible that a higher frequency of large fires may occur into late fall, when conditions remain dry. The wildfires can be followed by intense rains early in the winter, as occurred with the Thomas Fire in December 2017 and subsequent Montecito and Carpinteria debris flows in January 2018 that occurred in Santa Barbara County (CA SHMP 2018). Moreover, tree mortality resulting from drought, pests or any other threat could also pose an increase in landslides as the loss of trees would reduce the protection of steep slopes and thereby increase the probability of landslide occurrences.

4.5.9.6 Magnitude and Severity

Negligible - Figure 4-29 shows the relative extent of deep land sliding based on regional estimates of rock strength and steepness of slopes. The data used for the map utilizes detailed information on the location of past landslides, the location and relative strength of rock units, and the steepness of the slope in a methodology developed by Wilson and Keefer (1985) as implemented by Ponti et al (2008) to create classes of landslide susceptibility. These classes express the generalization that on very low slopes, landslide susceptibility is low even in weak materials, and that landslide susceptibility increases with slope and in weaker rocks. The convergence of factors suggests limited landslide potential in most of Kings County due to the very low slopes. However, there are areas on the west side where the potential increases due to an increase in slope and topography along the Southern California Coastal Range, mainly to the west of I-5. These areas are shown in darker orange and red in Figure 4-34.

Landslides are often triggered by other natural hazards such as earthquakes, heavy rain, flood, or wildfires. Landslide frequency is often related to the frequency of these other hazards. In Kings County, landslides typically occur during and after major storms so the potential for landslides largely coincides with the potential for sequential severe storms that saturate steep, vulnerable soils.

4.5.9.7 Vulnerability Assessment

Property

Landslides directly damage engineered structures in two general ways: 1) disruption of structural foundations caused by differential movement and deformation of the ground upon which the structure sits, and 2) physical impact of debris moving downslope against structures located in the travel path.

During the 2023 update of this plan, a GIS analysis of exposure to landslide hazard areas was performed. GIS analysis indicates approximately \$126.4 million of property improvements are exposed, which takes into account improved values of properties. Table 4-68 summarizes landslide exposure by jurisdiction. GIS was used to intersect the parcel boundaries with a master address point layer to obtain the number of buildings per parcel. Only parcels with improvement values greater than zero were used in the analysis, this method assumes that improved parcels have a structure of some type.

Based on this analysis there is a total of 144 improved parcels together with 304 structures located within landslide hazard areas in the County. The majority of this exposure is to the west of I-5 and in the southwestern unincorporated County. None of the parcels from the cities of Corcoran and Lemoore are exposed to landslide hazard. There is a high level of uncertainty as to the actual risk to these exposed parcels, thus a more specific loss estimation is not provided. A more detailed, site-specific analysis would be needed to assess actual risk within the identified parcels. The analysis results are shown below in Table 4-68.



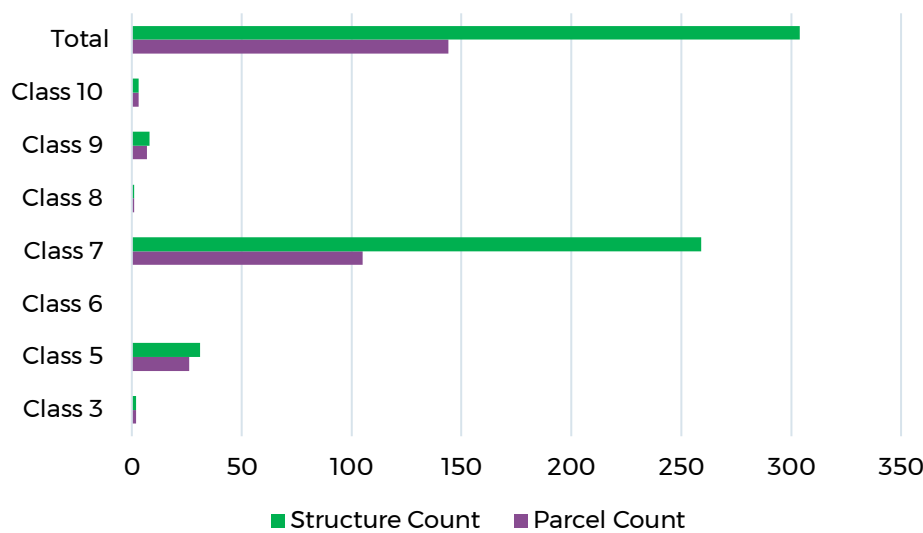
Table 4-68 Kings County Improved Parcels & Structures Potentially at Risk to Landslide

JURISDICTION	IMPROVED PARCEL COUNT	BUILDING COUNT	IMPROVED VALUE	ESTIMATED CONTENT VALUE	TOTAL VALUE	POPULATION
Avenal	22	22	\$1,820,347	\$1,197,668	\$3,018,015	61
Hanford	37	188	\$38,644,308	\$25,007,092	\$63,651,400	501
Unincorporated County	85	94	\$29,768,911	\$29,971,966	\$59,740,877	73
Total	144	304	\$70,233,566	\$56,176,725	\$126,410,291	635

Source: Department of Conservation, CGS, Kings County Assessor, Wood GIS Analysis

Figure 4-35 below further breaks down the numbers of exposed parcels by landslide class, as shown previously in Table 4-68; the higher the class the greater the susceptibility. As shown by Figure 4-35, most of the exposed parcels and structures are located within Class 7 landslide areas.

Figure 4-35 Total Parcel & Structure Counts by Landslide Class



Source: Department of Conservation, CGS, Kings County Assessor, Wood GIS Analysis

People

People could be susceptible if they are caught in a landslide or debris flow, potentially leading to injury or death. There is a danger to drivers operating vehicles, as rocks and debris can strike vehicles passing through the hazard area or cause dangerous shifts in roadways. Similar to the methodology used in the flood section, the total people at risk were estimated by multiplying the average number of persons per household in the County and each applicable incorporated jurisdiction with the number of residential parcels in landslide-prone areas to estimate the population residing in landslide hazard areas. As shown in Table 4-68 above, there are approximately 635 people potentially residing in landslide susceptible areas. These areas include the western portion of the City of Avenal and a small portion of the City of Hanford, as well as the unincorporated County to the west of I-5, SR 33 & SR 41. However, it is not likely that landslides will occur without warning and direct impacts to people are suspected to be minimal.

Critical Facilities and Lifelines

In addition to buildings, utilities and transportation structures are vulnerable to the impact and ground deformation caused by slope failures. They present a particular vulnerability because of their geographic extent and susceptibility to physical distress. Lifelines are generally linear structures that, because of their geographic extent, have a greater chance of being affected by ground failure due to greater hazard exposure.

Extension, bending, and compression caused by ground deformation can break lifelines. Failure of any component along the lifeline can result in the failure to deliver service over a large region. Once broken,



transmission of the commodity through the lifeline ceases, which can have catastrophic repercussions including loss of power to critical facilities such as hospitals, impaired disposal of sewage, contamination of water supplies, disruption of all forms of transportation, and release of flammable fuels. Therefore, the overall impact of lifeline failures, including secondary failure of systems that depend on lifelines, can be much greater than the impact of individual building failures.

Table 4-69 below summarizes the results of the critical facilities analysis, highlighting the exposure of critical facilities throughout the County to landslide hazards. The critical facilities that are exposed to landslide hazards are located within the City of Avenal and unincorporated County. Many exposed critical facilities are located in the southwestern part of the County to the west of Interstate 5.

Table 4-69 Critical Facilities Within the Class 9 Landslide Hazard by FEMA Lifeline

JURISDICTION	LANDSLIDE CLASS	COMMUNICATIONS	ENERGY	FOOD, WATER, SHELTER	HAZARDOUS MATERIAL	HEALTH AND MEDICAL	SAFETY AND SECURITY	TRANSPORTATION	TOTAL
Avenal	5	1	-	-	-	-	-	-	1
	7	4	1	-	-	-	-	-	5
	9	-	1	-	-	-	-	-	1
	10	1	-	-	-	-	-	-	1
Unincorporated	5	10	2	-	1	-	-	2	12
	7	2	2	-	1	-	-	4	9
	8	2	-	-	-	-	-	-	2
	9	-	-	-	-	-	-	2	2
	10	6	-	-	-	-	-	-	6
Grand Total	-	26	4	-	1	-	-	8	39

Source: HIFLD, Kings County, WSP GIS Analysis

Economy

Economic impacts typically center around transportation routes temporarily closed by debris flow or landslide activity. These roads may be used to transport goods across the County or provide access by visitors and tourists. Depending on the amount of damage, the road may simply need to be cleaned off or may require some level of reconstruction.

Cultural, Historic and Natural Resources

As primarily a natural process, landslides and debris flows can have varying impacts on the natural environment. Debris flows have the potential to permanently alter the natural landscape. The impacts of landslides and debris flows on historical and cultural structures would be similar to the impacts on the general property.

Development Trends

The severity of landslide problems is directly related to the extent of human activity in hazard areas. Human activities such as property development and road construction can exacerbate the occurrence of landslides. Development Trends should take place carefully to prevent landslide damage to property or people. Adverse effects can be mitigated by early recognition, avoiding incompatible land uses in these areas, or by corrective engineering. Improving mapping and information on landslide hazards and incorporating this information into the development review process could prevent siting of structures and infrastructure in identified hazard areas.

A GIS analysis of exposure to landslide hazard within SOI boundaries is summarized in Table 4-70 below. These parcels are also included in Table 4-69, and they fall under “Unincorporated” in terms of their jurisdiction. Parcels shown below in Table 4-70 are those that fall within each jurisdiction’s SOI and are



exposed to potential landslide hazard events. As shown in Table 4-70, only two parcels with two structures located in the SOI of the City of Hanford are exposed to landslide hazard.

Table 4-70 Sphere of Influence Risk to Landslide Hazard

JURISDICTION	IMPROVED PARCEL COUNT	BUILDING COUNT	IMPROVED VALUE	ESTIMATED CONTENT VALUE	TOTAL VALUE	POPULATION
Hanford	2	2	\$350,069	\$525,104	\$875,173	-
Total	2	2	\$350,069	\$525,104	\$875,173	-

Source: HIFLD, Kings County, WSP GIS Analysis

Furthermore, as shown in Figure 4-34, areas west of I-5 are the most susceptible to landslide hazard in the County. However, the Community District areas, which are outlined in the County's 2035 General Plan Land Use Element and represent the County's future urban growth, are not located to the west of I-5. They are mostly SOIs that surround the County's current municipal boundaries, while most areas within current SOIs are not significantly exposed to landslide hazard. Therefore, landslide hazards currently pose a limited threat to these Development Trends areas.

4.5.9.8 Risk Summary

- The overall significance of landslides in Kings is Low.
- The geologic formations commonly associated with slope stability problems in Kings County are largely concentrated to the west of I-5 and in the southwestern portion of the County.
- Heavy rain events caused a slope failure around a water line for Avenal in 1995, 1998, 2008 and 2010; however, there have not been any disaster declarations associated with landslides or CGS records of landslides in Kings County.
- People are most commonly at risk if they are caught in a landslide or debris flow, including when driving through a hazard area.
- Property loss is rare, but GIS analysis shows some properties could be exposed to landslides.
- Landslides in adjacent counties can disrupt major transportation corridors, possibly affecting the local tourist economy and shipment of goods.
- Landslides and debris flows can destroy infrastructure such as water and sewer lines, electrical and telecommunications utilities and drainage. Disrupted transportation routes occur occasionally, usually during heavy rainstorms, and cause considerable inconvenience.
- **Related Hazards:** Flood, Severe Weather

JURISDICTION	GEOGRAPHIC AREA	PROBABILITY OF FUTURE OCCURRENCE	MAGNITUDE/ SEVERITY	OVERALL SIGNIFICANCE	PRIORITY HAZARD?
Kings County	Significant	Occasional	Negligible	Low	No
City of Avenal	Significant	Occasional	Negligible	Low	No
City of Corcoran	Significant	Occasional	Negligible	Low	No
City of Hanford	Significant	Occasional	Negligible	Low	No
City of Lemoore	Significant	Occasional	Negligible	Low	No

4.5.10 PUBLIC HEALTH HAZARDS: PANDEMICS/EPIDEMICS

4.5.10.1 Hazard Description

A public health hazard spreads from one person to another through a variety of ways that include contact with blood and bodily fluids, breathing in an airborne virus, or being bitten by an insect.

The scale of a public health hazard outbreak or biological incident is described by the extent of the spread of disease in the community. An outbreak can be classified as an endemic, an epidemic, or a pandemic depending on the prevalence of the disease locally and around the world.

- An endemic is defined as something natural to or characteristic of a particular place, population, or climate. For example, threadworm infections are endemic in the tropics.
- An epidemic is defined as a disease that spreads rapidly through a demographic segment of the human population, such as everyone in a given geographic area, a similar population unit, or everyone of a certain age or sex, such as the children or women of a region.
- A pandemic is defined as an extensive epidemic with effects felt worldwide.



While many potentially devastating diseases are spread through ingestion or insects, airborne diseases and those spread through physical contact pose higher risks to the community as they are difficult to control. Diseases such as influenza, pertussis, tuberculosis, and meningitis are all spread through these methods and pose a threat to communities. Health agencies closely monitor for diseases with the potential to cause an epidemic and seek to develop and promote immunizations.

A pandemic is a global disease outbreak. A pandemic occurs when a new virus emerges for which people have little or no immunity, and for which there is no vaccine. This disease could easily spread person-to-person, causing serious illness, and can sweep across the country and around the world in a very short time. The CDC is working closely with other countries and the World Health Organization (WHO) to strengthen systems to detect outbreaks that might cause a pandemic and to assist with pandemic planning and preparation.

An especially severe influenza pandemic could lead to high levels of illness, death, social disruption, and economic loss. Impacts could range from school and business closings to the interruption of basic services such as public transportation, health care, and the delivery of food and essential medicines.

Pandemics are generally thought to be the result of novel strains of viruses. Because of the process utilized to prepare vaccines, it is impossible to have vaccines pre-prepared to combat future pandemics. Additionally, for novel viruses, identification of symptoms, mode of transmission, and testing/identification may require development, causing significant delays in response actions. A portion of the human and financial cost of a pandemic is related to the lag time to prepare a vaccine to prevent the future spread of the novel virus. In some cases, current vaccines may have limited efficacy against novel strains.

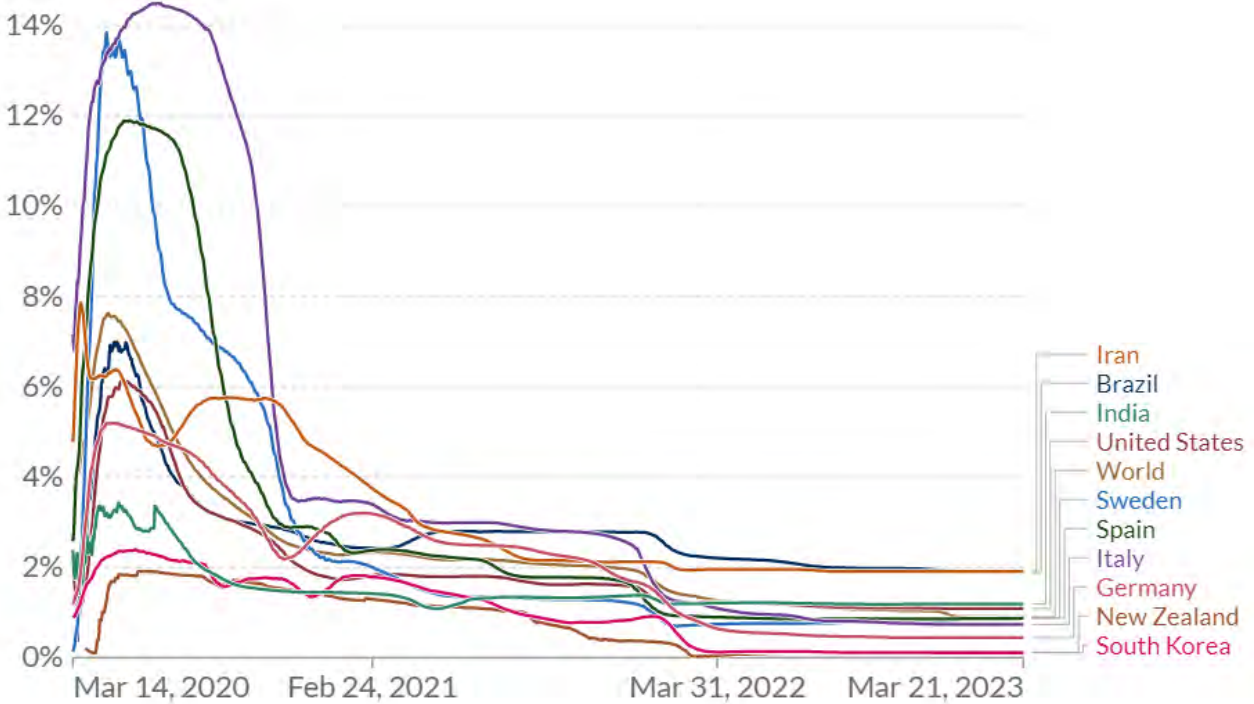
Even when there is a strong healthcare system in place, disease outbreaks can strain and overwhelm community resources. The County's vulnerable populations, young children, the elderly, under-resourced households, and those with underlying health conditions, will be the hardest hit during any disease outbreak. An especially severe outbreak could lead to high levels of illness, death, social disruption, and economic loss. Impacts could range from school and business closings to the interruption of basic services such as public transportation, health care, and the delivery of food and essential medicines.

Ongoing COVID-19 Pandemic

Since March 2020 and during the update of this plan, the County, the nation, and the world were dealing with the COVID-19 pandemic, confirming that the pandemic is a key public health hazard in the State. The COVID-19 virus has a much higher rate of transmission than the seasonal flu, primarily by airborne transmission of droplets/bodily fluids. Common symptoms include fever, cough, fatigue, shortness of breath or breathing difficulties, and loss of smell and taste.

Figure 4-36 below shows the case fatality rate of COVID-19 from March 14, 2020, to March 21, 2023. The case fatality rate (CFR) is the ratio between confirmed deaths and confirmed cases. As shown in the figure, the CFR was relatively much higher in 2020 and started dropping towards the end of 2020 and early 2021. The highest CFR that the US experienced was a bit higher than 6%. On the other hand, since early 2022, the US' CFR has been lower than 2%. However, as also mentioned by the figure's source – Our World In Data, CFR does not reflect the risk of dying from COVID-19 because the CFR relies on the number of confirmed cases, and many cases are not confirmed.

Figure 4-36 Case Fatality Rate of COVID-19 Up-to-Date



Source: Our World In Data – Global Change Data Lab

Moreover, as mentioned in CDC’s most up-to-date summary on January 27, 2023, there is a rapid reduction in the overall US COVID-19-related mortality rate in March 2022. From April through September 2022, COVID-19-related mortality rates remained relatively stable. On the other hand, although overall COVID-19-related mortality rates declined, adults aged ≥ 65 years continued to have the highest mortality rates. During April-September 2022, the proportion of COVID-19-related deaths accounted for by adults aged ≥ 85 years increased to ~40% despite accounting for <2% of the U.S. population. COVID-19-related deaths among children remained rare (CDC 2023).

2022 US Mpox Outbreak

As discussed by CDC in February 2023, Mpox is a rare disease caused by infection with the mpox virus. Mpox virus is part of the same family of viruses as the variola virus, the virus that causes smallpox. Mpox symptoms are similar to smallpox symptoms, but milder, and mpox is rarely fatal. Mpox is not related to chickenpox.

Mpox was discovered in 1958 when two outbreaks of a pox-like disease occurred in colonies of monkeys kept for research. Despite being named “monkeypox,” the source of the disease remains unknown. However, African rodents and non-human primates (like monkeys) might harbor the virus and infect people.

The first human case of mpox was recorded in 1970. Prior to the 2022 outbreak, mpox had been reported in people in several central and western African countries. Previously, almost all mpox cases in people outside of Africa were linked to international travel to countries where the disease commonly occurs or through imported animals. These cases occurred on multiple continents.

People with mpox often get a rash that may be located on hands, feet, chest, face, or mouth or near the genitals. The incubation period is 3-17 days. During this time, a person does not have symptoms and may feel fine. The rash will go through several stages, including scabs, before healing. The rash can initially look like pimples or blisters and may be painful or itchy. Other symptoms of mpox can include fever, chills, swollen lymph nodes, exhaustion, muscle aches and backache, headache, and respiratory symptoms (e.g., sore throat, nasal congestion, or cough). Mpox can spread to anyone through close, personal, often skin-to-skin contact. The risk is considered low for getting mpox by touching objects, fabrics, and surfaces that have been used by someone with mpox and not disinfected.



As of March 15, 2023, there are 86,500 global cases, while 30,262 of them are in the US. The WHO declared Monkeypox Spread a Global Health Emergency on July 23, 2022. Since the number of new cases remained low, the Biden Administration ended the mpox public health emergency declaration on January 31, 2023.

Valley Fever

Another example of a human health hazard that is endemic to the County is Valley Fever, or “cocci” which is a known but poorly understood secondary effect of drought conditions, and possibly a combination of wind and drought events followed by a rainy season. Valley Fever is an infection caused by a fungus (*Coccidioides immitis*) that lives in soil and dirt and areas with low rainfall, high summer temperatures, and moderate winter temperatures. Valley Fever is primarily a disease of the lungs and the infection can occur year-round. In California, it has been reported from most counties, but especially from the San Joaquin Valley and Central Coast. Anyone who lives in, works in, or visits a place with Valley Fever can be infected. According to the *Epidemiologic Summary of Valley Fever (Coccidioidomycosis) in California, 2019 Report*, published by the California Department of Public Health, Kings County was one of the counties that have the highest rates of Valley Fever in 2019.

People can get sick by breathing in a form of the Valley Fever fungus called spores. Spores are too small to be seen and they can get into the air with dust when it is windy or when dirt is distributed. Fortunately, Valley Fever cannot be spread from one person to another. About 60% of infected people will not get sick. People who do get sick can have symptoms such as fever, tiredness, and weight loss that last a month or more. Valley Fever can also infect the brain, joints, bone, skin, or other organs. This type of infection is rare; however, it can be serious and sometimes fatal. Most people who get Valley Fever fully recover and are usually protected from getting Valley Fever again.

4.5.10.2 Geographic Area

Extensive – Pandemics occur not only on a county or state level but on a national and global scale. Most communities in Kings County would likely be affected, either directly or by secondary impacts. Some indirect consequences may be the diversion of resources that may be otherwise available. Diseases usually spread throughout vulnerable populations and in areas where people live and work in close quarters. Depending on the specifics of the illness, these areas can include shelters, senior homes, schools, and places of business. In general, it is likely that the more populated areas may be affected sooner and may experience higher infection rates.

Kings County has reported 65,122 cases and 464 deaths from COVID-19 as of December 13, 2022. The current COVID-19 pandemic has affected all the jurisdictions in Kings County. Table 4-71 shows the total number of cases as well as the number of cases per total population specific to the jurisdictions within Kings County. Data specific to tribes are included in the nearest counties. Kings County comprises less than 1% of the statewide total cases and deaths. In general, it is likely that the more-populated areas municipal areas may be affected sooner and may experience higher infection rates.

Table 4-71 COVID-19 Cases by Jurisdiction (as of December 8, 2022)

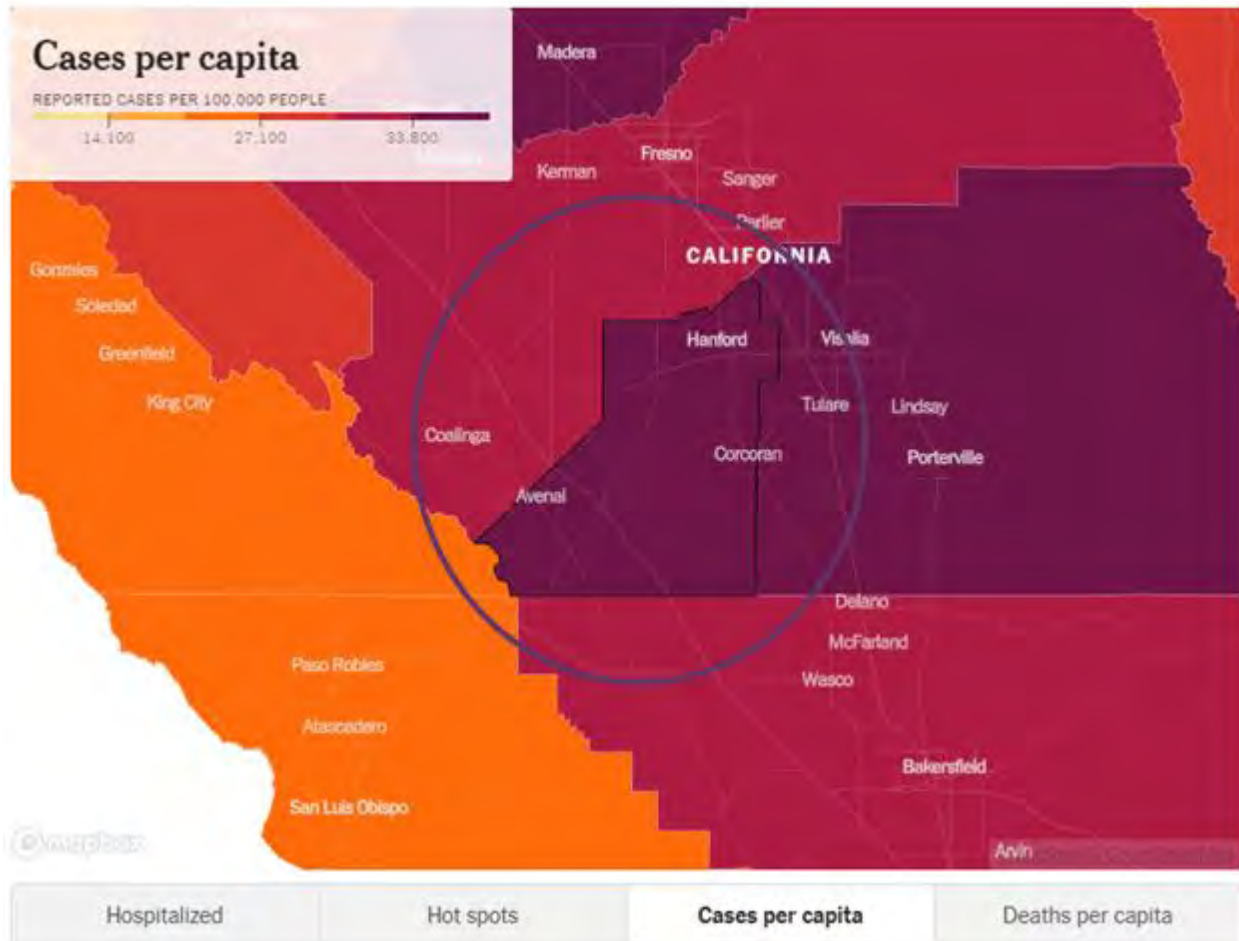
JURISDICTION	CASES	CASES PER TOTAL POP*.
City of Avenal	7,712	55.6%
City of Corcoran	11,584	51.2%
City of Hanford	25,589	44.6%
City of Lemoore	11,914	44.7%
Unincorporated County	4,166	13.3%
Total	60,974	40.1%

Source: Kings County Department of Public Health COVID-19 Dashboard

*Total population is based on U.S. Census Bureau ACS 2017-2021 5-Year Estimates

Moreover, according to the New York Times “Tracking coronavirus in Kings County” dashboard shown in Figure 4-37, Kings County has relatively high reported cases per 100,000 people.

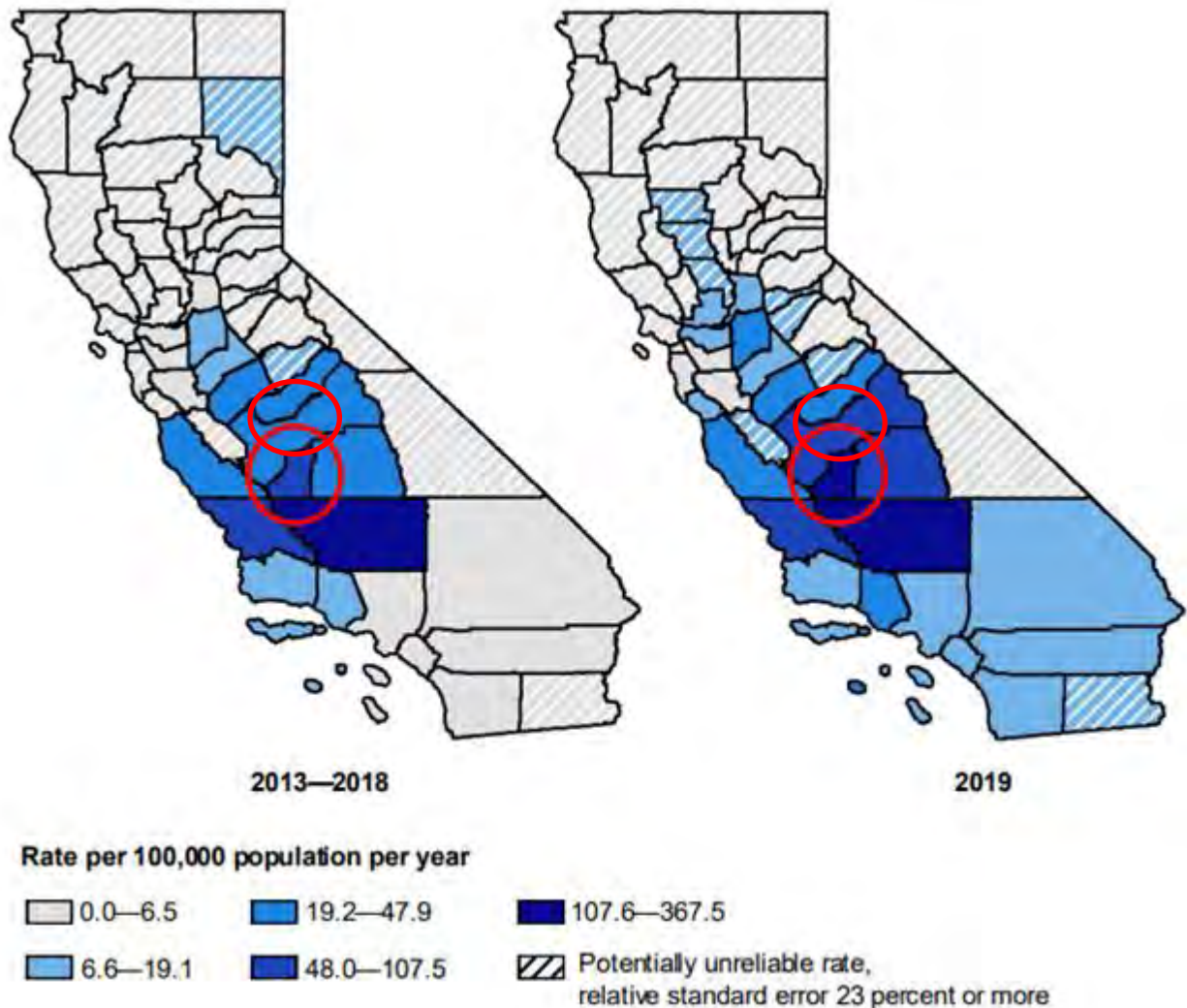
Figure 4-37 Reported Coronavirus cases per 100,000 people



Data source: The New York Times, December 14, 2022

With regards to Valley Fever, Figure 4-38 below shows Valley Fever Annual Incidence among California Counties in the year 2013 – 2018 and 2019.

Figure 4-38 Annual Incidence among California Counties in the year 2013 – 2018 and 2019



Source: Epidemiologic Summary of Valley Fever (Coccidioidomycosis) in California, 2019 Report, published by California Department of Public Health

4.5.10.3 Past Occurrences

Since the early 1900s, five lethal pandemics have swept the globe:

- 1918-1919 Spanish Flu: The Spanish Flu was the most severe pandemic in recent history. The number of deaths was estimated to be 50-100 million worldwide and 675,000 in the United States. Its primary victims were mostly young, healthy adults. At one point, more than 10% of the American workforce was bedridden.
- 1957-1958 Asian Flu: The 1957 Asian Flu pandemic killed 1.1 million people worldwide, including about 70,000 people in the United States, mostly the elderly and chronically ill. Fortunately, the virus was quickly identified, and vaccine production began in May 1957.
- 1968-1969 H3N2 Hong Kong Flu: The 1968 Hong Kong Flu pandemic killed one million people worldwide and approximately 100,000 people in the United States. Again, the elderly were more severely affected. This pandemic peaked during school holidays in December, limiting student-related infections, which may have kept the number of infections down. Also, people infected by the Asian Flu ten years earlier may have gained some resistance to the new virus.
- 2009-2010 H1N1 Swine Flu: This influenza pandemic emerged from Mexico in early 2009 and was declared a public health emergency in the US on April 26. By June, approximately 18,000 cases had been reported in the US and the virus had spread to 74 countries. Most cases were fairly mild, with



symptoms similar to the seasonal flu, but there were cases of severe disease requiring hospitalization and some deaths.

- 2020-Ongoing COVID-19: The COVID-19 or novel coronavirus was detected in December 2019 and was declared a pandemic in March 2020. As of December 14, 2022, 650 million cases and 6.66 million deaths have been reported globally, including approximately 99.2 million cases and 1.09 million deaths in the US. Worldwide there have been 13.05 billion vaccine doses administered. The response to the COVID-19 Pandemic included numerous public health orders, including stay-home orders, massive testing infrastructure, the establishment of alternate care sites to support the hospital system, and an unprecedented community-wide vaccination push.

4.5.10.4 Likelihood of Future Occurrence

Occasional – Although it is impossible to predict the next disease outbreak, recent history shows these outbreaks are not uncommon and are likely to reoccur. Based on the five pandemics that have affected the United States in roughly the last 100 years, a pandemic occurs on average roughly every 20 years. In other words, there is a 5% probability that a pandemic that affects the entire United States will occur in any given year.

For the current COVID-19 pandemic, due to the virus's ability to mutate and rapidly infect those who are not vaccinated, the pandemic may extend for several years, and booster vaccines may be necessary to prevent future outbreaks. In just the last couple of decades, the world has drastically increased points of transmissions through global travel and trade to levels unseen in human history – this may have a drastic impact on the frequency of pandemics and the speed with which they spread in coming years.

4.5.10.5 Climate Change Considerations

As the Earth's climate continues to warm, researchers predict wild animals will be forced to relocate their habitats – likely to regions with large human populations – dramatically increasing the risk of a viral jump to humans that could lead to the next pandemic. This link between climate change and viral transmission is described by an international research team led by scientists at Georgetown University, published on April 28, 2022, in *Nature*. The scholars noted that the geographic range shifts due to climate change could cause species that carry viruses to encounter other mammals, sharing associated viruses thousands of times, which may then further be spread to humans. In addition, rising temperatures caused by climate change will impact bats, which account for the majority of novel viral sharing. Bats' ability to fly will allow them to travel long distances and share viruses in geographically dispersed places. Altogether, the study suggests that climate change will become the biggest upstream risk factor for disease emergence – exceeding higher-profile issues like deforestation, wildlife trade and industrial agriculture. The authors highlight a need to pair wildlife disease surveillance with real-time studies of environmental change (GUMC 2022).

Another research article that was published on August 23, 2021, also reached a similar conclusion. The likelihood of an extremely infectious disease epidemic – similar to the COVID-19 pandemic – could triple in the coming decades. William Pan, Ph.D. – one of the study authors and an associate professor of global environmental health at Duke University, together with his colleagues looked at data from the past 400 years to estimate the chance of extreme epidemics each year. The rate of occurrence of epidemics varies widely across time, the researchers said, but the chance of an extreme epidemic can be calculated. Recent estimates show that infectious diseases that are passed from animals to humans – also called zoonotic diseases, such as COVID-19 – are becoming more common due to climate change (Crist, 2022).

4.5.10.6 Magnitude and Severity

Critical – The magnitude of a disease outbreak or public health emergency will range significantly depending on the aggressiveness of the virus in question, the ease of transmission, and the efficacy of public health and medical responses. Pandemic influenza is easily transmitted from person to person, but advances in medical technologies have greatly reduced the number of deaths caused by influenza over time.

Today, a large percentage of the world's population is clustered in cities, making them ideal breeding grounds for epidemics. Additionally, the explosive growth in air travel means a virus could spread around the globe within hours, quickly creating a pandemic. Under such conditions, there may be very little warning time. It is estimated that one to six months will have lapsed between the time that a dangerous new influenza strain is identified and the time that outbreaks begin to occur in the United States. Outbreaks are expected to occur simultaneously throughout much of the nation, preventing shifts in human and material resources that normally occur with other natural disasters. These aspects make



influenza pandemic unlike most other public health emergencies or community disasters. Pandemics typically last for several months to years.

As seen with the ongoing COVID-19 pandemic, the rapid spread of a virus combined with the need for increased hospital and coroner resources, testing centers, first responders, and vaccination administration sites causes significant strain on the medical system and public health departments. Additionally, other public health-related triggers or commingled public health hazards (such as an outbreak of another pathogen) or even more contagious strains of COVID such as the recent Omicron, BA.5 and Delta B.1.617.2 variant, can quickly lead to even more outbreaks.

The Pandemic Intervals Framework (PIF) developed by WHO is a six-phased approach to defining the progression of an influenza pandemic. This framework is used to guide influenza pandemic planning and provides recommendations for risk assessment, decision-making, and action. These intervals provide a common method to describe pandemic activities that can inform public health actions. The duration of each pandemic interval might vary depending on the characteristics of the virus and the public health response.

The six-phase approach was designed for the easy incorporation of recommendations into existing national and local preparedness and response plans. Phases 1 through 3 correlate with preparedness in the pre-pandemic interval, including capacity development and response planning activities, while Phases 4 through 6 signal the need for response and mitigation efforts during the pandemic interval.

Pre-Pandemic Interval

Phase 1 is the natural state in which influenza viruses circulate continuously among animals (primarily birds) but do not affect humans.

Phase 2 occurs when an animal influenza virus circulating among domesticated or wild animals is known to have caused infection in humans and is thus considered a potential pandemic threat. Phase 2 involves cases of animal influenza that have circulated among domesticated or wild animals and have caused specific cases of infection among humans.

Phase 3 represents the mutation of the animal influenza virus in humans so that it can be transmitted to other humans under certain circumstances (usually very close contact between individuals). At this point, small clusters of infection have occurred.

Phase 4 is characterized by verified human-to-human transmission of the virus able to cause “community-level outbreaks.” The ability to cause sustained disease outbreaks in a community marks a significant upward shift in the risk for a pandemic. Phase 4 involves community-wide outbreaks as the virus continues to mutate and becomes more easily transmitted between people (for example, transmission through the air)

Phase 5 is characterized by verified human-to-human spread of the virus in at least two countries in one WHO region. While most countries will not be affected at this stage, the declaration of Phase 5 is a strong signal that a pandemic is imminent and that the time to finalize the organization, communication, and implementation of the planned mitigation measures is short.

Phase 6, the pandemic phase, is characterized by community-level outbreaks in at least one other country in a different WHO region in addition to the criteria defined in Phase 5. The designation of this phase will indicate that a global pandemic is underway.

4.5.10.7 Vulnerability Assessment

People

Pandemics can affect large segments of the population for long periods. The number of hospitalizations and deaths will depend on the virulence of the virus. Risk groups cannot be predicted with certainty; the elderly, people with underlying medical conditions, and young children are usually at higher risk, but as discussed above, this is not always the case. People without health coverage or access to good medical care are also likely to be more adversely affected. According to the 2021 ACS 5-Year Estimates of the County, 10.3% of the County’s population is 65 years of age or older, 7.5% of the population is 5 years of age or younger, and 16.4% experienced poverty in the prior 12 months.

However, impacts, mortality rates, speed and types of spread are disease-specific. As seen with the current COVID-19 pandemic statewide, according to the County Department of Public Health, the most positive cases occurred in the 18-49 age group. This age group makes up more than 50% of the County’s total cases. Hospitalizations and deaths, however, happened more within the 50+ age group. (KCDPH, 2023)



Property

Public health hazards would not have direct impacts on infrastructure or the built environment. Should infrastructure require human intervention to fulfill vital functions, these functions could be impaired by absenteeism, sick days and isolation, quarantine, and disease prophylaxis measures. As concerns about contamination increase, property may be quarantined or destroyed as a precaution against spreading illness. Additionally, traditional sheltering facilities, including shelters for persons experiencing homelessness or facilities to support displaced persons during an evacuation, cannot be done in a congregate setting. This requires additional planning considerations or the use of facilities that allow for non-congregate shelter settings which may require approval from FEMA and may have an increased cost.

Critical Facilities and Lifelines

The impacts of a public health hazard on critical infrastructure and lifelines would center on service disruption due to staff missing work and shortages in essential resources and supplies to perform services, as seen with personal protective equipment during the COVID-19 pandemic within the health and medical sector. Schools may also be forced to close due to faculty and staffing shortages.

While automated systems and services that allow for the physical distancing of staff from other persons may fare better through a public health hazard incident, all critical infrastructure sectors and lifelines would likely be affected due to the globalization of supply chains, services, and interdependency of most communities.

Economy

A widespread public health hazard outbreak could have devastating impacts on Kings County's economy. The economic impacts fall under two categories – economic losses as a result of the disease, and economic losses to fight the disease. Economic impacts as a result of diseases include those costs associated with lost work and business interruption. Depending on the disease and the type and rate of spread, businesses could see a loss of consumer base as people self-isolate or avoid travel. This could last for a protracted amount of time, compounding economic loss. Economic costs are also associated with incident response. Two of the biggest areas of cost are public information efforts and mass prophylaxis.

In a normal year, lost productivity due to illness costs US employers an estimated \$530 billion. During a pandemic, that figure would likely be considerably high and could trigger a recession or even a depression. According to an October 2020 report by The Journal of American Medical Association (JAMA) Network, the estimated cumulative financial costs of the COVID-19 pandemic related to the COVID-19 economic recession and compromised health (premature death, mental health, long-term health impairment) in the US population was almost \$16 trillion (Cultler and Summers 2020). Since March 2022, the California Small Business COVID-19 Relief Grant Program has been rolling out and supporting small businesses with grants ranging from \$5,000 to \$25,000. The entire financial support offered through the program exceeds \$2 billion.

Cultural, Historic and Natural Resources

As mentioned previously, public health hazards would not have specific impacts on the built or natural environment, including historic and cultural resources. However, historic and cultural resources are often intertwined with the tourism industry, therefore reduced tourism could lead to impacts such as a loss of revenue needed for resource maintenance.

Impacts on natural resources can vary. Some ecosystems showed signs of improvement during the peak covid-19 lockdown. However, some zoonotic diseases can spread from animals to humans, wreaking havoc on both populations. Examples of zoonotic diseases include avian flu, swine flu, tuberculosis, plague, and rabies.

Development Trends

Population growth and development contribute to pandemic exposure. Development Trends in the County has the potential to change how infectious diseases spread through the community and impact human health in both the short and long term. New development may increase the number of people and facilities exposed to public health hazards and greater population concentrations (often found in special needs facilities and businesses) put more people at risk. During a disease outbreak, those in the immediate isolation area would have little to no warning, whereas the population further away in the dispersion path may have some time to prepare and mitigate against disease depending on the hazard, its transmission, and public notification.



4.5.10.8 Risk Summary

- In summary, the public health hazard is considered to be of overall **Medium** significance for Kings County. Variations in risk by jurisdiction are summarized in the table below, along with key issues from the vulnerability assessment.
- Pandemics affecting the U.S. occur roughly once every 20 years, meaning there is a roughly 5% chance a pandemic will happen each year, but they cannot be reliably predicted.
- Effects on people will vary, while the elderly, people with underlying medical conditions, and young children are usually at higher risk.
- Effects on property are typically minimal, although quarantines could result in short-term closures.
- Effects on economy: lost productivity due to illness and potential business closures could potentially have severe economic impacts. Social distancing requirements and fear of public gatherings could significantly reduce in-person commerce.
- Effects on critical facilities and infrastructure: community lifelines, such as healthcare facilities, like hospitals will be impacted and may be overwhelmed and have difficulty maintaining operations due to bed availability, medical staffing shortages, and lack of PPE and other supplies.
- Ongoing mitigation activities should focus on disease prevention, especially during flu season. This includes, but is not limited to, pre-season community outreach campaigns to educate the public about risks and available support; establishing convenient vaccination centers; reaching out to vulnerable populations and caregivers; and issuing advisories and warnings.
- **Related Hazards** - Human Conflict

JURISDICTION	GEOGRAPHIC AREA	PROBABILITY OF FUTURE OCCURRENCE	MAGNITUDE/ SEVERITY	OVERALL SIGNIFICANCE	PRIORITY HAZARD?
Kings County	Extensive	Highly Likely	Critical	Medium	Yes
City of Avenal	Extensive	Highly Likely	Critical	Medium	Yes
City of Corcoran	Extensive	Highly Likely	Critical	Medium	Yes
City of Hanford	Extensive	Highly Likely	Critical	Medium	Yes
City of Lemoore	Extensive	Highly Likely	Critical	Medium	Yes

4.5.11 SEVERE WEATHER: GENERAL

The climate in the Central Valley is defined generally by hot, dry summers and foggy, rainy winters. Severe weather is generally any destructive weather event but usually occurs in Kings County as localized thunderstorms that bring heavy rain and strong winds that occur most often during the winter and spring months. The agricultural industry is among the most vulnerable asset to severe weather. Agricultural losses resulting from natural hazards can have dramatic impacts on the economic health of Kings County.

For this plan, severe weather is broken down as follows:

- Dense Fog
- Heavy Rain, Thunderstorm, Hail, Lightning
- High Wind/Tornado

NOAA's NCEI has been tracking adverse weather since 1950. Their Storm Events Database contains data on the following: all weather events from 1996 to September 2022, and additional data for tornados (1950 - 1995), thunderstorm winds (1955-1995), and hail (1955-1995). This database contains 992 storm events that occurred in the County between January 1, 1950, and September 2022. Table 4-72 summarizes these events.

Table 4-72 NCEI Hazard Event Reports for Kings County, 1950-2022

HAZARD	# OF EVENTS	PROPERTY LOSS (\$)	CROP LOSS (\$)	DEATHS	INJURIES	USDA RMA LOSSES**
Cold/wind Chill*	4	\$0	\$0	0	0	\$0
Dense Fog*	333	\$3,911,000	\$0	0	8	\$0
Dense Smoke	0	\$0	\$0	0	0	\$0
Drought*	64	\$0	\$0	0	0	\$5,185,606
Excessive Heat*	24	\$2,000,000	\$0	0	0	\$0



HAZARD	# OF EVENTS	PROPERTY LOSS (\$)	CROP LOSS (\$)	DEATHS	INJURIES	USDA RMA LOSSES**
Extreme Cold/Wind Chill*	4	\$0	\$0	0	0	\$0
Flash Flood	6	\$0	\$0	0	0	\$0
Flood	19	\$818,190	\$1,000,000	0	0	\$0
Frost/Freeze*	198	\$0	\$216,720,000	0	0	\$10,965,935
Funnel Cloud	15	\$0	\$0	0	0	\$0
Hail	25	\$2,000	\$4,360,000	0	5	\$4,803,398
Heat*	93	\$0	\$106,600,000	0	0	\$37,013,009
Heavy Rain	61	\$131,000	\$10,450,000	0	0	\$17,638,076
High Wind*	41	\$5,553,000	\$300,000	1	6	\$1,220,101
Lightning	10	\$51,000	\$400,000	0	0	\$0
Strong Wind*	49	\$453,400	\$119,500	0	0	\$0
Thunderstorm Wind*	32	\$399,500	\$4,000,000	1	0	\$0
Tornado	8	\$540,250	\$0	0	1	\$0
Wildfire*	3	\$0	\$0	1	0	\$55,611
Winter Storm*	0	\$0	\$0	0	0	\$0
Winter Weather*	0	\$0	\$0	0	0	\$61,977,533
Total	992	\$13,859,340	\$343,949,500	3	20	\$138,859,270

Source: National Center for Environmental Information Storm Events Database, www.ncdc.noaa.gov/stormevents/

* Hazards with wide extents reflect larger zones that extend beyond Kings County.

** USDA RMA data is for the year 2007 - 2020

Hazards recorded in the USDA RMA database may not share the exact names used in the NCEI database: (NCEI Hazard Name - USDA RMA Name)
 Heavy Rain - Excess Moisture/Precipitation/Rain
 High Wind - Wind/Excess Wind
 Winter Weather - Cold Winter/Cold Wet Weather

The NCEI table above summarizes adverse weather events that occurred in the County from 1950 to 2022. Only a few of the events actually resulted in state and federal disaster declarations. It is interesting to note that different data sources capture different events during the same time period, and often different information specific to the same events. While the HMPC recognizes these inconsistencies, this data provides value in depicting the County's overall hazard environment as it relates to severe weather.

Due to the size of the County and changes in elevation and climate, weather conditions can vary greatly across the County. The profiles that follow provide information from two weather stations in different parts of the County, the Hanford weather station in the northeastern county and the Avenal weather station in the southwestern County. The temperature data from these two weather stations are displayed in Table 4-73.

Table 4-73 Hanford 1S and Avenal 9 Weather Station Summaries

METRIC	HANFORD 1S (043747)	AVENAL 9 SSE (040398)
Period of record	1899-2016	1955-1961
Winter Average Minimum Temperature*	36.2°F	37.0°F
Winter Mean Temperature *	46.7°F	49.5°F
Summer Average Maximum Temperature**	95.1°F	100.4°F
Summer Mean Temperature**	77.7°F	81.2°F
Average Annual Number of Days >90°F	105	124



METRIC	HANFORD 1S (043747)	AVENAL 9 SSE (040398)
Average Annual Number of Days <32°F	0.0	0.0
Mean Total Precipitation (in.)	8.38 in.	6.55 in.
Mean Snow Depth (in.)	0.0	0.3 in.

Source: WRCC

* Winter = Dec., Jan., and Feb.

** Summer = Jun., Jul., and Aug.

4.5.12 SEVERE WEATHER: DENSE FOG

4.5.12.1 Hazard Description

Fog results from air being cooled to the point where it can no longer hold all of the water vapor it contains. For example, rain can cool and moisten the air near the surface until fog forms. A cloud-free, humid air mass at night can lead to fog formation, where land and water surfaces that have warmed up during the summer are still evaporating water into the atmosphere. This is called radiation fog. A warm moist air mass blowing over a cold surface also can cause fog to form, which is called advection fog.

The interior California valleys have a unique fog problem called the tulle fog. The tulle fog is a radiation fog, which condenses when there is high relative humidity, typically after heavy rain, calm winds, and rapid cooling during the night. The longer nights during the winter months create this rapid ground cooling, which results in a pronounced temperature inversion at a low altitude, creating a thick ground fog. Above the cold, foggy layer, the air is typically warm and dry. Once the fog has formed, turbulent air is necessary to break through the inversion. Daytime heating can also work to evaporate the fog in some areas. The tulle fogs get their name from the tulle reeds, which grew around the swamps and deltas of the great Tulare Lake that once covered the southern end of the San Joaquin Valley.

As noted in the County's 2012 MJHMP, the tulle fog season in the County is typically December through February. Fog typically forms rapidly in the early morning hours. Tulle fogs can last for days, sometimes weeks. Fog can have devastating effects on transportation corridors in the County. Nighttime driving in the fog is dangerous and multi-car pileups have resulted from drivers using excessive speed for the conditions and visibility. Tulle fog has also been found to be connected to air pollution and exacerbates the naturally occurring fog. A study published in the Journal of Geophysical Research in 2019 found that air pollution is a key contributor to this seasonal fog, and due to the passage of the Clean Air Act in 1970, it has declined about 75 percent since 1980 (Gray et al., 2019). Figure 4-39 illustrates the extent of tulle fog over the Central Valley.

Figure 4-39 Tule Fog over Central Valley



Source: NASA, Jeff Schmaltz, January 5, 2005

4.5.12.2 Geographic Area

Extensive – The San Joaquin Valley is hemmed in on three sides by mountain ranges, with resulting inversion layers trapping cooler air on the valley floor. This predisposes the County's planning area to severe episodes of fog in winter months, when barometric pressures are high, humidity is increased, and ambient temperatures are low. All areas of the County are vulnerable to dense fog events.

4.5.12.3 Past Occurrences

As shown in Table 4-72 above, the NCEI records 333 dense fog events that occurred in various zones that encompass Kings County, such as Southwestern San Joaquin Valley and Western San Joaquin Valley zones. Since dense fog events are recorded on a zonal basis, not all 333 dense fog events happened within Kings County. The followings are the descriptions of a few dense fog events that impacted Kings County, based on the NCEI database.

- **November 14 – 22, 2002:** Following the very substantial rain for the 3 days from the 7th through the 9th of the month, high pressure aloft built and resided over Interior Central California. Numerous vehicle accidents occurred due to the extremely poor visibilities on Central and Southern San Joaquin Valley roadways. There were 4 indirect traffic fatalities due to the dense fog with at least 32 injuries. On the morning of the 22nd, there were several separate accidents due to locally dense fog in North Kings and West Tulare Counties that resulted in indirect injuries. According to NCEI database, this dense fog event resulted in a total of \$150,000 property losses.
- **January 11 – 17, 2003:** Widespread and dense morning fog continued throughout the Central and Southern San Joaquin Valley from the morning of the 11th through the morning of the 17th of January. Accidents were reported on the 7th, and 14th in Kings County due to very poor visibilities in dense fog. According to NCEI database, this dense fog event resulted in a total of \$150,000 property losses.
- **January 31, 2018:** Areas of dense fog formed once again overnight in the San Joaquin Valley. The fog became dense in several locations during the early morning hours and resulted in several auto accidents along State Route 198 near Hanford. Visibility of less than a quarter mile was reported in Hanford. California Highway Patrol was pacing traffic along State Highway 198 between the



Kings/Tulare County line and Armona as several fog-related minor auto accidents were reported. Several school districts had delayed openings due to dense fog. According to NCEI database, this dense fog event resulted in a total of \$100,000 property losses.

- **January 6, 2021:** High pressure built over central California on January 5. With mainly clear skies and light winds, areas of dense fog formed in the San Joaquin Valley during the early morning hours of January 6. Hanford reported visibility of below a quarter mile. A four-vehicle accident took place on State Route 198 at 08:09 am PST involving a big rig, a pickup truck and two cars. There was a minor injury from the collision. Visibility at both Hanford and Visalia (Tulare County) was at an eighth of a mile at the time of the accident. According to NCEI database, this dense fog event resulted in a total of \$150,000 property losses.

4.5.12.4 Likelihood of Future Occurrence

Highly Likely – According to Table 4-72, 333 dense fogs impacted Kings County during a 27-year period, which equates to 12.3 events per year. Therefore, based on NCEI data and the fact that the tule fog prevails in the San Joaquin Valley, it is highly likely that fog events will continue to occur regularly in Kings County.

On the other hand, California's winter tule fog has declined due to climate change and the reduction in air pollution. Refer to the Climate Change Considerations subsection below for more details on climate change's impact on the Likelihood of Future Occurrence of fog events.

4.5.12.5 Climate Change Considerations

As mentioned in the previous section, California's winter tule fog has declined dramatically over the past three decades, which raised a red flag for the state's multibillion-dollar agricultural industry, according to researchers at UC Berkeley. Crops such as almonds, pistachios, cherries, apricots, and peaches go through a necessary winter dormant period brought on and maintained by colder temperatures. Tule fog that descends upon the State's Central Valley between late fall and early spring, helps contribute to this winter chill.

When there is an insufficient rest period (or lack of dormant time for crops) it impairs the ability of farmers to achieve high-quality fruit yields. The UC Berkeley findings have implications for the entire country since many of these California crops account for 95 percent of U.S. production. The researchers also paired NASA and NOAA satellite records with data from a network of University of California weather stations, covering 32 consecutive winters. Based on the data, there was a great deal of variability from year to year, but on average, the researchers found a 46 percent drop in the number of fog days between the first of November and the end of February. Climate forecasts suggest that the accumulation of winter chill will continue to decrease in the Central Valley. Tule fog was also less prevalent in recent years in part due to the multi-year drought (Yang, 2015).

While the short-term fog variability is dominantly driven by climate fluctuations, the longer-term temporal and spatial changes in fog have been driven by changes in air pollution. In addition to the decrease in the accumulation of winter chill, the Clean Air Act has also greatly reduced the air pollution that would form fogs (Gray et al., 2019).

4.5.12.6 Magnitude and Severity

Critical – Tule fog forms on clear nights when the ground is moist, and the wind is near calm and can be widespread throughout the San Joaquin Valley. On nights like this, the ground cools rapidly. In turn, the moist air above it cools and causes water vapor to condense. Once it has formed, the air must be heated enough to either evaporate the fog or lift it above the surface so that visibilities improve. Common areas for tule fog to form include foothills and valleys. Visibility in tule fog is usually less than an eighth of a mile (about 600 ft or 200 m) but can be much lower. Visibility can vary rapidly; in only a few feet, visibility can go from 10 feet (3.0 m) to near zero.

Fog contributes to transportation accidents and is a significant life safety hazard. These accidents can cause multiple injuries and deaths and could have serious implications for human health and the environment if a hazardous or nuclear waste shipment were involved. Other disruptions from fog include delayed emergency response vehicles and school closures.

In 2018, the NWS in Hanford, California developed the Experimental Fog Severity Index in conjunction with the NWS issues fog advisories to help give motorists warning of fog events. A dense fog advisory is issued when widespread dense fog develops, and visibilities drop to one-quarter of a mile or less. The Experimental Fog Severity Index has five levels with level 5 being the most severe. Figure 4-40 describes each level of the Index.



Figure 4-40 National Weather Service Experimental Fog Severity Index

Level 5	Very High Risk For Transportation Visibilities 200 Feet To Zero Stopped Traffic Ahead Highest Risk For Chain Reaction Accidents
Level 4	High Risk For Transportation Visibility 800 Feet Or Less Very Slow Or Stopped Traffic Ahead Higher Risk For Chain Reaction Accidents
Level 3	Moderate Risk For Transportation Visibility Half Mile Or Less Slow Traffic Ahead Moderate Risk For Fog Related Accidents
Level 2	Low Risk For Transportation Visibility One Mile Or Less Traffic May Slow Below Speed Limit Low Risk For Fog Related Accidents
Level 1	No Transportation Risks

Source: NWS

4.5.12.7 Vulnerability Assessment

Property

Based on historic information, the primary effect of fog has not resulted in significant damages to property, and the losses are typically covered by insurance. Dense fog does result in substantial vehicle damage during transportation-related accidents.

People

Reduced visibility is the greatest risk to people when heavy fog is prevalent. Particularly when fog is dense, it can be hazardous to drivers, mariners and aviators and contributes to numerous accidents each year. To reduce injury and harm, people should avoid driving when dense fog is prevalent, if possible. If driving is pertinent, emergency services advise driving with lights on low beam, watching for California Highway Patrol (CHP) pace vehicles to guide through the fog, avoiding stopping on highways, and avoiding crossing traffic lanes. Feedback from the public as part of the public survey also emphasized the impacts of dense fog on the population related to travel on County roads that lack appropriate signage on fog hazards (see Appendix G).

Critical Facilities and Lifelines

Fog can have devastating effects on transportation corridors in the County. Multi-car pileups have resulted from drivers using excessive speed for the conditions and visibility. These accidents can cause multiple injuries and deaths and could have serious implications for human health and the environment if a hazardous or nuclear waste shipment were involved. Other disruptions from tule or dense fog include delayed emergency response vehicles and school closures.



Economy

Economic impacts due to dense fog are generally related to road closures leading to a decrease in travel to businesses. Other economic impacts related to property damages are vehicles from accidents. As shown in Table 4-72 above there is a recorded \$3,911,000 of property damages as a result of dense fog all of which are from traffic accidents in the Central Valley and San Joaquin Valley. Based on that amount, this region including Kings County has an estimated average annual loss expectancy of \$144,852 due to dense fog events.

Cultural, Historic and Natural Resources

As referred to in the Climate Change Considerations section, California’s winter tule fog has declined dramatically over the past three decades, raising a red flag for the State’s multibillion-dollar agricultural industry. Crops such as almonds, pistachios, cherries, apricots, and peaches go through a necessary winter dormant period brought on and maintained by colder temperatures and tule fog that descends upon the State’s Central Valley between late fall and early spring.

Development Trends

Population and commercial growth both within and outside the County will increase the potential for complications with traffic accidents and commerce interruptions associated with dense fog.

4.5.12.8 Risk Summary

- Tule fog season begins in late fall and lasts from winter (November - March).
- Between 1950 and 2022, 333 dense fog events impacted areas including Kings County during a 27-year period, which equates to 12.3 events per year.
- Dense fog events in the Central Valley and San Joaquin Valley have resulted in \$3,911,000 in property damages, largely due to traffic accidents.
- California’s winter tule fog has declined dramatically and is predicted to be less prevalent due to prolonged drought events and the reduction in air pollution.
- Reduced visibility is the greatest risk to people when heavy fog is prevalent, it can be hazardous to drivers, mariners and aviators and contributes to numerous accidents each year. It does not typically have a disproportionate impact on socially vulnerable populations.
- Fog can have devastating effects on transportation corridors and result in casualties; fog can prevent responders to arrive on the scene timely.
- **Related Hazards** - Hazardous Materials Incidents, Transportation Accidents

JURISDICTION	GEOGRAPHIC AREA	PROBABILITY OF FUTURE OCCURRENCE	MAGNITUDE/ SEVERITY	OVERALL SIGNIFICANCE	PRIORITY HAZARD?
Kings County	Extensive	Highly Likely	Critical	Medium	Yes
City of Avenal	Extensive	Highly Likely	Moderate	Low	No
City of Corcoran	Extensive	Highly Likely	Moderate	Low	No
City of Hanford	Extensive	Highly Likely	Critical	Medium	Yes
City of Lemoore	Extensive	Highly Likely	Moderate	Low	No

4.5.13 SEVERE WEATHER: HEAVY RAIN, THUNDERSTORMS, HAIL, AND LIGHTNING

4.5.13.1 Hazard Description

Heavy Rain

A majority of adverse weather experienced in the County takes place in the winter months as heavy rain and thunderstorm events that are sometimes accompanied by high winds or dense fog. The County’s weather is influenced by the Pacific Ocean and routine climate patterns such as El Niño, the warm phase of the El Niño-Southern Oscillation, a pattern found in the tropical Pacific when there are fluctuations in temperatures between the ocean and atmosphere. During El Niño, the surface winds across the entire tropical Pacific are weaker than normal and the ocean surface is at above-average temperatures in the central and eastern tropical Pacific Ocean (NOAA 2016). El Niño typically develops over North America during the winter season, causing the severe winter storms the County often experiences. This climate pattern occurs every few years and brings with it above-average rain and snow across the southern region of the United States, especially in California.



Atmospheric rivers (ARs), another climate pattern that leads to adverse weather in the County, are responsible for up to 50 percent of California's precipitation annually and 65 percent seasonally (Arcuni 2019). An AR is a long, narrow region of the atmosphere, like a river in the sky, that transports most of the water vapor outside of the tropics. ARs can be 300 miles wide, a mile deep and more than 1,000 miles long, and carry an amount of water vapor roughly the same as the average flow of water at the mouth of the Mississippi River (NOAA 2015). Warm water storms over the Pacific Ocean lead to evaporation and create a high concentration of moisture in the air while prevailing winds create the distinctive river shape, which is often compared "to a fire hose pointed at California" (Arcuni 2019). When an AR reaches land, it releases water vapor in the form of rain or snow. ARs play an important role in the global water cycle and are closely tied to both water supply and flooding risk.

Research suggests that ARs contributed to the collapse of both Oroville Dam spillways in February 2017 (NASA Global Hydrology Resource Center), as well as the winter flooding in 1861-1862, which completely inundated Sacramento and is considered the worst flood event in California's history (Ingram 2013). When an AR forms in the tropical regions of the Pacific near Hawaii it is known as a Pineapple Express. This type of AR can produce as much as five inches in one day (NOAA 2018). In 2018 two Pineapple Express ARs hit California, causing significant heavy precipitation events throughout the State.

California was facing a severe drought when it was hit by 31 AR storms between October 2022 and March 2023. Although the number of storms was not unprecedented, their location, intensity, and duration had a significant impact on California's climate. As a result of these AR storms, the state experienced record-breaking snowfall and deadly flooding. (Toohey, 2023).

Thunderstorms

Thunderstorms are formed from a combination of moisture, rapidly rising warm air, and a force capable of lifting air, such as warm and cold fronts or a mountain. Thunderstorms may occur alone, in clusters, or in lines. As a result, several thunderstorms can affect one location in the course of a few hours. A thunderstorm can produce lightning, thunder, and rainfall and may also lead to the formation of tornadoes, hail, downbursts, and microbursts of wind. Electricity can be interrupted by lightning strikes. During the summer, climatic factors combine to promote the development of thunderstorms.

Hail

Hail forms on condensation nuclei such as dust or ice crystals, when supercooled water freezes on contact. In clouds containing large numbers of supercooled water droplets, these ice nuclei grow quickly at the expense of the liquid droplets. The hail grows increasingly larger. Once a hailstone becomes too heavy to be supported by the storm's updraft it falls out of the cloud. Hailstones are usually from the size of a pea to the size of a golf ball, and larger hailstones can cause property damage.

Lightning

Lightning is an electrical discharge between positive and negative regions of a thunderstorm. A lightning flash is composed of a series of strokes with an average of about four strokes per flash. The length and duration of each lightning stroke vary but typically average about 30 microseconds.

4.5.13.2 Geographic Area

Extensive - Heavy rain is generally expansive in size. The entire County is susceptible to any of the effects of heavy rain and thunderstorms. Hail and lightning events are also common in the County, which can impact any area of the County during any month of the year.

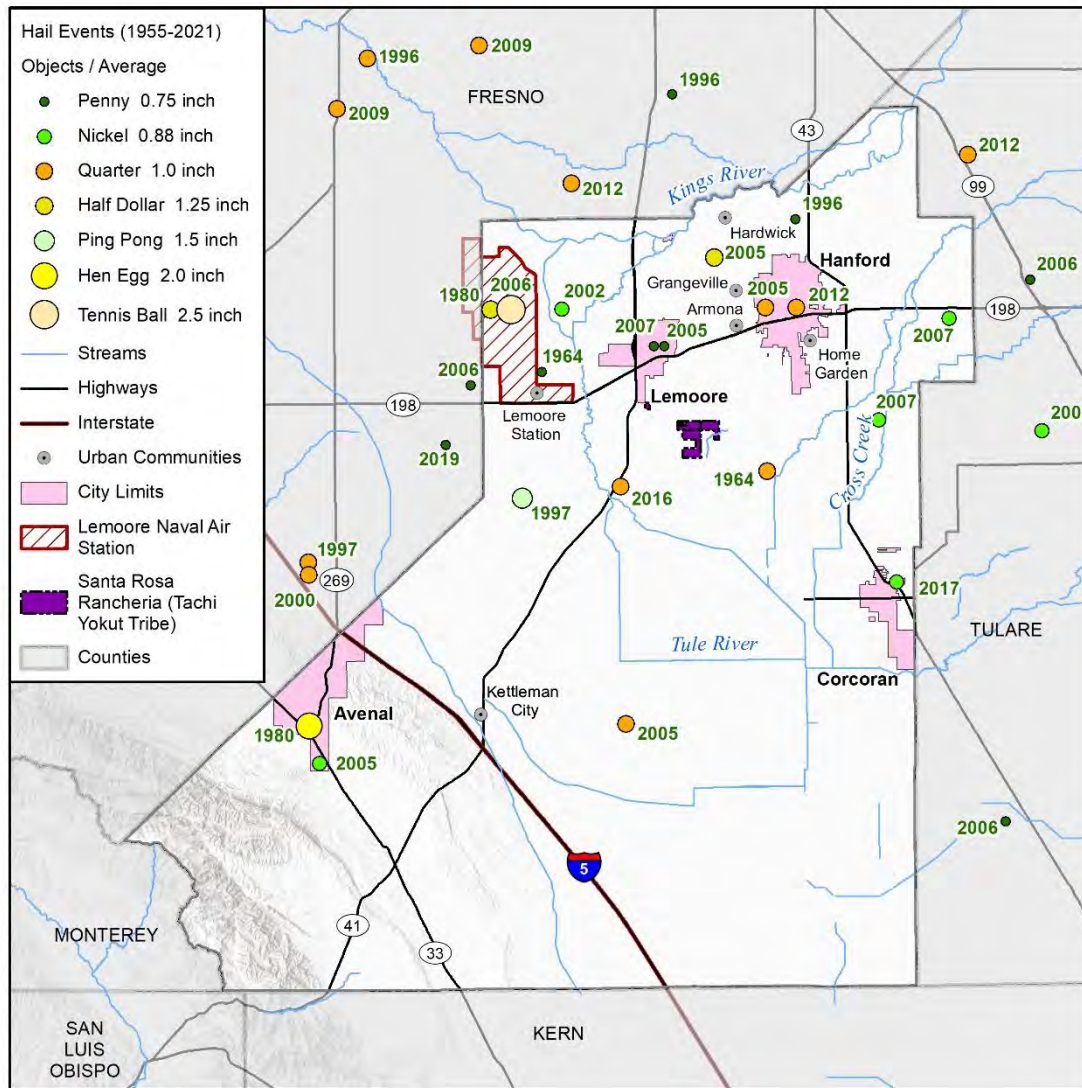
4.5.13.3 Past Occurrences

Hail

Hail events are common in the County. Figure 4-41 shows that different areas within the planning area, SOI, and other areas in the vicinity have historically experienced hail events. Several hail events during which quarter and even golf ball-sized hailstones fell happened in recent years. Database for hail. Additionally, there have been three USDA disaster declarations that included hail since 2012 (S4657, S4170, and S3320).



Figure 4-41 Hail Events in Kings County, 1950 - 2021



Map compiled 10/2022;
Intended for planning purposes only.
Data Source: Kings County, NOAA
National Weather Service SVRGIS 2021

0 5 10 Miles



As shown in Table 4-74, since 1950, there have been 25 reports of hail events that caused around \$2,000 property loss and \$4,060,000 crop loss. Table 4-74 shows the records collected from the NCEI Storm Events

Table 4-74 Hail Events in Kings County, 1950 - 2021

LOCATION	DATE	PROPERTY DAMAGE	CROP DAMAGE
KINGS CO.	1/22/1964	-	-
KINGS CO.	3/23/1964	-	-
KINGS CO.	3/6/1980	-	-
KINGS CO.	4/28/1980	-	-
KINGS CO.	3/12/1996	-	-
HANFORD	11/22/1996	\$2,000	-
LEMOORE NAS	3/22/1997	-	\$20,000
STRATFORD	4/8/1999	-	\$3,390,000



LOCATION	DATE	PROPERTY DAMAGE	CROP DAMAGE
HANFORD	10/10/2000	-	\$500,000
AVENAL	5/31/2002	-	-
(NLC)NAS LEMOORE	2/22/2005	-	-
KETTLEMAN CITY	4/28/2005	-	-
HANFORD	4/28/2005	-	-
LEMOORE	4/28/2005	-	-
HANFORD	4/28/2005	-	-
HANFORD	9/20/2005	-	-
AVENAL	3/10/2006	-	-
(NLC)NAS LEMOORE	2/22/2007	-	-
CORCORAN	9/22/2007	-	-
HANFORD MUNI ARPT	10/29/2007	-	-
CIMARRON	10/29/2007	-	-
CIMARRON	4/11/2012	-	\$150,000
HANFORD	4/24/2016	-	-
STRATFORD	9/11/2017	-	-

Source: NCEI

Heavy Rain

Heavy rains and adverse storms occur in the County primarily during the late fall and winter but have a chance of occurring in every month of the year. According to information obtained from the WRCC, the majority of precipitation is produced by storms during January and other winter months. Precipitation during the summer months is in the form of rain showers and is rare.

The NCEI records show heavy rainstorms can cause widespread flooding, which can lead to extensive localized drainage issues. In addition to the flooding that often occurs during these storms, strong winds, when combined with saturated ground conditions, can knock down very mature trees. Refer to the Flood section for more information related to flooding events in the County. There have been eight federal and state disaster declarations (1983, 1995 [two], 1997, 2005, 2017 [two], and 2023) for heavy rain, severe storm, and flooding in Kings County. In addition, there have been three USDA disaster designations (2012 [two], and 2016) for excessive rainfall.

The NCEI Storm Events Database records 56 rain events in Kings County between 1950 and 2021, as shown in Table 4-75. No casualties are recorded for any of the events. As noted above there is a connection between heavy rain events and flooding and it is assumed that the property damages listed in the NCEI database are the results of flooding caused by heavy rain events. The heavy atmospheric rain conditions which hit California in late 2022 to early 2023 are not reflected in this dataset.

Table 4-75 Heavy Rain Events in Kings County, 1950 - 2021

EVENT TYPE	LOCATION	DATE	PROPERTY DAMAGE	CROP DAMAGE
Flash Flood	AVENAL	3/5/2001	-	-
	KETTLEMAN CITY	2/21/2005	-	-
	HANFORD MUNI ARPT	9/22/2007	-	-
	AVENAL	6/5/2015	-	-
	AVENAL	10/3/2018	-	-
	KETTLEMAN CITY	6/1/2019	-	-
Flood	HANFORD	3/12/1996	-	-
	LEMOORE	3/24/1998	-	-
	LEMOORE	3/28/1998	-	-
	LEMOORE	5/5/1998	-	-



EVENT TYPE	LOCATION	DATE	PROPERTY DAMAGE	CROP DAMAGE
	HANFORD	11/12/2001	-	-
	COUNTYWIDE	1/2/2006	\$71,000	\$1,000,000
	HANFORD MUNI ARPT	1/23/2008	\$5,000	-
	HANFORD	10/13/2009	\$2,000	-
	(NLC)NAS LEMOORE	1/19/2010	\$25,000	-
	LEMOORE	12/29/2010	\$75,000	-
	KETTLEMAN CITY	4/7/2011	\$2,000	-
	HANFORD	6/5/2011	\$1,000	-
	HANFORD MUNI ARPT	3/8/2013	-	-
	ROSSI	1/8/2017	\$637,190	-
	AVENAL	1/18/2017	-	-
	HARDWICK	6/22/2017	-	-
	HANFORD	5/26/2019	-	-
	ARMONA	5/26/2019	-	-
	AVENAL	1/27/2021	-	-
	Heavy Rain	HANFORD	2/1/1998	\$20,000
HANFORD		5/1/1998	-	\$73,600,000
HANFORD		6/8/2000	-	\$100,000
HANFORD MUNI ARPT		5/31/2002	-	\$ -
AVENAL		3/15/2003	-	\$ -
HANFORD		4/1/2003	-	\$8,900,000
HANFORD		4/21/2003	\$1,000	-
COUNTYWIDE		5/1/2003	-	\$5,500,000
LEMOORE		12/14/2003	-	-
COUNTYWIDE		12/28/2004	-	-
COUNTYWIDE		1/1/2005	-	-
COUNTYWIDE		1/7/2005	-	-
COUNTYWIDE		1/24/2005	-	-
AVENAL		2/18/2005	-	-
LEMOORE		4/28/2005	-	-
COUNTYWIDE		5/5/2005	-	-
COUNTYWIDE		5/8/2005	-	\$671,000
KETTLEMAN CITY		9/20/2005	\$10,000	-
HANFORD MUNI ARPT		1/1/2006	-	-
COUNTYWIDE		3/2/2006	-	-
LEMOORE		3/28/2006	-	-
COUNTYWIDE		4/2/2006	-	\$2,200,000
AVENAL		5/21/2006	-	-
HANFORD		10/5/2011	\$100,000	-
CIMARRON		1/30/2014	-	-
SHIRLEY		3/26/2014	-	-
LEMOORE		11/1/2014	-	-
HANFORD		12/11/2014	-	-
CIMARRON		5/5/2016	-	-



EVENT TYPE	LOCATION	DATE	PROPERTY DAMAGE	CROP DAMAGE
	CIMARRON	5/5/2016	-	-
	CIMARRON	1/21/2017	-	-

Source: NCEI

Thunderstorms

County-level thunderstorm data is not available, however, as noted above, thunderstorm events are not uncommon in the County, especially during summer months.

Lightning

As noted above, lightning events are not uncommon in the County. As shown in Table 4-76, there have been 10 NCEI recorded lightning events in Kings County since 1950, which caused \$451,000 in damage.

Table 4-76 Lightning Events in Kings County, 1950 - 2021

LOCATION	DATE	CROP DAMAGE	PROPERTY DAMAGE
AVENAL	5/31/2002	\$5,000	-
HANFORD MUNI ARPT	5/31/2002	\$5,000	-
HANFORD	5/31/2002	-	-
HANFORD	5/31/2002	\$5,000	-
CORCORAN	7/30/2003	-	-
LEMOORE	4/28/2005	-	-
HANFORD MUNICIPAL AIRPORT	4/28/2005	\$25,000	\$400,000
COUNTYWIDE	10/24/2005	-	-
AVENAL	8/31/2007	\$1,000	-
SHORT ACRES SUBDIVISION	9/11/2017	\$10,000	-

Source: NCEI

4.5.13.4 Likelihood of Future Occurrence

Highly Likely - Based on the NCEI data, there have been a combined 90 heavy rain, thunderstorms, hail, and lightning events in Kings County since 1950. Statistically, there is a 100% percent chance that a major hail, heavy rain, or lightning event will happen in any given year. The actual risk to the County is dependent on the nature and location of any given hazard event.

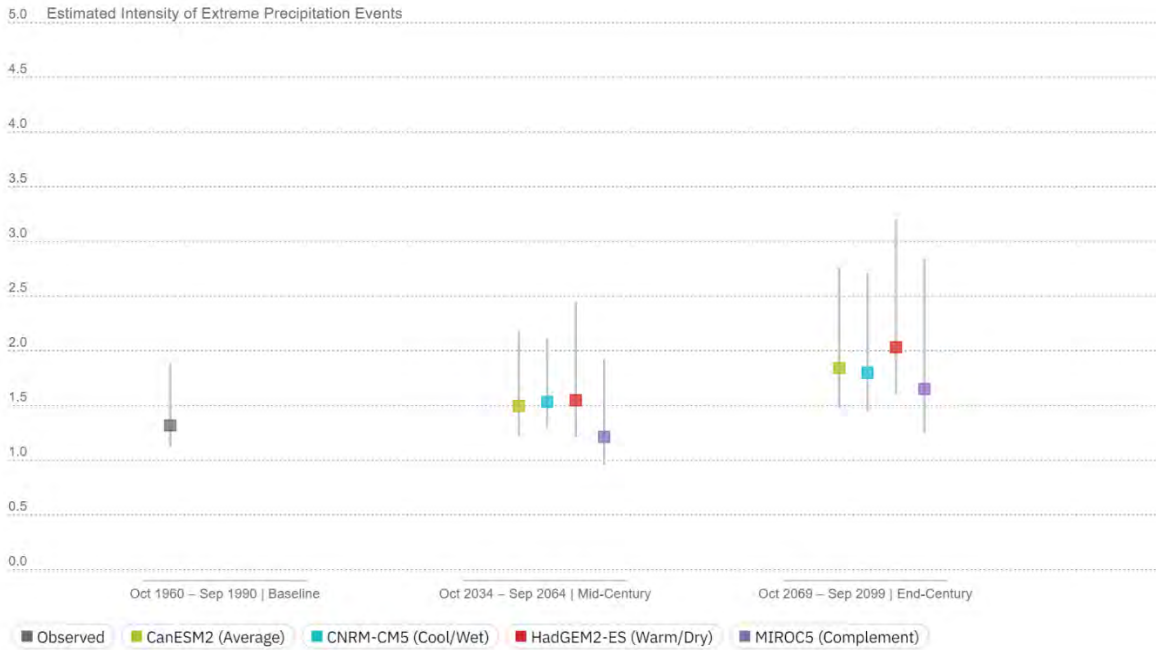
4.5.13.5 Climate Change Considerations

As average temperatures increase over time, warming in the atmosphere can trigger more frequent extreme weather events. Pacific Northwest National Laboratory researchers have found that ARs will reach the West Coast more frequently (Hagos et al., 2016). Currently, the West receives rain or snow from these ARs between 25 and 40 days each year. By the end of this century, days on which the ARs reach the coast could increase by a third, or between 35 and 55 days a year (Hagos et al., 2016).

Figure 4-42 shows the estimated intensity (return level) of extreme precipitation events which are exceeded on average once every 20 years and how it changes in a warming climate over historical, mid-century, and late-century time periods, based on the Cal-Adapt tool. Under both the RCP 4.5 and RCP 8.5 scenarios, precipitation levels will increase throughout the century. Using the RCP 8.5 scenario and the CanESM2 model, referred to by Cal-Adapt as an “average” simulation, precipitation will increase from 1.32 inches to 1.85 inches by 2099 (as shown by the green squares in Figure 4-42). Using the same scenario and the CNRM-CM5 “cooler/wetter” model, precipitation will increase to 2.3 inches by 2099 (as shown by the blue squares in Figure 4-42).



Figure 4-42 Predicted Future Changes in Intensity of Extreme Precipitation Events Under Low-emissions and High-emissions Scenarios for Kings County



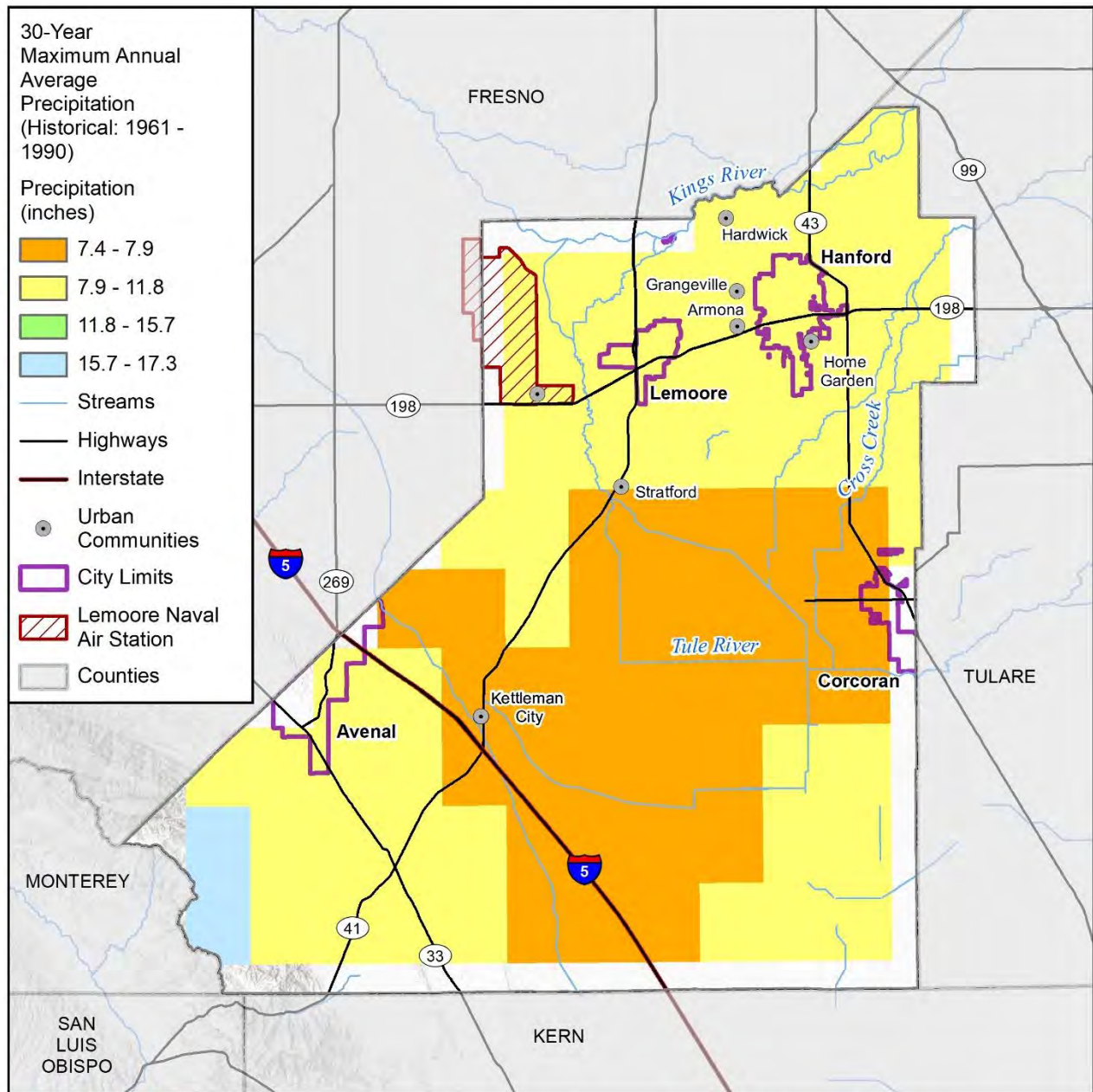
Source: Cal-Adapt. Data: LOCA Downscaled CMIP5 Climate Projections (Scripps Institution of Oceanography), Gridded Observed Meteorological Data (University of Colorado Boulder), LOCA Derived Products (Geospatial Innovation Facility).

For this graph from Cal-Adapt, an extreme precipitation event is defined as a day during a water year (Oct-Sep) with 1-day rainfall totals above the locally-defined extreme threshold of 0.33 inches.

Figure 4-43 shows the historic (1961-1991) annual 30-year average maximum precipitation for the County. Figure 4-44 shows the projected mid-century (2035-2064) annual 20-year average maximum precipitation for the County under the RCP 8.5 scenario.



Figure 4-43 Kings County 30-Year Historical Maximum Annual Average Precipitation



Map compiled 3/2022;
Intended for planning purposes only.
Data Source: Kings County, Cal-Adapt

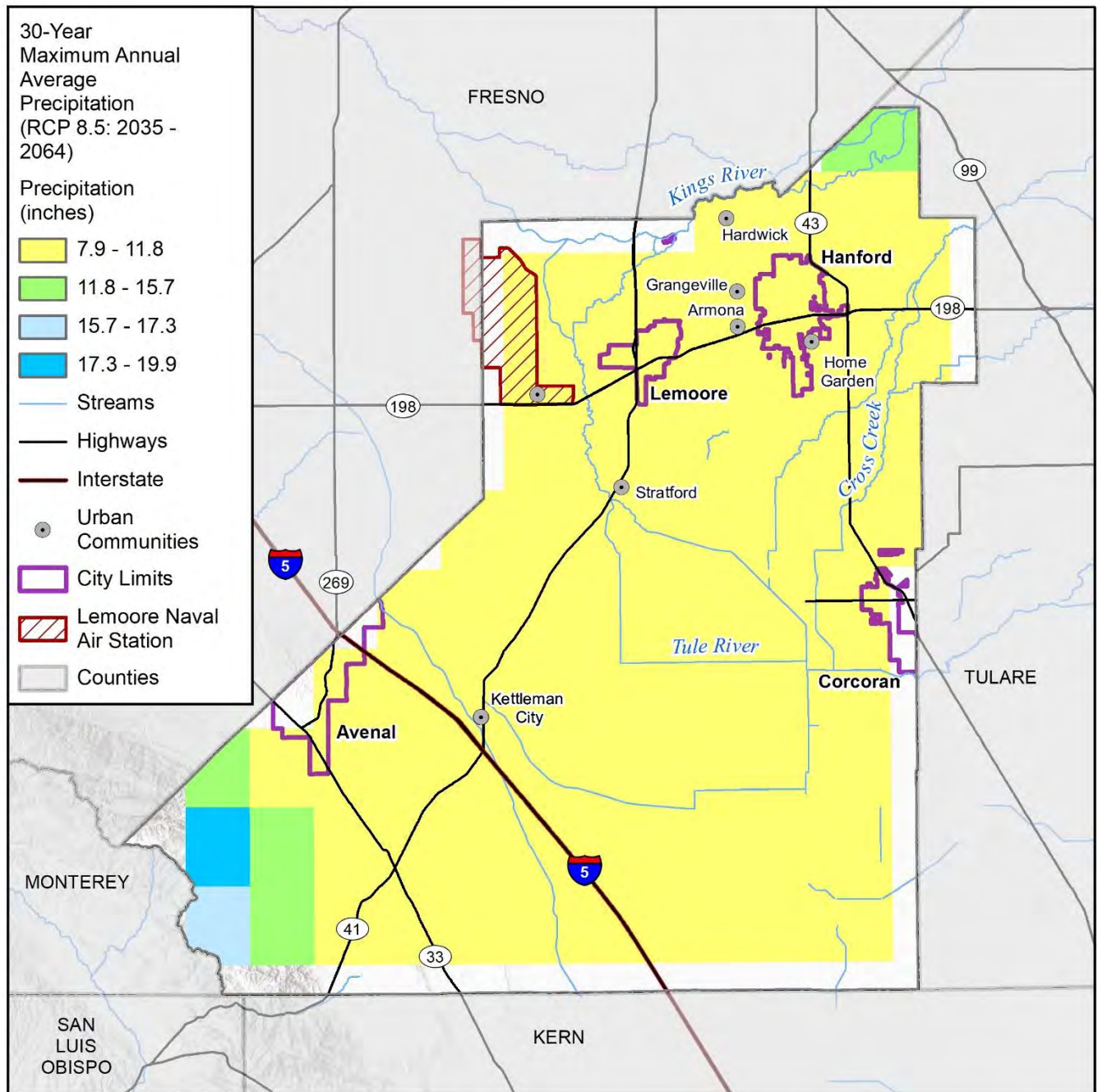
0 5 10 Miles

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Figure 4-44 Kings County 30-Year Maximum Annual Average Precipitation



Map compiled 3/2022;
Intended for planning purposes only.
Data Source: Kings County, Cal-Adapt

0 5 10 Miles



4.5.13.6 Magnitude and Severity

Critical - The extent of heavy rain, thunderstorms, hail, and lightning weather events can affect up to 50 percent of property in the County. These weather events can also shutdown of facilities and result in severe injuries.

Hail

The NWS classifies hail by diameter size, and corresponding everyday objects to help relay scope and severity to the population. Table 4-77 indicates the hailstone measurements utilized by the NWS.



Table 4-77 Hail Measurements

AVERAGE DIAMETER	CORRESPONDING HOUSEHOLD OBJECT
.25 inch	Pea
.5 inch	Marble/Mothball
.75 inch	Dime/Penny
.875 inch	Nickel
1.0 inch	Quarter
1.5 inch	Ping-pong ball
1.75 inch	Golf Ball
2.0 inch	Hen Egg
2.5 inch	Tennis Ball
2.75 inch	Baseball
3.00 inch	Teacup
4.00 inch	Grapefruit
4.5 inch	Softball

Source: NWS

There is no clear distinction between storms that do and do not produce hailstones. According to NOAA's National Severe Storms Laboratory, nearly all severe thunderstorms probably produce hail, though it may melt before reaching the ground. Multi-cell thunderstorms produce many hailstones, but not usually the largest hailstones. In the life cycle of the multicell thunderstorm, the mature stage is relatively short so there is not much time for the growth of the hailstone. Supercell thunderstorms have sustained updrafts that support large hail formation by repeatedly lifting the hailstones into the very cold air at the top of the thunderstorm cloud. In general, hailstones two inches (5 cm) or larger in diameter are associated with supercells (a little larger than golf ball size which the NWS considers to be 1.75 inches.). Non-supercell storms are capable of producing golf ball-size hail.

In all cases, the hail falls when the thunderstorm's updraft can no longer support the weight of the ice. The stronger the updraft the larger the hailstone can grow. When viewed from the air, it is evident that hail falls in paths known as hail swaths. Hail swaths can range in size from a few acres to areas 10 miles wide and 100 miles long. In some instances, piles of hail have been so deep that snowplows were required to remove them, and occasional hail drifts (several feet of dime to nickel-sized hail) have been reported. Severe hailstorms can be destructive to property. Vehicles, roofs of buildings, and landscaping are the most commonly damaged by hail. Hail has also been known to cause injury to humans and occasionally has been fatal.

Heavy Rain

The heavy precipitation events that County and all of California experience are often the results of an AR. ARs are categorized by a unit of measurement known as the Integrated Water Vapor Transport (IVT), which takes into account the amount of water vapor in the system and the wind that moves it around. For a storm to be classified as an AR it has to reach an IVT threshold of 250 units; 1,000 IVT or more is considered to be "extreme" (Arcuni 2019). In 2019 a system for categorizing the strength and impacts of ARs was developed by the Center for Western Weather and Water Extremes (CW3E), out of the Scripps Institution of Oceanography at UC San Diego.

The newly developed scale ranks ARs into five categories from weak to exceptional and characterizes the extent of heavy rain events related to AR. Unlike the Fujita Scale for tornadoes which focuses on potential damages, the AR scale accounts for both storms that may be hazardous and storms that can provide benefits to the local water supply. A category one AR is primarily beneficial, generally lasting only 24 hours and producing modest rainfall, while a category five AR is considered "exceptional" and primarily hazardous, lasting for several days, and associated with heavy rainfall and runoff that may cause significant damages. Table 4-78 below describes the scale. The CW3E developed the scale as a tool for officials with an operational need to assess flooding potential in their jurisdictions before the storms make landfall. The scale is also a useful tool to outline the extent of heavy rain events.



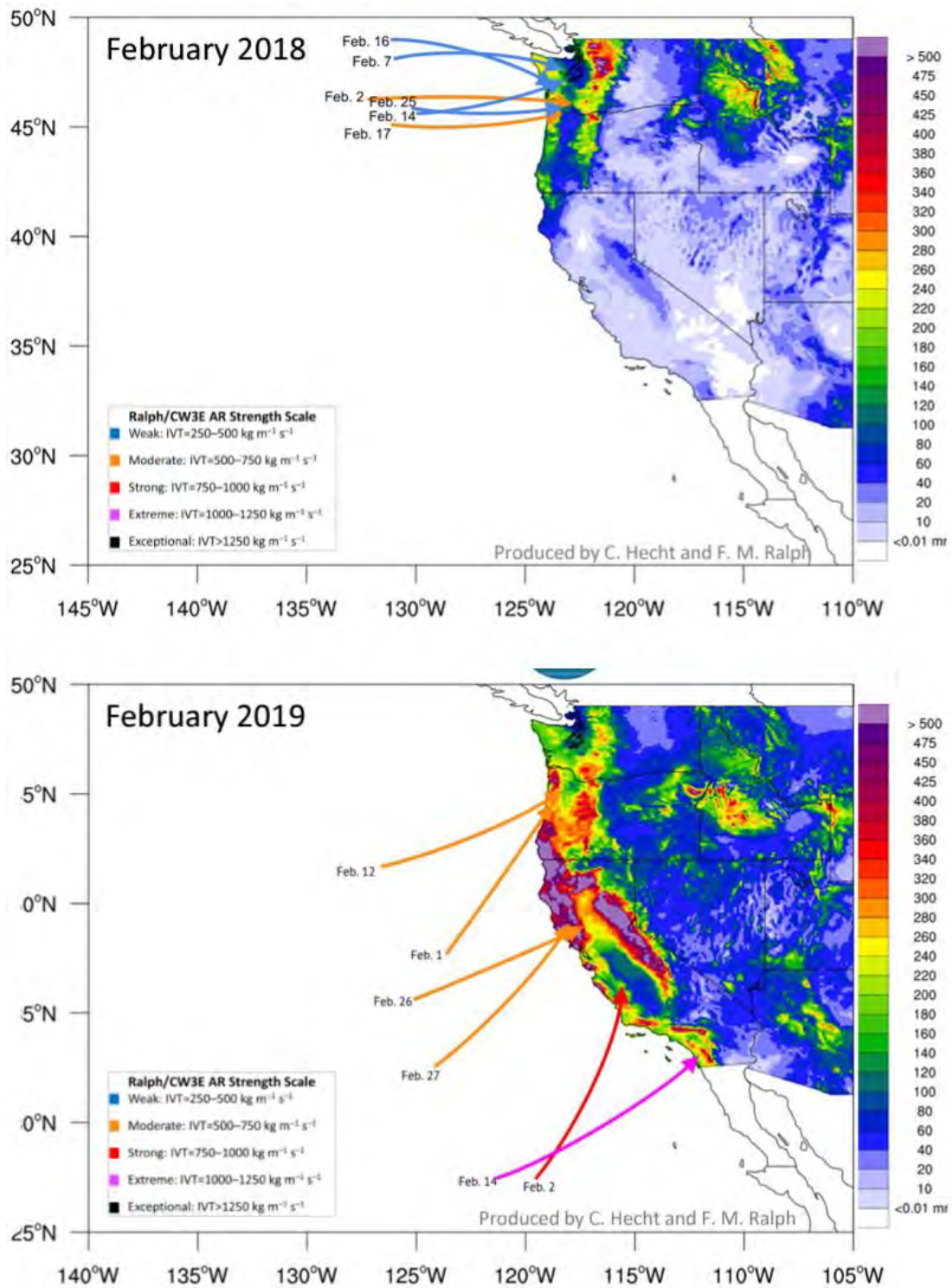
Table 4-78 Atmospheric River Categories

CATEGORY	DESCRIPTION	EXAMPLE
AR Cat. 1	Weak - Primarily beneficial	Feb. 2, 2017, AR hit California, lasted 24 hours at the coast, and produced modest rainfall.
AR Cat. 2	Moderate - Mostly beneficial, but also somewhat hazardous	Nov. 19-20, 2016, AR hit Northern California, lasted 42 hours at the coast, and produced several inches of rain that helped replenish low reservoirs after a drought.
AR Cat. 3	Strong balance of beneficial and hazardous	Oct. 14-15, 2016, AR lasted 36 hours at the coast, produced 5-10 inches of rain that helped refill reservoirs after a drought, but also caused some rivers to rise to just below flood stage.
AR Cat. 4	Extreme - Mostly hazardous, but also beneficial	Jan. 8-9, 2017, AR that persisted for 36 hours produced up to 14 inches of rain in the Sierra Nevada and caused at least a dozen rivers to reach flood stage.
AR Cat. 5	Exceptional - Primarily hazardous	Dec. 29, 1996, to Jan 2, 1997, AR lasted over 100 hours at the Central California coast. The associated heavy precipitation and runoff caused more than \$1 billion in damages.

Source: Center for Western Weather and Water Extremes, Scripps Institution of Oceanography at UC San Diego. Scale was developed by F. Martin Ralph Director of CW3E in collaboration with Jonathan Rutz of NWS.

In both February 2018 and 2019, the West Coast experienced six ARs. However, as shown in Figure 4-45, California experienced vastly different precipitation totals due to the location of the AR's landfall, as well as each AR's IVT. The ARs in February 2019 were all considered to be moderate to extreme, concentrated in California, and resulted in heavy precipitation; whereas the ARs in February 2018 had a negligible effect on California. Between October 2022 and March 2023, California was faced with an onslaught of additional ARs. Of the 31 ARs, one was categorized as extreme and six were strong. Almost half were moderate; 11 were weak (Toohey 2023). The strength of these ARs, as well as their locations, are shown in Figure 4-45.

Figure 4-45 Atmospheric River Strength and Land Distribution, February 2018 vs. February 2019



Source: Center for Western Weather and Water Extremes, Scripps Institution of Oceanography at UC San Diego

Figure 4-46 Atmospheric Rivers Strength, October 2022 through March 2023



Source: Center for Western Weather and Water Extremes, Scripps Institution of Oceanography, via the LA Times

Thunderstorms

Although thunderstorm events by themselves may not create significant damage or danger to the County, hail, lightning, and high winds events that happen together with thunderstorm events can all have damaging effects.

Lightning

Lightning is measured by the Lightning Activity Level (LAL) scale, created by the NWS to define lightning activity into a specific categorical scale. The LAL is a common parameter that is part of fire weather forecasts nationwide. The County is at risk to experience lightning in any of these categories. The LAL is reproduced in Table 4-79.

Table 4-79 Lightning Activity Level Scale

CATEGORY	DESCRIPTION
LAL 1	No thunderstorms.
LAL 2	Isolated thunderstorms. Light rain will occasionally reach the ground. Lightning is very infrequent, 1 to 5 cloud to ground strikes in a five-minute period.
LAL 3	Widely scattered thunderstorms. Light to moderate rain will reach the ground. Lightning is infrequent, 6 to 10 cloud to ground strikes in a five-minute period.



CATEGORY	DESCRIPTION
LAL 4	Scattered thunderstorms. Moderate rain is commonly produced. Lightning is frequent, 11 to 15 cloud to ground strikes in a five-minute period.
LAL 5	Numerous thunderstorms. Rainfall is moderate to heavy. Lightning is frequent and intense, greater than 15 cloud to ground strikes in a five-minute period.
LAL 6	Dry lightning (same as LAL 3 but without rain). This type of lightning has the potential for extreme fire activity and is normally highlighted in fire weather forecasts with a Red Flag warning.

Source: NWS

4.5.13.7 Vulnerability Assessment

People

Exposure is the greatest danger to people from heavy rain events. People can be caught in rising waters and may need to be rescued. Populations at higher elevations with large stands of trees or power lines may be more susceptible to power outages, while populations in low-lying areas are at risk for possible flooding.

Vulnerable populations include the elderly, low-income, linguistically isolated populations, people with life-threatening illnesses, and residents living in areas that are isolated from major roads, which includes portions of central Kings County where DACs are located. Power outages can be life-threatening to those dependent on electricity for life support. Isolation of these populations is a significant concern. These populations face isolation and exposure during hail, heavy rain, lightning, and thunderstorm events, and could suffer from the secondary effects of these hazards, particularly during long-term power outages. Recreationists in the area west of Avenal near Kettleman Hills may also be more vulnerable to severe weather events.

Property

The County experiences a rainy season in the winter months through early spring. These winter storms can include significant precipitation. The primary effect of these storms has not resulted in significant injury or damages to people and property, or the losses are typically covered by insurance. It is the secondary hazards caused by weather that have had the greatest impact on the County. Damage and disaster declarations related to adverse weather have occurred and will continue to occur in the future. Heavy rain and thunderstorms are the most frequent type of severe weather occurrences in the County. Utility outages, downing of trees, debris blocking streets and property damage can be a direct result of these storm events. Properties in poor condition may risk the most damage. Given the nature of these types of storms, the entire County is potentially at risk.

Critical Facilities and Lifelines

Transportation infrastructure can be affected by hail, heavy rain, and lightning events, mostly associated with secondary hazards. Landslides caused by heavy prolonged rains can block roads in the western portion of the County. Of particular concern are roads providing access to isolated areas and the elderly, especially given that limited local roads and highways are available to move people and supplies throughout the region. Prolonged obstruction of major routes due to landslides, debris, or floodwaters can disrupt the shipment of goods and other commerce.

Severe windstorms and downed trees can create serious impacts on power and above-ground communication lines. Loss of electricity and phone connection would leave some populations isolated because residents would be unable to call for assistance. Lightning events can have similarly destructive effects on power and information systems. Failure of these systems would have cascading effects throughout the County and could disrupt critical facility functions. Downed power lines can cause blackouts, leaving large areas isolated.

Economy

The economic impact of heavy rain and hail events is typically short-term. Generally, long-term economic impacts center more around hazards that cascade from a heavy rain event such as flooding or fires. In general, all severe weather poses a risk to the agriculture economy in the County.

Table 4-80 below describes the crop losses related to heavy rain, thunder, hail, and lightning events. Kings County experiences an average of \$1.6 million in annualized loss due to crop damages from heavy rain, thunder, hail, and lightning events.



Table 4-80 Crop Loss due to Heavy Rain, Hail, Lightning in Kings County, 2007 – 2021

CAUSE	YEAR	SUM OF DETERMINED ACRES	SUM OF INDEMNITY AMOUNT
Excess Moisture/ Precipitation/ Rain	2007	70.4	\$24,928
	2008	66.0	\$10,014
	2009	329.0	\$224,874
	2010	659.4	\$283,860
	2011	5,629.3	\$1,712,635
	2012	219.2	\$41,044
	2013	205.9	\$522,194
	2014	1,560.1	\$3,501,416
	2015	523.6	\$560,091
	2016	3,065.5	\$2,085,683
	2017	2,354.0	\$1,918,062
	2018	214.7	\$328,600
	2019	3,999.7	\$4,126,183
	2020	1,033.3	\$1,686,385
2021	318.6	\$612,108	
Hail	2007	35.0	\$26,581
	2009	9.5	\$8,404
	2010	2,237.3	\$2,762,216
	2011	170.4	\$256,672
	2012	27.6	\$9,793
	2014	46.7	\$20,870
	2015	11.0	\$6,829
	2016	274.7	\$256,324
	2017	114.2	\$96,615
	2018	1,057.4	\$1,001,332
	2019	200.4	\$123,523
	2020	100.4	\$270,721
2021	12.0	\$11,603	
Other (Snow/ Lightning/ Etc.)	2015	109.1	\$86,250
	2016	150.2	\$191,290
	2020	437.5	\$74,999
Grand Total		25,242.1	\$22,842,099

Source: USDA RMA

Cultural, Historic and Natural Resources

As a natural process, the impacts of most heavy rain events by themselves are part of the overall natural cycle and do not cause long-term consequential damage. However, natural habitats such as streams and trees risk major damage. Prolonged rains can saturate soils and lead to slope failure and potentially landslide events. Flooding events can produce river channel migration or damage riparian habitat.

Development Trends

New critical facilities, such as communication towers should be built to withstand heavy rain damage. Development Trends projects should consider adverse weather hazards at the planning, engineering, and architectural design stages to reduce vulnerability. Stormwater master planning and site review should account for buildings to withstand heavy rain events considered for all new development. Thus,



development trends in the County are not expected to increase overall vulnerability to the hazard but all development will be affected by adverse weather and storm events.

Continued development implies continued population growth, which raises the number of individuals potentially exposed to severe weather. Individual citizens, families, and businesses of the County need to be prepared to address severe weather events when they occur. It is recommended that citizens, families, and businesses have an emergency preparedness plan, such as storing extra supplies of food and water, as well as other related supplies such as flashlights, batteries, firewood and a battery-operated radio within their home or business. In addition, public education efforts should continue to help the population understand the risks and vulnerabilities of outdoor activities, property maintenance, and regular exposures during periods of severe weather.

4.5.13.8 Risk Summary

- During the 71-year period from 1950 to 2021, 24 hail events, 56 heavy rain events and 10 lightning events occurred in Kings County.
- The County experiences an estimated \$1.6 million in annualized crop loss due to hail, heavy rain, and lightning events.
- As average annual precipitation is expected to increase, these events are likely to increase as well.
- Climate change is expected to increase atmospheric rivers in California, increasing heavy rain events.
- **Related Hazards** - Flooding, Landslide

JURISDICTION	GEOGRAPHIC AREA	PROBABILITY OF FUTURE OCCURRENCE	MAGNITUDE/ SEVERITY	OVERALL SIGNIFICANCE	PRIORITY HAZARD?
Kings County	Extensive	Highly Likely	Critical	Medium	Yes
City of Avenal	Extensive	Highly Likely	Critical	Medium	Yes
City of Corcoran	Extensive	Highly Likely	Critical	Medium	Yes
City of Hanford	Extensive	Highly Likely	Critical	Medium	Yes
City of Lemoore	Extensive	Highly Likely	Critical	Medium	Yes

4.5.14 SEVERE WEATHER: HIGH WIND/TORNADO

4.5.14.1 Hazard Description

High winds, often accompanying severe thunderstorms, can cause significant property and crop damage, threaten public safety, and have adverse economic impacts from business closures and power loss. Straight-line winds are generally any thunderstorm wind that is not associated with rotation (i.e., is not a tornado). It is these winds, which can exceed 100 mph that represent the most common type of severe weather and are responsible for most wind damage related to thunderstorms. These winds can overturn mobile homes, tear roofs off houses, topple trees, snap power lines, shatter windows, and sandblast paint from cars. Other associated hazards include utility outages, arcing power lines, debris blocking streets, dust storms, and an occasional structure fire.

For this hazard, three different classifications of windstorms were analyzed: high winds, strong winds, and thunderstorm winds. The most significant distinction between high winds and thunderstorm winds in the NCEI dataset is that high winds are most frequently reported in the winter months (December, January, and February) and are recorded on a zonal scale, whereas thunderstorm winds are most reported in the summer months (June, July, and August) and recorded on a local county or city scale. Strong winds are another type of windstorm, which originates from thunderstorms and are any wind exceeding 58 mph. Despite these differences, the wind speeds and associated impacts from these winds are comparable.

Tornadoes are another severe weather hazard that can affect the Kings County Planning Area. Tornadoes form when cool, dry air sits on top of warm, moist air. Tornadoes are rotating columns of air marked by a funnel-shaped downward extension of a cumulonimbus cloud whirling at destructive speeds of up to 300 mph, usually accompanying a thunderstorm. Tornadoes are the most powerful storms that exist. They can have the same pressure differential that fuels 300-mile-wide hurricanes across a path only 300-yards wide or less.

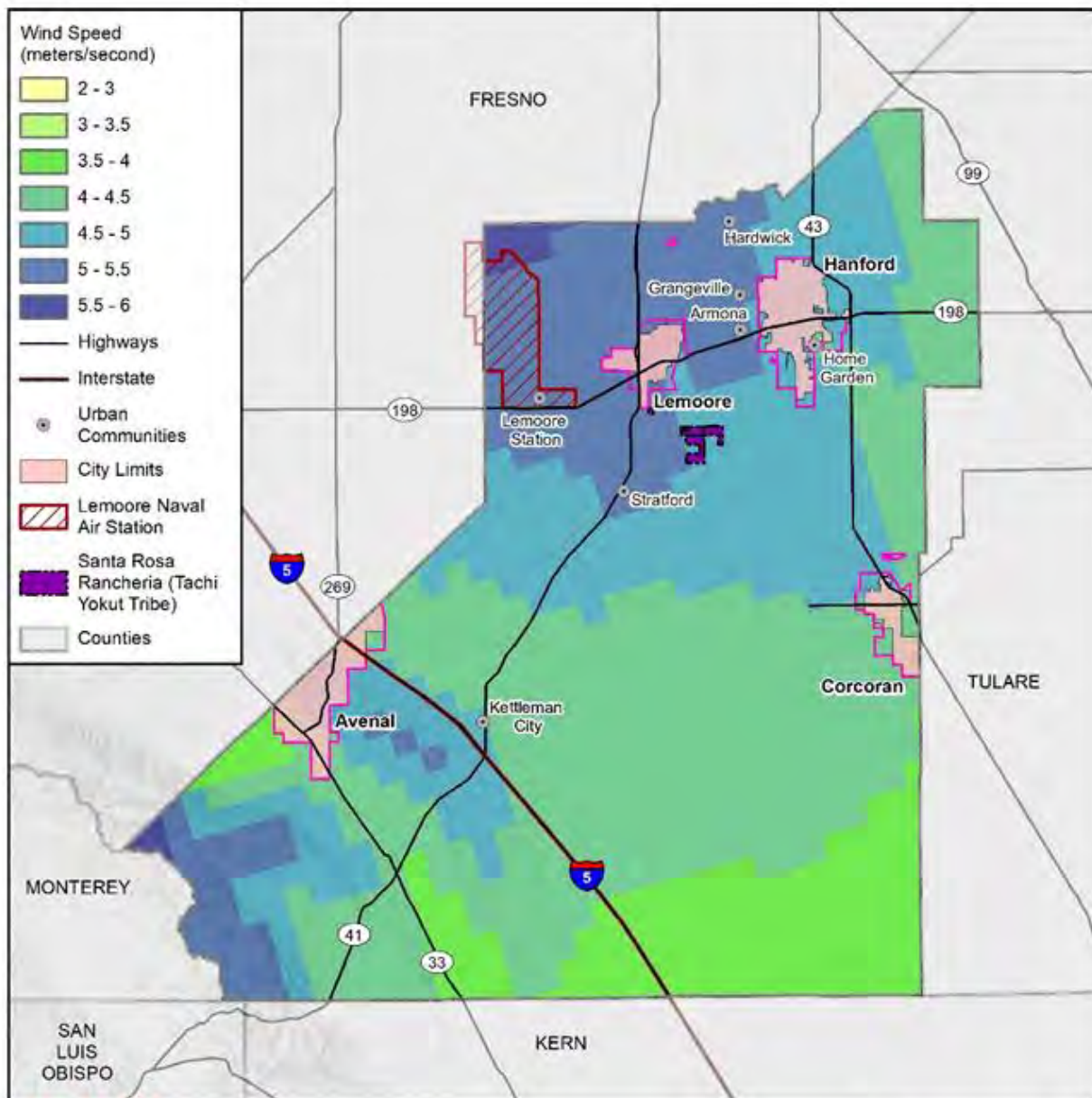
4.5.14.2 Geographic Area

Extensive - Wind and tornadoes have the potential to happen anywhere in the County. The resulting damage from wind and tornado events may be most severe in the downtown areas of incorporated communities where there are more large trees, infrastructure, and higher-density development.

The National Renewable Energy Laboratory (NREL) collects data on wind resources in the U.S. to help determine the location of new wind energy sites. Figure 4-47 from the NREL Wind Prospector Web viewer shows the average annual wind speed in Kings County at the height of 100 meters. The majority portions of the County have average wind speeds between 3.5 meters/second (7.8 miles/hour) and 5 meters/second (11.2 miles/hour). The southwestern and northwestern portions of the County, however, have relatively high average wind speeds – between 5 meters/second (11.2 miles/hour) and 6 meters/second (13.4 miles/hour).

As noted in the County's 2012 MJHMP, based on National Climate Data Center (NCC) data, tornado behavior, tornadoes are more likely to hit the flatter, lower elevations of Kings County and are more common in the eastern parts of the County around Hanford, Lemoore, and Corcoran.

Figure 4-47 Kings County Average Annual Wind Speed at 100 meters



Map compiled 1/2023;
Intended for planning purposes only.
Data Source: Kings County,
National Renewable Energy Laboratory

0 5 10 Miles



Source: NREL Wind Prospector



4.5.14.3 Past Occurrences

During the rainy season, the Kings Planning Area is prone to relatively strong thunderstorms, sometimes accompanied by high winds and tornadoes. While tornadoes do occur occasionally, most often they are of FO/EF0 intensity. The NCEI Storm Events Database does not record any tornado events that had a magnitude higher than F2 or EF1 in the Planning Area in the past. Table 4-81 shows the details of the most significant historic events recorded in NCEI, followed by additional descriptions of these events. In addition to the events listed in the NCEI database, there were three USDA disaster designations declared for the County that were related to high wind (and rain) in 2016 and 2017 (twice in 2017).

Table 4-81 Past High Wind and Tornado Events in Kings County, 1950-2021

HAZARD TYPE	DATE	LOCATION	MAGNITUDE	PROPERTY DAMAGES (\$)	CROP DAMAGES (\$)	DEATHS	INJURIES
Tornado	4/5/1980	Countywide	F2	\$250,000	\$0	0	1
Tornado	11/12/1996	Lemoore	F1	\$250,000	\$0	0	0
High Wind	2/3/2000	Countywide	-	\$100,000	\$0	1	4
High Wind	3/4/2001	Countywide	-	\$250,000	\$0	0	0
High Wind	10/13/2009	Countywide	-	\$250,000	\$0	0	0

Source: NCEI Storm Events Database

April 5, 1980: This F2 tornado event results in \$250,000 of property damage and 1 injury.

November 22, 1996: The tornado event caused substantial damage to the Lemoore Naval Air Station administrative section but no injuries occurred. Damage included roof removal of the base recycling center, wind damage to roofs on several administrative structures, powerlines and poles, and fixed structures (static display aircraft). This F1 tornado event results in \$250,000 of property damage.

February 3, 2000: Infrequent gusty wind occurred in Central California. Tehachapi and Frazier Park in the Kern County Mountains reported gusts of 45 knots. Bakersfield (Kern County) had gusts to 36 knots (41 miles/hour) and Lemoore had sustained wind at 21 knots (24 miles/hour) on the South San Joaquin Valley floor. Over 4,500 power company customers in the South San Joaquin Valley lost power due to downed, along with several weather-related vehicle accidents. This event resulted in 1 death, 4 injuries and \$100,000 of property damage.

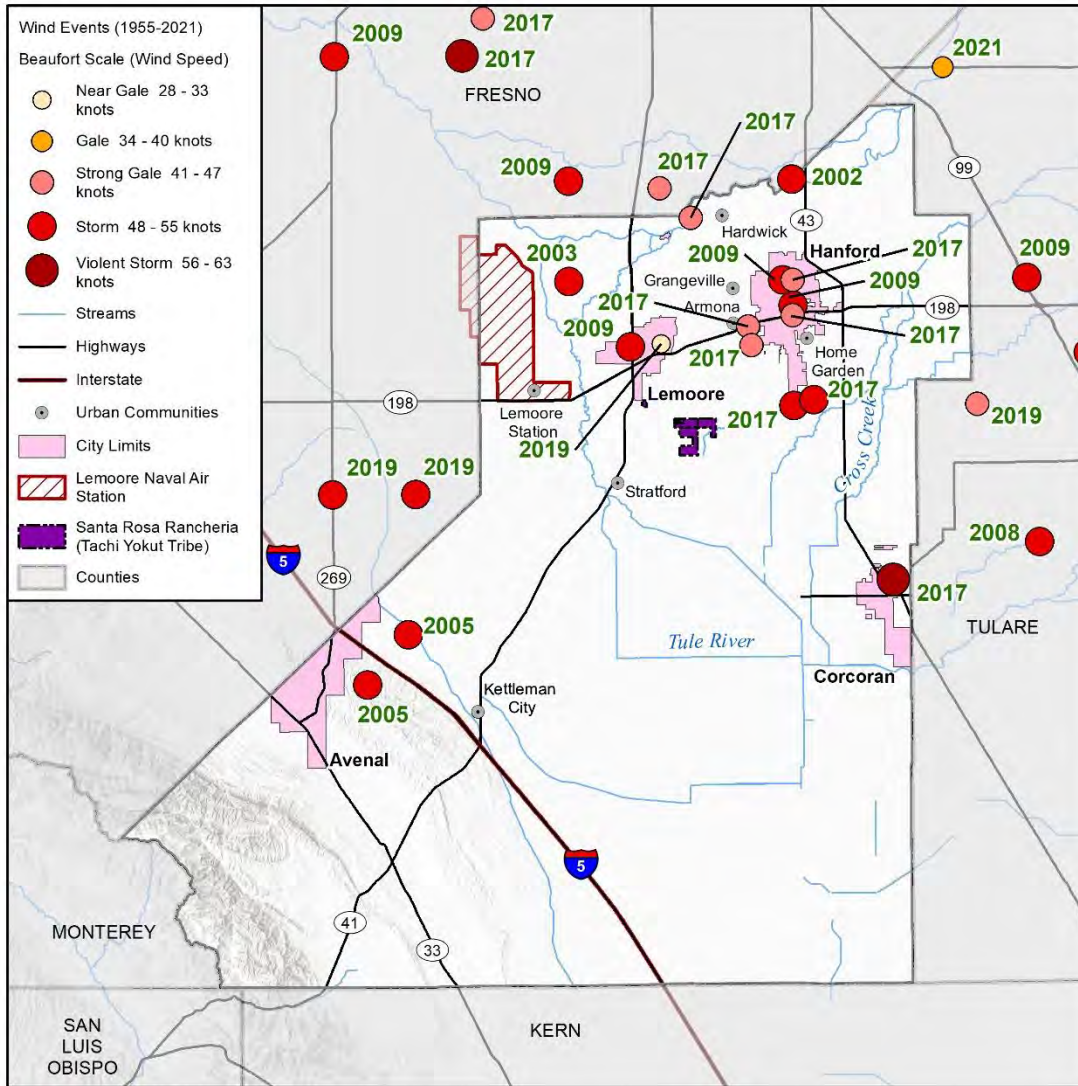
March 4, 2001: Strong southeast wind flow ripped through Interior California with various degrees of damage reported on the San Joaquin Valley floor to small structures and agriculture in addition to the damage in the Kern Mountains from strong wind around Frazier Park, Lebec, and Fort Tejon. Local utility companies reported more than 53 power poles downed and a dozen 70,000-volt power lines on the Southern San Joaquin Valley floor and in the Kern Mountains causing a power loss to at least 15,000 customers. Wind speed of 83 miles/hour was reported 5 miles east of Tehachapi (Kern County) with 55 miles/hour wind in Tehachapi Valley itself. This event resulted in \$250,000 property damage.

October 13, 2009: This high wind event came with a heavy precipitation event through the Southern San Joaquin Valley. High wind gusts toppled trees, downed utility lines, and created areas of blowing dust with near-zero visibility. Gusts to 60 mph developed at the south end of the San Joaquin Valley near the base of the Grapevine (Kern County). This event resulted in \$250,000 property damage.

Figure 4-48 and Figure 4-49 show the locations of the past wind and tornado events in Kings County based on data from NOAA's NWS Storm Prediction Center.



Figure 4-48 High Wind Events in Kings County, 1955 -2021



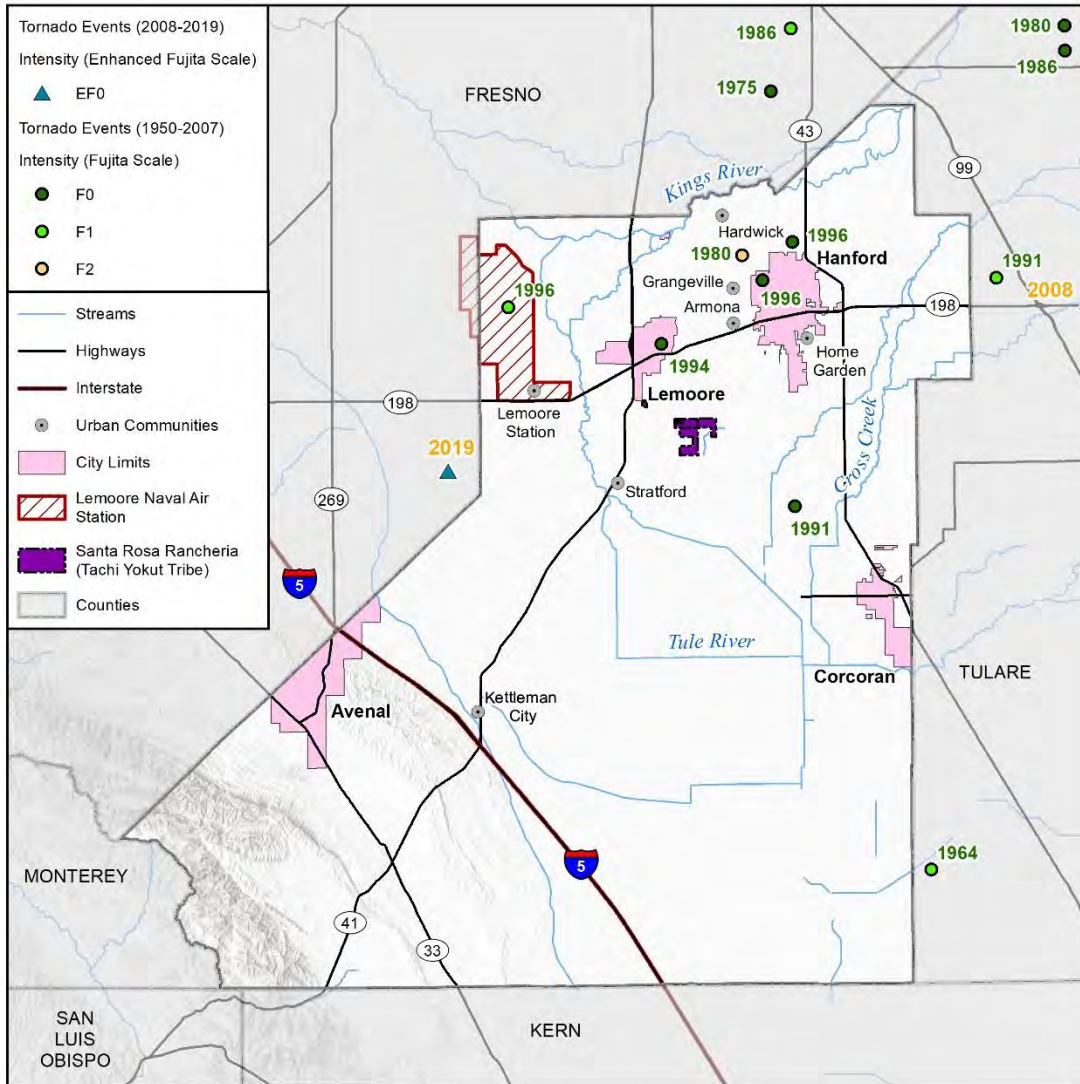
Map compiled 10/2022;
Intended for planning purposes only.
Data Source: Kings County, NOAA
National Weather Service SVRGIS 2021

0 5 10 Miles





Figure 4-49 Tornado Events in Kings County, 1950 -2019



Map compiled 10/2022;
Intended for planning purposes only.
Data Source: Kings County, NOAA
National Weather Service SVRGIS 2021

0 5 10 Miles





4.5.14.4 Likelihood of Future Occurrence

Highly Likely - 139 high wind and tornado events have occurred in Kings County over 73 years of recordkeeping, which equates to almost two high wind or tornado event on an annual basis. Historical wind activity within the Planning Area indicates the County will likely continue to experience high wind during thunderstorm events with the potential of the formation of funnel clouds and low-intensity tornadoes during adverse weather conditions. The actual risk to the County is dependent on the nature and location of any given thunderstorm or tornado event.

Moreover, ongoing research has resulted in different conclusions on the effect of climate change on wind regimes. For other types of extreme weather events, such as tornadoes and severe thunderstorms, more research is also needed to understand how climate change will affect them. Refer to the Climate Change Considerations subsection below for more details on climate change's impact on fog events.

4.5.14.5 Climate Change Considerations

Studies referenced in California's Fourth Climate Assessment indicated that extreme fire weather, particularly in the form of hot and dry winds, can strongly influence shrub-land fire regimes. Strong winds have also been now associated with severe forest fires in California meaning climate change impacts on wind patterns may also affect forest health and wildfire susceptibility. However, ongoing research compiled in the recent climate assessment has resulted in different conclusions on the effect of climate change on wind regimes. The August 2021 IPCC report argues that in most places, wind speeds will be drastically reduced because of climate change, whereas in 2019, Scientific American reported that winds across the world were speeding up. The Maine Monitor suggests that a lack of wind can increase wildfire risks and aggravate drought. Unusual wind patterns combined with other climate change issues, such as hotter water temperatures, can also cause problems. At this time, these changing factors are not well understood and are still being incorporated into state and regional research and risk analysis. Hopefully, soon, scientists will be able to find a solution for the rapidly changing wind patterns (Garrison 2022).

For other types of extreme weather events, such as tornadoes and severe thunderstorms, more research is also needed to understand how climate change will affect them. These events occur over much smaller scales, which makes observations and modeling more challenging. Projecting the future influence of climate change on these events can also be complicated by the fact that some of the risk factors for these events may increase with climate change, while others may decrease, like the complexity of predicting future wind patterns, which is mentioned above. Even though some studies predict that climate change could provide the opportunity for more severe thunderstorms to form, this does not necessarily mean that more tornadoes will occur, given that only about 20% of supercell thunderstorms produce tornadoes. The fourth National Climate Assessment summarizes the complicated relationship between tornadoes and climate change: "...extreme weather, such as tornadoes, are also exhibiting changes which may be linked to climate change, but scientific understanding isn't detailed enough to project direction and magnitude of future change" (NatGeo 2022).

4.5.14.6 Magnitude and Severity

Critical - High winds and tornadoes can cause damage to property and loss of life. While most tornado damage is caused by violent winds, most injuries and deaths result from flying debris. Property damage can include damage to buildings, fallen trees and power lines, broken gas lines, broken sewer and water mains, and the outbreak of fires. Crops and industries may also be damaged or destroyed. Access roads and streets may be blocked by debris, delaying the necessary emergency response.

In 2007, the NWS began rating tornadoes using the Enhanced Fujita Scale (EF-scale). The EF-scale is a set of wind estimates (not measurements) based on damage. It uses three-second gusts estimated at the point of damage based on a judgment of eight levels of damage to the 28 indicators. These estimates vary with height and exposure. Standard measurements are taken by weather stations in open exposures. Table 4-82 describes the EF-scale ratings versus the previous Fujita Scale used prior to 2007 (NOAA n.d.).

Table 4-82 The Fujita Scale and Enhanced Fujita Scale

FUJITA SCALE			DERIVED		OPERATIONAL EF-SCALE	
F NUMBER	FASTEST ¼ MILE (MPH)	3-SECOND GUST (MPH)	EF NUMBER	3-SECOND GUST (MPH)	EF NUMBER	3-SECOND GUSTS (MPH)
0	40-72	45-78	0	65-85	0	65-85
1	73-112	79-117	1	86-109	1	86-110
2	113-157	118-161	2	110-137	2	111-135
3	158-207	162-209	3	138-167	3	136-165



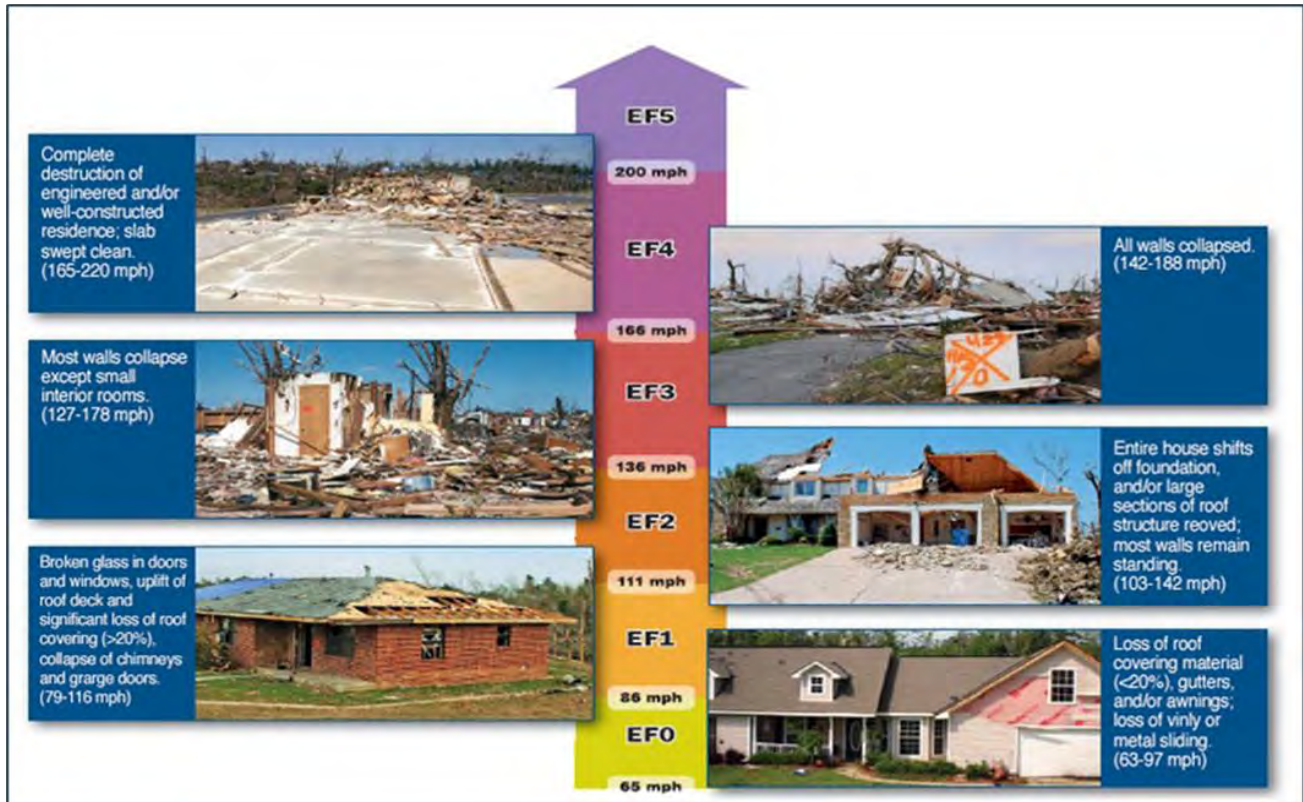
4	208-260	210-261	4	168-199	4	166-200
5	261-318	262-317	5	200-234	5	Over 200

Source: NWS.

Notes: EF - Enhanced Fujita F - Fujita mph - Miles per Hour

Figure 4-50 illustrates the potential impact and damage from a tornado.

Figure 4-50 Potential Impact and Damage from a Tornado



Source: NOAA NWS, Storm Prediction Center

The damaging effects of wind speed are measured using the Beaufort Wind Scale as shown in Table 4-83 below. This scale only reflects land-based effects and does not take into consideration the effects of wind over water.

Table 4-83 Beaufort Wind Scale

WIND SPEED (MPH)	DESCRIPTION - VISIBLE CONDITION
0	Calm; smoke rises vertically
1-4	Light air; direction of wind shown by smoke but not by wind vanes
4-7	Light breeze; wind felt on face; leaves rustle; ordinary wind vane moved by wind
8-12	Gentle breeze; leaves and small twigs in constant motion; wind extends light flag
13-18	Moderate breeze; raises dust and loose paper; small branches are moved
19-24	Fresh breeze; small trees in leaf begin to sway; crested wavelets form on inland water
25-31	Strong breeze; large branches in motion; telephone wires whistle; umbrellas used with difficulty
32-38	Moderate gale whole trees in motion; inconvenience in walking against wind
39-46	Fresh gale breaks twigs off trees; generally, impedes progress
47-54	Strong gale slight structural damage occurs; chimney pots and slates removed
55-63	Whole gale trees uprooted; considerable structural damage occurs
64-72	Storm very rarely experienced; accompanied by widespread damage
73+	Hurricane devastation occurs

Source: NWS



Based on NCEI records between 1955 and 2022 there have been a combined 116 strong wind/high wind/thunderstorm winds and 23 tornado/funnel cloud events in Kings County, which have resulted in a total of \$6,946,250 in property damage and \$4,420,000 in crop damage. The most damaging event took place on January 4, 2008. The first major winter storm of the new year arrived on the 4th and brought heavy rain to the San Joaquin Valley. Very strong winds developed on the west side of the San Joaquin Valley with this storm. The strongest winds occurred in Avenal, where roofs were damaged, trees toppled and two glider planes lifted off the tarmac and flipped over at the local airport. Based on surveys of the sustained property damage, top winds were estimated at 70-75 mph. This high wind event was caused by an increase in local winds due to a combination of strong large-scale winds (synoptic winds due to the Pacific storm pattern) and the interaction of the nearby Coastal Mountain range. Two direct injuries also occurred in Avenal during the wind event. According to the NCEI database, this wind event resulted in \$4,500,000 of property damages. Overall, high wind event impacts would likely be limited, with a majority of impacts being related to property damages caused by downed trees as well as power outages.

In the past 73 years, all the tornado events that have taken place in Kings County have been between FO-F1 or EF0 tornadoes. There was only one F2 tornado incident that happened in the year 1980. However, it should be noted that, although unlikely, larger tornadoes could occur. Should the County be hit by an EF-3 or higher tornado, it can be extrapolated that because of its relative size and the potential size and length of a tornado's path, a significant portion of the County could be impacted, resulting in property and crop damage and loss of life. The F2 tornado event that happened on April 5, 1980, resulted in \$250,000 of property damage and one injury. A worse tornado event could result in more severe damage.

Tornado impacts to the County would likely be negligible, with less than 10 percent of the Planning Area affected by events in the EF0-2 range, though stronger tornadoes are possible. The impact on quality of life or critical facilities and functions in the affected area would depend on where the tornado occurred. Injuries or deaths are possible due to wind-thrown trees or property damage caused by wind events. Overall, impacts from high wind and tornado events would likely be negligible, with less than 10 percent of property severely damaged and shutdown of facilities due to loss of power for 24 hours or less.

4.5.14.7 Vulnerability Assessment

Property

General damages are both direct (what the wind event physically destroys) and indirect, which focuses on additional costs, damages and losses attributed to secondary hazards spawned by the event, or due to the damages caused by the wind event. Depending on the magnitude of the wind events as well as the size of the tornado and its path, a tornado is capable of damaging and eventually destroying almost anything. Construction practices and building codes can help maximize the resistance of the structures to damage.

Secondary impacts of damage caused by wind events often result from damage to infrastructure. Downed power and communications transmission lines, coupled with disruptions to transportation infrastructure, create difficulties in reporting and responding to emergencies. These indirect impacts of a wind event put tremendous strain on a community. In the immediate aftermath, the focus is on emergency services.

Downed trees caused by a wind event are a common occurrence in the County. Falling trees can cause significant damage to property and put people at risk. Due to multiple years of drought in the County, many trees in the area have been impacted, making them more susceptible to blow-down during wind events.

People

Community members are the most vulnerable to high wind and tornado events. The availability of sheltered locations such as basements, buildings constructed using tornado-resistant materials and methods, and public storm shelters, all reduce the exposure of the population. However, there are also segments of the population that are especially exposed to the indirect impacts of high winds and



tornadoes, particularly the loss of electrical power. According to the data obtained from emPOWER.com, a website maintained by the U.S. Department of Health and Human Services (DHHS), 5.8%, or 1,049 of the 18,207 Medicare beneficiaries in the County rely on medical equipment that is dependent on electricity to live independently. These at-risk populations include the elderly or disabled, especially those with medical needs and treatments dependent on electricity. Nursing homes, community-based residential facilities, special needs housing facilities, and isolated communities are also vulnerable. Life support needs can be threatened when electrical outages are prolonged since backup power generally operates only with minimal functions for a short period of time.

Following the unprecedented 2018 wildfire season in California, Pacific Gas & Electric (PG&E) announced it will be conducting PSPS when there are high winds and dry conditions and generally a heightened fire risk forecasted. The outages could last several days, and PG&E has suggested customers be prepared for outages that could last longer than 48 hours. A majority of Kings County could be affected by the power outages, and many members of the public expressed these concerns in the County's public survey for the MJHMP (see Appendix G). In addition to PG&E, Southern California Edison (SCE) also provides power to Kings County residents. According to SCE's official website, their service territories within Kings County are not designated as high fire threat areas or have a very low wildfire risk. Despite the low risk, SCE has been implementing its own Wildfire Response Plan, which outlines a range of activities and actions to help SCE prevent and respond to the increasing risk of wildfires, including a PSPS Protocol. PSPS is mentioned on SCE's website. SCE also has 24-hour hotlines for customers to call and report power outage events. In addition, SCE keeps an online platform where customers can check out current outage information, including the estimate on when the power will return. In summary, severe wind events that result in PSPS events are likely to have the greatest impact on those communities that are socially vulnerable due to income levels or lack of accessibility and those that rely on electricity-dependent medical equipment.

PUBLIC SAFETY POWER SHUTOFF

High winds can cause trees or debris to damage electric lines and cause wildfires. As a result, utility providers may need to turn off power during severe weather events – high wind & other events that could increase wildfire risk. This is called a Public Safety Power Shutoff. In 2020, state-funded PSPS grant program was changed to “Community Power Resiliency”, which will continue to support critical services vulnerable to power outage events, including schools, county election offices, and food storage reserves.

Critical Facilities and Infrastructure

Both winds and tornadoes may impact exposed critical infrastructure such as power lines; depending on the impact and the function, this could cause a short-term economic disruption. The most common problems associated with tornadoes and high winds are loss of utilities. Downed power lines can cause power outages, leaving large parts of the County isolated, and without electricity, water, and communication. Damage may also limit timely emergency response and the number of evacuation routes. Downed electrical lines following a storm can also increase the potential for lethal electrical shock. Damaging winds can also cause wildfires.

Most structures, including the County's critical facilities, should be able to withstand and provide adequate protection from severe wind and tornadoes. Those facilities with backup generators should be fully equipped to handle severe wind and tornado events should the power go out. The impact of high wind on responders is similar to that of the general public. In the event of a tornado, there may be localized impacts on response personnel. Impacts on transportation corridors and communications lines affect first responders' ability to respond effectively. To maintain public confidence, jurisdictions must continue to adhere to building codes and facilitate new development that is built to the highest design standards to account for heavy winds and tornado winds.

On June 26, 2020, California Governor Gavin Newsom and the State Legislature approved the Fiscal Year 2020-2021 State Budget, which included a \$50 million one-time General Fund appropriation to support State and local government efforts to mitigate the impacts of the investment-owned utility use of PSPS. In 2020, the name of the PSPS program was changed to “Community Power Resiliency”. Building on the previous year's investments, the resiliency program will support critical services vulnerable to power outage events, including schools, county election offices, and food storage reserves.

According to the FY 2020-21 Community Power Resiliency Legislative Report by Cal OES, the City of Avenal received \$100,000 in funding to purchase a generator to enhance the resiliency of the Avenal Veteran's Hall against power outages. This facility also supported the resiliency areas of food storage



reserves and COVID-19 testing. The City of Corcoran received \$300,000 in funding to purchase a portable generator and transfer switches to enhance the resiliency of groundwater wells against power outages. The City of Corcoran’s action was highlighted in the report as in June 2021, the City utilized the generator when power was lost at a well site. The generator quickly restored power to the site, giving fire and paramedic stations access to clean water. In addition, Kings County received \$94,826 in funding to purchase generator connections to enhance the resiliency of evacuation points against power outages.

Economy

Winds typically do not have long-term impacts on the economy, although wind does have an impact on the agriculture economy in the County. As shown in Table 4-84, wind events have been a leading cause of crop loss in the past 15 years (2007 - 2021), resulting in over \$1.2 million in loss payments from the USDA and almost 2,905 acres lost to high wind events. Kings County experiences an estimated \$82,313 annualized loss due to crop damages from excessive wind events.

Table 4-84 Crops Loss Due to High Wind, RMA Crop Indemnity Reports, 2007-2021

YEAR	NET DETERMINED ACRES	INDEMNITY AMOUNT
2007	273.7	\$117,514
2008	1,552	\$322,529
2009	326.3	\$131,145
2010	18.8	\$8,742
2011	-	-
2012	147.1	\$3,555
2013	321.5	\$101,829
2014	-	-
2015	42	\$61,320
2016	89.6	\$187,826
2017	68.9	\$166,889
2019	0.75	\$588.5
2020	-	-
2021	64.3	\$82,759
Total	2,904.8	\$1,234,698

Source: USDA RMA

Cultural, Historic and Natural Resources

High winds and tornadoes can cause massive damage to the natural environment, uprooting trees and other debris. This is part of a natural process, however, and the environment will return to its original state in time.

Development Trends

As the County continues to increase in population, the number of people and housing developments exposed to the hazard increases. Adherence to current building codes, coupled with proper education on building techniques and the use of sturdy building materials, attached foundations, and other structural techniques may minimize property vulnerabilities. Public shelters at parks and open spaces may help reduce the impacts of tornadoes and high wind events on the recreational populations exposed to storms.

4.5.14.8 Risk Summary

- Between 1950 and 2021 there were a combined 139 high wind (116) and tornado (23) events.
- Wind and tornado events have resulted in \$6,946,250 in property damages. The most damaging event took place on January 4, 2008, with wind ranging from 70 to 75 mph causing two injuries and \$4,500,000 in property damages.
- Excessive wind has caused 2,904.8 acres to be lost and \$1,234,698 crop loss payment made by the USDA to farmers in the County.
- PSPS poses a risk to individuals in the County who depend on electricity to live independently. Six percent of Medicare Beneficiaries in the County are electricity dependent.
- **Related Hazards** – Extreme heat, Heavy Rain, Agriculture/Pest and Crop Disease, Wildfire



JURISDICTION	GEOGRAPHIC AREA	PROBABILITY OF FUTURE OCCURRENCE	MAGNITUDE/ SEVERITY	OVERALL SIGNIFICANCE	PRIORITY HAZARD?
Kings County	Extensive	Highly Likely	Critical	Medium	Yes
City of Avenal	Extensive	Highly Likely	Critical	Medium	Yes
City of Corcoran	Extensive	Highly Likely	Critical	Medium	Yes
City of Hanford	Extensive	Highly Likely	Critical	Medium	Yes
City of Lemoore	Extensive	Highly Likely	Critical	Medium	Yes

4.5.15 WILDFIRE

4.5.15.1 Hazard Description

A wildfire is an uncontrolled fire spreading through vegetative fuels, such as grasslands, brush, or woodlands, and posing danger and destruction to property and watersheds. Generally, three major factors sustain wildfires and predict a given area’s potential to burn. These factors are fuel, topography, and weather.

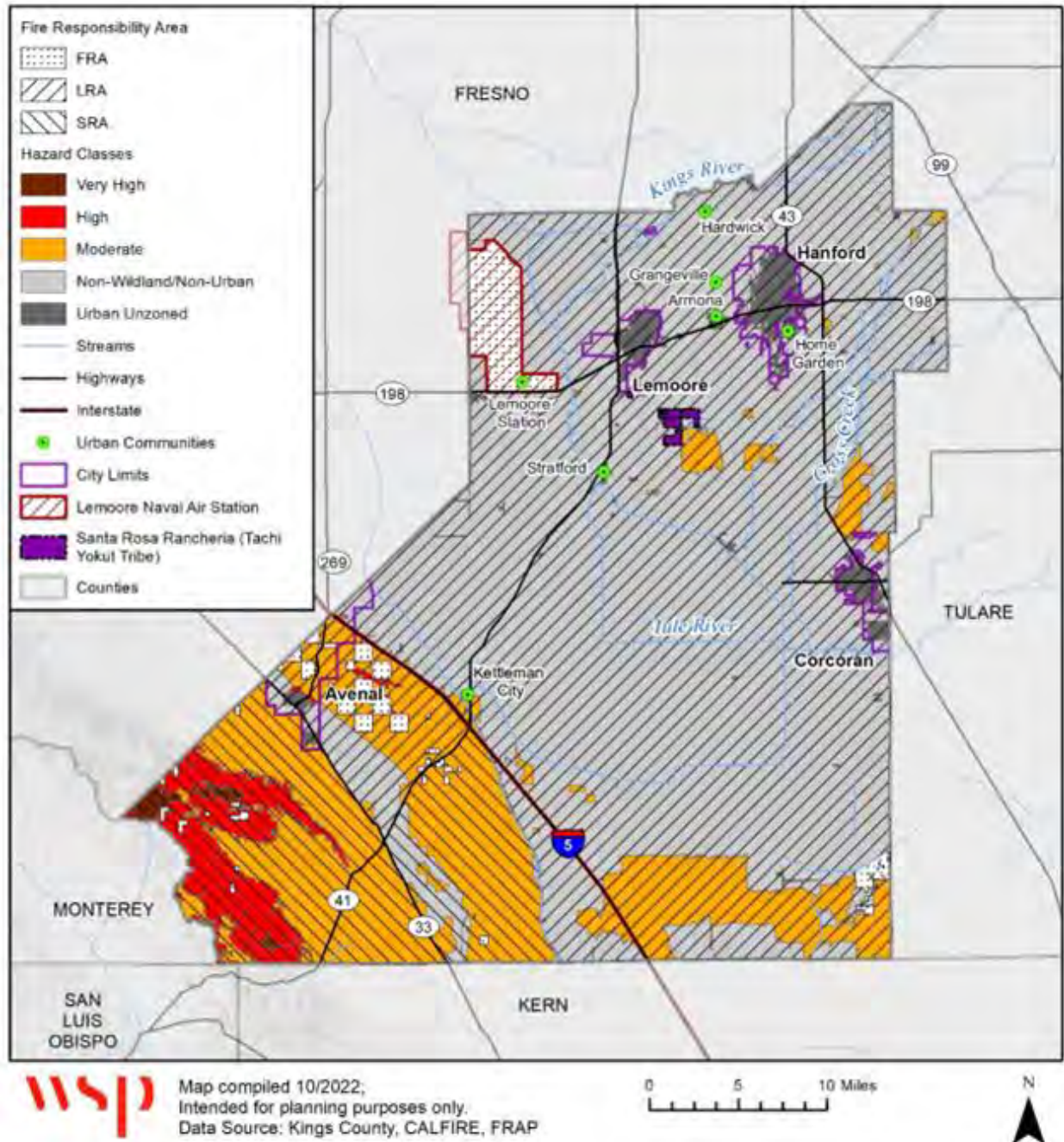
- **Fuel** – Fuel is the material that feeds fire and is a key factor in wildfire behavior. Fuel is generally classified by type and by volume. Fuel sources are diverse and include everything from dead tree leaves, twigs, and branches to dead standing trees, live trees, brush, and cured grasses. Manmade structures are also considered as a fuel source, such as homes and other associated combustibles. The type of prevalent fuel directly influences the behavior of wildfire. Fuel is the only factor that can be modified by humans.
- **Topography** – An area’s terrain and slope affect its susceptibility to wildfire spread. Both fire intensity and rate of spread increase as slope increases due to the tendency of heat from a fire to rise via convection. The arrangement and types of vegetation throughout a hillside can also contribute to increased fire activity on slopes.
- **Weather** – Weather components such as temperature, relative humidity, wind, and lightning affect the potential for wildfire. High temperatures and low relative humidity dry out fuels that feed wildfires, creating a situation where fuel will more readily ignite and burn more intensely. Thus, during periods of drought, the threat of wildfire increases. Wind is the most influential weather factor of the three and its influence can increase rates of spread regardless of temperature and relative humidity.

Wildfires can occur in areas essentially void of development, or in areas where development intermingles with the natural area known as the wildland-urban interface (WUI), a general term that applies to development adjacent to landscapes that support wildfire. Many wildfires occur in locations that abound in grasslands and brush. While wildfires are often the direct result of lightning strikes, they can be caused by downed powerlines or mechanical equipment or as the result of human activities like landscape debris burns, carelessness, or arson. Wildfires often start in undeveloped areas and public land areas, such as state and federal lands, but can spread to urban areas where structures and other human development are more concentrated. The predominant dangers from wildfires are injury or loss of life to people in the affected area and the destruction of vegetation, property, and wildlife.

Communities throughout California are increasingly concerned about wildfire safety as increased development in the foothills and mountain areas and subsequent fire control practices have affected the natural cycle of the ecosystem. Wildfire risk is predominantly associated with WUI areas. However, significant wildfires can also occur in heavily populated areas, although urbanized and developed areas that are not contiguous with vast areas of wildlands are typically considered safer from wildfires.

The County is exposed to a variety of wildfire hazard conditions that vary based on fuels, topography, weather, and human behavior. CAL FIRE, as required by Government Code Section 51181, has undertaken a statewide program to map areas of potential wildfire severity, and to describe the potential for wildfires to occur in a given area; the resulting Fire Hazard Severity Zones (FHSZs) adopted in November 2007 for the State Responsibility Areas (SRA) and adopted in September 2007 for the Local Responsibility Area (LRA) are shown in Figure 4-51 below.

Figure 4-51 Kings County Federal, State, and Local Responsibility Severity Zones



4.5.15.2 Geographic Area

Significant - CAL FIRE has ranked fuel loading as low in most of the County, where crops and grasses are the primary sources of fuel. However, in the southwest corner, there are moderate fuel hazards from brush, pine, and grass, specifically in the area west of Interstate 5 and north of Highway 41.

The County is mostly flat, with a slight slope towards the topographic low point in the Tulare Lake Basin, which minimizes the fire risk for most of the county. However, elevations in the southwestern part of the County range from 500 feet at the Kettleman Plains to almost 3,500 feet at Table Mountain, creating a more varied terrain with a higher fire hazard in the steeply sloped areas of this region.



4.5.15.3 Past Occurrences

There have been no state or federal disaster declarations in Kings County due to wildfire. The 2012 Kings County MJHMP noted that although there are many fire starts, the fuels are “flashy,” and most fires are quickly put out. Except for the Braley-Jones Ranch fire in 1951 near Stratford, all mapped fires have occurred west of Interstate 5. The largest was the Garza fire in 2017, which burned over 48,000 acres along the west side of Interstate 5, southwest of Avenal. See Table 4-85 and Figure 4-52 for the history of fires named by CAL FIRE in Kings County.

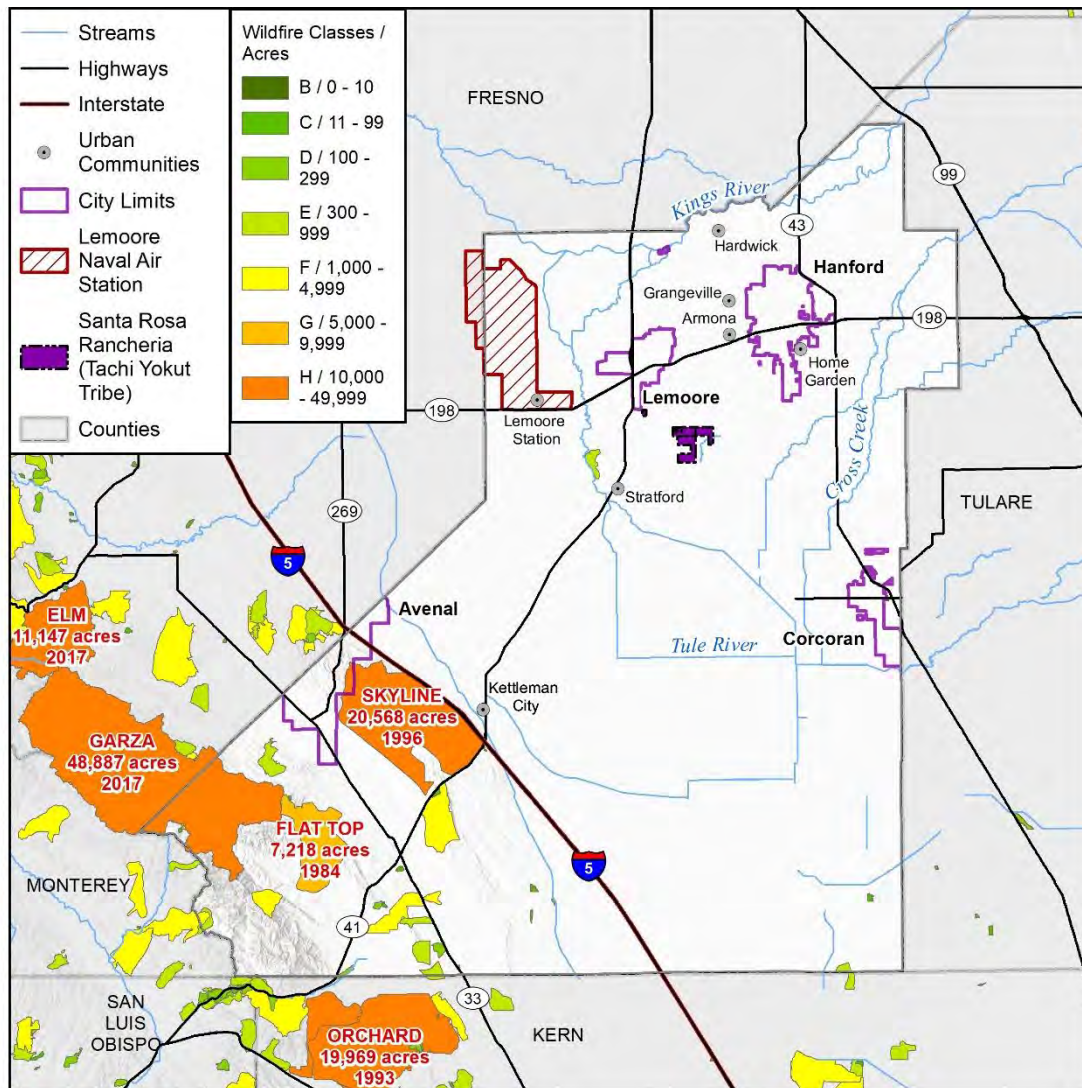
Table 4-85 Fire History in Kings County, 1950 - 2021

DATE	NAME OF FIRE	ACRES BURNED
06/04/1951	Braley-Jones Ranch	468
09/22/1968	Hughs	776
07/30/1969	Avenal Canyon	983
05/22/1979	Pyramid Hills	693
07/01/1979	State of California #32	2,292
05/25/1984	Flat Top	7,218
06/03/1989	Cal Oil	492
06/12/1994	York	1,012
09/04/1995	Tar	126
09/08/1995	Pyramid	397
04/27/1996	Skyline	20,567
05/01/1996	Hwy 41	3,198
08/13/1999	33	243
08/27/2001	Taylor	26
08/10/2007	Tar	5,644
8/19/2008	Avenal	946
07/09/2017	Garza	48,660
05/03/2020	Interstate 5	2,060
10/11/2021	Kettle	447

Source: Cal Fire Redbooks



Figure 4-52 Fire History in Kings County, 1950 - 2021



Map compiled 10/2022;
Intended for planning purposes only.
Data Source: Kings County, CALFIRE, FRAP

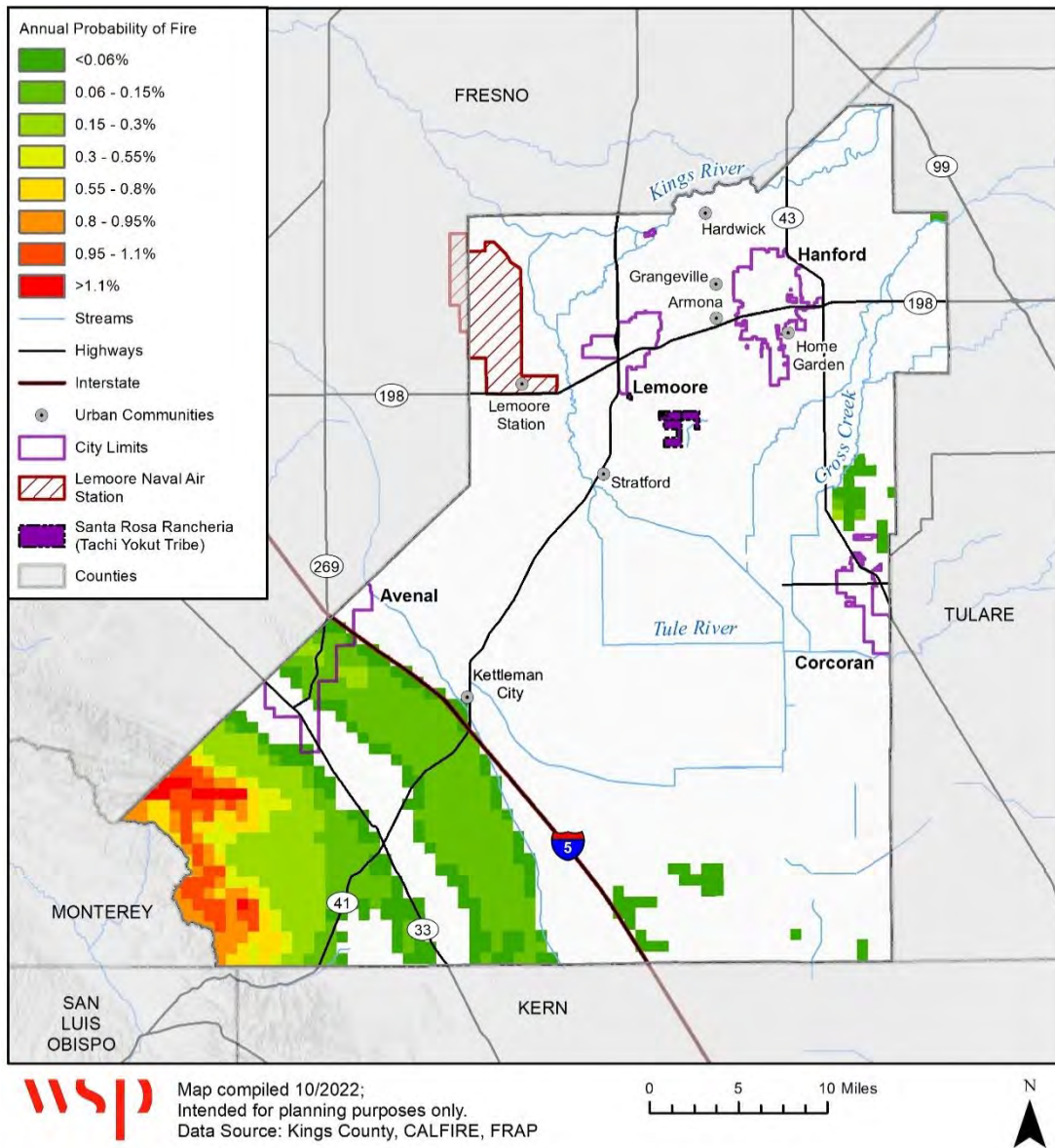
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4.5.15.4 Likelihood of Occurrence

Occasional – Fire starts are highly likely during each fire season, although they rarely result in large-scale wildfires in Kings County. Based on the recent fire history (2016-2021), there is a 60% chance that a fire will occur during any given year. Figure 4-53 shows the annual probability for wildfire in Kings County from 2023 - 2050, based on Cal FIRE data.

Figure 4-53 Kings County Annual Probability of Fire, 2023 - 2050

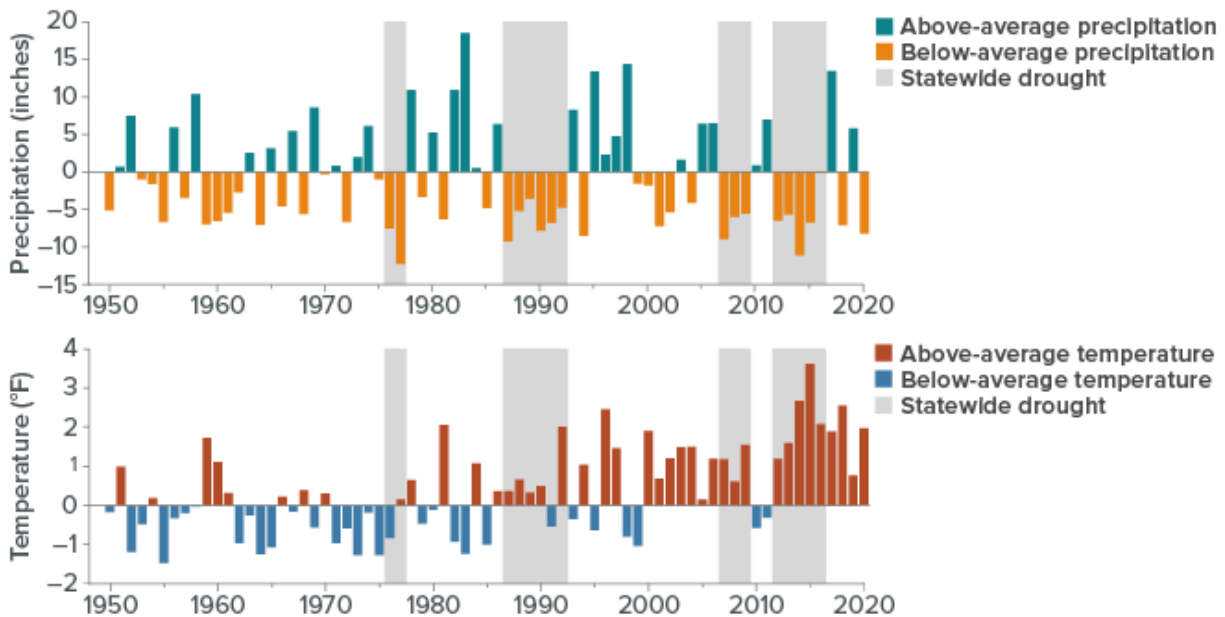


4.5.15.5 Climate Change Considerations

According to the 2018 California SHMP, climate change has the potential to impact the frequency, size, and severity of wildfire hazards statewide. Increasing temperatures and decreased precipitation statewide, as shown in Figure 4-54, may intensify wildfire threat and susceptibility to more frequent wildfires in the County.

Exactly how climate change will affect total precipitation is not clear, but models suggest that there is a tendency for wetter conditions in the northern part of the State and drier conditions in the south (CNRA 2018a). What is clear is that California is becoming exceptionally warm and dry, as evidenced by the 2012-2016 drought, the hottest drought in the State's recorded history (Mount et al, 2021). Forests in the State were weakened by this drought, which made them more susceptible to pests and pathogens and contributed to widespread tree mortality, creating an abundance of kindling for fire (CNRA 2018).

Figure 4-54 Average Statewide Precipitation and Temperature Patterns, 1950 - 2020



Source: Mount et al, WRCC, DWR

Current scientific models expect all of California will be affected by increased numbers of forest fires with added intensity due to longer warmer seasons, reduced distribution of biodiversity, lack of moisture, changes in ecosystems, drought impacts (e.g. pest diseases and continued spread of invasive species), and other impacts in coming years (Cal-Adapt, 2023). The extending of the wildfire season into winter months, coinciding with seasonal high wind patterns, has contributed to severe fires in recent years. Southern California experienced 29 wildfires in December of 2017 alone, and the deadliest and most destructive fire in California's history, the Camp Fire, happened in November of 2018 and resulted in 153,336 acres burned, 18,804 structures damaged, and 85 deaths (CAL FIRE, 2019; CAL FIRE, n.d.).

Projected wildfire occurrence estimates in annual area burned, based on different potential climate futures and GHG emission scenarios, are summarized from Westerling (2018) and presented in Figure 4-55 and Figure 4-56. These figures show the modeled projections of annual area burned for mid- and end-of-century timelines under both a high emissions scenario (Figure 4-56) and low emissions scenario (Figure 4-55). The projected future climate from these four models can be described as producing:

- CanESM2 - An average future climate simulation
- CNRM-CM5 - A cooler/wetter future climate simulation
- HadGEM2-ES - A warm/dry future climate simulation
- MIROC5 - The model simulation that is most unlike the first three for the best coverage of different possibilities.



Figure 4-55 Kings County Projected Annual Average Area Burned Under RCP 6.5

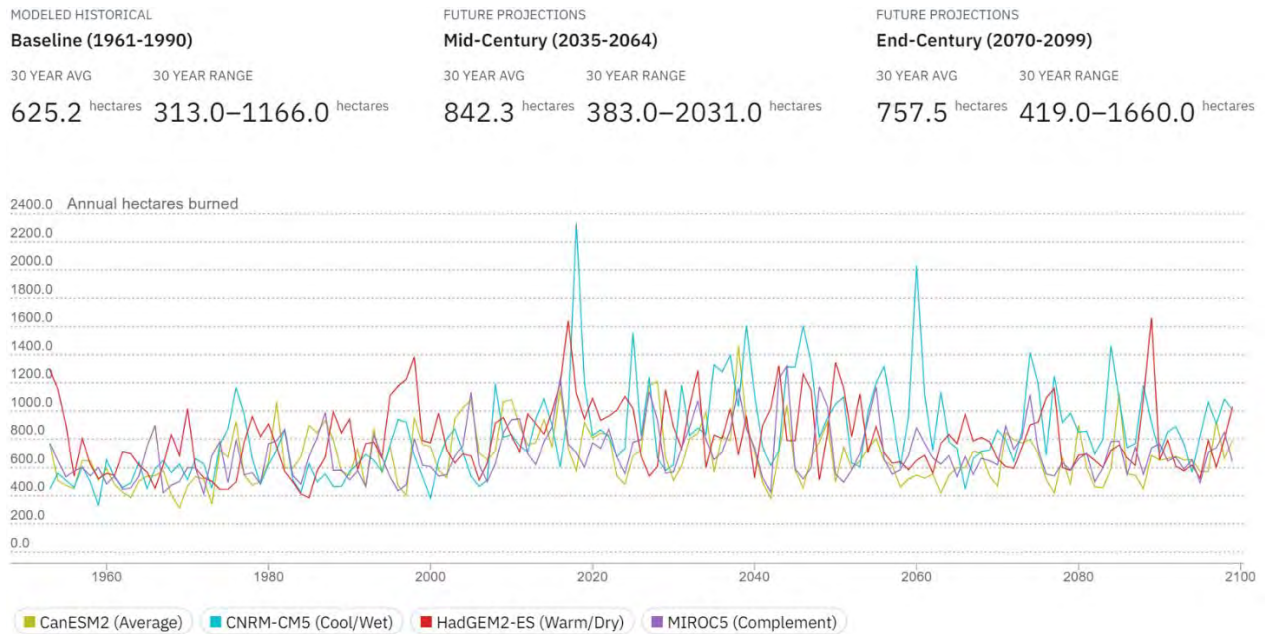
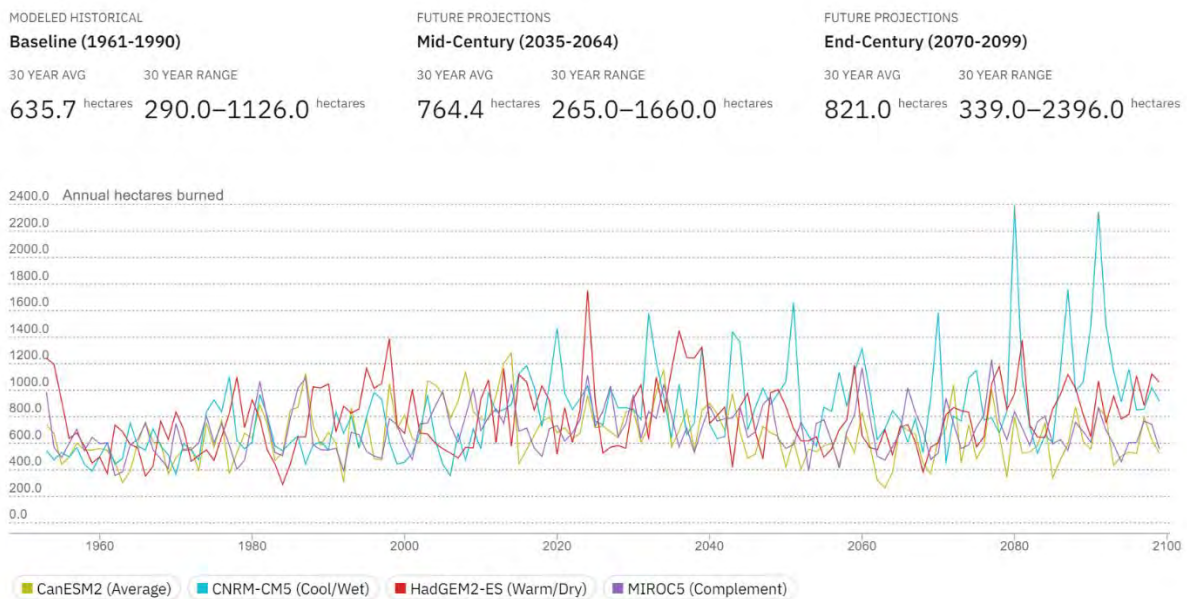


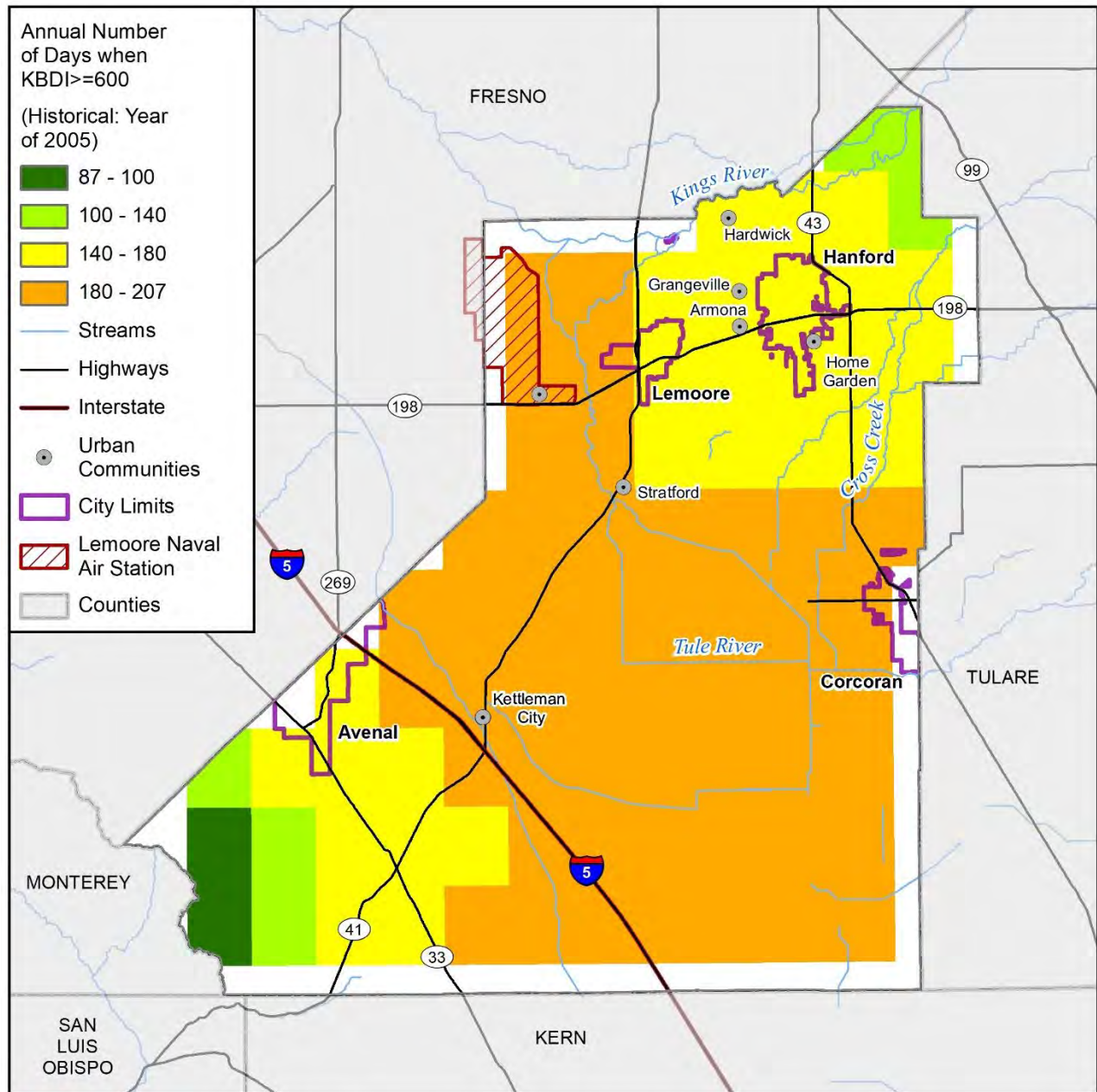
Figure 4-56 Kings County Projected Annual Average Area Burned Under RCP 8.5



The Keetch-Byram Drought Index (KBDI) is a measure of the amount of precipitation required to return soil to full moisture capacity. A KBDI of zero indicates a total lack of moisture deficiency, while 800 represents drought conditions deep within soil layers. KBDI is cumulative, meaning values will increase on dry and warm days and decrease during rainy periods. It is a simplified proxy for favorability of occurrence and spread of wildfire but is not itself a predictor of fire. Figure 4-57 shows the historic number of days when KBDI is greater than or equal to 600, based on data from 2005, and Figure 4-58 shows the projected number of midcentury (2050) when KBDI will be greater or equal to 600 based on the RCP 8.5 scenario.



Figure 4-57 Kings County Historical Annual Number of Days When KBDI is Greater than or Equal to 600

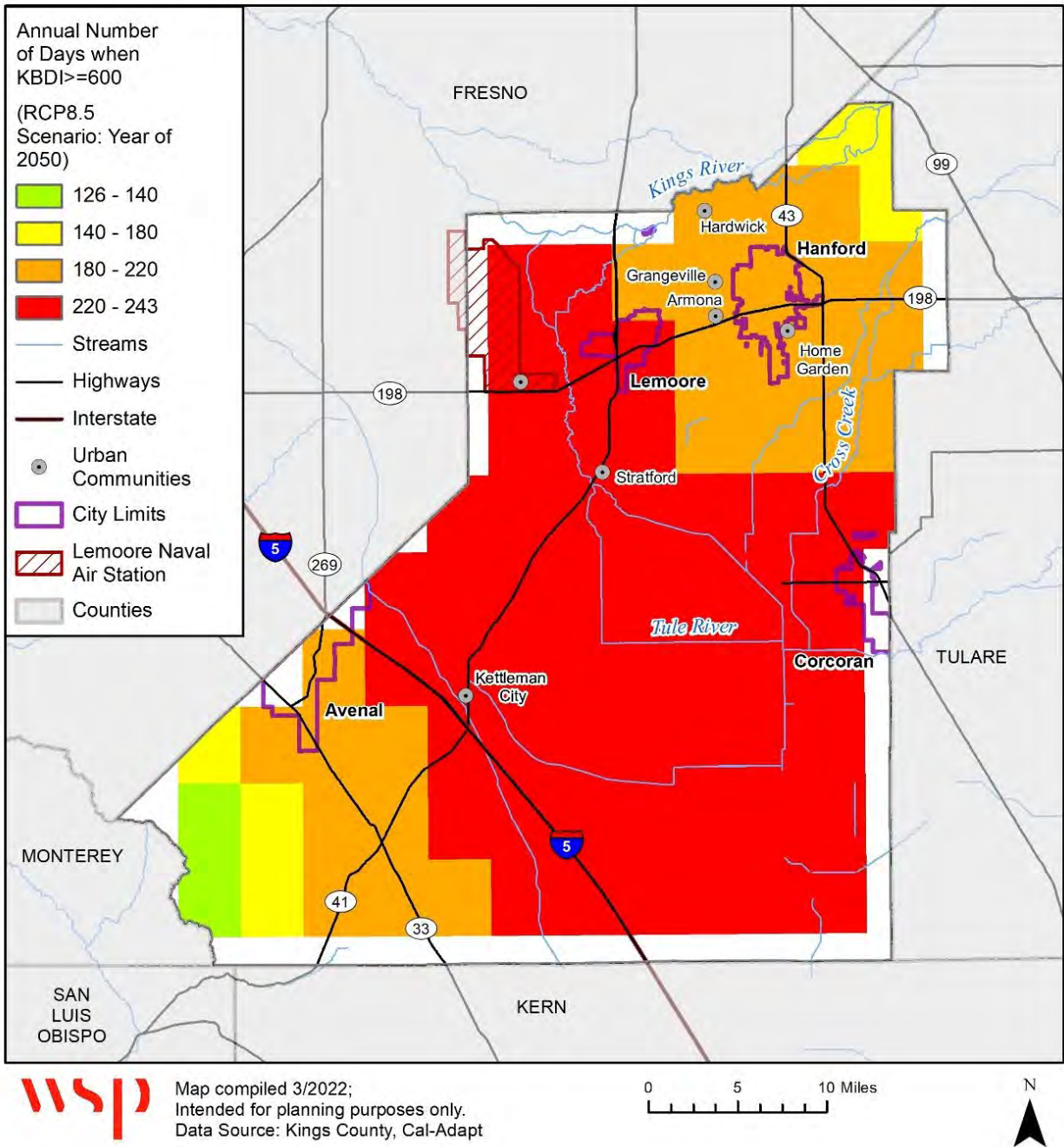


Map compiled 3/2022;
Intended for planning purposes only.
Data Source: Kings County, Cal-Adapt

0 5 10 Miles



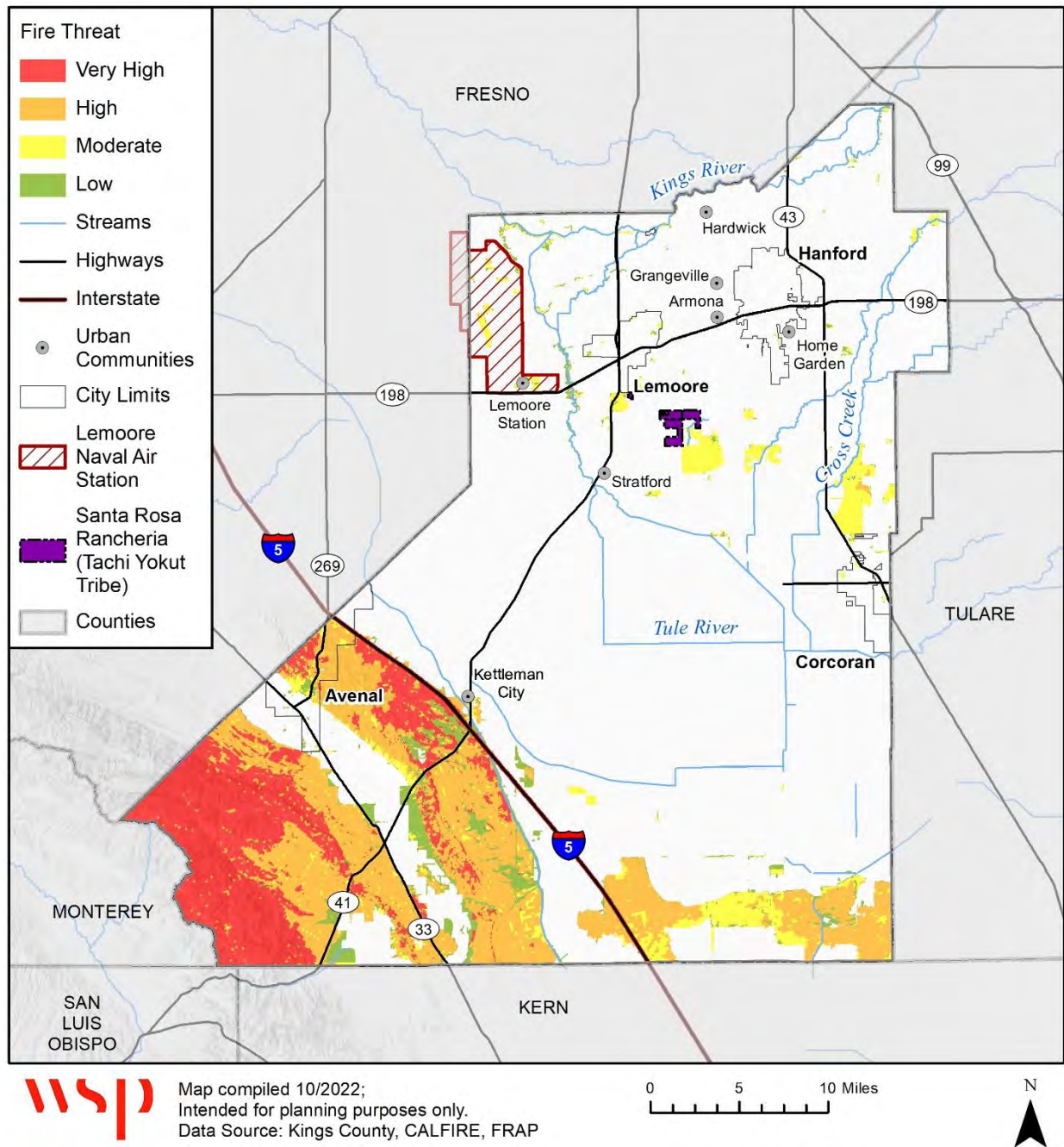
Figure 4-58 Kings County Mid-Century Annual Number of Days When KBDI is Greater than or Equal to 600



4.5.15.6 Magnitude and Severity

Negligible - Fire threat provides a measure of fuel conditions and fire potential in the ecosystem, representing the relative likelihood of “damaging” or difficult to control wildfire occurring for a given area. Fire Threat is not a risk assessment by itself but can be used to assess the potential for impacts on various assets and values susceptible to fire. Impacts are more likely to occur and/or be of increased severity for the higher threat classes. Fire threat is a combination of two factors: 1) fire probability, or the likelihood of a given area burning, and 2) potential fire behavior (hazard). These two factors are combined to create five threat classes ranging from low to extreme. Figure 4-59 below shows the wildfire threat areas throughout the County.

Figure 4-59 Kings County Fire Threat Areas



4.5.15.7 Vulnerability Assessment

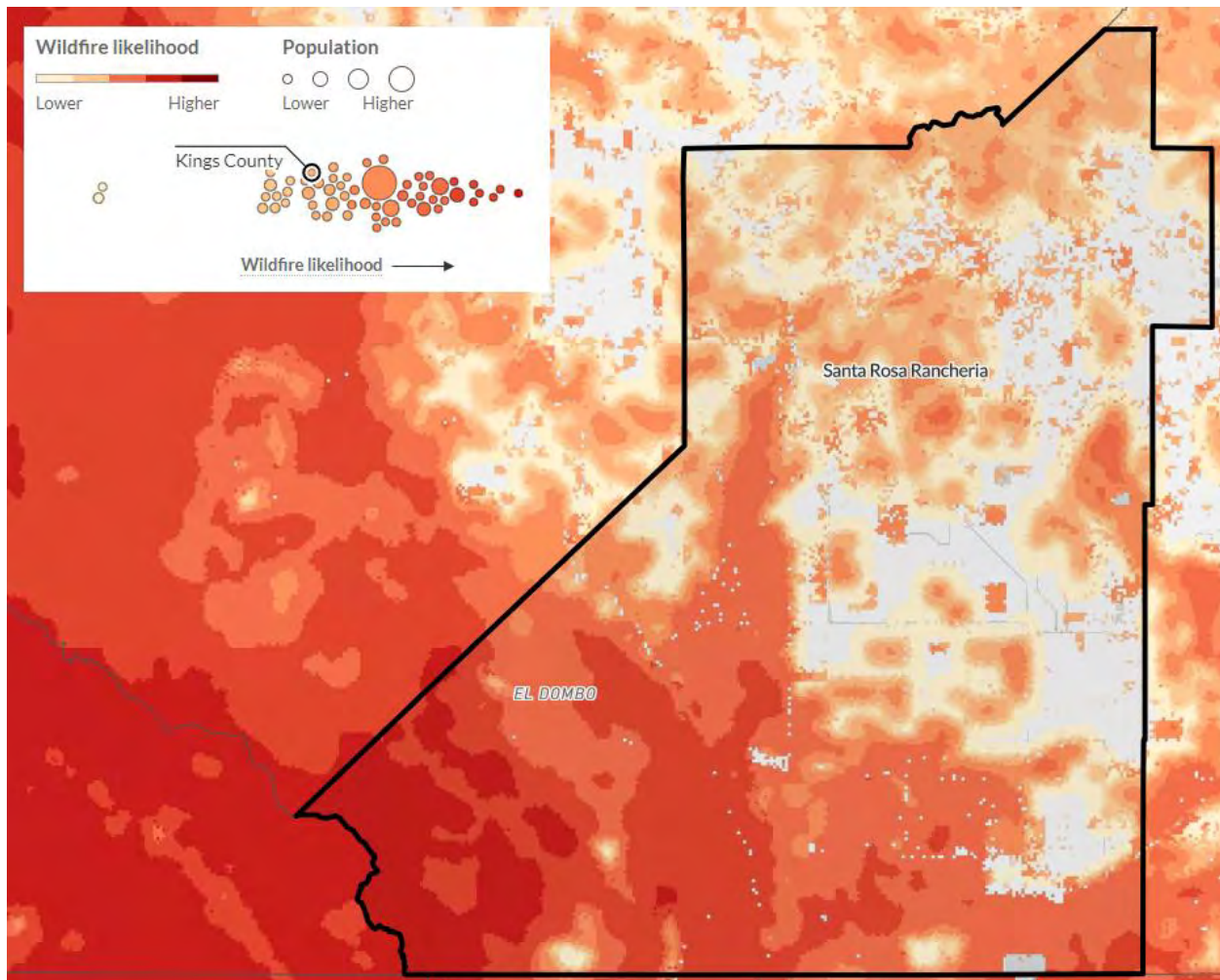
Typically, fire season in Kings County runs from early Spring to late Fall, and wildfires can start suddenly due to human activity or lightning strikes. These fires can last anywhere from a few hours to several months, with secondary effects including increased erosion, degraded air and water quality, and economic impacts from burned landscapes. Areas along the southwestern corner of the County face a higher risk than the central and more urbanized portion of the County.

Generally, this hazard is a medium concern given the increasing frequency and severity of wildfires in California. High fuel loads in some regions of the Planning Area along with geographical and topographical features create the potential for both natural and human-caused fires that can result in loss of life and property. These factors, combined with natural weather conditions common to the area, including periods of drought, low relative humidity, and periodic winds, can result in frequent and sometimes catastrophic fires. Even the relatively flat central parts of the County are not immune to fire;

hot and sometimes windy weather combined with dry vegetation and a denser population can increase the number of ignitions.

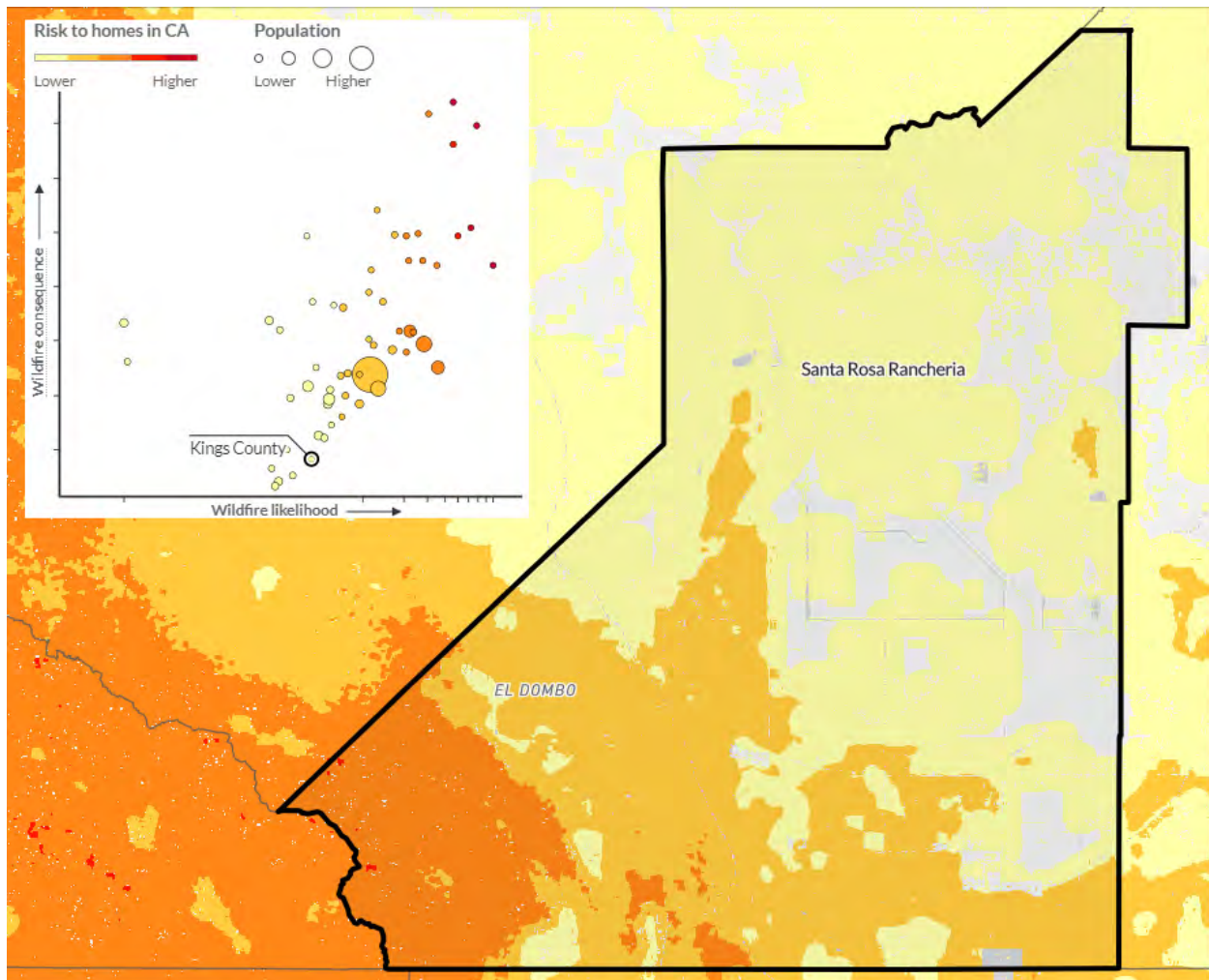
Figure 4-60 and Figure 4-61 are the results of *Wildfire Risk to Communities*, a nationwide risk study from the United States Forest Service that was designed to help communities understand, explore, and reduce wildfire risk. These figures provide a perspective of wildfire risk and vulnerability compared to other California counties. Populated areas in Kings County have, on average, greater wildfire likelihood than 23% of counties in California (USFS 2021). Populated areas in Kings County also have, on average, a greater risk to homes than 19% of counties in California (USFS 2021).

Figure 4-60 Kings County Relative Wildfire Likelihood



Source: USFS 2021

Figure 4-61 Kings County Relative Wildfire Risk to Homes



People

Wildland fires result in a high risk for personal injury, loss of life to inhabitants of the fire area and firefighters, and losses of structures and personal property. Wildfires in or near the WUI frequently require emergency evacuation and sheltering, often for many days. As is shown in Table 4-86 below, approximately 3,052 people in Kings County reside in moderate, high, and very high fire threat areas. The numbers were derived by taking the total number of residential, multi-family residential, and mixed-use structures identified in the moderate, high and very high fire threat areas and multiplying them by the average household size of the County and cities based on the 2021 ACS 5-Year Estimates. Of this population, only the DACs and socially vulnerable communities identified west of the City of Avenal in the unincorporated County are at greater risk. However, the direct risk from wildfire hazards to socially vulnerable communities in the County is less than the direct risk from other hazards. It does, however, pose human health risk associated with poor air quality, which will have a greater impact on those populations that are disadvantaged and have existing respiratory health conditions.

Table 4-86 Population at Risk to Fire Threat

JURISDICTION	POPULATION
Avenal	334
Corcoran	53
Lemoore	242
Unincorporated	2,089
Total	3,052

Source: Kings County, Cal FIRE, FRAP, U.S. Census Bureau, WSP GIS Analysis



In addition to the direct costs resulting from human injury and property destruction, secondary effects have the potential to continue impacting the community for years. Wildfires release gaseous pollutants, such as carbon monoxide, and hazardous air pollutants, such as particulate matter (i.e. polycyclic aromatic hydrocarbons composed of acids, molds, metals, or soot), into the air where they can drift long distances, affecting millions of people (Borgschulte et al, 2022). These small particles easily slip into homes, where they are inhaled, causing negative cardiovascular and respiratory conditions. These effects are felt most acutely by first responders and sensitive populations, such as the young and the old.

Property

The potential impacts of wildfire on property include crop loss, injury and death of livestock and pets, and damage to infrastructure, homes and other buildings located throughout the wildfire risk area.

A wildfire threat assessment was performed for Kings County using the following GIS methodology. Similar to the methodology used by the flood analysis, address point data together with the assessor’s parcel data were overlaid on a Fire Threat Layer. Improved parcels together with the structures on them were then assigned with wildfire threat area class (very high, high, and moderate). It was assumed that every parcel with an improved value greater than zero was developed in some way, thus only improved parcels and their values were analyzed.

An analysis of the value of those parcels and structures – the improvement value plus the estimated value of building contents – quantifies the potential losses from wildfires by wildfire threat areas, as shown in

Table 4-87. The results show that over \$145.8 million worth of property and approximately 270 improved parcels together with 747 structures are exposed to wildfire threat countywide. The majority of these buildings are in moderate wildfire threat areas. The unincorporated areas and the City of Lemoore make up the majority of this risk. Exempt residential and agricultural properties constitute the majority of the number of parcels and the projected losses. Exempt properties include but are not limited to wetlands, schools, museums, etc. The total values shown in these tables include both structure value and contents and can be used as an estimate of potential losses since wildfires typically result in a total loss.

Table 4-87 Wildfire Hazard Exposure –Property Summary by Jurisdiction and Fire Threat Zone

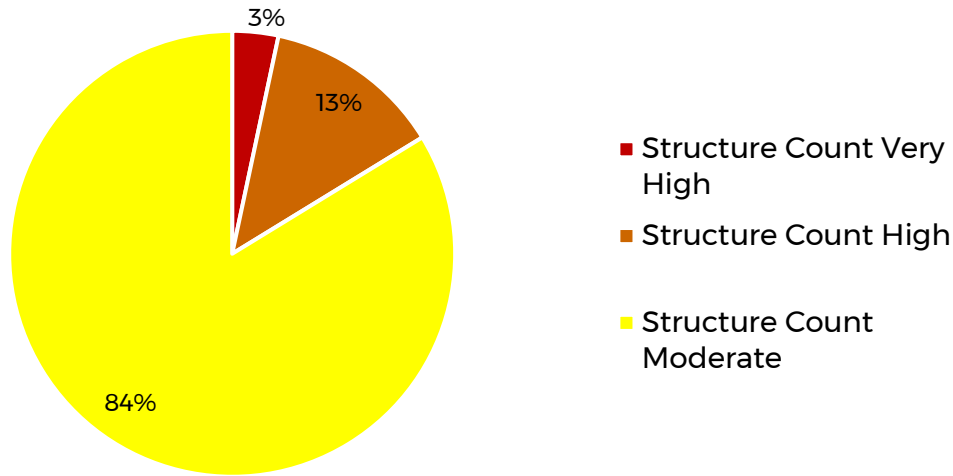
JURISDICTION	AVENAL	CORCORAN	LEMOORE	UNINCORPORATED	TOTAL
Parcel Count Very High	-	-	-	15	15
Building Count Very High	-	-	-	15	15
Parcel County High	-	-	-	53	53
Building County High	-	-	-	58	58
Parcel County Moderate	18	15	82	69	202
Building County Moderate	100	16	82	376	674
Total Parcel County	18	15	82	137	270
Total Building Count	100	16	82	449	747
Improved Value	\$11,097,454	\$2,258,421	\$18,202,253	\$41,643,263	\$84,298,845
Estimated Content Value	\$5,905,592	\$1,129,211	\$9,101,127	\$39,465,975	\$61,507,495
Total Value	\$17,003,046	\$3,387,632	\$27,303,380	\$81,109,238	\$145,806,340
Population	334	53	242	2,089	3,052

Source: Cal FIRE, Kings County Assessor, WSP GIS analysis



Figure 4-62 shows the composition of structures that are exposed to fire threats within the unincorporated County, categorized by fire threat zone.

Figure 4-62 Unincorporated County Parcels in Fire Threat Area



Critical Facilities and Lifelines

Critical facilities are those community components that are most needed to withstand the impacts of a disaster, as previously described in the Assets section. Wildfire impacts on critical facilities can include structural damage or destruction, risk to persons located within facilities, disruption of transportation, shipping, and evacuation operations, and interruption of facility operations and critical functions.

Critical facilities and infrastructure also create an increased risk for the occurrence of wildfires. Overhead electric transmission lines have been known to spark wildfires. According to data from the California Public Utilities Commission (CPUC), the State’s three largest utility companies collectively reported 1,744 ignitions statewide between 2019-2021 (CPUC, 2023). Most of these instances were small, less than one acre in size, however these fires can grow rapidly under the right fire conditions. Identifying critical facilities and infrastructure and mitigating their potential risks is important both for maintaining the County’s resilience and for reducing the potential impacts of wildfire.

The locations of critical facilities identified by HIFLD throughout the County are summarized by their exposure to the various wildfire threat levels in Table 4-88.

Table 4-88 Critical Facilities Within Wildfire Threat Zones by Jurisdiction and FEMA Lifeline

WILDFIRE THREAT ZONE	JURISDICTION	COMMUNICATIONS	ENERGY	FOOD, WATER, SHELTER	HAZARDOUS MATERIAL	HEALTH AND MEDICAL	SAFETY AND SECURITY	TRANSPORTATION	TOTAL
Low	Avenal	2	1	-	-	1	-	-	4
	Unincorporated	8	2	-	-	-	-	16	26
	Total	10	3	-	-	1	-	16	30



WILDFIRE THREAT ZONE	JURISDICTION	COMMUNICATIONS	ENERGY	FOOD, WATER, SHELTER	HAZARDOUS MATERIAL	HEALTH AND MEDICAL	SAFETY AND SECURITY	TRANSPORTATION	TOTAL
Moderate	Avenal	3	1	-	-	-	-	1	5
	Unincorporated	9	8	-	-	-	-	2	19
	Total	12	9	-	-	-	-	3	24
High	Avenal	1	1	-	-	-	-	-	2
	Unincorporated	4	1	-	-	-	-	-	5
	Total	5	2	-	-	-	-	-	7
Very High	Avenal	-	-	-	-	-	-	-	-
	Unincorporated	4	-	-	-	-	-	-	4
	Total	4	-	-	-	-	-	-	4

Source: Kings County, HIFLD, Cal FIRE, FRAP, WSP GIS Analysis

According to the analysis conducted, there are 35 critical facilities exposed to at least a moderate wildfire threat area. The highest rates of exposure to wildfire threat areas are facilities in the Communication and Energy Lifeline categories, both of which are crucial for response and evacuations in the event of a significant fire.

Economy

The economic impacts of wildfires include loss of property, direct agricultural sector job loss, secondary economic losses to businesses in or near wildland resources like parks and national forests, and loss of public access to recreational resources. Fire suppression may also require increased costs to local and state governments for water acquisition and delivery, especially during periods of drought when water resources are scarce. Effects on agriculture can be significant, which makes up a large portion of Kings County's economy. In addition to the obvious impacts on crops and animals, wildland fire can have damaging effects on soil and water that will impact agriculture for an extended period.

Cultural, Historic and Natural Resources

The County has three historic sites according to the California Office of Historic Preservation (refer to Subsection 4.2.1). Only one of these sites, No. 206 El Adobe de Los Robles Rancho, involves a structure. A re-built adobe house dating back to 1856, this structure is sensitive in nature and may not meet the latest building codes; it is expected that it might be at risk of wildfires (e.g., because of its potential inability to withstand significant heat). Parks and open spaces, particularly in the foothills, could also be at risk of a wildfire.

Development Trends

A fire threat GIS analysis within SOI boundaries is summarized in the table below. The methodology resembles what was used for the General Property subsection above. These parcels are also included in

Table 4-87, and they fall under "Unincorporated" in terms of their jurisdiction. Parcels shown below in Table 4-89 are those that fall within each jurisdiction's SOI and are located within different wildfire threat areas. As shown in Table 4-89, only parcels located within the SOIs of the Cities of Hanford and Lemoore are exposed to wildfire threat. The majority of these parcels are located in moderate fire threat areas.



Table 4-89 Sphere of Influence Fire Threat Analysis

Jurisdiction	Hanford	Lemoore	Total
Parcel Count High	2	0	2
Building Count High	2	0	2
Parcel Count Moderate	2	5	7
Building Count Moderate	2	6	8
Total Parcel Count	4	5	9
Total Building Count	4	6	10
Improved Value	\$528,005	\$1,862,074	\$2,390,079
Estimated Content Value	\$264,003	\$1,126,907	\$1,390,909
Total Value	\$792,008	\$2,988,981	\$3,780,988
Population	12	18	30

Source: Kings County, HIFLD, Cal FIRE, FRAP, WSP GIS Analysis

Any population increases in the Planning Area will continue to make wildfire vulnerability a growing issue, especially as Development Trends expands into higher fire risk areas. These risks can however be managed with strong land use regulations and building code requirements, and with policies established in the Safety Element of the 2035 General Plan. For example, policies requiring fire-resistant vegetation, clustered development, and vegetation clear zones in areas with high and extreme fire hazard, can all decrease the County’s vulnerability to fire.

4.5.15.8 Risk Summary

- The overall significance of wildfire in Kings County is **Medium**. These events are recurring in nature and can cause significant damage, loss of life, and disruption to critical infrastructure.
- The County experiences an average of one wildfire every 3 years and an average of 1,355 acres burned per year. As impacts of climate change such as increased temperatures and prolonged drought conditions continue in coming years, this frequency and intensity may increase.
- Powerlines and vehicle or equipment use present a significant source of ignitions.
- Wildfires can destroy homes, businesses, and critical infrastructure; almost \$146 million worth of property in the County is located in a Fire Threat Zone.
- Wildfires can disrupt access to, or even destroy critical facilities and infrastructure; 24 critical facilities are in the Moderate Fire Threat Zone, 7 critical facilities are in the High Fire Threat Zone, and 4 critical facilities are in the Very High Fire Threat Zone.
- Wildfire impacts can include loss of property, direct agricultural sector job loss, secondary economic losses to businesses, and loss of public access to recreational resources.
- Wildfires can significantly impact water and air quality, even at great distances from the area burning. Damages to agriculture, natural resource areas, and habitats are very likely during a wildfire.
- **Related Hazards** – Agricultural Pests and Diseases, Drought, Extreme Temperatures

JURISDICTION	GEOGRAPHIC AREA	PROBABILITY OF FUTURE OCCURRENCE	MAGNITUDE/ SEVERITY	OVERALL SIGNIFICANCE	PRIORITY HAZARD?
Kings County	Significant	Likely	Negligible	Medium	Yes
City of Avenal	Limited	Likely	Negligible	Medium	Yes
City of Corcoran	Limited	Likely	Negligible	Low	No
City of Hanford	Limited	Likely	Negligible	Low	No
City of Lemoore	Limited	Likely	Negligible	Low	No



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5 MITIGATION STRATEGY

Requirement §201.6(c)(3):

[The plan shall include the following:] A mitigation strategy that provides the jurisdiction's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs, and resources, and its ability to expand on and improve these existing tools.

This section describes the mitigation strategy process and mitigation action plan for the Kings County MJHMP. It describes how the County and participating jurisdictions met the requirements for the following from the 10-step planning process:

- Planning Step 6: Set Goals
- Planning Step 7: Review Possible Activities
- Planning Step 8: Draft an Action Plan

The mitigation strategy reflects the results of the collaborative work of the HMPC. Subsection 5.3 Mitigation Action Plan is based on the updated planning process, risk assessment, capability assessment, consequence analysis, goal setting, and the identification of mitigation actions. Taking all of these into consideration, the HMPC developed the following overall mitigation strategy, which builds upon the 2012 LHMP strategy:

- **Communicate** the hazard information collected and analyzed through this planning process as well as HMPC success stories so that the community better understands what can happen where and what they themselves can do to be better prepared.
- **Implement** the action plan recommendations of this plan to reduce the County's vulnerability to hazards.
- **Use** existing rules, regulations, policies, and procedures already in existence. Given the flood hazard in the planning area, an emphasis should be placed on continued compliance with the NFIP.
- **Lessen** the impact of disasters and the speed of the response and recovery process.
- **Build** awareness to help the community become more sustainable and reliant to disasters.
- **Monitor** multi-objective management opportunities so that funding opportunities may be shared and packaged, and broader constituent support may be garnered.

5.1 MITIGATION GOALS AND OBJECTIVES

§201.6(c)(3)(i)

[The hazard mitigation strategy shall include a] description of mitigation goals to reduce or avoid long - term vulnerabilities to the identified hazards.

Up to this point in the planning process, the HMPC has organized resources, assessed hazards and risks, and documented mitigation capabilities. The resulting goals, objectives, and mitigation actions were developed based on these tasks. The HMPC held a series of meetings and exercises designed to achieve a collaborative, updated mitigation strategy as described further throughout this section.

Over a series of meetings during the 2022 - 2023 update process, the HMPC reviewed the results of the hazard identification, vulnerability assessment, and capability assessment update. This analysis of the risk assessment identified areas where improvements could be made and provided the framework for the HMPC to update planning goals and objectives and the ultimate mitigation strategy for the Kings County planning area.

Mitigation goals are defined as general guidelines that explain what the County wants to achieve in terms of hazard and loss prevention. Goals are typically long-range statements representing community-wide visions. The HMPC reviewed the goals from the 2012 MJHMP which focused on reducing the impacts of natural hazards to life, property, and the environment, as well as agriculture and the economies of communities, and implementing identified mitigation activities. The goals were developed to be compatible with the goals of the community as expressed in the Health and Safety Element of the General Plan, and the 2015 EOP. The County's Mitigation Strategy is guided by the vision of a safe and resilient County. The mission is to integrate existing laws and programs into a mitigation strategy that will serve the citizens by reducing and preventing injury and damage from natural hazards.



Kings County routinely performs activities such as issuing building permits, approving development plans, and repairing roads. The County is conscious that these activities should reflect the vision and goals by using the most current building code, restricting development in hazard-prone areas, or making infrastructure decisions based on the risk assessment findings. As a result, goals were defined for this mitigation plan as broad-based public policy statements that:

- Represent basic desires of the community;
- Encompass all aspects of community, public and private;
- Are nonspecific, in that they refer to the quality (not the quantity) of the outcome;
- Are future-oriented, in that they are achievable in the future; and
- Are time-independent, in that they are not scheduled events.

Goals are stated without regard to implementation. Implementation cost, schedule, and means are not considered. Goals are defined before considering how to accomplish them so that they are not dependent on the means of achievement. Goal statements form the basis for objectives and actions that will be used as means to achieve the goals. Objectives define strategies to attain the goals and are more specific and measurable. Goals are listed below. The County decided not to develop specific objective statements.

5.1.1 Mitigation Goals

- **Goal 1:** Reduce impacts of natural hazards to life, property, and the environment.
- **Goal 2:** Minimize impacts of natural disasters to agriculture and the economies of communities.
- **Goal 3:** Implement identified mitigation activities.
- **Goal 4:** Plan for and adapt to the effects of climate change.

5.2 IDENTIFICATION AND ANALYSIS OF MITIGATION ACTIONS

§201.6(c)(3)(ii):

[The hazard mitigation strategy shall include a] section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure. All plans approved by FEMA after October 1, 2008, must also address the jurisdiction's participation in the NFIP, and continued compliance with NFIP requirements, as appropriate.

In order to identify and select mitigation measures to support the mitigation goals, each hazard identified in Section 4: Hazard Identification and Risk Assessment was evaluated. The HMPC analyzed a comprehensive set of viable mitigation alternatives for both new and existing buildings and infrastructure that would support identified goals and objectives and reduce or eliminate risks to persons or property or lessen the actual or potential effects or consequences of a disaster. Each HMPC member was provided with the following list of categories of mitigation measures, which originate from the NFIP CRS:

- **Prevention:** Administrative or regulatory actions or processes that influence the way land and buildings are developed and built.
- **Property protection:** Actions that involve the modification of existing buildings or structures to protect them from a hazard or remove them from the hazard area.
- **Structural:** Actions that involve the construction of structures to reduce the impact of a hazard.
- **Natural resource protection:** Actions that, in addition to minimizing hazard losses, also preserve or restore the functions of natural systems.
- **Emergency services:** Actions that protect people and property during and immediately after a disaster or hazard event.
- **Public information/education and awareness:** Actions to inform and educate citizens, elected officials, and property owners about the hazards and potential ways to mitigate them.

At the HMPC Meeting #3, the HMPC was provided with a matrix showing examples of potential mitigation action alternatives for each of the above categories, for each of the identified hazards. The HMPC was also provided a handout that explains the categories and provided further examples. These documents list the common alternatives for mitigation by hazard and actions funded by FEMA. The HMPC was also instructed to consider both future and existing buildings in considering possible mitigation actions. This reference provides four categories of mitigation actions that were discussed at the HMPC meeting in addition to the NFIP/CRS categories. These include:



- Plans and Regulations
- Structure and Infrastructure Projects
- Education and Awareness
- Natural systems protection

Other alternatives discussed in the webinar include the four A's of mitigation:

- **Alter** the physical nature of the hazard.
 - Such as wildfire defensible space and fuels treatments, snow fences etc.
- **Avert** the hazard away from people, buildings, and infrastructure.
 - Can include engineered solutions, drainage, and channel improvements, floodproofing, fuel breaks.
- **Adapt** to the hazard.
 - Through land use planning, building codes and design standards, warning systems etc.
- **Avoid** the hazard.
 - Natural systems protection, open space, acquisition, or relocation of properties out of hazardous areas

As part of the review of mitigation options, long-term climate change adaptation strategies were also discussed, such as climate adaptation strategies included in the Final Regional Climate Action Plan for the cities of Avenal and Hanford (e.g., Trees, Parks, and Open Space Measures, Community Education and Outreach Measures). HMPC members were encouraged to incorporate climate change adaptation measures into the mitigation strategy of their respective jurisdictions by utilizing resources and guidance available on the Cal-Adapt website and California APG. These adaptation strategies were considered for inclusion in the mitigation strategy and to comply with California Government Code Section 65302.3(g) requirements. Further, the County was provided a list of over 12 suggested ideas for new mitigation actions during HMPC Meeting #3 to consider when developing new mitigation actions (see Appendix D).

To facilitate the brainstorming process, the HMPC was provided a matrix of typical mitigation alternatives organized by CRS category for the hazards identified in the plan, in addition to a handout that explains the categories and provided examples. These materials are included in Appendix B. During a group activity during HMPC Meeting #3 the HMPC members were encouraged to develop mitigation alternatives that would protect future, as well as existing, development from hazards per the DMA 2000 regulations. A facilitated discussion then took place to examine the existing actions in the 2012 MJHMP and analyze the other possible mitigation alternatives from the suggested ideas for new mitigation ideas (previously noted) and by incorporating policies and implementation measures from each jurisdiction's Safety Element, Emergency Operations Plan, and Capital Improvement Program (e.g. storm water drainage facility policies; emergency preparedness policies; and natural hazard policies for drought, earthquake, extreme heat, dam failure, and other hazards). This facilitated discussion resulted in a full list of mitigation actions from which the HMPC could select mitigation actions. With an understanding of all the alternatives, the group activity was conducted to generate a list of preferred mitigation actions to carry forward into the mitigation strategy. The result was new and updated project ideas with the intent of meeting the identified goals and mitigating identified hazards. These new and updated project mitigation actions were expanded on during numerous follow-up meetings with County OES staff and participating jurisdictions to focus on the refinement and prioritization of new mitigation activities added later in the planning process.

Once new mitigation actions were defined, the HMPC selected and prioritized the mitigation actions by ranking them during another group activity that asked the participants to rank actions as either low, medium, or high-priority projects; additional information on this process is described below. WSP also discussed remaining information or mitigation gaps that needed to be addressed during the final follow-up meetings. These meetings were more focused on stakeholder group sessions intended to wrap up mitigation gaps, discuss opportunities for plan integration, and review the plan implementation and maintenance procedures.

5.2.1 Prioritization Process

Once the mitigation actions were identified, the HMPC was provided with several decision-making tools, including FEMA's recommended prioritization criteria, STAPLEE, to assist in deciding why one recommended action might be more important, more effective, or more likely to be implemented than another. STAPLEE stands for the following:



- **Social:** Does the measure treat people fairly? (e.g., different groups, different generations) Does it consider social equity, disadvantaged communities, or vulnerable populations?
- **Technical:** Will it work? (Is the action technically feasible? Does it solve the problem?)
- **Administrative:** Is there capacity to implement and manage the project? (adequate staffing, funding, and other capabilities to implement the project?)
- **Political:** Who are the stakeholders? Did they get to participate? Will there be adequate political and public support for the project?
- **Legal:** Does the jurisdiction have the legal authority to implement the action? Is it legal? Are there liability implications?
- **Economic:** Is the action cost-beneficial? Is there funding available? Will the action contribute to the local economy?
- **Environmental:** Does the action comply with environmental regulations? Will there be negative environmental consequences from the action?

In accordance with the DMA requirements, an emphasis was placed on the importance of a benefit-cost analysis in determining action priority. Other criteria used to assist in evaluating the benefit-cost of a mitigation action included:

- Does the action address hazards or areas with the highest risk?
- Does the action protect lives?
- Does the action protect infrastructure, community assets or critical facilities?
- Does the action meet multiple objectives (Multiple Objective Management)?
- What will the action cost?
- What is the timing of available funding?

The mitigation categories, multi-hazard actions, and criteria are included in Appendix D.

At the HMPC Meeting #3: mitigation strategy meeting, the HMPC reviewed and discussed the STAPLEE considerations to determine which of the identified actions were most likely to be implemented and effective. Prioritization of previous mitigation actions identified in the 2012 MJHMP were carried forward in the updated plan. New actions identified and selected for further consideration during the 2022-2023 process also were prioritized based on the group activity (sticky dot exercise) and a follow-up discussion. With the STAPLEE criteria in mind, HMPC participants completed the group activity to select and rank the existing and new mitigation actions, which corresponds to the final list of mitigation actions summarized below in Section 5.4 (e.g., a full list of recommended mitigation actions consisted of recommended actions and actions that would incorporate policies and implementation measures from other planning documents).

The team was asked to prioritize projects with the above criteria in mind, essentially voting on the projects. The projects with the most points or votes using a sticky dot exercise became the higher priority projects, and those with the next highest number of sticky dots became the medium priority projects. Those projects with less than three or no sticky dots were the low priority projects. The HMPC decided that the high priority projects would be those the County and participating jurisdictions would focus on for implementation during this planning cycle. The HMPC decided that the low priority actions would not be prioritized for implementation during this planning cycle. The HMPC also re-prioritized projects that were added during final review of the plan to ensure mitigation actions were explicitly linked to each known natural hazard assessed and the key vulnerabilities. This process provided both consensus and priority for the recommendations.

The process of identification and analysis of mitigation alternatives allowed the HMPC to come to a consensus and to collectively prioritize recommended mitigation actions. During the voting process, emphasis was placed on the importance of a benefit-cost review in determining project priority; however, this was not a quantitative analysis.

Cost-Benefit Review

A cost-benefit review was applied to prioritize the mitigation recommendations for implementation. The priority for implementing mitigation recommendations depends upon the overall cost-effectiveness of the recommendation when taking into account monetary and non-monetary costs and benefits associated with each action. The cost-benefit table for each hazard provides an analysis of the benefit, cost, and relative priority rank (High, Medium, and Low) for each mitigation activity. The guidelines are listed below.



- **High** – Benefits are perceived to exceed costs without further study or evaluation.
- **Medium** – Benefits are perceived to exceed costs but may require further study or evaluation prior to implementation.
- **Low** – Benefits and cost evaluations requires additional evaluation prior to implementation.

Funding projects that will help mitigate imminent hazards are cost-effective and assist in efforts to help communities recover from disasters. Most of the projects are already funded through general fund, application fees or state/federal funds. The majority of the projects are ongoing to ensure mitigation measures are implemented within the County. It is not anticipated that all future projects will be identified in the 2023 MJHMP. The County's MJHMP will also help guide local government to prioritize, be flexible, and identify critical mitigation strategy needs that may arise from a disaster when there is no time to update the local plan.

Benefit-cost was considered in greater detail in the development of the Mitigation Action Plan. For example, parameters were established for assigning the subjective ratings (high, medium, low) to the benefits and costs of each mitigation action. Specifically, each action developed for this plan contains a description of the problem and proposed project, the entity with primary responsibility for implementation, any other alternatives considered, a cost estimate, expected project benefits, potential funding sources, and an implementation schedule. Development of these project details for each action led to the determination of an overall high, medium, or low priority for each action.

Recognizing the limitations in prioritizing actions from multiple departments and the regulatory requirement to prioritize by benefit-cost to ensure cost-effectiveness, the HMPC decided to pursue mitigation action strategy development and implementation according to the nature and extent of damages, the level of protection and benefits each action provides, political support, project cost, available funding, and jurisdiction and department priority. This process guided the development of a prioritized action plan for Kings County and the participating jurisdictions.

Cost-effectiveness will be considered in greater detail through a formal benefit-cost analysis when seeking FEMA mitigation grant eligibility and funding (e.g. HMGP, BRIC grant programs) for eligible actions associated with this plan. It is also important for the County to protect critical facilities and infrastructure. Areas of repetitive loss are high priorities for mitigation funding as they can drain County coffers.

5.2.2 Continued NFIP Participation

The NFIP makes federally-backed flood insurance available to homeowners, renters, and business owners in participating communities. For most participating communities, FEMA has prepared a detailed Flood Insurance Study (FIS). The study presents water surface elevations for floods of various magnitudes, including the 1% annual chance flood (or 100-year flood) and the 0.2% annual chance flood (or 500-year flood). Base flood elevations and the boundaries of the 100- and 500-year floodplains are shown on Flood Insurance Rate Maps (FIRM), which are the principal tools for identifying the extent and location of the riverine flood hazard. FIRMs are the most detailed and consistent data source available, and for many communities, they represent the minimum area of oversight under their floodplain management program.

Participants in the NFIP must, at a minimum, regulate development in floodplain areas in accordance with NFIP criteria. Before issuing a permit to build in a floodplain, participating jurisdictions must ensure that three criteria are met:

- New buildings and those undergoing substantial improvements must, at a minimum, be elevated to protect against damage by the 100-year flood.
- New floodplain development must not aggravate existing flood problems or increase damage to other properties.
- New floodplain development must exercise a reasonable and prudent effort to reduce its adverse impacts on threatened salmonid species.

Kings County and all four jurisdictions participate in the NFIP. Under the NFIP, buildings that were built before the flood hazard was identified on the community's FIRMs are generally referred to as "pre-FIRM" buildings. When the NFIP was created, the U.S. Congress recognized that insurance for pre-FIRM buildings would be prohibitively expensive if the premiums were not subsidized by the Federal Government. Congress also recognized that most of these flood-prone buildings were built by individuals



who did not have sufficient knowledge of the flood hazard to make informed decisions. The NFIP requires that full actuarial rates reflecting the complete flood risk be charged on all buildings constructed or substantially improved on or after the effective date of the initial FIRM for the community or after December 31, 1974, whichever is later. These buildings are generally referred to as “Post-FIRM” buildings.

Table 5-1 below shows the dates when Kings County and the jurisdictions joined the NFIP.

Table 5-1 Kings County and Its Jurisdictions’ NFIP Entry Date

COUNTY/JURISDICTION	NFIP ENTRY DATE
Kings County	August 4, 1988
City of Avenal	April 5, 1989
City of Corcoran	November 28, 1997
City of Hanford	March 18, 1987
City of Lemoore	April 3, 1987

Source: CIS 2023

Post-FIRM structures built in compliance with the floodplain regulations are mitigated to withstand floods up through the 100-year event. The insurance rate is different for the two types of structures, as pre-FIRM structures are at higher risk of flooding. The effective date for the current countywide FIRM is September 16, 2015.

The County and participating jurisdictions are currently in good standing with the provisions of the NFIP. Compliance is monitored by FEMA regional staff. Maintaining compliance with the NFIP is an important component of flood mitigation and risk reduction and Kings County and the four participating jurisdictions will continue to make every effort to remain in good standing with the program. This includes continuing to comply with the NFIP’s standards for adopting floodplain maps and maintaining and periodically updating local floodplain regulations. Actions related to continued compliance also include:

- Continued designation of a local floodplain manager whose responsibilities include reviewing floodplain development permits to ensure compliance with the local floodplain management ordinances and rules;
- Suggest changes to improve enforcement of and compliance with regulations and programs;
- Participate in FIRM updates by adopting new maps or amendments to maps;
- Utilize Digital FIRMs in conjunction with GIS to improve floodplain management, such as improved risk assessment and tracking of floodplain permits;
- Promote and disperse information on the benefits of flood insurance.

5.3 MITIGATION STRATEGY ACTION PLAN

§201.6(c)(3)(iii)

[The hazard mitigation strategy shall include an] action plan, describing how the action identified in paragraph (c)(3)(ii) of this section will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost-benefit review of the proposed projects and their associated costs.

§201.6(c)(3)(iv)

For multi - jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.

This action plan was developed to present the recommendations developed by the HMPC for how the Kings County planning area can reduce the vulnerability of people, property, infrastructure, and natural and cultural resources to future disaster losses. Over time the implementation of these projects will be tracked as a measure of demonstrated progress on meeting the plan’s goals.



5.3.1 Progress on Previous Mitigation Actions

A review of 2012 mitigation actions progress reports indicates that Kings County has been successful in implementing actions identified in the 2012 MJHMP Mitigation Strategy, thus, working diligently towards meeting the 2012 plan goals.

The 2012 mitigation strategy contained 20 separate mitigation actions. Three of these actions were multi-jurisdictional, four applied to the City of Avenal, two applied to the City of Corcoran, and the remaining 11 were County-wide actions. As of July 2023, five of these actions have been completed, one has been deleted, and 14 actions are continuing and carried forward into the 2023 MJHMP.

Table 5-2 summarizes progress implementing mitigation actions. The total continuing actions row summarizes the actions from 2012 that are either still in-progress, have annual implementation, or are continuing but not completed. The new actions in 2023 summarizes the number of actions that were identified during the 2022- 2023 plan update process.

Table 5-2 Mitigation Action Progress Summary for County

PROGRESS CATEGORY	# OF MITIGATION ACTIONS
Completed	5
Deleted	1
Total Removed Actions	6
Continue: In-Progress	9
Continue: Not Started	3
Continue: Revised	2
New Actions in 2023	69
Total Active Actions	78

Source: HMPC 2023

Table 5-3 indicates the details for each of the 2012 mitigation action items. One deleted action was multi-jurisdictional, three actions were completed by the County, one action was completed by the City Corcoran, and one action was completed by the City of Avenal.

Table 5-3 Status of 2012 Mitigation Actions

ID	HAZARD(S) ADDRESSED	MITIGATION ACTION	LEAD AGENCY	ACTION STATUS NOTES
1	Earthquake, Land Subsidence, Landslide	Housing Rehabilitation Program - Continue and enhance housing rehabilitation program.	City of Avenal Community Development Director	Ongoing.
2	Drought, Earthquake, Extreme Temperatures: Freeze and Heat, Flood, Fog, Wildfire	Emergency Power System for the Emergency Operations Center at the Ken Brown Public Safety Center - Purchase, Install, test, and utilize a 200 KW Propane/Natural Gas-powered emergency Generator system for the Emergency Operations Center.	Avenal OES/Police Department, Kings County OES	Completed in 2018, creating the City's EOC at the APD
3	Earthquake	Vulnerability of Water Distribution System	City of Avenal Public Works Department	In progress.
4	Earthquake, Subsidence, Landslide	Loss Reduction Program for URM Buildings	City of Avenal City Manager's Office, California Seismic Safety Commission, City of Avenal Public Works Department	In progress.
5	Drought, Earthquake, Extreme Temperatures: Freeze and Heat,	Expand the Veterans' Memorial Building and designate it as an emergency shelter.	City of Corcoran Public Works	Revised Action in 2023. Use of the Veteran's Hall is no longer needed now that the RAC gymnasium is



ID	HAZARD(S) ADDRESSED	MITIGATION ACTION	LEAD AGENCY	ACTION STATUS NOTES
	Flood, Fog, Wildfire			outfitted and serves a larger population.
6	Drought, Earthquake, Extreme Temperatures: Freeze and Heat, Flood, Fog, Wildfire	Assess vulnerability of critical infrastructure and lifeline utilities, that may be disrupted due to the construction of high-speed rail through Kings County.	Kings County, Cities of Hanford and Corcoran	Deleted. Construction of high-speed rail has begun.
7	Drought, Earthquake, Extreme Heat, Flood, Fog, Freeze, Wildfire	Emergency Power System for shelter site	City of Corcoran Public Works, Kings County Office of Emergency Services	Revised Action. Use of the Veteran's Hall is no longer needed now that the RAC gymnasium is outfitted and serves a larger population. The next critically identified need area is the Corcoran Depot apartment complex as it houses a concentrated area of senior and special needs individuals.
8	Drought, Earthquake, Extreme Temperatures: Freeze and Heat, Flood, Fog, Wildfire	New Public Safety Building	Corcoran Police Department	Completed, October 2019
9	Drought, EQ, Extreme Heat, Flood, Fog, Freeze, Wildfire	Public Education Program	County and City Public Works, Kings County Health Dept., Kings County OES	In progress.
10	Drought, Earthquake, Extreme Heat, Flood, Fog, Freeze, Wildfire	Emergency Power Switching System for Primary Care Clinics	County Public Health Emergency Preparedness	Completed, December 2018
11	Drought, Earthquake, Extreme Heat, Flood, Fog, Freeze, Wildfire	Hospitals HVAC	County Public Health Emergency Preparedness	Completed, December 2018
12	Drought, Earthquake, Extreme Heat, Flood, Fog, Freeze, Wildfire	Water Recharge Basin Partnership Program	State DWR led joint powers authority should be developed to manage this multi-jurisdictional project. California Department of Water Resources (DWR), Kings County water and irrigation districts, Kings County OES, Community Development	In progress. Funding not yet secured but grant has been applied for with HMGP



ID	HAZARD(S) ADDRESSED	MITIGATION ACTION	LEAD AGENCY	ACTION STATUS NOTES
13	Drought, Earthquake, Extreme Heat, Flood, Fog, Freeze, Wildfire	Community Alert and Warning	Kings County OES, Sheriff and City Law Enforcement, Kings County Operational Area partners, county communications and Cal OES, State Department of Corrections, State High Speed Rail Authority.	Ongoing
14	Drought, Earthquake, Extreme Heat, Flood, Fog, Freeze, Wildfire	Transportable Shelter Caches for Displaced Populations	County Public Health Emergency Preparedness	Completed, December 2022
15	Drought, Earthquake, Extreme Heat, Flood, Fog, Freeze, Wildfire	New County EOC Assessment	Kings County OES, County Departments, Kings County Fire Department, Kings County Environmental Health, Kings County Information Technology Department, and Kings County Public Works Department	Not started. Funding not yet secured.
16	Drought, Earthquake, Extreme Heat, Flood, Fog, Freeze, Wildfire	Inter-jurisdictional GIS Program	Kings County Community Development, OES, City GIS, IT, Cities of Avenal, Corcoran, Lemoore, and Hanford; special districts; water and irrigation districts; Local Agency Formation Commission of Kings County; and Kings County Association of Governments	In progress.
17	Drought, EQ, Extreme Heat, Flood, Fog, Freeze, Wildfire	Kings County Area Disaster Council	Kings County OES, County Admin Office, Board of Supervisors	In progress. Organizational work to establish the Council was accomplished but formal meetings have not yet commenced.
18	Extreme Heat	Livestock Disposal Plan	Kings County Agricultural Commissioner, Kings County Agricultural Advisory Committee, University of California at Davis Extension, Environmental Health Services, Natural Resources Conservation Service, Kings County	Not started. Funding not yet secured



ID	HAZARD(S) ADDRESSED	MITIGATION ACTION	LEAD AGENCY	ACTION STATUS NOTES
			Community Development Agency, Kings County Environmental Health, County OES, PHEP	
19	Drought, EQ, Extreme Heat, Flood, Fog, Freeze, Wildfire	Disaster Evacuation Routes	Kings County Public Works Department, Kings County Sheriff / City Police, County OES, Human Services Agency (HAS), Kings Rural Area Transit, Public Health Emergency Preparedness, Kings County Planning Agency; Cities of Avenal, Corcoran, Lemoore, and Hanford; California Department of Transportation	In progress. Funding has not been secured, may do this internally
20	Fog	Traffic Safety Fog Events	Kings County Public Works, Kings OES, County and City Law Enforcement, CHP, Caltrans	Not started, funding not secured

Source: HMPC 2023

5.3.2 Updated Action Plan

The results of the project identification and prioritization exercise from the third HMPC meeting are summarized in Table 5-4. These projects detail specific actions for reducing future hazard-related losses within Kings County. The projects are organized by jurisdictions and include notes about the department and partners necessary to implement the project.

Table 5-4 provides details on 83 existing and new mitigation actions, including the mitigation action description estimated cost, potential funding sources, timeline, indication of the goal(s) that the projects primarily align with, and are marked with their relative level of priority high, medium, and low. The following table also provides status/implementation notes that describe progress made on the actions so far, using the following categories, and, where applicable, notes if there were changes in the priority level from the previous plan:

- **Not Started:** Work has not begun
- **In Progress:** Work has begun but not completed
- **Annual Implementation:** Ongoing with no specific end date
- **New in 2023:** The action is new to this plan update; little to no work has been completed.

The Cost Estimate column describes the estimated project costs using the following categories:

- **Little to no cost**
- **Low:** Less than \$10,000
- **Moderate:** \$10,000-\$100,000
- **High:** \$100,000-\$1,000,000
- **Very High:** More than \$1,000,000

The Timeline column describes the estimated time of completion for each project using the following categories:



- **Short Term:** 1-2 years
- **Medium Term:** 3-5 years
- **Long Term:** 5+ years
- **Ongoing:** action is implemented every year

Of the 83 mitigation actions in the updated plan, 14 were carried over from the previous plan, two actions were revised, and 69 are new mitigation actions, including 28 Kings County actions and 55 jurisdiction-specific actions. Many of these mitigation actions are intended to reduce impacts to existing development. Those that protect future development from hazards, as required per the DMA 2000 regulations, are indicated by an asterisk in the action identification number. These actions include those that promote wise development and hazard avoidance, such as updating mapping and continued enforcement of floodplain development regulations. Those projects with two asterisks are emergency preparedness actions, most of which were carried forward from the 2017 plan. There is at least one mitigation actions for each natural hazard identified in the plan.



Table 5-4 Kings County Mitigation Actions

ID	LINKS TO GOALS	HAZARD(S) MITIGATED	DESCRIPTION/ BACKGROUND/ BENEFITS	JURISDICTION	LEAD AGENCY AND PARTNERS	COST ESTIMATE	POTENTIAL FUNDING	FEMA LIFELINE	PRIORITY	TIMELINE	IMPLEMENTATION STATUS
KC-1	Goal 1, Goal 2, Goal 3	Drought, Subsidence	Water Recharge Basin Partnership Program Partner with the State and contiguous counties to improve coordination, planning, and investment in long-term water supplies by developing a comprehensive water recharge basin project to meet demands of ongoing growth and development.	Kings County	State DWR led joint powers authority should be developed to manage this multi-jurisdictional project. California Department of Water Resources (DWR), Kings County water and irrigation districts, Kings County OES, Community Development	High	Possible grant and bond funds through recent State Propositions, DWR Grants, HMGP	Food, Hydration, Shelter	Medium	Ongoing	In progress. Funding not secured but has been applied for with Hazard Mitigation Grant Program
KC-2**	Goal 1, Goal 2, Goal 3	Dam Incidents, Earthquake, Flood, Dense Fog, Heavy Rain, Thunderstorms, Hail, and Lightning	Community Alert and Warning System - Purchase, install, test, and utilize a community wide alert and early warning system that alerts residents by phone, email, cell phone and other electronic communication devices.	Kings County	Kings County OES, Sheriff and City Law Enforcement, Kings County Operational Area partners, county communications and Cal OES, State Department of Corrections, State High Speed Rail Authority.	High	HMGP, Emergency Management Performance Grant (EMPG), Homeland Security Grant Program (HSGP) and potentially the EOC Grant Program	Safety and Security; Communications	High	Ongoing	In progress. Funding has been secured through EMPG grant
KC-3**	Goal 1, Goal 2, Goal 3	Drought, Earthquake, Extreme Temperatures: Freeze and Heat, Flood, Fog, Wildfire	New County EOC Assessment - Develop a standing EOC group to review and discuss specifications, supervise the creation of construction plans, identify funding mechanism and requirements, and identify the site for the new Kings County EOC.	Kings County	Kings County OES, County Departments, Kings County Fire Department, Kings County Environmental Health, Kings County Information Technology Department, and Kings County	High	General Fund, HMP Grants, EOC Grant Program, Partnership with State, County and Transportation Agencies, EMPG, Homeland Security Grant Program	Safety and Security; Communications	High	Short-term	In progress. Funding not secured yet



ID	LINKS TO GOALS	HAZARD(S) MITIGATED	DESCRIPTION/ BACKGROUND/ BENEFITS	JURISDICTION	LEAD AGENCY AND PARTNERS	COST ESTIMATE	POTENTIAL FUNDING	FEMA LIFELINE	PRIORITY	TIMELINE	IMPLEMENTATION STATUS
KC-4*	Goal 1, Goal 2, Goal 3	Agricultural Pests and Disease, Dam Incidents, Earthquake, Flood, Land Subsidence, Landslide, Wildfire	Inter-jurisdictional GIS Program – Establish a centralized, inter-jurisdictional GIS program to improve all phases of emergency management.	Kings County	Public Works Department Kings County Community Development, OES, City GIS, IT, Cities of Avenal, Corcoran, Lemoore, and Hanford; special districts; water and irrigation districts; Local Agency Formation Commission of Kings County; and Kings County Association of Governments.	Moderate	Local government funds and possible grant funds through recent	Safety and Security; Communications; Transportation	Medium	Short-term	In progress. The County has been completely mapped; Hanford and Avenal have joined in on the project contracting with County GIS to meet their mapping needs. The project is planned to expand to include all the incorporated Cities and continue to create an integrated countywide GIS system and database.
KC-5	Goal 1, Goal 2, Goal 3	Drought, Earthquake, Extreme Temperatures: Freeze and Heat, Flood, Fog, Wildfire	Kings County Area Disaster Council - Review and update items related to the Kings County Area Disaster Council in the Kings County Emergency Services Ordinance to improve countywide coordination and the monitoring and implementation of the mitigation plan	Kings County	Kings County OES, County Admin Office, Board of Supervisors	Low	Kings County General Fund, EMPG	Safety and Security	High	Short-term	In progress. Organizational work to establish the Council was accomplished but formal meetings have not yet commenced.
KC-6	Goal 1, Goal 2, Goal 3	Agriculture and Pest Disease, Public Health, Extreme Temperatures: Freeze and Heat	Livestock Disposal Plan - Establish a livestock disposal plan and compost team to address livestock fatality during extreme heat events. This action would reduce impacts to the agricultural industry during extreme temperature events, reduce the potential for	Kings County	Kings County Agricultural Commissioner, Kings County Agricultural Advisory Committee, University of California at Davis Extension, Environmental Health Services, Natural	Moderate	Hospital Preparedness Grant, the actual costs to bury the carcasses would be the responsibility of the animal facility owner/operator	Safety and Security	High	Short-term	Not started, funding not yet secured



ID	LINKS TO GOALS	HAZARD(S) MITIGATED	DESCRIPTION/ BACKGROUND/ BENEFITS	JURISDICTION	LEAD AGENCY AND PARTNERS	COST ESTIMATE	POTENTIAL FUNDING	FEMA LIFELINE	PRIORITY	TIMELINE	IMPLEMENTATION STATUS
			agricultural pests and diseases and public health concerns, and avoid overwhelming critical rendering infrastructure.		Resources Conservation Service, Kings County Community Development Agency, Kings County Environmental Health, County OES, PHEP						
KC-7	Goal 1, Goal 2, Goal 3	Earthquake, Extreme Temperatures: Freeze and Heat, Flood, Fog, Wildfire	Disaster Evacuation Routes - Ensure the maintenance and enhancement of established disaster evacuation routes	Kings County	Kings County Public Works Department, Kings County Sheriff / City Police, County OES, Human Services Agency (HAS), Kings Rural Area Transit, Public Health Emergency Preparedness, Kings County Planning Agency; Cities of Avenal, Corcoran, Lemoore, and Hanford; California Department of Transportation	Moderate	Gas tax, federal/state transportation funding, Kings County General Fund for staff time, Community Power Resiliency Allocation Program, EMPC, HMGP	Transportation	High	Short-term	In progress. Funding has not been secured, may do this internally.
KC-8	Goal 1, Goal 2, Goal 3	Severe Weather - Dense Fog	Traffic Safety Fog Events - Improve lighting, signage, and traffic controls at critical intersections and roadways to improve safety during fog events.	Kings County	Kings County Public Works, Kings OES, County and City Law Enforcement, CHP, Caltrans	Moderate	Cal Trans Grants, EMPC, HSGP	Transportation	Medium	Short-term	Not started, funding not secured yet.
KC-9**	Goal 1	Dam Incidents, Earthquake, Flood, Land Subsidence, Landslide,	Automated Transportation App - Develop a transportation routing app, similar to the	Kings County	Kings County Public Works, Kings County Administration, City GIS, and	Moderate	Community Power Resiliency Allocation	Transportation, Communications	Low	Short-term	New Action in 2023.



ID	LINKS TO GOALS	HAZARD(S) MITIGATED	DESCRIPTION/ BACKGROUND/ BENEFITS	JURISDICTION	LEAD AGENCY AND PARTNERS	COST ESTIMATE	POTENTIAL FUNDING	FEMA LIFELINE	PRIORITY	TIMELINE	IMPLEMENTATION STATUS
		Severe Weather: Dense Fog	Caltrans app, to divert traffic due to road conditions during hazard events		Emergency Management Department		Program, EMPC, HMGP				
KC-10*	Goal 2, Goal 3, Goal 4	Drought	Water Conservation Campaign - Create a water conservation campaign, utilizing social media, signage, and grass roots outreach	Kings County	Kings County Administration, Water Manager, Utility Districts	Low	DWR, FEMA HMA HMGP Funds	Food, Water, Shelter	High	Short-term	New Action in 2023.
KC-11*	Goal 2, Goal 4	Drought	Floodwater Recharge Project - Create a flood water recharge project utilizing a feasibility study, pumps, and land for recharge.	Kings County	Kings County Administration, Water Manager, Utility Districts, City and County Engineering Departments	Very High	FEMA HMA HMGP Funds, DWR	Food, Water, Shelter	High	Medium-term	New Action in 2023.
KC-12*	Goal 1, Goal 2, Goal 3, Goal 4	Drought, Subsidence	Land Subsidence Study - Conduct updated land subsidence study to understand elevation, shifts, and vulnerability.	Kings County	Kings County Administration, Water Manager, City and County Engineering Departments	Moderate	DWR, USACE, Cal OES	Safety and Security; Food, Water, Shelter; Transportation	Medium	Short-term	New Action in 2023.
KC-13*	Goal 1, Goal 2	Flooding, Fire	Debris Management Plan - Create a flood channel debris management plan to allow the flow of water, increase capacity, and remove fire hazards.	Kings County	Kings County Public Works, Water and Irrigation Districts, City Public Works	High	Proposition 68, Federal and State Resources	Safety and Security	High	Short-term	New Action in 2023.
KC-14*	Goal 1, Goal 2, Goal 3, Goal 4	Flood, Severe Weather - Heavy Rain/Thunderstorm/Hail/Lightning, Drought, Subsidence	Develop a series of flood control basins on the Kings River that either recharge or store water during flood flows.	Kings County	Kings County Conservation District (KRCD), Local GSAs	Very High	DWR Grants	Safety and Security, and Food, Water, Shelter	High	Long-term	New Action in 2023.
KC-15*	Goal 1, Goal 2, Goal 3, Goal 4	Flood, Subsidence, Severe Weather - Heavy Rain/Thunderstorms/Hail/Lightning	Sediment Removal - Remove sediment from the Kings to River to avoid future capacity issues.	Kings County	KRCD	Very High	HMPG Funds, Prop 68	Safety and Security	High	Medium-term	New Action in 2023.
KC-16**	Goal 1, Goal 4	Drought	Establish a Drought Task Force - Kings County will establish	Kings County	Water Districts, Small Water Suppliers, Non-	High	General Fund	Water Systems, Safety and Security	High	Short-term	New Action in 2023.



ID	LINKS TO GOALS	HAZARD(S) MITIGATED	DESCRIPTION/ BACKGROUND/ BENEFITS	JURISDICTION	LEAD AGENCY AND PARTNERS	COST ESTIMATE	POTENTIAL FUNDING	FEMA LIFELINE	PRIORITY	TIMELINE	IMPLEMENTATION STATUS
			and convene a task force that develops water shortage preparedness planning efforts for domestic wells, privately supplied homes, and small state water systems.		Transient Non-Community Water Systems; Kings County Department of Public Health						
KC-17	Goal 1, Goal 2, Goal 4	Drought	Regularly review and incorporate information from the Water Storage Vulnerability Tool to update information about drought and water shortage vulnerabilities in the County's MJHMP, WSCPs, and Drought Resiliency Plan	Kings County	Kings County Office of Emergency Services, Water Districts, Small Water Suppliers, Non-Transient Non-Community Water Systems, Kings County Department of Public Health	Little to No Cost	General Fund	Water Systems	High	Short-term	New Action in 2023.
KC-18	Goal 1, Goal 2, Goal 3, Goal 4	Drought	Water Shortage Contingency Plans (WSCPs) - The County will work with small water providers to develop a WSCP and update the plans every 5 years.	Kings County	Kings River Hardwick School, Hanford Christian School, Island Union School, Pioneer Union Elementary School, Lakeside Union School, Kings Ranch Ministries, Villa Terrace Apartments, Rollerland Company, Westlake Farms Headquarters, Couture Farms, State Water Resources Control Board (SWRCB)	Moderate	FEMA HMA, CA DWR	Water Systems	Medium	Short-term	New Action in 2023.
KC-19	Goal 1, Goal 2, Goal 3, Goal 4	Drought	County Drought Resiliency Plan – The County will develop a Drought Resiliency	Kings County	Water Districts, Small Water Suppliers, Non-Transient Non-	Moderate	FEMA HMA HMGP, DWR	Water Systems	Medium	Short-term	New Action in 2023.



ID	LINKS TO GOALS	HAZARD(S) MITIGATED	DESCRIPTION/ BACKGROUND/ BENEFITS	JURISDICTION	LEAD AGENCY AND PARTNERS	COST ESTIMATE	POTENTIAL FUNDING	FEMA LIFELINE	PRIORITY	TIMELINE	IMPLEMENTATION STATUS
			Plan that includes water districts, small water suppliers, and Non-Transient Non-Community Water Systems		Community Water Systems						
KC-20	Goal 1, Goal 2, Goal 3, Goal 4	Drought	Perform a countywide service area assessment to address the needs of maintaining an adequate level of service for all small public water systems.	Kings County	Water Districts, Small Water Suppliers, Non-Transient Non-Community Water Systems, Kings County Department of Public Health	Moderate	FEMA HMA HMGP	Water Systems	Medium	Short-term	New Action in 2023.
KC-21	Goal 1, Goal 3	Earthquake	Adopt Hazard-Resistant and Modern Building Ordinance to improve Seismic Resiliency - Residential properties would be most vulnerable during a major earthquake. This action promotes the regular local adoption of applicable building code updates to the Building Ordinance that are consistent with the minimum requirements in the California Building Code (CBC) and make use of the International Code Council (ICC) model building codes to provide a higher level of protection against seismic hazards.	Kings County	Kings County Community Development Agency	Moderate	FEMA Public Assistance, National Earthquake Hazards Reduction Program's State Assistance Grant Program	Safety and Security; Health and Medical, Energy, Communications, Transportation	Low	Short-term	New Action in 2023.
KC-22	Goal 1, Goal 2, Goal 3, Goal 4	Extreme Temperatures - Heat	Collaborate with the Kings County Farm Bureau to promote Climate-Smart Agricultural Practices that improve crop	Kings County	Kings County Agricultural Commissioner's Office, Department of Public Health,	High	California Climate Investments Technical Assistance Program	Safety and Security; Health and Medical, Energy, Transportation	Low	Medium-term	New Action in 2023.



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			resilience to extreme heat to ensure Kings County's working lands are productive and vulnerable and underserved communities can access produce throughout the year and refrigeration infrastructure.		Kings County Farm Bureau						
KC-23	Goal 1, Goal 3, Goal 4	Extreme Temperatures - Heat, Earthquake, Severe Weather: Heavy Rain/Thunderstorm/Hail/Lightning, Severe Weather: Wind/Tornado	Kings County Cool Zone and Warm Zone Program - Expand participating businesses and continuums of care in Kings County in partnership with major hospitals and medical clinics to ensure there are protections in place for the unhoused and other vulnerable populations during extreme temperature events. Also consider retrofitting designated facilities included in the Program that can also serve as Safe Rooms during earthquake and severe weather events.	Kings County	Kings County Department of Public Health, Kings County Office of Emergency Services, Kings Partnership	Moderate	EPA Grants, Office of Environmental Health Hazard Assessment (OEHA), Health and Human Services Agency Technical Support	Safety and Security; Health and Medical, Energy, Transportation	Low	Medium-Term	New Action in 2023.
KC-24	Goal 1, Goal 3, Goal 4	Extreme Temperatures - Heat and Freeze, Earthquake, Severe Weather: Heavy Rain/Thunderstorms/Hail/Lightning, Severe Weather: Wind/Tornado	Conduct a Public Survey on At-Risk Community Demographics and Disability Needs - A public survey will be developed around at-risk communities to understand those in the County with Access and Functional Needs (AFNs) and other disabilities, household	Kings County	Kings County Department of Public Health, Kings County Office of Emergency Services, Kings Partnership	Low	FEMA HMA HMGP	Safety and Security; Health and Medical, Energy, Transportation	High	Short-Term	New Action in 2023



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			emergency preparedness and evacuation and support needs, and medical devices and equipment needs at sheltering facilities.								
KC-25	Goal 1, Goal 3, Goal 4	Landslide	Development Regulations in Landslide Hazard Areas - Define steep slope/high-risk areas in land use, community plans, and specific plans in western Kings County and create guidelines for development in these areas or restrict development. The regulations should also ensure protections are in place for critical facilities, like transportation and communications facilities.	Kings County	Kings County Community Development Agency	Low	FEMA HMA HMGP	Safety and Security; Energy, Transportation	Low	Medium-Term	New Action in 2023.
KC-26	Goal 1, Goal 3, Goal 4	Severe Weather - All	Protect Existing Substandard Housing and New Residential Construction from Severe Weather Hazards - Identify Housing Rehabilitation Funding Opportunities and Review Building Ordinance and consider inclusion of techniques such as structural bracing (straps or clips, anchor bolts), shutters, roof coverings or interlocking shingles, flashing, and bracing elevated components in building design to	Kings County	Kings County Community Development Agency, City of Avenal, City of Corcoran, City of Hanford, City of Lemoore	Low	FEMA HMA HMGP	Safety and Security	Low	Medium-term	New Action in 2023. Complements Mitigation Action KC-21.



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			minimize severe weather, hail, and wind hazards.								
KC-27	Goal 1, Goal 3, Goal 4	Severe Weather - Wind/Tornado	Protect Power Line Infrastructure and Coordinate a Community Back-Up Power Resiliency Plan during PSPS Events - This will involve coordination with the CPUC, PG&E and SCE and the purchase of permanent generators in partnership with hospitals, nursing homes, and sheltering facilities.	Kings County	CPUC, Electric Safety and Reliability Branch, PG&E, SCE, City of Avenal	High	FEMA HMA HMGP, CPUC Rule 20 Undergrounding Programs, Federal Transportation Enhancements Program (under TEA-21)	Energy	Low	Medium-term	New Action in 2023.
KC-28	Goal 1, Goal 3, Goal 4	Wildfire	Regulate Development in Wildfire Urban Interface (WUI) in Western Portion of County - Update Safety Element policies to address current wildfire risk, discourage development in the WUI (very high Fire Hazard Severity Zones [VHFHSZs] or State Responsibility Area [SRA]), and implement defensible space inspection requirements through zoning or land use regulations related to emergency accessibility, water supply and flow for fire suppression, visible street addressing and signage, defensible space clearances, fuel modifications, and fire breaks.	Kings County	Kings County Fire Department	Moderate	General Fund	Safety and Security; Food, Hydration, Shelter; Health and Medical; Energy; Communications, Transportation; Water Systems	Low	Short-term	New Action in 2023.



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A-1	Goal 1, Goal 3, Goal 4	Earthquake, Land Subsidence, Landslide	Housing Rehabilitation Program - Continue and enhance housing rehabilitation program.	Avenal	City of Avenal Community Development Director	High	General Fund, Housing and Urban Development (HUD) Community Development Block Grant (CDBG) Funds, HOME, Cal Home Program	Food, Hydration, Shelter	Medium	Medium-term	In progress. Homes continue to be rehabbed with these funds-first come first serve. The City has received funding from CDBG, HOME, and the Cal Home Program to rehabilitate homes. Under this program most homes are torn down and reconstructed to current codes.
A-2	Goal 1, Goal 2, Goal 3, Goal 4	Flood, Drought, Earthquake, Land Subsidence	Vulnerability of Water Distribution System - Upgrade the two water transmission lines that supply water to the city and Avenal State Prison (one 18-inch line and one 12-inch line) that experience water leaks and movement due to earthquakes that lead to slope failure.	Avenal	City of Avenal Public Works Department	High	FEMA HMA HMPG, BRIC	Food, Hydration, Shelter	Medium	Long-term	In progress. Expected to be completed December 2023.
A-3	Goal 1, Goal 3, Goal 4	Earthquake, Subsidence, Landslide	Loss Reduction Program for unreinforced masonry (URM) Buildings - Establish a loss reduction program for URM buildings in compliance with the California URM Law of 1986. In response to the danger posed by the great number of potentially hazardous buildings in California, in 1986 the state legislature enacted the URM building law (Chapter 250, Statutes of 1986: SF547 [Alquist]; Government Code	Avenal	City of Avenal City Manager's Office, California Seismic Safety Commission, City of Avenal Public Works Department	Very High	FEMA HMA HMGP, BRIC, General Fund, Staff Time	Food, Hydration, Shelter	Medium	Long-term	In progress.



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			Section 8875 et seq.). The law mitigates hazards posed by URM's and applies to all jurisdictions in California's Seismic Hazard Zone 4, the region of highest earthquake activity in the nation.								
A-4	Goal 2, Goal 4	Earthquake	Replace Existing Valves at Tank Sites with Earthquake Valves to Protect Water Supply	Avenal	City of Avenal Public Works	Moderate	General Fund	Safety and Security	Medium	Medium Term	New Action in 2023.
A-5	Goal 2, Goal 3, Goal 4	Drought	Water Supply Rehabilitation - Install valve at the City water source to isolate from joint use facilities to maintain water supply during unexpected outages of Westland Water District facility.	Avenal	DWR, City of Avenal, Westlands Water District	Very High	FEMA HMA HMGP, BRIC, USDA DWSRF, DWR Urban Community Drought Relief Grant Program	Food, Hydration, Shelter	Low	Medium Term	New Action in 2023.
A-6	Goal 1, Goal 2, Goal 3, Goal 4	Flood; Severe Weather: Heavy Rain, Thunder, Hail, and Lightning	Improve Flow Design for Arroyo Esquinado Channel	Avenal	City of Avenal Public Works Department	Moderate	FEMA HMA HMGP, BRIC	Water Systems	Medium	Medium Term	New Action in 2023.
A-7	Goal 1, Goal 2, Goal 3, Goal 4	Flood	Stormwater Drainage Master Plan	Avenal	City of Avenal Public Works Department	Moderate	General Fund	Water Systems	Medium	Medium Term	New Action in 2023.
A-8*	Goal 1, Goal 2, Goal 3, Goal 4	Flood	Investigate Capacity for Floodwater Conveyance Facilities (Drainage Ditches and Culverts) along Arroyo del Camino	Avenal	City of Avenal Public Works Department	Moderate	FEMA HMA HMGP, BRIC, General Fund	Water Systems	Low	Medium Term	New Action in 2023.
A-9*	Goal 1, Goal 2, Goal 3, Goal 4	Land Subsidence	Conduct updated Land Subsidence Study to understand Elevation, Shifts, and Vulnerability.	Avenal	Kings County Administration, Water Management Agencies, City of Avenal Public Works Department	Moderate	DWR, FEMA HMA HMGP, USACE	Safety and Security, Food and Water, Shelter, Transportation	Medium	Long Term	New Action in 2023.



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A-10	Goal 1, Goal 2, Goal 3, Goal 4	Wildfire	Undergrounding of Utilities along City's Main Corridors	Avenal	Kings County Fire Department	High	FEMA HMA HMGP, US Forest Service WUI Grants	Energy	Medium	Medium Term	New Action in 2023.
A-11	Goal 1, Goal 3, Goal 4	Extreme Temperatures - Heat and Freeze, Earthquake, Severe Weather: Heavy Rain, Thunderstorms, Hail, and Lightning, Severe Weather: Wind and Tornado	Conduct a Public Survey on At-Risk Community Demographics and Disability Needs - A public survey will be developed around at-risk communities to understand those in the County with Access and Functional Needs (AFNs) and other disabilities, household emergency preparedness and evacuation and support needs, and medical devices and equipment needs at sheltering facilities.	Avenal	Kings County Department of Public Health, Kings County Office of Emergency Services, Kings Partnership	Low	FEMA HMA HMGP	Health and Medical, Energy, Transportation	High	Short Term	New Action in 2023.
C-1	Goal 1, Goal 2, Goal 3	Extreme Temperatures: Freeze and Heat	Equip and maintain the Recreational Association of Corcoran (RAC) Gymnasium Building, and Corcoran Transit Station with climate control features and designate each site as an Emergency Warming and Cooling Center for Sensitive Populations	Corcoran	City of Corcoran Public Works Department	High	FEMA HMA HMGP, Other State Grants	Safety and Security	High	Long Term	In progress - revised in 2023. This project has been carried over from the 2007 and 2012 MJHMPs. This action has also been modified to now include the RAC Building and the Corcoran Transit Station. These facilities are already in use for this purpose and now need to be maintained for this use.
C-2**	Goal 1, Goal 3	Extreme Temperatures: Extreme Heat	Emergency Power System for the Corcoran Depot Apartment complex operated by the Kings	Corcoran	City of Corcoran Public Works, Kings County Office of Emergency Services	High,	Community Power Resiliency Allocation Program, EMPCG, FEMA	Energy	High	Short Term	In progress - revised in 2023. Use of the Veteran's Hall is no longer needed now that the RAC gymnasium is



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			County Housing Authority.				HMA HMGP, SHSGP Grant Program				outfitted and serves a larger population. The next critically identified need area is the Corcoran Depot apartment complex as it houses a concentrated area of senior and special needs individuals.
C-3	Goal 1, Goal 2, Goal 3, Goal 4	Earthquake, Flood, Land Subsidence	Assess the Vulnerability of Critical Facilities – Assess vulnerability of critical facilities, including police/fire stations, hospitals, schools, and others, to identify and prioritize projects for multi-hazard risk reduction.	Corcoran	City of Corcoran Public Works, Police Department	High	General Fund	Water Systems	High	Ongoing	In progress. This was carried over from the 2012 MJHMP. The Police Department building is a newly constructed building that shifted all Police Department operations to the new facility in 2019. Other City facilities are routinely reviewed through risk management authority in order to maintain current insurance.
C-4	Goal 1, Goal 2, Goal 3, Goal 4	Drought	Assess Community Lifelines related to Water Distribution Systems – Assess vulnerability of lifeline utilities, including water distribution systems, to identify and prioritize projects for multi-hazard risk reduction.	Corcoran	City of Corcoran Public Works Department	High	Department of Water Resources (DWR) and Regional Water Quality Control Board (RWQCB)	Safety and Security, Water Systems	High	Ongoing	In progress. This was carried over from the 2007 MJHMP. Upgrades and investments are routinely planned for the City's CIP and funding through grants, loans, and other City funding. The City's Water system is monitored and upgraded to maintain reliable system services, which also pro-actively addresses challenges posed by the drought. The City's Wastewater



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											ponds and connecting system were recently upgraded using American Rescue Plan (ARP) funding.
C-5	Goal 3	Cyber Threat	Use antivirus solutions, malware, and firewalls to block threats	Corcoran	City of Corcoran, Public Works Department	Moderate	General Fund	Safety and Security; Communications	Medium	Ongoing	New Action in 2023. The City has assessed network vulnerabilities and is currently implementing measures for cybersecurity. Monitoring and evaluation will be ongoing to evaluate changes and risks.
C-6**	Goal 1, Goal 2, Goal 3	Dam Incidents, Earthquake, Flood, Severe Weather: Dense Fog, Severe Weather: Heavy Rain, Thunderstorms, Lightning, and Hail	Community Alert and Warning System - Purchase, install, test, and utilize a community wide alert and early warning system that alerts residents by phone, email, cell phone and other electronic communication devices. This system can be expanded to include a Flood Early Warning System (FEWS) component (HMGP eligible component) that utilizes USGS and NOAA rainfall and flood gauges to initiate flood-specific warnings and downstream evacuations.	Corcoran	City of Corcoran, Corcoran Police Department, and Kings County OES	Moderate	Emergency Management Performance Grant (EMPG), Homeland Security Grant Program (HSGP), High Hazard Potential Dam (HHPD), FEWS designs that are eligible for HMPG funding	Safety and Security, Water Systems	High	Ongoing	New Action in 2023. The City has implemented NIXLE Alert System, and utilizes City associated social media for community announcements. Extended Countywide alert notification system is in development through Kings County OES - Funding has been secured through a EMPG Grant.
C-7	Goal 1, Goal 2, Goal 3	Drought	Public Education Program for Water Conservation	Corcoran	City of Corcoran, City Public Works Department	Low	General Fund, City Water Enterprise Fund, and Department of	Water Systems	High	Ongoing	New Action in 2023. The City is currently implementing citywide water meter installation along



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							Water Resources funding.				with public use property water use application, water restriction notifications, and enhancing water utility payment information. Together, these systems are providing enhanced water conservation education to the public and is anticipated to affect greater conservation headed into 2024 summer.
C-8*	Goal 1, Goal 2, Goal 3, Goal 4	Flooding, Drought, Subsidence	Corcoran Flood Protection – Multi-Agency Strategic Plan for Upstream Floodwater Diversion to Reduce Tulare Lake Flooding	Corcoran	City of Corcoran, Cross Creek Flood Control District, other Water & Irrigation Districts representing the Tulare Lake Basin, and DWR	Very High	FEMA HMA HMGP, DWR Riverine Stewardship Program and Urban Stream Restoration Program, Prop 68 Funds (Floodplain Management, Protection, and Risk Awareness Grant Program)	Water Systems	High	Long Term	New Action in 2023. Acknowledges that the USACE controls water releases from Pine Flat, Terminus, Schaefer, and Isabella Dams, and water and irrigation districts in Kings, Tulare, Fresno, and Kern counties. It is critical to beneficial groundwater recharge and management.
C-9*	Goal 1, Goal 3, Goal 4	Dam Failure; Flood; Severe Weather: Heavy Rain, Thunder, Hail, and Lightning	Enhanced Erosion Control and Protection of the Flood Control Levee	Corcoran	City of Corcoran, Cross Creek Flood Control District	High	FEMA HMA HMGP, DWR Urban Community Drought Relief Program	Safety and Security	Medium	Long Term	New Action in 2023. DWR response to 2023 flooding provided erosion control measures along the Corcoran Levee for enhanced erosion control. This established a flood response measure that can be replicated in future years with flood disasters.



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C-10*	Goal 2, Goal 3, Goal 4	Flooding, Drought, Subsidence	Increase Reservoir Storage for Control of Floodwater	Corcoran	Cross Creek Flood Control District, City of Corcoran, USACE, Kings County, Other Water Districts	Very High	FEMA HMA HMGP, DWR Grants	Water Systems	High	Long Term	New Action in 2023.
C-11	Goal 3	Public Health Hazards	Utilize trainings and exercises, epidemiology, and surveillance to control and combat public health risks	Corcoran	Kings County, City of Corcoran	Moderate	General Fund	Health and Medical	Medium	Short Term	New Action in 2023. This would be a Kings County Public Health Department initiated effort that the City supports and helps to facilitate in Corcoran.
C-12*	Goal 1, Goal 2, Goal 3	Flooding	Update the City's Storm Drain Master Plan every Few Years to included Planned Growth Areas	Corcoran	City of Corcoran	Low	General Fund	Water Systems	Low	Short Term	New Action in 2023. This is needed infrastructure for the City to diversify disbursement of stormwater drainage within the City.
C-13*	Goal 1, Goal 2, Goal 3	Flooding	Continue to Participate with the Cross Creek Flood Control District to Ensure Levees Protecting Corcoran from Tulare Lake Flooding are Adequately Monitored	Corcoran	City of Corcoran, Cross Creek Flood Control District	Low	General Fund	Water Systems, Safety and Security	High	Short Term	New Action in 2023. This is ongoing monitoring and maintenance efforts that are needed. New Action in 2023; this was integrated from the Safety Element (Policy 4.17).
C-14	Goal 1, Goal 3, Goal 4	Extreme Temperatures - Heat and Freeze, Earthquake, Severe Weather: Heavy Rain, Thunderstorms, Hail, and Lightning, Severe Weather: Wind and Tornado	Conduct a Public Survey on At-Risk Community Demographics and Disability Needs - A public survey will be developed around at-risk communities to understand those in the County with Access and Functional Needs (AFNs) and other disabilities, household emergency preparedness and evacuation and support needs, and	Corcoran	Kings County Department of Public Health, Kings County Office of Emergency Services, Kings Partnership	Low	FEMA HMA HMGP	Safety and Security, Health and Medical, Energy, Transportation	High	Short Term	New Action in 2023/



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			medical devices and equipment needs at sheltering facilities.								
H-1	Goal 1, Goal 2, Goal 3	Drought, Earthquake, Extreme Temperatures, Flood, Public Health Hazards, Wildfire	Public Education Program for All Hazards	Hanford	County and City Public Works, Kings County Health Dept., Kings County OES	Low	General Fund	Safety and Security	High	Ongoing	In progress. The Hanford Fire Department hired a Fire Marshal to lead Community Risk Reduction and public education program for the department. Outreach now includes numerous events such as school programs and other monthly events.
H-2	Goal 1, Goal 3	Drought	Retrofits to Water Storage Tanks - Two water storage tanks holding 800,000 gallons of water need to be seismically retrofitted against seismic and fire hazards following earthquakes	Hanford	City of Hanford Public Works Department	Moderate	DWR Grants, HMGP	Food, Water Shelter	High	Ongoing	In progress. Drilled two new wells to feed the system and added two additional 500,000 water tanks being proposed as part of the City Infrastructure Plan.
H-3	Goal 1, Goal 2, Goal 3	Earthquake	GIS Database of Unreinforced Masonry (URM) Buildings	Hanford	City of Hanford Fire Department, Kings County Community Development, OES, City GIS, IT	Moderate	General Fund	Safety and Security; Communication; Transportation	Medium	Short Term	Not started. Funding not secured yet.
H-4	Goal 1, Goal 3, Goal 4	Earthquake	Retrofit 58 URM Buildings in Downtown Hanford	Hanford	City of Hanford City Manager's Office	Very High	FEMA HMA HMGP	Food, Hydration, Shelter	Medium	Long Term	In progress. In certain cases, the City has required developers to conform to the most recent
H-5	Goal 1, Goal 2	Earthquake, Dam Incidents, Flood, Wildfire	Disaster Evacuation Routes - Ensure the maintenance and enhancement of established disaster evacuation routes	Hanford	City of Hanford City Manager's Office, City of Hanford Public Works Department,	Moderate	General Fund	Transportation	Medium	Medium Term	Not started.



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					Kings County OES						
H-6	Goal 1	Dam Incidents, Earthquake, Flood, Subsidence, Landslide, Fog, Severe Storms, Wildfire	Develop a transportation routing app, like the Caltrans app, to divert traffic due to road conditions during hazard events.	Hanford	Kings County Public Works, Kings County Administration	Moderate	Community Power Resiliency Allocation Program, Emergency Management Performance Grant (EMPG), HMGP	Transportation, Communication	Low	Short Term	New Action in 2023.
H-7	Goal 1, Goal 2	Flooding, Wildfire	Create a flood channel debris management plan to allow the flow of water, increase capacity, and remove fire hazards.	Hanford	Kings County Public Works, Water and Irrigation Districts, City Public Works	High	Proposition 68, Federal and State Resources	Safety and Security	High	Short Term	New Action in 2023.
H-8	Goal 1, Goal 2, Goal 3, Goal 4	Flood; Severe Weather: Heavy Rain, Thunder, Hail and Lightning; Drought; Subsidence	Develop a series of flood control basins on the Kings River that either recharge or store water during flood flows.	Hanford	Kings County Conservation District (KRCD), Local GSAs	Very High	DWR Grants, FEMA HMA HMGP, BRIC	Safety and Security, and Food, Water, Shelter	High	Long Term	New Action in 2023.
H-9	Goal 1, Goal 2, Goal 3, Goal 4	Flood, Severe Weather: Heavy Rain, Thunder, Hail and Lightning	Evaluate federal levees to determine height and make-up of levees to protect during 100-year storm events.	Hanford	United States Army Corps of Engineers (USACE), KRCD	Very High	USACE Grants	Safety and Security	High	Long Term	New Action in 2023.
H-10	Goal 1, Goal 2, Goal 3, Goal 4	Flood, Subsidence, Severe Weather: Heavy Rain, Thunder, Hail and Lightning	Remove sediment from Kings River to avoid future capacity issues.	Hanford	KRCD	Very High	HMPG Funds. Prop 68	Safety and Security	High	Medium Term	New Action in 2023.
H-11	Goal 1, Goal 2, Goal 3, Goal 4	Drought, Subsidence	Conduct updated land subsidence study to understand elevations, shifts, and vulnerability.	Hanford	Kings County Administration, Water Management Agencies	Moderate	DWR, USACE, Cal OES	Safety and Security, Food, water, Shelter, Transportation	Medium	Short Term	New Action in 2023.
H-12	Goal 3	Cyber-attack	Use antivirus solutions, malware, and firewalls to block threats	Hanford	Kings County, Avenal, Corcoran, Hanford, Lemoore	Moderate	General fund	Safety and Security, Communications	Medium	Ongoing	New Action in 2023.



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H-13	Goal 3	Public Health Hazards	Utilize trainings and exercises, epidemiology, and surveillance to control and combat public health risks	Hanford	County and City Public Health Departments	Moderate	General Fund	Health and Medical	Medium	Ongoing	New Action in 2023.
H-14	Goal 1, Goal 3	Earthquake, Drought	Safety Building & Community Center - Create a safety building for police and fire administration. Building will house EOC and a community center	Hanford	Hanford Police and Fire Departments	Moderate	General Fund	Safety and Security	Medium	Medium Term	New Action in 2023.
H-15	Goal 1, Goal 3, Goal 4	Extreme Temperatures: Heat and Freeze	Extreme Weather Shelter - Develop plan for center to assist at-risk populations during extreme weather events. Coordinate with regional plans for consistency.	Hanford	Hanford Community Development Agency, Police and Fire Department	Moderate	General Fund, APGP	Food, Hydration, Shelter	High	Medium Term	New Action in 2023.
H-16	Goal 1, Goal 3, Goal 4	Dam Incidents, Earthquake, Flood, Dense Fog Heavy Rain, Thunderstorms, Hail, and Lightning, High Wind and Tornado, Wildfire	Grangeville Overpass - Design and build an overpass for the train tracks to allow emergency vehicle access during a hazard event.	Hanford	Hanford Public Works, Community Development, and Administration	Very High	General Fund	Transportation	High	Long Term	New Action in 2023.
H-17	Goal 1, Goal 3, Goal 4	Dam Incidents, Earthquake, Flood, Dense Fog Heavy Rain, Thunderstorms, Hail, and Lightning, High Wind and Tornado, Wildfire	Assess the Capacity and Viability of Designate Evacuation Routes and Develop Evacuation Plan for All Hazard Scenarios	Hanford	Hanford Public Works, Community Development, and Administration	Very High	General Fund	Transportation	High	Long Term	New Action in 2023.
H-18	Goal 1, Goal 3, Goal 4	Dam Incidents; Extreme Temperatures - Heat and Freeze,	Conduct a Public Survey on At-Risk Community Demographics and Disability Needs - A	Hanford	Kings County Department of Public Health, Kings County Office of	Low	FEMA HMA HMCP	Safety and Security, Health and Medical, Energy, Transportation	High	Short-Term	New in 2023



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		Earthquake, Severe Weather: Heavy Rain, Thunderstorms, Hail, and Lightning, Severe Weather: Wind and Tornado	public survey will be developed around at-risk communities to understand those in the County with Access and Functional Needs (AFNs) and other disabilities, household emergency preparedness and evacuation and support needs, and medical devices and equipment needs at sheltering facilities.		Emergency Services, Kings Partnership						
L-1	Goal 1, Goal 3	Drought, Earthquake, Extreme Heat, Flood, Fog, Freeze, Wildfire	Public Education Program for All Hazards	Lemoore	City of Lemoore, City Public Works, Kings County Health Department, Kings County OES,	Low	General Fund, FEMA HMA HMGP, EMPG	Safety and Security; Communications	High	Short Term	In progress. This project entails establishing a training program to educate citizens about hazards and encourage households to have emergency kits, plans, and drills in place.
L-2	Goal 1, Goal 2, Goal 3, Goal 4	Drought	Long-Term Water Supply – Improve coordination, planning, and investment in long-term water supplies to meet demands of ongoing growth and development	Lemoore	City of Lemoore, Kings County Water District, Kings County, Kings County COG	Moderate	DWR Funds	Water Systems	High	Short Term	In progress. The City has installed a new well head and is actively pursuing funding sources to complete treatment and connection to water supply for development on the south side of town.
L-3*	Goal 1, Goal 3, Goal 4	Earthquake, Flood, Land Subsidence	Inter-jurisdictional GIS Program – Establish a centralized, inter-jurisdictional GIS program to improve all phases of emergency management	Lemoore	City of Lemoore Planning Department	Low	FEMA HMA HMGP, ESRI, General Fund	Communications	High	Ongoing	In progress. This project was completed as part of the 2012 MJHMP but carried forward in that plan as an ongoing effort. The City continues to participate in the Municipal GIS Program with the



ID	LINKS TO GOALS	HAZARD(S) MITIGATED	DESCRIPTION/ BACKGROUND/ BENEFITS	JURISDICTION	LEAD AGENCY AND PARTNERS	COST ESTIMATE	POTENTIAL FUNDING	FEMA LIFELINE	PRIORITY	TIMELINE	IMPLEMENTATION STATUS
											Kings County Planning Department.
L-4	Goal 1, Goal 3	Dam Incidents, Earthquake, Flood, Subsidence, Landslide, Fog, Severe Storms, Wildfire	Develop a transportation routing app, similar to the Caltrans app, to divert traffic due to road conditions during hazard events	Lemoore	Kings County Public Works, Kings County Administration, Kings County, City of Lemoore	Low	FEMA HMA HMGP	Transportation	Low	Medium Term	New Action in 2023.
L-5	Goal 1, Goal 2, Goal 3, Goal 4	Drought	Public Education Program for Water Supply and Conservation	Lemoore	City of Lemoore Administration Department, Finance Department	Low	FEMA HMA HMGP, DWR Grants	Water Systems	Medium	Short Term	New Action in 2023. The City of Lemoore recently hired a Water Conservation Officer to provide public education on water supply and conservation measures.
L-6	Goal 1, Goal 2, Goal 3, Goal 4	Flood	Well Protection and Flood Mitigation - Protect Wells from Floodwaters during Future Flooding Events by Building Infrastructure and Protection around the Well Sites	Lemoore	City of Lemoore Public Works	High	FEMA HMA HMGP, DWR Funds, USDA DWSRF	Water Systems	Medium	Medium Term	New Action in 2023. The City of Lemoore Public Works Department has created berms around City wells and is researching additional protective measure solutions.
L-7	Goal 1, Goal 2	Flood, Wildfire	Create a flood channel debris management plan to allow the flow of water, increase capacity, and remove fire hazards.	Lemoore	City of Lemoore, Kings County Public Works, Water and Irrigation Districts, City Public Works, Kings County	High	FEMA HMA HMGP	Safety and Security, Water Systems	High	Medium Term	New Action in 2023.
L-8*	Goal 1, Goal 2, Goal 3, Goal 4	Drought, Subsidence	Conduct updated land subsidence study to understand elevations, shifts, and vulnerability.	Lemoore	City of Lemoore, Kings County Administration, Water Management Agencies	Moderate	DWR, USACE, Cal OES	Safety and Security, Food, water, Shelter, Transportation	Low	Short Term	New Action in 2023. The City currently performs subsidence studies at areas of concern.
L-9	Goal 3	Cyber Attack	Use antivirus solutions, malware, and firewalls to block threats	Lemoore	Kings County, Avenal, Corcoran, Hanford, Lemoore	Moderate	General fund, HSGP	Safety and Security, Communications	Medium	Short Term	New Action in 2023. City of Lemoore IT staff will assess cyber security needs and seek solutions to



ID	LINKS TO GOALS	HAZARD(S) MITIGATED	DESCRIPTION/ BACKGROUND/ BENEFITS	JURISDICTION	LEAD AGENCY AND PARTNERS	COST ESTIMATE	POTENTIAL FUNDING	FEMA LIFELINE	PRIORITY	TIMELINE	IMPLEMENTATION STATUS
											improve security measures.
L-10	Goal 3	Public Health Hazards	Utilize trainings and exercises, epidemiology, and surveillance to control and combat public health risks	Lemoore	County Public Health Department	Moderate	General Fund	Health and Medical	Low	Short Term	New Action in 2023. The City does not have a Public Health Department but will coordinate with the Kings County Public Health Department during public health emergencies.
L-11	Goal 1, Goal 3	Dam Incidents	Develop plan addressing communication and evacuation for vulnerable populations in areas potentially impacted by Pine Flat Dam failure.	Lemoore	Kings County OES	Low	General Fund	Communications, Safety and Security	Low	Short Term	New Action in 2023. The City will coordinate with Kings County OES to create a response plan addressing the impacts of a dam failure.
L-12	Goal 1, Goal 3, Goal 4	Dam Incidents; Extreme Temperatures - Heat and Freeze, Earthquake, Severe Weather: Heavy Rain, Thunderstorms, Hail, and Lightning, Severe Weather: Wind and Tornado; Severe Weather: Dense Fog	Conduct a Public Survey on At-Risk Community Demographics and Disability Needs - A public survey will be developed around at-risk communities to understand those in the County with Access and Functional Needs (AFNs) and other disabilities, household emergency preparedness and evacuation and support needs, and medical devices and equipment needs at sheltering facilities.	Lemoore	Kings County Department of Public Health, Kings County Office of Emergency Services, Kings Partnership	Low	FEMA HMA HMGP	; Safety and Security, Health and Medical, Energy, Transportation	High	Short-Term	New Action in 2023

NOTES:

- HMA - Hazard Mitigation Assistant Program
- HMGP - Hazard Mitigation Grant Program
- HSGP - Homeland Security Grant Program
- EMPG - Emergency Management Performance Grant
- Community Power Resiliency Allocation Grant Program - formerly the Public Safety Power Shutoff (PSPS) Program Funds



- DWR – Department of Water Resources Grant Funds
- Proposition 68 – water bond funds allocated to recreation, ecosystem protection, habitat conservation, and climate resilience projects
- KRCD – Kings River Conservation District Funds (funding from the California Department of Conservation [DOC])
- USACE – U.S. Army Corps of Engineers Funds
- APGP – Adaptation Planning Grant Program



Table 5-5 provides a summary of the individual mitigation actions by jurisdiction specific to the municipalities that participated in the 2022-2023 plan update. Together with the County goals, objectives, and actions the tables provide an overview of all the mitigation actions proposed. More details on jurisdiction-specific mitigation actions can be found in the respective jurisdictional annexes.

Table 5-5 Jurisdictional Mitigation Action Summary

ID	HAZARD(S) MITIGATED	PROJECT TITLE	LEAD AGENCY AND PARTNERS	PRIORITY	IMPLEMENTATION STATUS
City of Avenal					
A-1	Earthquake, Land Subsidence, Landslide	Housing Rehabilitation Program - Continue and enhance housing rehabilitation program.	City of Avenal Community Development Director	Medium	In progress. Homes continue to be rehabbed with these funds-first come first serve. The City has received funding from CDBG, HOME, and the Cal Home Program to rehabilitate homes. Under this program most homes are torn down and reconstructed to current codes.
A-2	Flood, Drought, Earthquake, Land Subsidence	Vulnerability of Water Distribution System - Upgrade the two water transmission lines that supply water to the city and Avenal State Prison (one 18-inch line and one 12-inch line) that experience water leaks and movement due to earthquakes that lead to slope failure.	City of Avenal Public Works Department	Medium	In progress, expected to be completed December 2023.
A-3	Earthquake, Subsidence, Landslide	Loss Reduction Program for unreinforced masonry (URM) Buildings - Establish a loss reduction program for URM buildings in compliance with the California URM Law of 1986. In response to the danger posed by the great number of potentially hazardous buildings in California, in 1986 the state legislature enacted the URM building law (Chapter 250, Statutes of 1986: SF547 [Alquist]; Government Code Section 8875 et seq.). The law mitigates hazards posed by URMs and applies to all jurisdictions in California's Seismic Hazard Zone 4, the region of highest earthquake activity in the nation.	City of Avenal City Manager's Office, California Seismic Safety Commission, City of Avenal Public Works Department	Medium	In progress.
A-4	Earthquake	Replace Existing Valves at Tank Sites with Earthquake Valves to Protect Water Supply	City of Avenal Public Works	Medium	New in 2023.
A-5	Drought	Water Supply Rehabilitation - Install valve at the City water source to isolate from joint use facilities to maintain water supply during unexpected outages of Westland Water District facility.	DWR, City of Avenal, Westlands Water District	Low	New in 2023.
A-6	Flood; Severe Weather: Heavy Rain, Thunder, Hail, and Lightning	Improve Flow Design for Arroyo Esquinado Channel	City of Avenal Public Works Department	Medium	New in 2023.



ID	HAZARD(S) MITIGATED	PROJECT TITLE	LEAD AGENCY AND PARTNERS	PRIORITY	IMPLEMENTATION STATUS
A-7	Flood	Stormwater Drainage Master Plan	City of Avenal Public Works Department	Medium	New in 2023.
A-8*	Flood	Investigate Capacity for Floodwater Conveyance Facilities (Drainage Ditches and Culverts) along Arroyo del Camino	City of Avenal Public Works Department	Low	New in 2023.
A-9*	Land Subsidence	Conduct updated Land Subsidence Study to understand Elevation, Shifts, and Vulnerability.	Kings County Administration, Water Management Agencies, City of Avenal Public Works Department	Medium	New in 2023.
A-10	Wildfire	Undergrounding of Utilities along City's Main Corridors	Kings County Fire Department	Medium	New in 2023.
A-11	Extreme Temperatures - Heat and Freeze, Earthquake, Severe Weather: Heavy Rain, Thunderstorms, Hail, and Lightning, Severe Weather: Wind and Tornado	Conduct a Public Survey on At-Risk Community Demographics and Disability Needs - A public survey will be developed around at-risk communities to understand those in the County with Access and Functional Needs (AFNs) and other disabilities, household emergency preparedness and evacuation and support needs, and medical devices and equipment needs at sheltering facilities.	Kings County Department of Public Health, Kings County Office of Emergency Services, Kings Partnership	High	New in 2023.
City of Corcoran					
C-1	Extreme Temperatures: Freeze and Heat	Equip and maintain the Recreational Association of Corcoran (RAC) Gymnasium Building, and Corcoran Transit Station with climate control features and designate each site as an Emergency Warming and Cooling Center for Sensitive Populations	City of Corcoran Public Works Department	High	In progress - revised in 2023. This project has been carried over from the 2007 and 2012 MJHMPs. This action has also been modified to now include the RAC Building and the Corcoran Transit Station. These facilities are already in use for this purpose and now need to be maintained for this use.
C-2	Extreme Temperatures: Extreme Heat	Emergency Power System for the Corcoran Depot Apartment complex operated by the Kings County Housing Authority.	City of Corcoran Public Works, Kings County Office of Emergency Services	High	In progress - revised in 2023. Use of the Veteran's Hall is no longer needed now that the RAC gymnasium is outfitted and serves a larger population. The next critically identified need area is the Corcoran Depot apartment complex as it houses a concentrated area of senior and special needs individuals.
C-3	Earthquake, Flood, Land Subsidence	Assess the Vulnerability of Critical Facilities - Assess vulnerability of critical facilities, including police/fire stations, hospitals, schools, and others, to identify and prioritize projects for multi-hazard risk reduction.	City of Corcoran Public Works, Police Department	High	In progress. This was carried over from the 2012 MJHMP. The Police Department building is a newly constructed building that shifted all Police Department operations to the new facility in 2019. Other City facilities are routinely reviewed through risk management authority in order to maintain current insurance.



ID	HAZARD(S) MITIGATED	PROJECT TITLE	LEAD AGENCY AND PARTNERS	PRIORITY	IMPLEMENTATION STATUS
C-4	Drought	Assess Community Lifelines related to Water Distribution Systems - Assess vulnerability of lifeline utilities, including water distribution systems, to identify and prioritize projects for multi-hazard risk reduction.	City of Corcoran Public Works Department	High	In progress. This was carried over from the 2007 MJHMP. Upgrades and investments are routinely planned for the City's CIP and funding through grants, loans, and other City funding. The City's Water system is monitored and upgraded to maintain reliable system services, which also pro-actively addresses challenges posed by the drought. The City's Wastewater ponds and connecting system were recently upgraded using American Rescue Plan (ARP) funding.
C-5	Cyber Threat	Use antivirus solutions, malware, and firewalls to block threats	City of Corcoran, Public Works Department	Medium	New Action in 2023. The City has assessed network vulnerabilities and is currently implementing measures for cybersecurity. Monitoring and evaluation will be ongoing to evaluate changes and risks.
C-6	Dam Incidents, Earthquake, Flood, Severe Weather: Dense Fog, Severe Weather: Heavy Rain, Thunderstorms, Lightning, and Hail	Community Alert and Warning System	City of Corcoran, Corcoran Police Department, and Kings County OES	High	New Action in 2023. The City has implemented NIXLE Alert System, and utilizes City associated social media for community announcements. Extended Countywide alert notification system is in Progress through Kings County OES - Funding has been secured through a EMPG Grant.
C-7	Drought	Public Education Program for Water Conservation	City of Corcoran, City Public Works Department	High	New Action in 2023. The City is currently implementing citywide water meter installation along with public use property water use application, water restriction notifications, and enhancing water utility payment information. Together, these systems are providing enhanced water conservation education to the public and is anticipated to affect greater conservation headed into 2024 summer.
C-8*	Flooding, Drought, Subsidence	Corcoran Flood Protection - Multi-Agency Strategic Plan for Upstream Floodwater Diversion to Reduce Tulare Lake Flooding	City of Corcoran, Cross Creek Flood Control District, other Water & Irrigation Districts representing the Tulare Lake Basin, and DWR	High	New Action in 2023. Acknowledges that the USACE controls water releases from Pine Flat, Terminus, Schaefer, and Isabella Dams, and water and irrigation districts in Kings, Tulare, Fresno, and Kern counties. It is critical to beneficial groundwater recharge and management.
C-9*	Dam Failure; Flood; Severe Weather: Heavy Rain, Thunder, Hail, and Lightning	Enhanced Erosion Control and Protection of the Flood Control Levee	City of Corcoran, Cross Creek Flood Control District	Medium	New Action in 2023. DWR response to 2023 flooding provided erosion control measures along the Corcoran Levee for enhanced erosion control. This established a flood response measure that can be



ID	HAZARD(S) MITIGATED	PROJECT TITLE	LEAD AGENCY AND PARTNERS	PRIORITY	IMPLEMENTATION STATUS
					replicated in future years with flood disasters.
C-10*	Flooding, Drought, Subsidence	Increase Reservoir Storage for Control of Floodwater	Cross Creek Flood Control District, City of Corcoran, USACE, Kings County, Other Water Districts	High	New in 2023.
C-11	Public Health Hazards	Utilize trainings and exercises, epidemiology, and surveillance to control and combat public health risks	Kings County, City of Corcoran	Medium	New Action in 2023. This would be a Kings County Public Health Department initiated effort that the City supports and helps to facilitate in Corcoran.
C-12*	Flooding	Update the City's Storm Drain Master Plan every Few Years to included Planned Growth Areas	City of Corcoran	Low	New Action in 2023. This is needed infrastructure for the City to diversify disbursement of stormwater drainage within the City.
C-13*	Flooding	Continue to Participate with the Cross Creek Flood Control District to Ensure Levees Protecting Corcoran from Tulare Lake Flooding are Adequately Monitored	City of Corcoran, Cross Creek Flood Control District	High	New Action in 2023. This is ongoing monitoring and maintenance efforts that are needed. New Action in 2023; this was integrated from the Safety Element (Policy 4.17).
C-14	Extreme Temperatures - Heat and Freeze, Earthquake, Severe Weather: Heavy Rain, Thunderstorms, Hail, and Lightning, Severe Weather: Wind and Tornado	Conduct a Public Survey on At-Risk Community Demographics and Disability Needs - A public survey will be developed around at-risk communities to understand those in the County with Access and Functional Needs (AFNs) and other disabilities, household emergency preparedness and evacuation and support needs, and medical devices and equipment needs at sheltering facilities.	Kings County Department of Public Health, Kings County Office of Emergency Services, Kings Partnership	High	New in 2023.
City of Hanford					
H-1	Drought, Earthquake, Extreme Temperatures, Flood, Public Health Hazards, Wildfire	Public Education Program for All Hazards	County and City Public Works, Kings County Health Dept., Kings County OES	High	In Progress. The Hanford Fire Department hired a Fire Marshal to lead Community Risk Reduction and public education program for the department. Outreach now includes numerous events such as school programs and other monthly events.
H-2	Drought	Retrofits to Water Storage Tanks - Two water storage tanks holding 800,000 gallons of water need to be seismically retrofitted against seismic and fire hazards following earthquakes	City of Hanford Public Works Department	High	In progress. Drilled two new wells to feed the system and added two additional 500,000 water tanks being proposed as part of the City Infrastructure Plan.
H-3	Earthquake	GIS Database of Unreinforced Masonry (URM) Buildings	City of Hanford Fire Department, Kings County Community Development, OES, City GIS, IT	Medium	Not started. Funding not secured yet.



ID	HAZARD(S) MITIGATED	PROJECT TITLE	LEAD AGENCY AND PARTNERS	PRIORITY	IMPLEMENTATION STATUS
H-4	Earthquake	Retrofit 58 URM Buildings in Downtown Hanford	City of Hanford City Manager's Office	Medium	In progress. In certain cases, the City has required developers to conform to the most recent
H-5	Earthquake, Dam Incidents, Flood, Wildfire	Disaster Evacuation Routes - Ensure the maintenance and enhancement of established disaster evacuation routes	City of Hanford City Manager's Office, City of Hanford Public Works Department, Kings County OES	Medium	Not started.
H-6	Dam Incidents, Earthquake, Flood, Subsidence, Landslide, Fog, Severe Storms, Wildfire	Develop a transportation routing app, like the Caltrans app, to divert traffic due to road conditions during hazard events.	Kings County Public Works, Kings County Administration	Low	New in 2023.
H-7	Flooding, Wildfire	Create a flood channel debris management plan to allow the flow of water, increase capacity, and remove fire hazards.	Kings County Public Works, Water and Irrigation Districts, City Public Works	High	New in 2023
H-8	Flood; Severe Weather: Heavy Rain, Thunder, Hail and Lightning; Drought; Subsidence	Develop a series of flood control basins on the Kings River that either recharge or store water during flood flows.	Kings County Conservation District (KRCD), Local GSAs	High	New in 2023.
H-9	Flood, Severe Weather: Heavy Rain, Thunder, Hail and Lightning	Evaluate federal levees to determine height and make-up of levees to protect during 100-year storm events.	United States Army Corps of Engineers (USACE), KRCD	High	New in 2023.
H-10	Flood, Subsidence, Severe Weather: Heavy Rain, Thunder, Hail and Lightning	Remove sediment from Kings River to avoid future capacity issues.	KRCD	High	New in 2023.
H-11	Drought, Subsidence	Conduct updated land subsidence study to understand elevations, shifts, and vulnerability.	Kings County Administration, Water Management Agencies	Medium	New in 2023.
H-12	Cyber-attack	Use antivirus solutions, malware, and firewalls to block threats	Kings County, Avenal, Corcoran, Hanford, Lemoore	Medium	New in 2023.
H-13	Public Health Hazards	Utilize trainings and exercises, epidemiology, and surveillance to control and combat public health risks	County and City Public Health Departments	Medium	New in 2023.
H-14	Earthquake, Drought	Safety Building & Community Center - Create a safety building for police and fire administration. Building will house EOC and a community center	Hanford Police and Fire Departments	Medium	New in 2023.



ID	HAZARD(S) MITIGATED	PROJECT TITLE	LEAD AGENCY AND PARTNERS	PRIORITY	IMPLEMENTATION STATUS
H-15	Extreme Temperatures: Heat and Freeze	Extreme Weather Shelter - Develop plan for center to assist at-risk populations during extreme weather events. Coordinate with regional plans for consistency.	Hanford Community Development Agency, Police and Fire Department	High	New in 2023.
H-16	Dam Incidents, Earthquake, Flood, Dense Fog Heavy Rain, Thunderstorms, Hail, and Lightning, High Wind and Tornado, Wildfire	Grangeville Overpass - Design and build an overpass for the train tracks to allow emergency vehicle access during a hazard event.	Hanford Public Works, Community Development, and Administration	High	New in 2023.
H-17	Dam Incidents, Earthquake, Flood, Dense Fog Heavy Rain, Thunderstorms, Hail, and Lightning, High Wind and Tornado, Wildfire	Assess the Capacity and Viability of Designate Evacuation Routes and Develop Evacuation Plan for All Hazard Scenarios	Hanford Public Works, Community Development, and Administration	High	New in 2023.
H-18	Dam Incidents; Extreme Temperatures - Heat and Freeze, Earthquake, Severe Weather: Heavy Rain, Thunderstorms, Hail, and Lightning, Severe Weather: Wind and Tornado	Conduct a Public Survey on At-Risk Community Demographics and Disability Needs - A public survey will be developed around at-risk communities to understand those in the County with Access and Functional Needs (AFNs) and other disabilities, household emergency preparedness and evacuation and support needs, and medical devices and equipment needs at sheltering facilities.	Kings County Department of Public Health, Kings County Office of Emergency Services, Kings Partnership	High	New in 2023.
City of Lemoore					
L-1	Drought, Earthquake, Extreme Heat, Flood, Fog, Freeze, Wildfire	Public Education Program for All Hazards	City of Lemoore, City Public Works, Kings County Health Department, Kings County OES,	High	In Progress. This project entails establishing a training program to educate citizens about hazards and encourage households to have emergency kits, plans, and drills in place.
L-2	Drought	Long-Term Water Supply - Improve coordination, planning, and investment in long-term water supplies to meet demands of ongoing growth and development	City of Lemoore, Kings County Water District, Kings County, Kings County COG	High	In Progress. The City has installed a new well head and is actively pursuing funding sources to complete treatment and connection to water supply for development on the south side of town.
L-3*	Earthquake, Flood, Land Subsidence	Inter-jurisdictional GIS Program -- Establish a centralized, inter-jurisdictional GIS program to improve all phases of emergency management.	City of Lemoore Planning Department	High	In progress. This project was completed as part of the 2012 MJHMP but carried forward in that plan as an ongoing effort. The City continues to participate in the Municipal GIS Program



ID	HAZARD(S) MITIGATED	PROJECT TITLE	LEAD AGENCY AND PARTNERS	PRIORITY	IMPLEMENTATION STATUS
					with the Kings County Planning Department.
L-4	Dam Incidents, Earthquake, Flood, Subsidence, Landslide, Fog, Severe Storms, Wildfire	Develop a transportation routing app, similar to the Caltrans app, to divert traffic due to road conditions during hazard events	Kings County Public Works, Kings County Administration, Kings County, City of Lemoore	Low	New Action in 2023.
L-5	Drought	Public Education Program for Water Supply and Conservation	City of Lemoore Administration Department, Finance Department	Medium	New Action in 2023. The City of Lemoore recently hired a Water Conservation Officer to provide public education on water supply and conservation measures.
L-6	Flood	Well Protection and Flood Mitigation - Protect Wells from Floodwaters during Future Flooding Events by Building Infrastructure and Protection around the Well Sites	City of Lemoore Public Works	Medium	New Action in 2023. The City of Lemoore Public Works Department has created berms around City wells and is researching additional protective measure solutions.
L-7	Flood, Wildfire	Create a flood channel debris management plan to allow the flow of water, increase capacity, and remove fire hazards.	City of Lemoore, Kings County Public Works, Water and Irrigation Districts, City Public Works, Kings County	High	New Action in 2023.
L-8*	Drought, Subsidence	Conduct updated land subsidence study to understand elevations, shifts, and vulnerability.	City of Lemoore, Kings County Administration, Water Management Agencies	Low	New Action in 2023. The City currently performs subsidence studies at areas of concern.
L-9	Cyber Attack	Use antivirus solutions, malware, and firewalls to block threats	Kings County, Avenal, Corcoran, Hanford, Lemoore	Medium	New Action in 2023. City of Lemoore IT staff will assess cyber security needs and seek solutions to improve security measures.
L-10	Public Health Hazards	Utilize trainings and exercises, epidemiology, and surveillance to control and combat public health risks	County Public Health Department	Low	New Action in 2023. The City does not have a Public Health Department, but will coordinate with the Kings County Public Health Department during public health emergencies.
L-11	Dam Incidents	Develop plan addressing communication and evacuation for vulnerable populations in areas potentially impacted by Pine Flat Dam failure.	Kings County OES	Low	New Action in 2023. The City will coordinate with Kings County OES to create a response plan addressing the impacts of a dam failure.
L-12	Dam Incidents; Extreme Temperatures - Heat and Freeze, Earthquake, Severe Weather: Heavy Rain, Thunderstorms, Hail, and Lightning,	Conduct a Public Survey on At-Risk Community Demographics and Disability Needs - A public survey will be developed around at-risk communities to understand those in the County with Access and Functional Needs (AFNs) and other disabilities, household emergency preparedness and evacuation and support needs, and medical	Kings County Department of Public Health, Kings County Office of Emergency Services, Kings Partnership	High	New Action in 2023.



ID	HAZARD(S) MITIGATED	PROJECT TITLE	LEAD AGENCY AND PARTNERS	PRIORITY	IMPLEMENTATION STATUS
	Severe Weather: Wind and Tornado; Severe Weather: Dense Fog	devices and equipment needs at sheltering facilities.			



6 PLAN ADOPTION, IMPLEMENTATION, AND MAINTENANCE

6.1 ADOPTION

DMA Requirements §201.6(c)(3):

[The local hazard mitigation plan shall include] documentation that the plan has been formally approved by the governing body of the jurisdiction requesting approval of the plan (e.g., City Council, County Commissioner, Tribal Council).

The purpose of formally adopting this plan is to secure buy-in from Kings County and the participating jurisdictions, raise awareness of the plan, and formalize the plan's implementation. The adoption of this plan completes Planning Step 9 of the 10-step planning process: Adopt the Plan. The governing board for each participating jurisdiction has adopted this MJHMP by passing a resolution.

Implementation and maintenance of the plan are critical to the overall success of hazard mitigation planning. This is Planning Step 10 of the 10-step planning process. This section provides an overview of the overall strategy for plan implementation and maintenance, and outlines the method and schedule for monitoring, updating, and evaluating the plan. The section also discusses incorporating the plan into existing planning mechanisms and how to address continued public involvement.

6.2 IMPLEMENTATION

Once adopted, the plan faces the truest test of its worth: implementation. While this plan contains many worthwhile actions, the participating jurisdictions will need to decide which action(s) to undertake first. Two factors will help with making that decision: the priority assigned to the actions in the planning process and funding availability. Low or no-cost actions most easily demonstrate progress toward successful plan implementation.

Implementation will be accomplished by adhering to the schedules identified for each action (see Section 5 for County mitigation actions and the annexes for local participating jurisdiction mitigation actions), and through constant, pervasive, and energetic efforts to network and highlight the multi-objective, win-win benefits of each project to the Kings County community and its stakeholders. These efforts include the routine actions of monitoring agendas, attending meetings, and promoting a safe, sustainable community. The three main components of implementation are:

- **Implement** the action plan recommendations of this plan;
- **Utilize** existing rules, regulations, policies, and procedures already in existence; and
- **Communicate** the hazard information collected and analyzed through this planning process so that the community better understands what can happen where, and what they can do themselves to be better prepared. Also, publicize the success stories that are achieved through the HMPC's ongoing efforts.

During the implementation of these efforts, it is important to maintain constant monitoring of funding opportunities that can be leveraged to implement some of the more costly recommended actions. This will include creating and maintaining a bank of ideas on how to meet local match or participation requirements, should grants be pursued. When funding becomes available, the participating jurisdictions will be in a position to capitalize on the opportunity. Funding opportunities to be monitored include special pre- and post-disaster funds, special district budgeted funds, state and federal earmarked funds, and other grant programs, including those that can serve or support multi-objective applications.

For this update, the County's implementation program will emphasize mitigation projects and setting priorities based on loss reduction consistent with DMA requirements.

6.2.1 Role of the HMPC in Implementation and Maintenance

With the adoption of this plan, the participating jurisdictions will be tasked with plan implementation and maintenance. The participating jurisdictions, led by the Kings County OES agree to:



- Act as a forum for hazard mitigation issues;
- Disseminate hazard mitigation ideas and activities to all participants;
- Pursue the implementation of high-priority, low/no-cost recommended actions;
- Keep the concept of mitigation at the forefront of community decision-making by identifying plan recommendations when other community goals, plans, and activities overlap, influence, or directly affect increased community vulnerability to disasters;
- Maintain a vigilant monitoring of multi-objective cost-share opportunities to help the community implement the plan's recommended actions for which no current funding exists;
- Monitor and assist in the implementation and update of this plan;
- Report on plan progress and recommended changes to the Kings County Board of Supervisors and the governing boards of the other participating jurisdictions; and
- Inform and solicit input from the public.

The primary duty of the participating jurisdictions is to see the plan successfully carried out, and to report to their community governing boards and the public on the status of plan implementation and mitigation opportunities. Other duties include reviewing and promoting mitigation proposals, considering stakeholder concerns about hazard mitigation, passing concerns on to appropriate entities, and posting relevant information on the county website (and others as appropriate).

6.3 MAINTENANCE AND MONITORING

Requirement §201.6(c)(2)(i):

[The risk assessment shall include a] description of the type, location and extent of all natural hazards that can affect the jurisdiction. The plan shall include information on previous occurrences of hazard events and on the probability of future hazard events.

Plan maintenance implies an ongoing effort to monitor and evaluate plan implementation and to update the plan as required or as progress, roadblocks, or changing circumstances are recognized. This section describes how public participation will be integrated throughout the plan maintenance and implementation process. It also explains how the mitigation strategies outlined in this plan will be incorporated into existing planning mechanisms and programs, such as comprehensive land use planning processes and building code enforcement and implementation. The plan's format allows sections to be reviewed and updated when new data become available, resulting in a plan that will remain current and relevant.

6.3.1 Maintenance Schedule

In order to track progress and update the mitigation strategies identified in the action plan, the HMPC will revisit this plan at the following times or occurrences:

- Annually, to assess if mitigation actions/projects have been completed;
- Following a significant hazard event;
- Following a disaster declaration; or
- Any other time the HMPC sees it is prudent or necessary.

Annual Reviews: The HMPC will meet annually to assess progress on plan implementation. Kings County's OES Department and the County's OES Manager will facilitate and lead these reviews and an associated meeting. The OES Manager will also document the annual review meeting (see Appendix E for Annual Progress Meeting Agenda and Report Template). The timing of the annual meeting is recommended for the first or second quarter of each year to identify potential mitigation grants, some of which have a submittal period in the fourth quarter. A template for the annual meeting and a summary report is provided in Appendix E. Another tool developed during the 2022 -2023 update process to facilitate regular review and implementation and make the plan more of a "living document" is the MJHMP website, where the updated 2023 MJHMP and HMPs from previous years are available for public access. Various links to additional disaster and emergency preparation, hazard mitigation, as well as other related local, state, and federal-level information are also included on the MJHMP website. This website is accessible from the Kings County OES homepage. The County can use the MJHMP to post updates on the plan implementation process, such as grants submitted, grants pending review, and grant awards.

Critical Facility Database Maintenance: Moving forward the County and its municipalities will maintain the critical facility database that was prepared during the 2022-2023 update. The County's OES Manager



will work with the County GIS Manager to lead periodic reviews of the database and assess the need for updates.

Five-Year Update: This plan will be updated, approved, and adopted within a five-year cycle as per Requirement §201.6(c)(4)(i) of the Disaster Mitigation Act of 2000. Efforts to begin the update should begin no later than November 2027 in order to provide at least 9 to 12 months to facilitate the planning process, update the plan, and provide adequate time for public review. The County's OES Manager will lead the update by soliciting an RFP to select a contract to support the MJHMP update by November 2027. The County's OES Manager will also manage the update planning process, review the risk assessment, and champion the update to the mitigation strategy, including tracking updates on mitigation actions and facilitating the mitigation strategy workshop. The County's OES Manager will also co-facilitate at least three planning meetings with the selected consultant.

During the time leading up to the formal update, the County's OES Manager will monitor planning grant opportunities from the Cal OES and FEMA for funds to assist with the update. This may include submitting a BRIC grant application. This grant should be submitted in 2024, as there is a three-year performance period to expend the funds, and there is no guarantee that the grant will be awarded when initially submitted. This allows time to resubmit the grant in subsequent years if needed. Updates to this plan will follow the most current FEMA and Cal OES planning guidance. The next plan update should be completed and reapproved by Cal OES and FEMA Region VIII by October 2028.

6.3.2 Maintenance and Evaluation Process

The HMPC will continually observe the incorporation process, evaluation method, updating method, continued public participation, and completion of the action/projects to assure that the HMPC and the plan itself are performing as anticipated. By monitoring these processes, the HMPC will then be able to evaluate them at the time of the plan update, determining if any changes are needed.

The every five-year MJHMP plan update provides an opportunity to determine whether there have been any significant changes in the County that may, in turn, necessitate changes in the types of mitigation actions proposed. New development in identified hazard areas, increased exposure to hazards, increase or decrease in capability to address hazards, and changes to federal or state legislation are examples of factors that may affect the necessary content of the MJHMP.

The plan review provides County officials with an opportunity to evaluate those actions that have been successful and to explore the possibility of documenting potential losses that were avoided due to the implementation of specific mitigation measures. The process for setting new priorities based on loss reduction is also emphasized in this MJHMP update process. The plan review also provides the opportunity to address mitigation actions that may not have been successfully implemented as assigned.

During the five-year plan update process, the following questions will be considered as criteria for assessing the effectiveness and appropriateness of the MJHMP:

- Do the goals address current and expected conditions?
- Are the goals and objectives consistent with changes in state and federal policy?
- Complete status update on all mitigation projects. What strategies should be revised?
- Has the nature or magnitude of risks changed (current and expected conditions)?
- Are the current resources appropriate for implementing the MJHMP?
- Are there implementation problems, such as technical, political, legal or coordination issues with other agencies?
- Have the outcomes occurred as expected?
- Did the County and participating agencies and other partners participate in the plan implementation process as assigned?

The County of Kings is committed to involving the public in the continual reshaping and updating of the MJHMP, as discussed in Subsection 6.3.4.

6.3.3 Incorporation into Existing Planning Mechanisms

Another important implementation mechanism that is highly effective and low-cost is the incorporation of the HMP recommendations and their underlying principles into other county and city plans and



mechanisms. Where possible, plan participants will use existing plans and/or programs to implement hazard mitigation actions. This plan should also be cross-referenced when related planning mechanisms are updated. As previously stated above, mitigation is most successful when it is incorporated into the day-to-day functions and priorities of government and development. As described in this plan's capability assessment and jurisdictional annexes, the County and participating jurisdictions already implement policies and programs to reduce losses to life and property from hazards. This plan builds upon the momentum developed through previous and related planning efforts and mitigation programs and recommends implementing actions, where possible, through these other program mechanisms.

These existing mechanisms include (but are not limited to) the following:

- County and local general plans (General Plan Safety Element)
- Community service district area plans and master plans
- County and local emergency operations plans
- County and local ordinances
- Flood/stormwater management/master plans
- Community wildfire protection plans
- GSPs
- Stormwater Resource Plans
- Urban Water Management Plans (UWMPs)
- CIPs
- Other plans and policies outlined in the capability assessments in the jurisdictional annexes
- Other plans, regulations, and practices with a mitigation focus

HMPC members involved in the updates to the planning mechanisms will be responsible for integrating the findings and recommendations of this plan with these other plans, programs, etc., as appropriate. As an action step to ensure integration with other planning mechanisms, the County OES Manager or designee will discuss this topic at the annual meeting of the HMPC described above in Subsection 6.3.1. The HMPC will discuss where there are opportunities to incorporate the plan into other planning mechanisms and who would be responsible for leveraging those opportunities. HMPC members representing local jurisdictions will work with their jurisdictional LPTs to integrate their identified mitigation actions into their local plans and programs. Efforts to integrate the HMP into local plans, programs, and policies will be reported at the annual HMPC plan review meeting, and a record of successful integration efforts will be kept.

Efforts should continuously be made to monitor the progress of mitigation actions implemented through these other planning mechanisms and, where appropriate, their priority actions should be incorporated into updates of this hazard mitigation plan. Examples of a process for incorporation of the MJHMP into specific existing or upcoming planning mechanisms include:

- Each community (County, Avenal, Corcoran, Hanford, and Lemoore) should adopt (by reference or incorporation) this MJHMP into the Safety Element of their General Plan(s), as encouraged by AB 2140. Evidence of such adoption (by formal, certified resolution) shall be provided to Cal OES and FEMA to become eligible or maintain eligibility for CDDA funding. Also, specific risk and vulnerability information from the Kings County MJHMP can be incorporated into the General Plan; which, can in turn, inform the development of hazard overlay zones, or other policy changes designed to minimize hazard impacts.

6.3.4 Continued Public Involvement

Continued public involvement is imperative to the overall success of the plan's implementation. Efforts will be made to involve the public in the plan maintenance, evaluation, and review process. This includes maintaining a digital version of the plan on the County OES website for public review. In addition, information on who to contact within the OES will be posted with the plan. The Kings County OES will maintain a file of comments received for reference during the next five-year update. Any revisions to the plan that may occur as a result of a disaster will also be made public and posted on the County website.

The next five-year update process also provides an opportunity to solicit participation from new and existing stakeholders and publicize success stories from the plan implementation and seek additional public comment. A public hearing(s) or survey to receive public comment on the plan will be held during the plan update period. When the HMPC reconvenes for the update, they will coordinate with all



stakeholders participating in the planning process, including those who joined the HMPC after the initial effort, to update and revise the plan. Public notice will be posted, and public participation will be invited, at a minimum, through available website postings and press releases to the local media outlets as well as email and social media announcements.

Public involvement strategies that were used during the 2022 - 2023 planning process are captured in the Outreach Strategy in Appendix F. The appendix can serve as a reference for continued public involvement over the next several years and lays the foundation for outreach associated with the next formal five-year update. The HMPC should incorporate the following engagement concepts from the Outreach Strategy:

- Collaborate with Community Based Organizations and faith-based organizations (i.e. Kings Tulare Homeless Alliance).
- Create stories and mitigation success announcements to use for publishing at media outlets.
- Distribute emails and postcards and newsletters to the public about hazard mitigation.
- Participate in existing community events to share information about hazard mitigation (e.g., community farmer's markets, library events, senior centers).
- Continue to use the County's MJHMP Webpage as a distribution point or repository for HMP information.



7 PLAN ADOPTION

DMA Requirement §201.6(c)(5):

[The plan shall include...] Documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval of the plan (e.g., City Council, County commissioner, Tribal Council).

7.1 ELEMENT E.1 FORMAL PLAN ADOPTION DOCUMENTATION

Adoption by the local governing body demonstrates the community's commitment to implementing the mitigation strategy and authorizes responsible agencies to execute their actions. The final plan is not approved until Kings County and each participating jurisdiction adopt the plan and FEMA receives documentation of formal adoption by the governing body of each jurisdiction requesting approval. This plan is for Kings County, the unincorporated County, and its incorporated cities of Avenal, Corcoran, Hanford, and Lemoore.

Kings County and the four participating cities plan to submit this plan to the Kings County Board of Supervisors (BOS), and their respective city councils upon successful completion of State and federal review and following the issuance of an Approved Pending Adoption (APA) designation from FEMA. This provides an efficient approval process if FEMA determines the MJHMP requires revisions because the County and each participating city can make these revisions prior to initiating the local plan adoption process.

Once FEMA issues APA notification, adoption by each participating jurisdiction must take place within one year for each jurisdiction to become or remain eligible for FEMA HMA program funding. Given this is a multi-jurisdictional planning process, Kings County will coordinate the adoption of all four jurisdictions adoption process as soon as the plan receives APA status. Because each City/Board governing body has different meeting schedules, Kings County will also coordinate with each participating jurisdiction/agency regarding the timing of their adoptions to submit adoption documentation to Cal OES and FEMA at the same time.

Once the County records and submits the adoption documentation to Cal OES and FEMA, FEMA will issue an official approval letter stating which jurisdictions/agencies have adopted and are approved and eligible for FEMA HMA program funding. The approval letter will include an expiration date five years from the date of the letter and attached to the approval letter will be a final FEMA Local Mitigation Plan Review Tool that provides feedback on the strengths of the plan, recommendations for plan improvements during future plan updates, and suggestions for implementing the mitigation strategy.

7.2 GENERAL PLAN SAFETY ELEMENT INTEGRATION

The MJHMP was prepared consistent with the Kings County General Plan Health and Safety Element. The planning mechanisms cover common overlapping natural hazard issues and mutually-reinforcing policies and implementation programs. California Government Code Section 65302.10, (AB 2140) encourages California counties and cities to adopt their current, FEMA-approved LHMPs into the Safety Element of their General Plan. This adoption by reference or incorporation of the MJHMP into the Health and Safety Element of the General Plan follows plan approval and makes Kings County and each participating jurisdiction eligible to be considered for part or all of its local-share costs on eligible public assistance funding to be provided by the State under the CDAA. As such, AB 2140 compliance provides additional funding after a disaster occurs and this is an optional state incentive to help counties and cities become more resilient to natural hazards. Because compliance with AB 2140 expires when the MJHMP expires, the County must re-adopt the plan into the Health and Safety Element during update cycles to ensure continued compliance and funding eligibility. Additionally, each participating jurisdiction must adopt their annex into their own General Plan Safety Element, as the annex jurisdictions are not covered under the County's General Plan Safety Element adoption.



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ANNEX D CITY OF LEMOORE

D.1 PURPOSE

This Annex summarizes the hazard mitigation elements specific to the City of Lemoore. This Annex supplements the Kings County Multi-Jurisdictional Hazard Mitigation Plan (MJHMP); therefore, the Annex is not a stand-alone plan but intended to supplement the hazard information provided in the Base Plan document. All other sections of the Kings County MJHMP, or Base Plan, including the sections on the planning process, countywide risk assessment, and procedural requirements related to plan implementation and maintenance apply to the City of Lemoore. This Annex provides additional information specific to the City of Lemoore, including details on the City’s profile, planning process, risk assessment, and mitigation strategy for the community.

D.2 COMMUNITY PROFILE

D.2.1 Mitigation Planning History and 2022-2023 Process

This Annex was created during the development of the 2023-2028 Kings County MJHMP update. The City of Lemoore participated in the Kings County’s 2012 MJHMP process; however, the 2012 MJHMP did not include supplemental annexes for each of the participating jurisdictions. Instead, the 2012 MJHMP included a Community Profile that summarized the priority hazards for the City and included a vulnerability assessment. Information on the participating jurisdictions vulnerability to hazards and their specific mitigation actions were also included in the main plan.

During the current update process, the City of Lemoore followed the planning process detailed in Chapter 3 of the Base Plan. This planning process consisted of participation in the Hazard Mitigation Planning Committee (HMPC) and the formation of a smaller internal planning team referred to as the City’s Local Planning Committee (LPT). The LPT was organized to support the broader planning process, coordinate with the City departmental staff, and develop customized mitigation actions and projects specific to the City of Lemoore. The City’s LPT is also responsible for the update, implementation, and maintenance of the plan. Table D-1 includes stakeholders who participated in the City’s LPT.

Table D-1 Stakeholders Who Participated in Lemoore’s LPT

STAKEHOLDER GROUP	STAKEHOLDER AGENCY
Agencies involved in hazard mitigation activities	Lemoore Fire Department
	Lemoore Police Department
	California DWR
	California OES
	Kings County OES
	Kings County Public Works
	Kings County Public Health Department
	NWS Hanford
	Kings County Water District
	Mid-Kings River Groundwater Sustainability Agency
	Lemoore City Manager’s Office

STAKEHOLDER GROUP	STAKEHOLDER AGENCY
Agencies that have the authority to regulate development:	Kings County Board of Supervisors
	Kings County Community Development Agency
	Kings County Fire Department
Neighboring Communities	City of Hanford
	City of Corcoran
	City of Lemoore
	Kings County
Representatives of business academia, and other private organizations:	Cross Creek Flood Control District
	Kings County Farm Bureau
	Kings River Conservation District
	Westland Water District
Representatives that provide support to underserved communities	Office of Senator Hurtado SD 16

Given the small population size of each jurisdiction in Kings County, as well as the County itself, three entities that encompass the region were invited to represent vulnerable populations in each jurisdiction. The Kings Tulare Homeless Alliance, which addresses housing and service needs for the homeless, was invited as its extensive connections with the unhoused population would make it a valuable contributor. The Kings Partnership for Prevention, a non-profit organization which leads various groups including substance use response and mental health task forces, was invited by the Planning Team for its broad reach across demographic groups. The Office of Senator Hurtado Senate District 16 (SD 16), covering Kern, San Bernardino, and Tulare Counties, highlighted the economic challenges in these areas, including high rates of adults without high school diplomas and single-parent households. The Office of SD 16 was the sole organization supporting vulnerable populations participating in the drafting of the plan, providing valuable information during HMPC meetings and workshops.

The City of Lemoore received additional support from Police Chief Michael Kendall and Assistant City Manager Michelle Speer. Despite occasional scheduling conflicts, both representatives made efforts to be present at each HMPC meeting and arranged for additional representatives when needed. Feedback on the draft Annex to the MJHMP was provided by Brionne Jackson, City of Lemoore Management Analyst.

Additionally, while the LPT did not promote the public survey or request public comments on the draft plan, 13 self-reported citizens of Lemoore participated in the public survey. These individuals spanned a large range of demographic backgrounds and expressed a high level of concern about drought, dense fog, and extreme temperatures. These survey results were shared with the LPT and influenced the City’s hazard rankings and mitigation strategy.

D.2.2 Geography and Climate

Nestled within the central expanse of California's San Joaquin Valley, the City of Lemoore occupies a strategic position, approximately 35 miles to the south of Fresno and 60 miles northwest of Bakersfield. Lemoore lies within Kings County, sharing its western border with the City of Hanford. Lemoore's connectivity is enhanced by the presence of State Route (SR) 198, which traverses the City in an east-west direction.

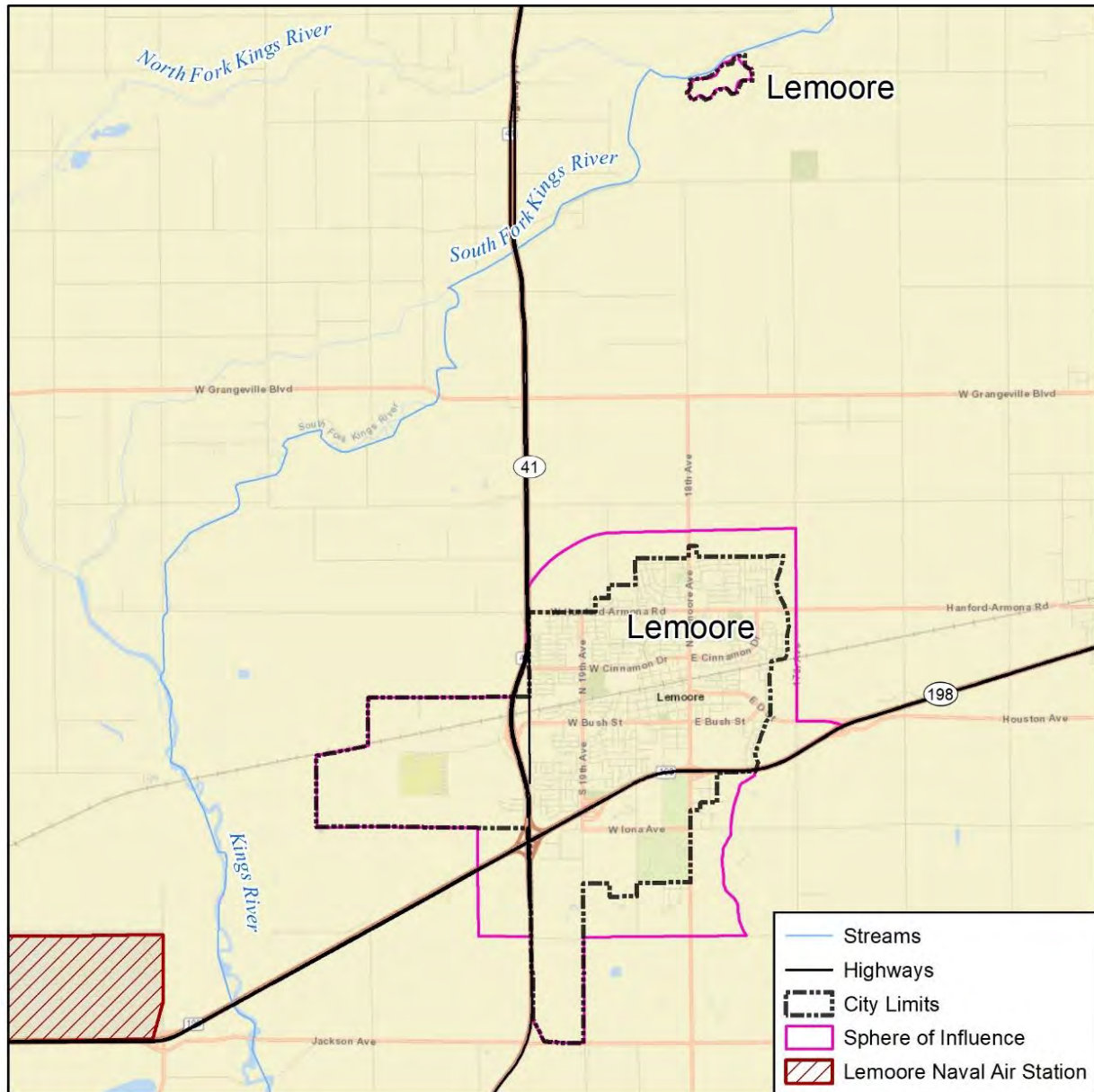
Lemoore experiences a Mediterranean climate with hot, dry summers and mild-relatively wet winters, typical of the San Joaquin Valley. The City receives an average annual precipitation of

approximately 8.5 inches, concentrated mainly from November through March. High temperatures peak in July, with average readings hovering around 96.2 °F, while January is the coldest month, with average lows of about 42.6 °F.

The City's level terrain is a result of the alluvial fan formations inherent to the San Joaquin Valley. This geographical trait has been instrumental in establishing Lemoore's significance in the realm of agriculture. It is an integral part of the agriculturally rich Central Valley, celebrated for its multifaceted and farming industry. Notably, Lemoore is the home of the Lemoore Naval Air Station (NAS), a distinguished military installation that adds to the City's distinctive identity.

Figure D-1 below shows the limits and Sphere of Influence (SOI) boundary for the City of Lemoore. The City limits, or the area where the City has authority to make land use decisions, is the City's Planning Area, and consists of approximately 5,376 acres, or 8.4 square miles.

Figure D-1 City of Lemoore Boundary



Map compiled 7/2023;
Intended for planning purposes only.
Data Source: Kings County, DWR

0 1 2 Miles



D.2.3 History

Dr. Lovern Lee Moore established his residence in what was once the western part of Tulare County, California, now known as the City of Lemoore, in April 1871. This location was close to Tulare Lake, which held the distinction of being the largest inland body of water in central California during that era. Upon Moore's arrival, the region was characterized by numerous individual farms, with sheep and grain farming being the predominant activities. Moore's efforts went beyond the typical agricultural endeavors.

Recognizing the potential for communal growth, Moore unified the local farm families and orchestrated the establishment of a post office and a central point for business dealings. Moreover, he introduced the district's inaugural real estate development and meticulously planned and named the streets. This initiative laid the foundation for the City's future layout. Subsequently, on July 11, 1900, Lemoore attained official City status through incorporation. This marked a pivotal transition from scattered agricultural enterprises to a structured urban entity, with Moore himself becoming the Lemoore's first mayor. As time passed, the City continued to evolve, adapting to changing agricultural practices and welcoming new residents seeking fresh opportunities. Today, Lemoore's vibrant community and thriving economy stand as a testament to the influence of strong leadership, which positions the City for economic development.

D.2.4 Economy

According to the City of Lemoore Economic Development Department, the City has experienced a consistent population increase of four to 5% over recent years. There are various economic opportunities for businesses that expand and relocate to the City. These include access to a dedicated and diligent labor force, expansive and cost-effective land options, incentives within enterprise zones, a foreign trade zone designation, and an overall pro-business environment. Still, the City retains its small-town charm and rustic beauty, embodied by its turn-of-the-century edifices and residences.

Given the City's central location in the San Joaquin Valley, positioned at the intersection of Highway 198 and 41, Lemoore enjoys direct access to Interstate 5 and Highway 99, each 25 miles away. Moreover, the Fresno/Yosemite International Airport, located within 35 miles, effectively serves both commercial and freight air traffic.

The available labor pool in Lemoore benefits from diversity. Given the region's strong ties to agriculture, there is an abundance of unskilled and semi-skilled general labor. Additionally, a substantial number of skilled workers possess various educational and technical training backgrounds. Many residents have connections to navy personnel stationed at NAS – Lemoore, and several are military veterans who have chosen Lemoore as their permanent residence. To further enhance the workforce, educational opportunities and technical training are provided by institutions like West Hills College, Chapman University, College of the Sequoias, and the Kings County Job Training Office.

The City of Lemoore is also committed to collaborating with local businesses as well as potential future enterprises. Both the City Council and City Manager are dedicated to fostering economic growth and vitality within the City. Correspondingly, the City staff is devoted to streamlining the process of establishing new businesses within the City limits. Numerous existing incentives are poised to positively impact companies' financial outcomes.

Estimates of select economic characteristics for the City of Lemoore are shown in Table D-2.

Table D-2 City of Lemoore Economic Characteristics, 2017-2021

CHARACTERISTIC	CITY OF LEMOORE
Families below Poverty Level (%)	13.4%
All People below Poverty Level (%)	12.7%
Median Family Income	\$68,65
Median Household Income	\$71,503
Per Capita Income	\$28,761

CHARACTERISTIC	CITY OF LEMOORE
Population in Labor Force	59.2%
Population Employed*	60.3%
Unemployment Rate**	11.9%

Source: U.S. Census Bureau, California Department of Finance, 2017-2021 American Community Survey (ACS), 5-year estimates, www.census.gov/

*Excludes armed forces. **Does not reflect unemployment numbers due to COVID-19 Pandemic

The most common industries within a five-mile radius of Lemoore are educational services and health care. Public administration and the combined arts, entertainment, and recreation, and accommodation and food services are the other two major industries. Table D-3 and Table D-4 below show the labor force breakdown by occupations and industry based on estimates from the 2017-2021 five-year American Community Survey (ACS).

Table D-3 City of Lemoore Employment by Industry, 2017-2021

OCCUPATION	# EMPLOYED	% EMPLOYED
Agriculture, forestry, fishing and hunting, and mining	641	5.87%
Construction	272	2.49%
Manufacturing	938	8.59%
Wholesale trade	254	2.23%
Retail trade	1,030	9.43%
Transportation and warehousing, and utilities	975	8.92%
Information	68	0.62%
Finance and insurance, and real estate and rental and leasing	264	2.42%
Professional, scientific, and management, and administrative and waste management services	719	6.58%
Educational services, and health care and social assistance	2,298	21.03%
Arts, entertainment, and recreation, and accommodation and food services	1,275	11.67%
Other services, except public administration	343	3.14%
Public administration	1,849	16.92%
Total	10,926	100%

Source: U.S. Census Bureau, California Department of Finance, 2017-2021 American Community Survey (ACS), 5-year estimates, www.census.gov/

*Excludes armed forces

Table D-4 City of Lemoore Employment by Occupation, 2017-2021

OCCUPATION	# EMPLOYED	% EMPLOYED
Management, business, science, and arts occupations	3,070	28.1%
Service occupations	2,415	22.1%
Sales and office occupations	1,901	17.4%
Natural resources, construction, and maintenance occupations	1,355	12.4%
Production, transportation, and material moving occupations	2,185	20.0%
Total	10,926	100%

Source: U.S. Census Bureau, California Department of Finance, 2017-2021 American Community Survey (ACS), 5-year estimates, www.census.gov/

*Excludes armed forces

D.2.5 Population

According to ACS, the City of Lemoore had a total population of 24,508 in 2010, while the City had a total population of 26,631 in 2021. The City’s population increased by 10% during the 11-year period. Select demographic and social characteristics for the City of Lemoore from the 2017-2021 ACS and the California DOF, are shown in Table D-5. As shown in this table, the City has a predominantly White and Latino population, and approximately 29% of the population speaks a language other than English at home.

Table D-5 City of Lemoore Demographic and Social Characteristics, 2017-2021

CHARACTERISTIC	CITY OF LEMOORE
Gender/Age	
Male	52%
Female	48%
Median age (years)	32
Under 5 years	8%
Under 18 years	25.8%
65 years and over	12.1%
Race/Ethnicity	
White	56.7%
Asian	7.5%
Black or African American	6.3%
American Indian/Alaska Native	0%
Hispanic or Latino (of any race)	43.6%
Native Hawaiian and Other Pacific Islander	0%
Some other race	0.3%
Two or more races	12.7%
Education*	
% High school graduate or higher	84.9%
% with bachelor’s degree or higher	21.2%
Social Vulnerability	
% with Disability	8.6%
% Language other than English spoken at home	29.1%
% Speak English less than “Very Well”	
% of households with a computer	93.9%
% of households with an Internet subscription	90.1%
% of households with no vehicle available	3.27%

Source: U.S. Census Bureau, California Department of Finance, 2017-2021 American Community Survey (ACS), 5-year estimates, www.census.gov/

* Population 25 years and over

Table D-6 contains information from the ACS 5-year estimates (2017-2021) related to housing occupancy in the City of Lemoore.

Table D-6 City of Lemoore Housing Occupancy and Units, 2017-2021

HOUSING CHARACTERISTIC	ESTIMATE	PERCENTAGE
Total Households	9,033	100%
Average Household Size	2.95	-
Total Families	6,661	-
Vacant		6.1%
Housing Units	9,623	
1-unit structures	7,053	73.3%
2 or more units structures	2,425	25.2%
Mobile Homes	154	1.6%
Owner Occupied	4,908	54.3%
Renter Occupied	4,125	45.7%

Source: U.S. Census Bureau, California Department of Finance, 2017-2021 American Community Survey (ACS), 5-year estimates, www.census.gov/

D.2.6 Disadvantaged Communities

Disadvantaged communities (DACs) are identified by the California Environmental Protection Agency (Cal EPA) pursuant to Section 39711 of the Health and Safety Code, based on geographic, socioeconomic, public health, and environmental hazard criteria, and may include, but not be limited to: areas disproportionately affected by environmental pollution or other hazards and areas with concentrations of people that are low income, high unemployment, low levels of home ownership, high rent burden, sensitive populations, or low levels of education attainment (California Health and Safety Code Section 39711). One of the ways the Cal EPA's Office of Environmental Health Hazard Assessment (OEHHA) identifies DACs is using the CalEnviroScreen tool.

Employing a comprehensive approach, the OEHHA CalEnviroScreen tool applies a formula to generate a combined ranking score that considers 21 indicators for each census tract. These indicators span pollution measures like diesel emissions and concentrations of toxic sites, alongside demographic factors such as poverty and unemployment rates. Census tracts exhibiting CalEnviroScreen rankings ranging from 75 to 100% (i.e., within the top 25% of all tracts statewide) are designated as DACs. Census tracts are also defined as disadvantaged based on the highest 5% cumulative pollution burden scores, as well as those tracts identified in the 2017 DAC designations, and lands under control of federally recognized Tribes.¹

As shown in Table D-7, which is based on data derived from the OEHHA CalEnviroScreen tool, there is one large census tract designated as a DAC located on the far western edge of the City that also encompasses the non-contiguous portion of the City to the north along the South Fork of the Kings River. This census tract is composed of housing-burdened low-income households. This means the households in this census tract are both economically disadvantaged (making less than 80% of the County's median family income) and substantially burdened by housing costs (paying greater than 50% of their income on housing costs). This situation renders these households more susceptible to negative impacts during hazard events, and less likely to recover after a disaster. California has very high housing costs relative to the rest of the country, which can make it hard for households to afford housing (OEHHA 2021). While this census tract has an overall CalEnviroScreen ranking of 88%, only 8% of the tract consists of housing-burdened and low-income households, which is lower than the DACs identified in the other Kings County

¹ For more information on how DACs are designated refer to the final designations of DACs from May 2022 on the OEHHA CalEnviroScreen tool here: <https://oehha.ca.gov/calenviroscreen/sb535>

municipalities. Still, the households in the City with lower incomes may spend a larger proportion of their income on housing and may suffer from housing-induced poverty that can affect disaster recovery (OEHHA 2021).

Table D-7 Disadvantaged Communities Statistics

Census Tract	% Housing-Burdened and Low-Income	# Housing units	#Low-Income Housing Units	# Low Income & Housing-Burdened Housing Units	CalEnviroScreen Ranking
6031000200	8%	750	284	56	88.5

Source: OEHHA 2023, <https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-40>

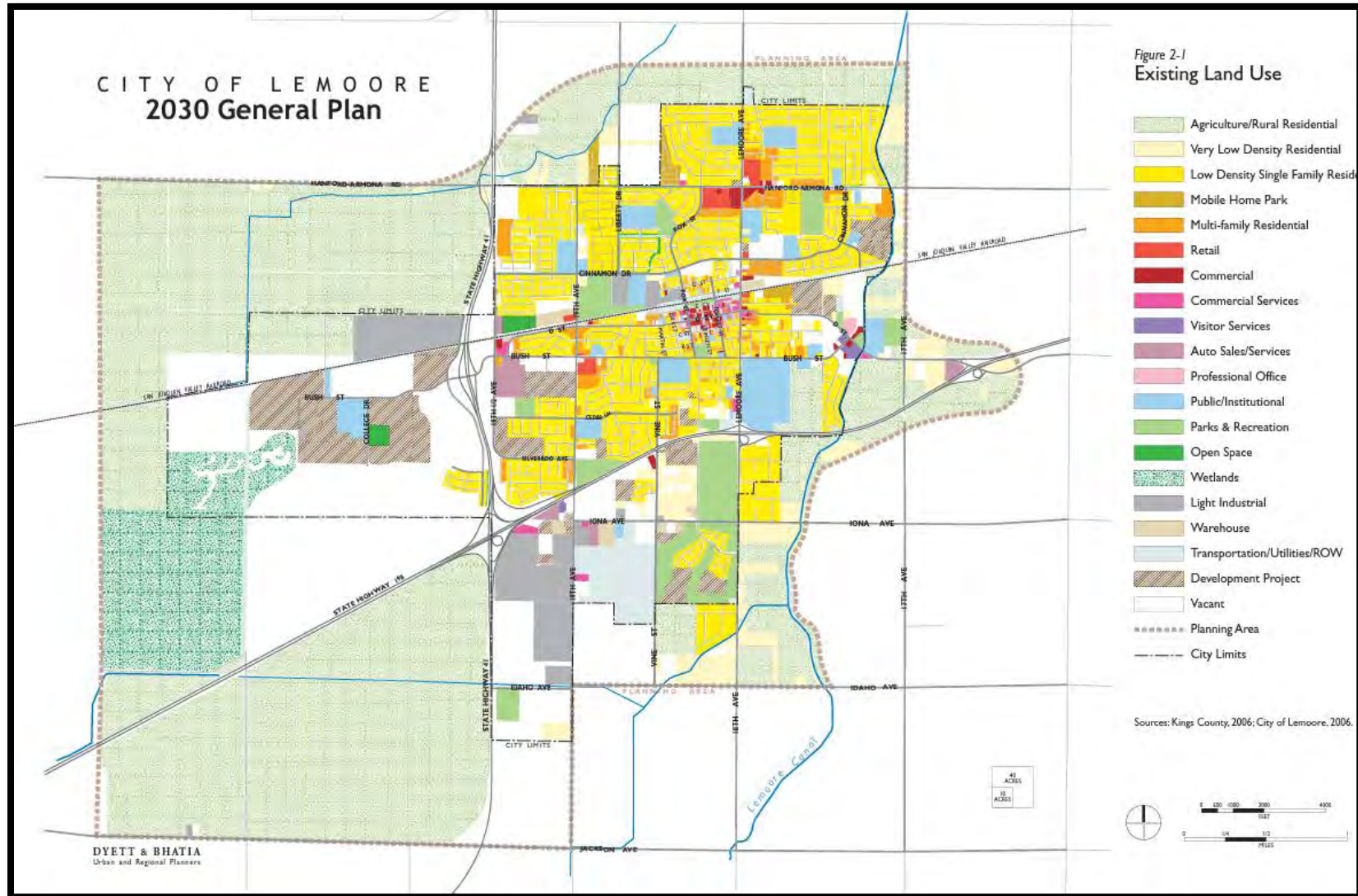
Of the 26,631 people that live in the City according to the 2021 ACS 5-Year Estimates, approximately 1,679 people are potentially exposed to hazards in the City based on the vulnerability assessment in Section D.3.1. Among this population, those who reside in the DACs in the City are considered more socially vulnerable to hazards. Additional information on specific exposure of DACs and socially vulnerable populations is summarized in Section D.3 Hazard Identification and Summary. Outreach, engagement, and hazard mitigation efforts should therefore address the needs of the City’s low-income and housing burdened residents. The City can utilize the CalEnviroScreen information to conduct targeted outreach and engage community members to consider what other hazards and mitigation strategies or programs should be considered to meet community needs. The City can also engage these communities to proactively prioritize hazard mitigation projects that benefit DACs.

D.2.7 Development Trends

Growth has occurred along the west side of the City and will continue in this area, as well as the north side in the coming years. As noted in the City’s 2030 General Plan Land Use Element, the land utilization observed in Lemoore is in line with the norm for cities situated within the Central Valley area. The predominant urban expansion can be credited to Lemoore’s historical progression as an agricultural hub, followed by its subsequent transformation due to the expansion of NAS – Lemoore to the west. The City’s downtown area contains a traditional central business district, encompassing a blend of commercial and public establishments. More extensive commercial, agricultural, and contemporary residential regions are situated in the outer reaches of the City’s downtown. Industrial zones are positioned adjacent to the San Joaquin Valley Railroad and to the south of Iona Avenue. Green spaces and educational institutions are also interspersed throughout the residential neighborhoods. The predominant land use within the City is dedicated to agriculture and rural purposes, encompassing 4,574 acres, which constitutes approximately 37% of the total land area. Slightly over 40% of the land falls under Williamson Act contracts which typically restricts those lands to agricultural uses; however, a portion of this land is currently not in active agricultural use. Most of the agricultural land is also concentrated along the western portion of the City’s SOI (General Plan refers to planning areas as the SOI) near the Kings River. The following most substantial land use category in the City’s SOI is vacant land, accounting for 2,082 acres or around 17% of the land. Within the residential classification, the most prominent subcategory is Low Density Single Family Residential, covering an estimated 1,146 acres or 9% of the land, with the majority of this land falling within the existing City Limits. The next residential land use is Very Low Density Residential, comprising 399 acres. Supplementary residential land designations include 35 acres for Mobile Home Parks, 34 acres for Low Density Multi-Family Residential, and 115 acres for Multi-Family Residential.

Among the non-residential land uses in Lemoore, approximately 1,212 acres or 10% of the entire City SOI is occupied by roads and other right-of-ways. Despite its role in employment generation, industrial land only covers 304 acres, equating to 2% of the total land. Primary industrial and commercial zones align with two State Routes. Additionally, certain parcels of industrial land are situated near the San Joaquin Valley Railroad. Throughout the City, parks of varying sizes are interspersed, often conveniently located near educational institutions. Figure D-2 shows the Land Use Diagram included in the 2030 General Plan.

Figure D-2 City of Lemoore General Plan Land Use Designations



Source: Lemoore General Plan 2030

The General Plan Land Use Map designates the general distribution of land uses, including housing, business, industrial, open space, and public facilities within the City’s boundaries. Table D-8 below demonstrates the density and intensity standards and acreage totals for the 2030 General Plan land use designations.

Table D-8 Lemoore General Plan Land Use Density Assumptions

LAND USE CLASSIFICATION	UNIT DENSITY (MIN)	UNIT DENSITY (TYPICAL)	UNIT DENSITY (MAX)	FLOOR AREA RATION (FAR) (MIN)	FAR (TYPICAL)	FAR (MAX)
Agricultural/ Rural Residential	-	0.05	0.2	-	-	-
Very Low Density Residential	1	2.5	3	-	-	0.25
Low Density Residential	3	4.5	7	-	-	0.40
Low-Medium Residential	7	9	12	-	-	0.60
Medium Density Residential	12	14	17	-	-	0.80
High Density Residential	17	18	25	-	-	-
Mixed Use	8	9	20	0.2	0.25	1
Neighborhood Commercial	-	-	-	0.1	0.2	0.6
Regional Commercial	-	-	-	0.1	0.3	0.6
Professional Office	-	-	-	0.1	0.25	0.6
Light/Heavy Industrial	-	-	-	0.1	0.2	0.5
Business, Tech & Industrial. Reserve**	-	-	-	0.1	0.15	0.2

*Development allowed only when more than 75% of available non-residential land north of SR-198 is fully developed.
 Source: Lemoore General Plan 2030

Table D-9 and Table D-8 displays the expansion acreage depicted in the General Plan Diagram. Upon complete buildout, slightly more than 4,000 acres of land would be utilized within the City’s SOI, with nearly all of it falling within the confines of the UGB (Urban Growth Boundary). The areas designated for new development are intended for residential purposes, comprising a sum of approximately 2,000 acres.

Table D-9 City of Lemoore Potential Planning Area Buildout by 2030

LAND USE	GP LAND USE IN PLANNING AREA ONLY	TOTAL NEW GP LAND USE IN PLANNING AREA	% BUILDOUT BY LAND USE IN PLANNING AREA	DEV. PROJECTS IN PROGRESS	GP LAND USE IN UGB	TOTAL NEW GP LAND USE IN GB	% BUILDOUT BY LAND USE IN UGB
Residential	209	2,113	26%	339	1,565	1,904	47%
Agricultural /Rural Residential	209	213	3%	0	4	4	0%

LAND USE	GP LAND USE IN PLANNING AREA ONLY	TOTAL NEW GP LAND USE IN PLANNING AREA	% BUILDOUT BY LAND USE IN PLANNING AREA	DEV. PROJECTS IN PROGRESS	GP LAND USE IN UGB	TOTAL NEW GP LAND USE IN GB	% BUILDOUT BY LAND USE IN UGB
Very Low Density Residential	0	515	6%	19	496	515	13%
Low Density Residential	-	1,111	13%	307	803	1,111	27%
Low-Medium Residential	-	200	2%	10	190	200	5%
Medium Density Residential	-	74	1%	3	72	74	2%
High Density Residential	-	0	0%	0	0	0	0%
Mixed Use	-	165	2%	0	165	165	4%
Mixed Use	-	118	1%	0	118	118	3%
Neighborhood Commercial	-	48	1%	0	48	48	1%
Commercial/office/Industrial	-	1,361	16%	40	1,321	1,361	34%
Commercial	-	170	2%	31	139	170	4%
Professional Office	-	78	1%	0	78	78	2%
Industrial	-	715	9%	9	706	715	18%
Business, Tech & Industrial Reserve**	-	396	5%	0	398	398	10%
Other	4,004	4,630	56%	119	507	626	15%
Parks/Recreation	-	208	3%	39	168	208	5%
Community Facilities	-	218	3%	79	139	218	5%
Agriculture	3,341	3,352	41%	0	11	11	0%
Greenway/Basin	12	198	2%	0	186	186	5%
Wetlands	652	655	8%	0	2	2	0%
Total	4,214	8,270	100%	497	3,559	4,056	100%

*Planning for this area is not likely to be initiated before 2020 at a time when at least 75% of the planned development north of SR-196 has occurred,

Note: Acreage totals do not include existing developed land.

Source: Lemoore General Plan 2030

As shown in the Figure D-2, most of the City’s downtown consists of commercial and mixed uses, which are surrounded by mainly low density single-family residential land uses. Beyond these residential uses are agricultural and rural residential uses. As previously noted, because most of these parcels are under Williamson Act contracts, and designated for agricultural and rural residential, these lands should not be developed in the future. Also, while the City has processed new building permits for single-family units over the past decade, the majority of these permits have been issued in areas designated for residential land uses; thereby limiting development in potential hazard-prone areas, like the floodplains to the far west of the City. The City has issued permits for commercial development in hazard prone areas, such as flood zones. However, mitigation measures were taken to ensure safety and damage prevention, such as raising ground-mounted solar panels in the western portion of the City. Several other permits have been pulled near the area with a 0.2% annual chance of flood hazard, but site-specific mitigation measures were also in place to minimize the flood risk for these project developments. Further, the City of Lemoore does not plan to annex any further west, which is the area at risk for flooding. In summary, development over the past decade has been consistent with the City’s General Plan, other plans that guide development, and limited to the areas within the City’s 2035 UGB, further limiting development in hazard areas. Through the implementation of various planning tools like the General Plan, Zoning Ordinance, and Municipal Code, and the integration of mitigation measure to minimize risk for those development approved in the 0.2% floodplain to the west, the City’s net vulnerability to natural hazards has remained the same.

D.2.8 Future Development

The areas located in the SOI shown in Table D-10 are areas the City plans to grow into and potentially slated for future development. Understanding the potential hazard exposure in the area can help to mitigate the impacts of events before development occurs in those areas. During this plan update process parcel analysis was conducted using the SOI and overlaid with available hazard risk layers to determine where future development may be at risk of natural hazard events. The results of the analysis have been integrated into the applicable hazard sections: dam incidents. Table D-11 is the summary of the SOI total exposure for the City of Lemoore.

Table D-10 Sphere of Influence Total Exposure Summary

Property Type	Improved Parcel Count	Building Count	Improved Value	Estimated Content Value	Total Value
Agricultural	14	14	\$965,374	\$965,374	\$1,930,748
Commercial	5	97	\$1,415,207	\$1,415,207	\$2,830,414
Exempt	7	9	\$3,900,590	\$3,900,590	\$7,801,180
Industrial	1	1	\$199,265	\$298,898	\$498,163
Multi-Use	10	12	\$1,892,321	\$1,892,321	\$3,784,642
Residential	154	158	\$22,152,791	\$11,076,396	\$33,229,187
Total	191	291	\$30,525,548	\$19,548,785	\$50,074,333

Source: Kings County Assessor, WSP analysis

D.3 HAZARD IDENTIFICATION AND SUMMARY

The City of Lemoore LPT identified the hazards that affect the City and summarized their frequency of occurrence, spatial extent, potential magnitude, and significance specific to their community (see Table D-11). There are no hazards that are unique to Lemoore, although the hazard risk in the City varies and is distinct from the hazard risk in the County’s Planning Area. The purpose of this section is to profile the City of Lemoore’ hazards where different from the County and assess the City’s unique vulnerabilities.

The hazards profiled in the County MJHMP Base Plan discuss the overall impacts to the County’s Planning Area. This information is summarized in the hazard description, geographic extent, magnitude/severity, previous occurrences, and probability of future occurrences. The information in the City of Lemoore’ risk assessment summarizes all priority hazards, and specifically those hazards that vary from the County’s planning area. The hazard profile information is organized in a similar format here as a way to identify priority hazards for mitigation purposes.

Table D-11 summarizes the hazards profiled in the County’s Planning Area and risk assessment to provide a way for the LPT to evaluate which hazards are addressed in their General Plan Safety and Noise Element and which hazards are relevant and priority hazards for the City. The City’s General Plan Safety and Noise Element addressed climate change, seismic and geologic hazards (including earthquake), flood hazards (including dam inundation), and fire hazards as well as hazardous materials and operations. Among the hazards addressed in the City’s General Plan Safety and Noise Element dam inundation, earthquake, flood hazards, landslide, and wildfire hazards are further addressed in this Annex while wildfire is addressed in the Base Plan. Climate change considerations are also addressed in the Base Plan.

Table D-11 City of Lemoore –Hazard Profiles

HAZARD	GEOGRAPHIC AREA	PROBABILITY OF FUTURE OCCURRENCE	MAGNITUDE/ SEVERITY (EXTENT)	OVERALL SIGNIFICANCE	PRIORITY HAZARD?
Agriculture Pest and Disease	Extensive	Likely	Critical	Low	No
Cyber Attack	Significant	Occasional	Critical	High	Yes
Dam Incidents	Extensive	Unlikely	Critical	Medium	Yes
Drought	Extensive	Likely	Critical	Medium	Yes
Earthquake	Limited	Occasional	Critical	High	Yes
Extreme Temperatures: Freeze and Heat	Extensive	Highly Likely	Limited	High	Yes
Flood	Limited	Likely	Limited	Medium	Yes
Land Subsidence	Significant	Occasional	Negligible	Medium	Yes
Landslide, Mud/Debris Flow, Rockfall	Limited	Occasional	Negligible	Low	No
Public Health Hazards: Pandemic/Epidemic	Extensive	Highly Likely	Critical	Medium	Yes
Severe Weather: Dense Fog	Extensive	Highly Likely	Critical	Medium	Yes
Severe Weather: Hail, Heavy Rain, Thunderstorms, Lightning	Extensive	Highly Likely	Negligible	Medium	Yes
Severe Weather: High Wind/Tornado	Extensive	Highly Likely	Negligible	Medium	Yes
Wildfire	Limited	Unlikely	Negligible	Low	No

HAZARD	GEOGRAPHIC AREA	PROBABILITY OF FUTURE OCCURRENCE	MAGNITUDE/ SEVERITY (EXTENT)	OVERALL SIGNIFICANCE	PRIORITY HAZARD?
Geographic Area Limited: Less than 10% of planning area Significant: 10-50% of planning area Extensive: 50-100% of planning area Probability of Future Occurrences Highly Likely: Near 100% chance of occurrence in next year or happens every year. Likely: Between 10 and 100% chance of occurrence in next year or has a recurrence interval of 10 years or less. Occasional: Between 1 and 10% chance of occurrence in the next year or has a recurrence interval of 11 to 100 years. Unlikely: Less than 1% chance of occurrence in next 100 years or has a recurrence interval of greater than every 100 years.		Magnitude/Severity (Extent) Catastrophic—More than 50 percent of property severely damaged; shutdown of facilities for more than 30 days; and/or multiple deaths Critical—25-50 percent of property severely damaged; shutdown of facilities for at least two weeks; and/or injuries and/or illnesses result in permanent disability Limited—10-25 percent of property severely damaged; shutdown of facilities for more than a week; and/or injuries/illnesses treatable do not result in permanent disability Negligible—Less than 10 percent of property severely damaged, shutdown of facilities and services for less than 24 hours; and/or injuries/illnesses treatable with first aid Significance Low: minimal potential impact Medium: moderate potential impact High: widespread potential impact			

D.3.1 Vulnerability Assessment

The intent of this section is to assess Lemoore’s vulnerability that is separate from that of the Planning Area as a whole, which has already been assessed in Section 4 Hazard Identification and Risk Assessment of the Base Plan. This vulnerability assessment analyzes the population, property, and other assets at risk of hazards ranked as a priority.

The information to support the hazard identification and risk assessment was based on a combination of the previous 2012 MJHMP for the City and County and jurisdiction-specific information collected during the 2022-2023 update. A Plan Update Guide and associated worksheets were distributed to each participating municipality to complete during the 2022-2023 update process. Information collected was analyzed and summarized in order to identify and rank all the hazards that could impact anywhere within the County, as well as to rank the hazards and identify the related vulnerabilities unique to each jurisdiction.

Each participating jurisdiction was in support of the main hazard summary identified in the Base Plan (see Table 4-3). However, the hazard summary rankings for each jurisdictional annex may vary due to specific hazard risks and vulnerabilities unique to that jurisdiction. The information in this Annex helps differentiate the jurisdiction’s risk and vulnerabilities from that of the overall County, where applicable.

Note: The hazard “Significance” reflects the overall ranking for each hazard and is based on a combination of the City of Lemoore LPT’s input from the Plan Update Guide, the risk assessment developed during the planning process (see Section 4 of the Base Plan), and the set of problem statements developed by the City LPT. The hazard significance summaries in Table D-11 above reflect the hazards that could potentially affect the City. The discussion of vulnerability for each of the following hazards is located in Section D.3.6 Estimating Potential Losses, which includes an overview on the local issues and areas of concern associated with the hazard, a problem statement for the priority hazard, and a quantitative risk assessment, where spatial data is available. Based on this analysis, the priority hazards for mitigation purposes for the City of Lemoore are identified below.

- Cyber Attack
- Dam Incidents
- Drought

- Earthquake
- Extreme Temperatures
- Flood
- Land Subsidence
- Public Health Hazards: Pandemic/Epidemic
- Severe Weather: Dense Fog
- Severe Weather: Hail, Heavy Rain, Thunderstorms, Lightning
- Severe Weather: High Wind/Tornado

D.3.2 Assets

This section considers Lemoore’s assets at risk, including values at risk, critical facilities and infrastructure, historic assets, economic assets and growth and development trends.

D.3.3 Property Exposure

The following data on property exposure is derived from the Kings County 2021 Parcel and Assessor data. This data should only be used as a guideline to overall values in the City as the information has some limitations. It is also important to note that in the event of a disaster, it is generally the value of the infrastructure or improvements to the land that is of concern or at risk. Generally, the land itself is not a loss and is not included in the values below. Table D-12 shows the exposure of properties (e.g., the values at risk) broken down by property type for the City of Lemoore.

Table D-12 City of Lemoore Property Exposure by Type

PROPERTY TYPE	IMPROVED PARCEL COUNT	BUILDING COUNT	IMPROVED VALUE	ESTIMATED CONTENT VALUE	TOTAL VALUE
Agricultural	6	6	\$360,817	\$360,817	\$721,634
Commercial	228	704	\$132,810,700	\$132,810,700	\$265,621,400
Exempt	26	30	\$6,332,106	\$6,332,106	\$12,664,212
Industrial	24	32	\$109,777,286	\$164,665,929	\$274,443,215
Multi-Family Residential	166	2,445	\$152,673,286	\$76,336,643	\$229,009,929
Multi-Use	21	30	\$9,741,781	\$9,741,781	\$19,483,562
Residential	6,638	6,765	\$1,130,157,720	\$565,078,860	1,695,236,580
Total	7,109	10,012	\$1,541,853,696	\$955,326,836	2,497,180,532

Source: Kings County Assessor, WSP analysis

D.3.4 Critical Facilities and Infrastructure

For the purposes of this plan, a critical facility is defined as one that is essential in providing utility or direction either during the response to an emergency or during the recovery operation. FEMA sorts critical facilities into seven lifeline categories as shown in Figure 4-1 in the Base Plan.

Table D-13 shows a summary of the critical facilities within the City of Lemoore and Figure D-3 shows their locations. Critical facilities and other community assets as important to protect in the event of a disaster.

Table D-13 Critical Facilities within the City of Lemoore

LIFELINE	# OF CRITICAL FACILITIES
Communication	11
Energy	6

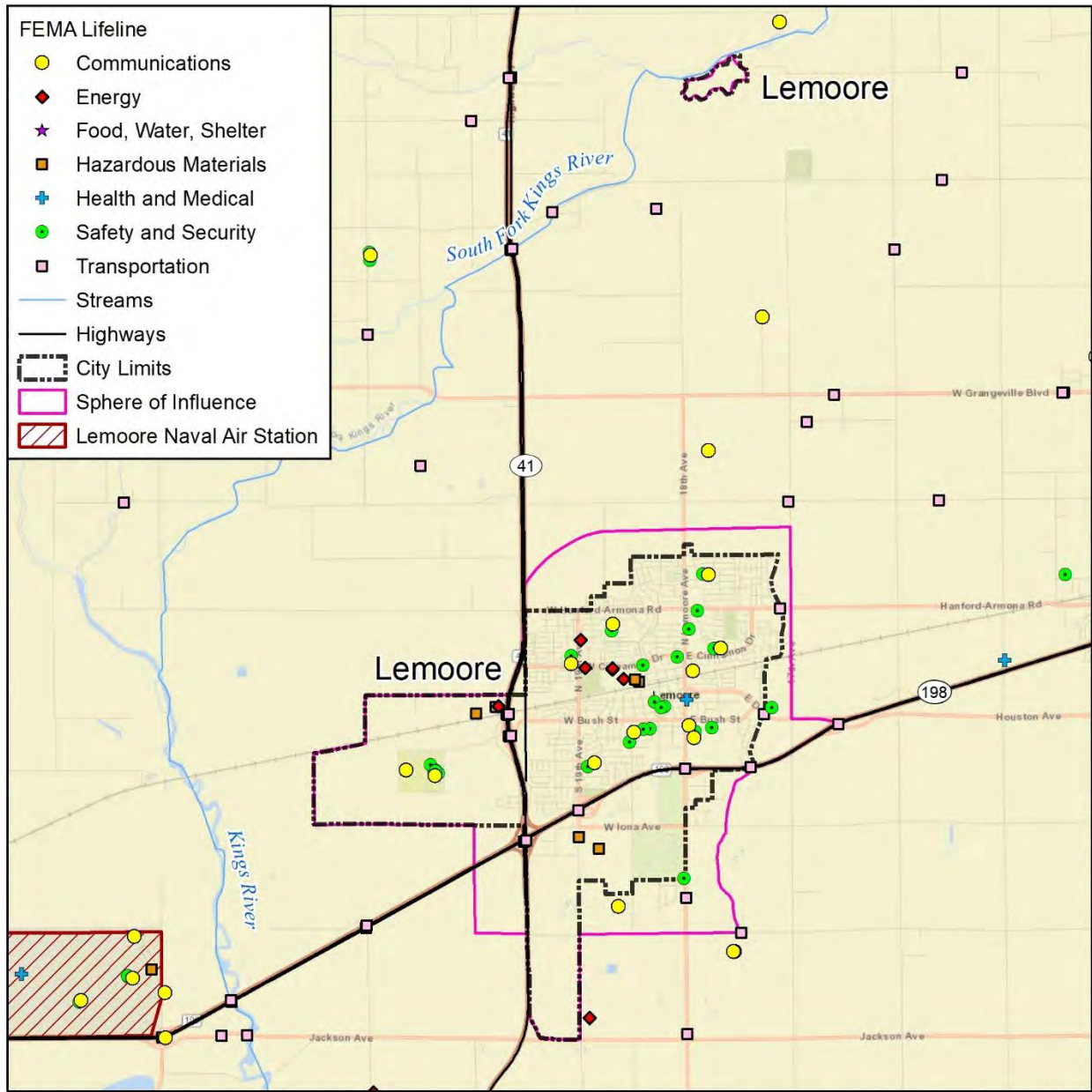
LIFELINE	# OF CRITICAL FACILITIES
Food, Water, Shelter	-
Hazardous Materials	6
Health and Medical	1
Safety and Security	23
Transportation	10
Total	57

Source: Kings County, HIFLD, NID, DWR, WSP analysis

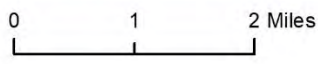
Within the City of Lemoore, the following are considered critical facilities:

- Lemoore Volunteer Fire Department North Side Station
- Lemoore Volunteer Fire Department
- American Ambulance Incorporated
- Kings County Fire Department Station 7 South Lemoore
- West Hills College-Lemoore
- Lemoore Police Department
- Water supply lines and wells
- Wastewater treatment plant, pumping stations, and trunk lines
- Major electrical transmission lines and substations
- Major communication lines and microwave transmission facilities
- Major public and private schools
- Public Library
- Hospital facilities, nursing homes and dialysis centers
- Wells 7, 10, 11, 12, 13, 14
- EW Rail
- 40 G Street
- North Well field
- City Municipal Complex

Figure D-3 Lemoore Critical Facilities



Map compiled 9/2023;
Intended for planning purposes only.
Data Source: Kings County,
HIFLD, NID, DWR



D.3.5 Historic, Cultural and Natural Resources

Lemoore is situated in an area that has historical ties to the Tachi tribe of the Yokuts indigenous people. This tribe, known as the Tachi Yokuts, inhabited the region north of Tulare Lake and extending westward to the hills near Coalinga. Historical records and archaeological findings suggest that these Native American inhabitants were the final group among a succession of hunter-gatherer populations to reside in the Tulare Lake vicinity (Wallace 1991).

Artifacts recovered from archaeological sites near the lake, primarily concentrated along a former lower shoreline, have included an impressive collection of more than 325 Clovis-type lithic projectile points (Stepp 1997). These Clovis points are recognized as significant indicators of an early North American stone tool technology that emerged around 11,000 to 13,000 years ago. Consequently, it is likely that human presence along the Tulare Lake's edge dates back more than 10,000 years.

The City of Lemoore serves as a prime illustration of a Central Valley railroad town from the late 19th and early 20th centuries. Noteworthy features include its prominent high school situated to the south of downtown and a tall and a wooden mill positioned to the east of downtown. As reported by the South San Joaquin Valley Information Center (SSJVIC) at California State University Bakersfield, there is currently no record of any buildings or structures from Lemoore being listed in the National Register of Historic Places (NRHP) or designated as California Historic Landmarks.

However, considerable attention is drawn to the Lemoore Canal, which holds strong potential for inclusion on the NRHP. This canal, originally referred to as the Lower Kings River Ditch, holds historical significance as the inaugural irrigation system established in the region that now constitutes Kings County (formerly part of Tulare County). It is recognized as providing ongoing importance in supporting the agricultural progress of the County.

The City of Lemoore also recognizes a total of 37 historic buildings and structures that carry historical significance. Notably, a significant portion of these local historic sites are concentrated within the downtown district. This area is defined by the northern presence of railroad tracks, the eastern boundary of Lemoore Avenue, the southern border of C Street, and the western edge of Hill Street. Through its historic buildings, Lemoore's evolution over time is visually evident, reflecting its shifting roles as a hub of agriculture and commerce.

D.3.6 Estimating Potential Losses

D.3.6.1 Cyber-Attack

All servers, networks, and users are vulnerable to cyber-attacks. While there have been no recorded cyber-attack events occurring in the City of Lemoore, minor cyber-attacks such as phishing emails often go unreported. Cyber-attack is ranked an overall medium significance hazard for the City of Lemoore and all jurisdictions within Kings County. However, jurisdictions with greater populations and therefore more people exposed to a cyber-attack event are at a higher risk.

Refer to Chapter 4 for a discussion of the cyber-attack risk relative to the City of Lemoore and Kings County.

D.3.6.2 Dam Incidents

During the 2022-2023 plan update process, the HMPC and City's LPT highlighted concerns regarding the Pine Flat Dam situated on the Kings River in Fresno County. This dam holds the potential to trigger dam inundation flooding in the City of Lemoore, constituting a considerable threat due to its high hazard classification. Despite the significance of assessing potential inundation areas for all dams, such data remains inaccessible. Reasons include the lack of

available GIS data and restrictions on releasing such information in public documents. Consequently, a quantitative analysis of dam inundation exposure couldn't be conducted.

However, based on dam inundation mapping done for the 2035 Kings County General Plan Safety and Noise Element, the overall northeastern County, including the cities of Hanford and Lemoore, would be impacted by a dam failure at the Pine Flat Dam. According to the Safety and Noise Element, if the Pine Flat Dam were to breach at full capacity, it would take approximately five hours to reach the County. If such an incident were to occur, those in the dam inundation area with limited mobility or who have no access to vehicles, as well as those in isolated or mobile housing, would be at the greatest risk of harm.

Dam incidents are ranked an overall medium significance hazard for the City of Lemoore. Refer to Chapter 4 for a discussion of dam incident risk relative to the City of Lemoore and Kings County.

D.3.6.3 Drought

The City of Lemoore currently supplies water to residential, commercial, industrial, and institutional customers within the City limits. In 2017, the City's Utilities Department provided approximately 2,076 million gallons (MG) of water through 6,784 service connections (UWMP 2017). The City continuously assesses its infrastructure to ensure water distribution to the City in the case of a natural disaster or other emergency. A response plan has been implemented and procedures are in place to ensure water is distributed in the case of emergency.

The City utilizes local groundwater as its sole source of municipal water supply. The City's municipal water system extracts its water supply from underground aquifers via nine groundwater wells, three in a well field north of town, and six located within the City; there is also one emergency standby well (Lemoore Public Works 2023). The City maintains three ground-level storage reservoirs within the distribution system, with a total capacity of 2.9 MG (UWMP 2017). The City is waiting on bids to rebuild a 1.5 MG water storage tank that was destroyed in a human-caused explosion in 2021 (WRCB 2023). In addition to the main domestic water supply, the City operates a separate system to supply industrial water to the Olam tomato processing plant.

The City's service area rests upon the Tulare Lake Subbasin, which is part of the larger Tulare Lake Hydrologic Region encompassing eight subbasins responsible for the transport, filtration, and storage of water. The City also relies on groundwater sourced from the Tulare Lake Subbasin for its water supply. The Kings River is the major contributor of surface water runoff for the region within the Tulare Lake Subbasin. Regardless of climatic conditions, there is an estimated 82.5 million acre-feet (AF) of fresh groundwater within the Tulare Lake Subbasin. Considering the City's size and a conservative estimate of 100 vertical feet of groundwater accessible to City wells at various depths, it has been calculated that the City presently has access to 178,228 MG of groundwater. This supply remains available to the City, irrespective of climatic conditions, including average years, single-dry years, or multiple-dry years.

However, due to the City's dependence on groundwater wells, the drawdown of groundwater may be more severe during drought years and periods of high mean temperatures. Given that the central San Joaquin Valley has experienced severe drought conditions in recent history, there is a potential for groundwater levels to reach a critical point, especially in terms of the depth to groundwater in the wells. As a result, the need to deepen wells may arise in the future during prolonged droughts. These water shortage vulnerabilities are discussed in Chapter 4 of the Base Plan, which shows that the County's highest vulnerability to drought is situated in the area around the City of Lemoore. This is due to the presence of several small water providers in the vicinity, as well as the high number of private domestic water wells (DWR 2023).

Given the City relies entirely on groundwater sources, the City is vulnerable to drought and related climate change considerations, with anticipated changes primarily linked to increasing

average temperatures, intensifying storm events, and prolonged drought periods based on the City's geographical location and current climate conditions. Other climate change effects, such as increased precipitation variability which could entail longer periods of time without rain, may result in depleted stored groundwater resources, leading to reduced crop productivity and potentially higher water costs. Variations in annual precipitation and temperature could also impact the City's overall water consumption and available supply volumes. DACs and socially vulnerable populations in the City may be even more vulnerable to drought and water supply shortages due to income disparities and limited access to emergency water supplies.

To address these drought challenges, the City has implemented watering regulations to promote water conservation and educate all customers. Almost all City connections, accounting for 99%, are metered, with a few exceptions in downtown and low-usage commercial service connections. The City recently updated its water rates and utilizes the annual Consumer Confidence Report to convey additional information on water conservation and other demand management measures when necessary. Display cases and bulletin boards at City facilities serve as permanent platforms for sharing current City information. The monthly water bills distributed to all water service customers play a role in public education, presenting data on previous-year water usage to enable self-monitoring of water demand. Additionally, the bills contain space for public service announcements aimed at reminding citizens of conservation and demand management measures. The City Manager has also appointed a conservation coordinator, the Public Works Director, responsible for coordinating and expanding the City's water conservation program and providing residents with valuable water conservation information.

In summary, the City has staff and resources to manage water resources and implements conservation programs. The City may benefit from projects and initiatives to promote groundwater recharge and recovery. The City currently does not intentionally divert stormwater for beneficial use within its water distribution system, and there are no immediate plans for such diversion. However, the City may consider these actions in the future to bolster aquifer storage and recovery. The City may also ensure DACs and other socially vulnerable communities have adequate emergency water supplies.

Drought is ranked an overall medium significance hazard for the City of Lemoore. Refer to Chapter 4 for a discussion of drought hazards relative to the City of Lemoore and Kings County.

D.3.6.4 Earthquake

The City of Lemoore lies within a seismically active area. As mentioned in the Base Plan, no major fault systems are known to exist in Kings County. However, minor surface ruptures could occur in areas of minor faulting, which occur primarily in the southwestern part of the County along the Kettleman Hills mountain range. Moreover, the San Andreas Fault is located less than four miles west of the Kings County line.

As shown in Figure 4-14 Kings County Earthquake Ground Shaking Potential and Nearby Faults of the Base Plan, earthquake hazard is the most severe in the southwest of Kings County. The potential for ground shaking in the Lemoore area is 50-60%g, while ground shaking at the southwestern County line can reach 100% g and above. There have not been any damaging earthquakes greater than magnitude 6.0 recorded in Kings County in over 200 years, though several have been very close. Geologic studies estimate that over the past 1,400 to 1,500 years, large earthquakes have occurred at about 150-year intervals on the southern San Andreas fault. As the last large earthquake on the southern San Andreas fault was the Fort Tejon earthquake in 1857, that section of the fault is considered a likely location for an earthquake within the next few decades. The system of fault lines, however, are far enough away that no damage was recorded in Lemoore from the earthquake or aftershocks of the 6.7 magnitude 1983 Coalinga earthquake (Lemoore General Plan 2012). The closest active fault to Lemoore is the Nunez fault located in western Fresno County. The Nunez fault is a 4.2-kilometer long, north-south trending, right-reverse oblique-slip fault situated approximately eight miles northwest of Coalinga. Surface rupture occurred along this fault in the 1983 Coalinga earthquake, which had a

magnitude of 6.7 (City of Lemoore 2008). This was followed by another earthquake with a magnitude of 6.0 in 1985. This fault is far enough away from the City of Lemoore that aftershocks during both earthquakes did not cause any damage.

The City’s proximity to major faults, such as the San Andreas Fault makes the City’s population more vulnerable to the secondary effects associated with an earthquake, such as planned and unplanned power outages, in addition to temporary loss of water delivery where water conveyance relies on electricity for pump stations to remain in operation. In turn, these secondary effects could have a severe impact on the City’s DACs and other socially vulnerable populations, in addition to Medicare beneficiaries that rely on electricity-dependent medical equipment and devices to live independently in their homes.

Refer to the Base Plan for details on earthquake hazard’s potential impact on the City of Lemoore and Kings County.

D.3.6.5 Extreme Temperatures

Based on data gathered by the National Oceanic and Atmospheric Administration (NOAA) from the Lemoore Reeves NAS weather station (USW00023110) during the period between 1981 and 2010, Lemoore has an average of 23.9 days per year where the maximum temperature exceeds 100°F, and 32.3 days per year when the minimum temperature falls below 32°F. This data indicates that Lemoore experiences a wide range of temperatures, making it susceptible to extreme weather conditions on both ends of the temperature spectrum. The summary of monthly normals for the Lemoore Reeves NAS station is displayed in Table D-14 below.

Table D-14 Period of Record General Temperature Summary for Lemoore Reeves NAS Station

	Jan.	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Average Temperatures (degrees Fahrenheit)												
Average Maximum Temperature	55.0	62.1	68.7	75.6	84.6	91.7	96.8	95.4	90.4	80.3	65.8	54.9
Average Minimum Temperature	35.6	38.6	41.7	44.7	51.1	56.4	60.5	59.0	59.0	47.3	38.5	34.2
Average Temperature	45.3	50.4	55.2	60.1	67.9	74.1	78.6	77.2	72.8	63.8	52.2	44.5
Extreme Temperatures (Mean Number of Days)												
Maximum over 100°F	0.0	0.0	0.0	0.0	1.0	4.2	9.2	6.3	2.7	0.5	0.0	0.0
Minimum under 32°F	8.8	4.4	1.9	0.4	0.0	0.0	0.0	0.0	0.0	0.1	4.6	12.1

Source: NOAA 2023, <https://www.ncdc.noaa.gov/cdo-web/datatools/>

The City of Lemoore opens a cooling center out of the Lemoore Recreation Center when temperatures are expected to exceed 105°F for two consecutive nights. Additionally, the Kings County Library operates a heating and cooling center at the County library in Lemoore during business hours. Still, communities in the City, such as the one DAC as well as other socially vulnerable communities may experience disproportionate impacts. Impacts can be particularly problematic for those households that lack air conditioning or easy access to local cooling centers at the County library. Further, of this socially vulnerable population, the Medicare beneficiaries that rely on electricity-dependent medical equipment and devices are most vulnerable to extreme heat events that result in planned or unplanned power outages.

Extreme temperatures are an overall high significance hazard in Lemoore. Refer to Chapter 4 for a discussion of the extreme temperature risk relative to the City of Lemoore and Kings County.

D.3.6.6 Flood

The extent of flood severity is influenced by various factors, encompassing the intensity and duration of rainfall, the landscape’s topography, and the type of ground cover in the region. An abundance of rainfall within a brief timeframe can lead to sudden flash floods. Conversely, even a modest amount of rain can trigger flooding, particularly in regions with frozen or saturated soil

from prior wet spells. Furthermore, floods might occur if rainfall accumulates over impermeable surfaces like extensive parking lots, paved roads, or densely developed zones.

The repercussions of flooding encompass a broad spectrum of effects, including injuries and loss of life, financial setbacks, psychological trauma, as well as damage to infrastructure such as roads and bridges, and properties. This damage spans across different aspects including structural elements (such as foundations), electrical systems (outlets, wiring, meters, etc.), mechanical equipment (washers, dryers, furnaces, water heaters, etc.), and finishing touches like floors and walls.

Floodplains and Special Flood Hazard Area

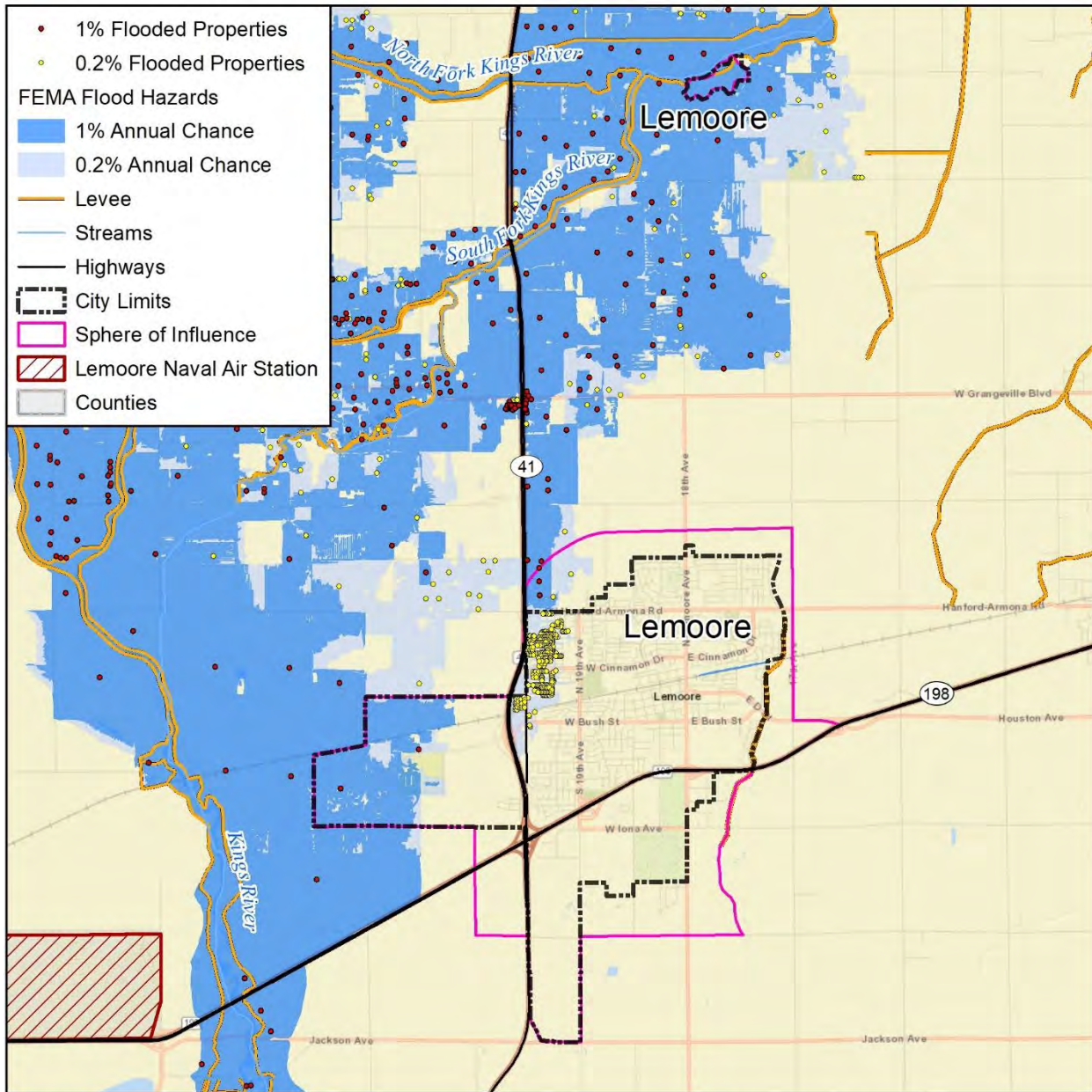
As referenced in the Base Plan, federal, state, and local agencies use the 1% annual chance flood, often called the "base flood" or "100-year flood," as a regulatory benchmark for flood risk. This predefined boundary, also known as the Special Flood Hazard Area (SFHA) serves as a practical method for evaluating susceptibility and potential hazards within regions prone to flooding. A floodplain is a flat area near water bodies prone to periodic flooding, reducing flood impact on communities. Floodplains have fertile soil and diverse ecosystems, requiring careful management for safety and environmental protection. During times of increased water flow, such as heavy rainfall or snowmelt, the floodplain serves as a natural area for excess water to spread out and temporarily inundate. Floodplains are crucial for managing and mitigating flood risks, as they help to absorb and distribute floodwaters, protecting nearby structures and communities from the full impact of flooding.

As noted in the General Plan, the 100-year and 500-year floodplains for the City of Lemoore are delineated by the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Maps (FIRMs). Flood hazards for the City of Lemoore are shown in Figure D-4. As shown in the figure, mostly the far western portion of the City is exposed to flood hazards, including a small non-contiguous portion of the City to the north. Within the City's SOI, 14% (1,710 acres) is located within the 100-year floodplain and 6% is located in the 500-year flood plain (764 acres). Within the UGB, 6% (448 acres) is located within the 100-year flood plain. These floodplains are largely located in the western portion of the City's SOI near the wetlands and the westside industrial park. The remainder of the City's SOI (80%) is located outside of these two floodplains.²

The City also reports minor localized flooding on Cedar Lane east of 19th Avenue, East D Street east of Lemoore Avenue, and near the areas north of Hanford Aroma Road (City of Lemoore 2008). As noted in the City's Safety and Noise Element, upgrades to the storm drainage facilities along these roads would mitigate the localized flooding problems.

² The City applied for an amendment to the current FEMA floodplain maps. The City will amend the General Plan maps after approval is received.

Figure D-4 City of Lemoore FEMA 1% & 0.2% Annual Chance Floodplains



Map compiled 7/2023;
Intended for planning purposes only.
Data Source: Kings County, DWR
FEMA NFHL 6/17/2019

0 1 2 Miles



The Kings River, which is the primary source of irrigation water for the areas around the City, is regulated by the Pine Flat Dam, located east of Fresno. A Flood Inundation Analysis performed for Pine Flat Dam by the U.S. Army Corps of Engineers indicates the potential effects of dam failure on the downstream floodplain covers the entire City SOI. The extremely low probability of the occurrence of dam failure, large volume of flood water available for dilution of potential pollutants, and the relatively long warning period to prepare downstream dairy farms for flooding indicate that inundation related to dam failure would not be a significant impact on growth and development in and around Lemoore (see Section D.3.6.2).

A flood vulnerability assessment was completed during the 2022-2023 update, following the methodology described in Section 4 of the Base Plan. Table D-15 summarizes the values at risk

in the City's 1% annual chance floodplain. Table D-16 summarizes the values at risk in the City's 0.2% annual chance floodplain.

Table D-15 City of Lemoore FEMA 1% Annual Chance Flood Hazard, by Property Type

Property Type	Improved Parcel Count	Building Count	Improved Value	Content Value	Total Value	Estimated Loss	Population
Agricultural	1	1	\$11,954	\$11,954	\$23,908	\$5,977	
Exempt	1	1	\$-	\$-	\$-	\$-	
Total	2	2	\$11,954	\$11,954	\$23,908	\$5,977	-

Source: Kings County Assessor's Office; National Flood Hazard Layer Effective 6/17/2019; FEMA; WSP analysis

Table D-16 City of Lemoore FEMA 0.2% Annual Chance Flood Hazard, by Property Type

Property Type	Improved Parcel Count	Building Count	Improved Value	Content Value	Total Value	Estimated Loss	Population
Commercial	3	4	\$1,542,712	\$1,542,712	\$3,085,424	\$771,356	
Industrial	1	1	\$399,406	\$599,109	\$998,515	\$249,629	
Multi-Family Residential	2	274	\$34,356,891	\$17,178,446	\$51,535,337	\$12,883,834	808
Multi-Use	1	1	\$3,821,051	\$3,821,051	\$7,642,102	\$1,910,526	3
Residential	212	212	\$41,915,687	\$20,957,844	\$62,873,531	\$15,718,383	625
Total	219	492	\$82,035,747	\$44,099,161	\$126,134,908	\$31,533,727	1,437

Source: Kings County Assessor's Office; National Flood Hazard Layer Effective 6/17/2019; FEMA; WSP analysis

Based on this analysis, the City of Lemoore has two buildings located within the 1% annual chance floodplain for a total value of almost \$24,000. The potential loss is estimated at almost \$6,000 if these areas were inundated by the 1% annual chance flood. In addition, the City of Lemoore has 492 buildings located within the 0.2% annual chance floodplain for a total value of over \$126 million. Most of these properties are located along the far western portion of the City and within the non-contiguous portion of the City to the north. The potential loss is estimated at almost \$32 million if these areas were inundated by the 0.2% annual chance flood. The population at risk was calculated for the 1% and 0.2% annual chance floodplains based on the number of residential properties at risk and the average number of persons per household (2.95). No population is at risk to 1% annual chance flood events; however, 1,437 persons are at risk to 0.2% annual chance flood in the City.

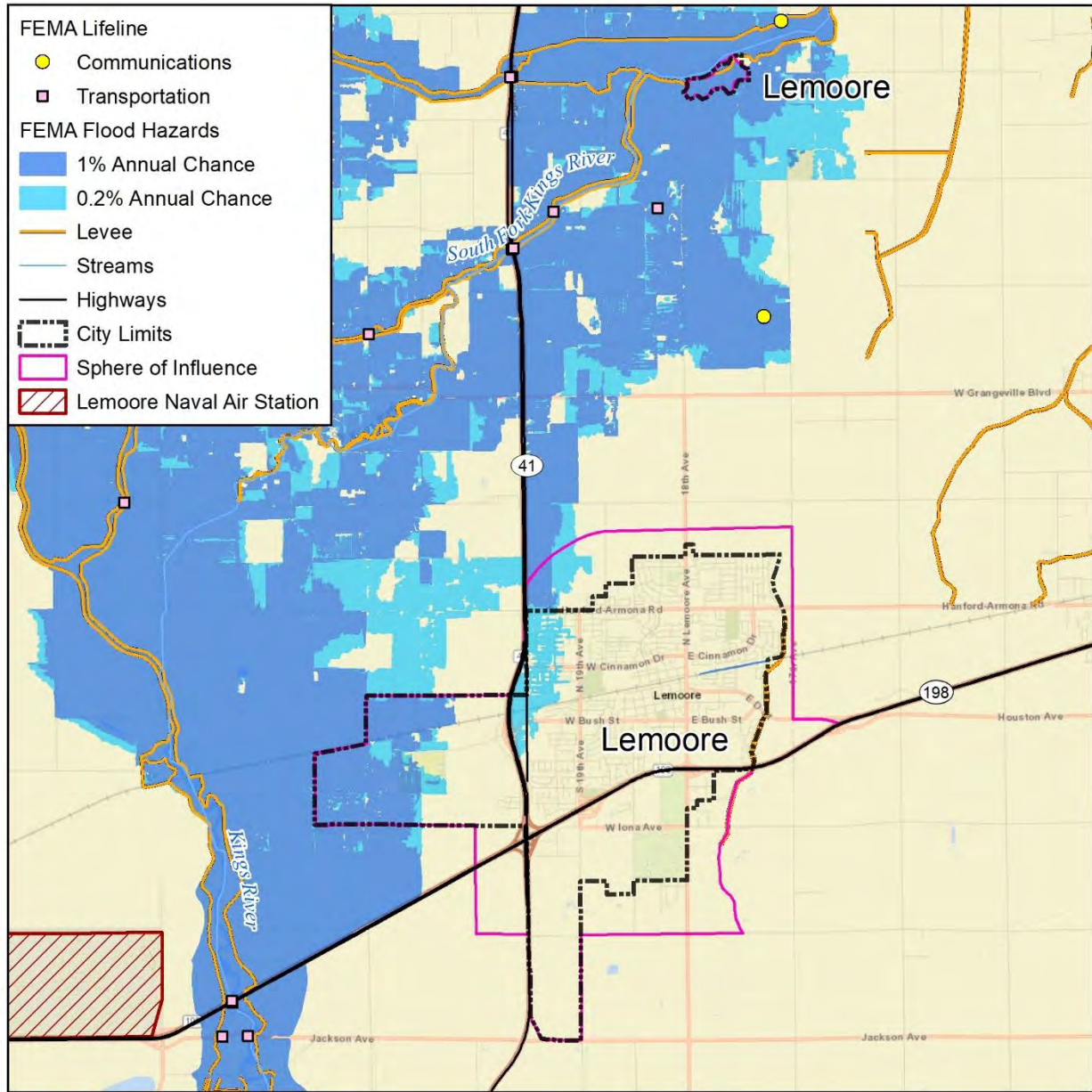
Further, of this population one census tract (6031000200) in the City includes a DAC. This means that the population within this tract is more likely to have a disproportionate impact from flood hazards, and may need additional assistance responding to and recovering from these hazards. For example, the community may not be able to easily evacuate or relocate to alternative housing. The community may also lack flood insurance. However, in comparison to the other cities in Kings County, the City of Lemoore's flood risk to socially vulnerable populations is more severe mainly based on the overall population at risk to the 0.2% annual chance flood (1,437).

The Department of Water Resources (DWR) developed Best Available Maps (BAM) following legislation enacted in 2017 (Senate Bill 5) for the 100-, 200-, and 500-year floodplains located within the Sacramento-San Joaquin Valley. The BAM maps contains the best available information on flood hazards in cities and counties. While the BAM maps do not replace existing FEMA regulatory floodplains shown on the Flood Insurance Rate Maps (FIRM) they identify potential flood risk in areas that may warrant further studies and are intended to facilitate land use decision making. There is no DWR Awareness 100-year floodplain located within the City of Lemoore.

Critical Facilities at Risk

Critical facilities are those community components that are most needed to withstand the impacts of disaster as previously described. According to the critical facility flood hazard analysis during the 2022-2023 plan update process, none of Lemoore’s facilities are located in 1% or 0.2% annual chance floodplains; most of these critical facilities are in the unincorporated County. Figure D-5 below shows the City’s critical facilities in the 1% and 0.2% annual chance floodplains.

Figure D-5 Critical Facilities at Risk of FEMA 1% & 0.2% Annual Flood Hazard



Map compiled 9/2023;
Intended for planning purposes only.
Data Source: Kings County,
FEMA NFHL 6/17/2019, HIFLD,
NID, DWR

0 1 2 Miles



Insurance Coverage, Claims Paid, and Repetitive Losses

The City of Lemoore joined the NFIP on April 3, 1987. NFIP Insurance data indicates that as of May 2023, there were nine flood insurance policies in force in the City with \$ 3,034,000 of coverage. All nine policies are located in B, C & X zones. All nine policies are for single family residential. There have not been any historical claims. According to the FEMA Community Information System accessed August 25, 2023, the City currently has no Repetitive Loss or Severe Repetitive Loss properties.

Future Development

The results of the SOI flood analysis are shown below. A total of two buildings within the SOI are exposed to the 1% annual chance flood (see Table D-17). Another two buildings within the SOI are exposed to the 0.2% annual chance flood (see Table D-18). This indicates the risk to existing development that could be under the City’s jurisdiction if the area was annexed.

Table D-17 Sphere of Influence Areas Exposed to 1% Annual Chance Flood Hazard

Property Type	Improved Parcel Count	Building Count	Improved Value	Content Value	Total Value	Estimated Loss	Population
Agricultural	2	2	\$25,742	\$25,742	\$51,484	\$12,871	-
Total	40	44	\$38,205,152	\$37,338,575	\$75,543,727	\$18,885,932	96

Source: Kings County Assessor’s Office; National Flood Hazard Layer Effective 6/17/2019; FEMA; WSP analysis

Table D-18 Sphere of Influence Areas Exposed to 0.2% Annual Chance Flood Hazard

Property Type	Improved Parcel Count	Building Count	Improved Value	Content Value	Total Value	Estimated Loss	Population
Residential	1	1	\$33,200	\$16,600	\$49,800	\$12,450	-
Exempt	1	1	\$30,770	\$30,770	\$61,540	\$15,385	3
Total	2	2	\$63,970	\$47,370	\$111,340	\$27,835	3

Source: Kings County Assessor’s Office; National Flood Hazard Layer Effective 6/17/2019; FEMA; WSP analysis

Flood hazards are ranked medium for the City of Lemoore based on flood risk associated with the 1% and 0.2% annual chance floodplains. There are also localized flooding issues along several roads in the City that can be improved through storm drainage facility upgrades. Refer to Chapter 4 for a discussion of flood risk relative to the City of Lemoore and the County.

D.3.6.7 Land Subsidence

The 2030 Lemoore General Plan defines subsidence as “the gradual settling or sinking of the earth’s surface with little or no horizontal motion,” further explaining that subsidence in Kings County is predominately related to groundwater withdrawal. Land subsidence is prevalent along the northeastern portion of Kings County. According to data from DWR, the City of Lemoore has experienced moderate subsidence. Between 2015 and 2023, the City experienced vertical displacement of -3.5 to -4.5 feet. The northeastern portion of the City, which has experienced the most vertical displacement (between -4.0 to -4.5 feet), is largely zoned for residential and agricultural uses.

Land subsidence is an overall medium significance hazard for the City of Lemoore and all jurisdictions within Kings County. Refer to Chapter 4 for a discussion of land subsidence risk relative to the City of Lemoore and the County.

D.3.6.8 Public Health Hazards: Pandemics/Epidemics

All populations are vulnerable to public health hazards. Elder populations, young children, and individuals with pre-existing medical conditions are more likely to face long lasting impacts from communicable disease. These groups are at a higher risk of facing prolonged and often more serious impacts from infectious diseases due to their compromised immune systems or underdeveloped defense mechanisms.

While areas of high population density are likely to experience a greater number of cases due to a larger population, larger cities tend to have advantages in terms of access to medical resources. The availability of medical facilities, advanced healthcare services, and a concentration of healthcare professionals can contribute to a more robust response to disease outbreaks. In such urban environments, medical resources are often better equipped to manage and treat a larger volume of cases. However, the effectiveness of response doesn't solely depend on the presence of medical resources. It also hinges on the coordination of public health interventions, early detection, and the implementation of preventative measures. In contrast, rural or less densely populated areas might have limitations in terms of immediate medical access, but their smaller populations can make it easier to implement containment strategies and monitor outbreaks closely.

Public health hazards are an overall medium significance hazard for the City of Lemoore and all jurisdictions within Kings County. Refer to Chapter 4 for a discussion of public health hazards risk relative to the City of Lemoore and the County.

D.3.6.9 Severe Weather: Dense Fog

Thick fog, referred to as Tule fog, is a common meteorological phenomenon experienced in Kings County, primarily during the winter months, typically spanning from December through February. This fog formation transpires rapidly in the early morning hours and can persist for extended periods, often stretching over days to weeks. The National Center for Environmental Information (NCEI) Storm Events Database, covering the timeframe from 1996 to 2022, has documented a total of 333 dense fog occurrences in Kings County (as detailed in Table 4-65 of the Base Plan). 131 of these incidents were registered in Lemoore with \$6,000 in crop damages and \$150,000 in property damages. Each event with recorded property and crop damages is summarized in Table D-19.

Table D-19 Dense Fog Events in Lemoore with Damages (2017-2022)

DATE	INJURIES	DAMAGES	SUMMARY
01/31/2017	0	\$6,000 (Crop)	High pressure with clearing skies over the region coupled with recent heavy precipitation created ideal conditions for dense nighttime and morning radiational fog to develop. California Highway Patrol reported dense fog caused a multiple vehicle collision with 3 vehicles involved on westbound Highway 198 just east of 16th avenue east of Lemoore in Kings County. No injuries were reported.
11/21/2021	0	\$50,000 (Property)	Another night of clear skies, light winds and inversion conditions resulted in widespread dense fog forming in the San Joaquin Valley during the evening of November 21 into the early morning of November 22. The fog persisted over a widespread area until late morning when it lifted into a low clouds deck which eroded during the afternoon. The fog resulted in at least three major vehicular accidents in the San Joaquin Valley during the morning of November 22.
01/14/2022	0	\$100,000 (Property)	A weak upper-level low pressure system brought some mid-level clouds to the area during the morning of January 13 inhibiting fog formation in the valley that morning. However, skies cleared out during the early morning of January 14 which allowed for widespread dense fog to form in the San Joaquin Valley as light winds and inversion conditions prevailed. The fog resulted in several multi-vehicle accidents during the morning of January 14 and California Highway Patrol paced traffic on several highways as visibility was as low as 50 feet on some highways. In addition, several school districts in the San Joaquin Valley opened late and cancelled

			bus service for the day. The fog slowly dissipated during the early afternoon.
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Source: NCEI Storms Event Database 2023

Fog is an annual recurrence in Kings County, with potentially damaging events transpiring every three years on average since 1962. Consequently, the anticipation of regular annual fog and intermittent damaging occurrences is high. To mitigate the impact, fog advisories are employed to postpone school and bus schedules until the fog lifts. A well-maintained traffic signage and striping system is pivotal in aiding drivers during fog events, facilitating safer navigation.

The sustained occurrence of fog, coupled with its potential for adverse effects, reinforces the importance of ongoing vigilance and comprehensive planning. Through the utilization of fog advisories to adjust school and bus schedules and the enhancement of traffic systems, Hanford demonstrates a proactive commitment to addressing the challenges posed by Tule fog. These initiatives underscore the City's dedication to ensuring the safety and welfare of its residents amidst the recurring atmospheric conditions associated with Tule fog. These initiatives also reduce the exposure associated with dense fog on socially vulnerable communities, particularly children and seniors dependent on public transportation.

Severe weather hazards associated with dense fog are an overall medium significance hazard for the City of Lemoore. Refer to Chapter 4 for a discussion of dense fog hazards risk relative to the City of Lemoore and the County.

D.3.6.10 Severe Weather: Heavy Rain, Thunderstorms, Lightning, and Hail

Between 1968 and 2022, the NCEI Storm Events Database recorded a total of 127 instances of hail, heavy rain, thunderstorms, and lightning events in Kings County. Of these events, 13 were recorded in Lemoore consisting of four heavy rain events, four thunderstorm events, four hail events, and one lightning event. There were no recorded deaths or injuries. There has been \$90,000 in property damages, summarized in Table .

Table D-20 Heavy Rain, Thunderstorms, Hail, and Lightning Events (1968-2022)

Date	Property Damage	Summary
Heavy Rain		
Dec. 14, 2003	N/A	In the Southern Sierra and Tulare County Mountains at the higher elevations substantial snow fell primarily during the morning of the 14th. Estimated amounts included Chilkoot Meadow 15 inches of new snow, Volcanic Knob 13", Beach Meadow 22", and Lodgepole 15". Pre-frontal wind was also present as the foothill areas reported southeast wind gusts to 35 MPH at Catheys Valley. Post-frontal conditions later in the day had north winds sustained at 41 MPH in the Indian Wells Valley area with a gust to 64 MPH. Jawbone RAWS had northwest wind gusts to 58 MPH. Locally heavy rain occurred on the San Joaquin Valley floor with the city of Lemoore reporting street flooding in the late morning hours from 0.41" of rain in that short period.
April 28, 2005	N/A	Early afternoon thunderstorm activity brought locally heavy rain (0.88"), hail, and reports of funnel clouds around the city of Lemoore.
March 28, 2006	N/A	A small FO Tornado occurred just west of Atwater, CA, which resulted in small structure roof damage and the tossing of equipment and trash cans at nearly the same time as another tornado 10 miles to the ESE in Merced County. Locally heavy rain from the thunderstorm activity in Merced County also resulted in reports of roadway flooding just northeast of

		Livingston by 1633 PST. Urban flooding was the result of locally heavy rain and thundershowers specifically in the Lemoore/Hanford area of Kings County as well as Porterville in Tulare County.
Nov. 01, 2014	N/A	An apartment roof collapsed due to heavy rain. Reported by local media via twitter. Rain estimated 0.75 inches from combination of nearby ASOS and COCORAHS reports.
Thunderstorm		
June 15, 1995	\$25,000 (Property)	Oak tree limbs were broken, and other full-foliage trees were toppled by brief strong wind in the Hanford/Lemoore area, 30 miles south-southeast of Fresno. In Hanford, one of the toppled trees damaged a car. A post-event survey was unable to ascertain whether severe thunderstorm wind criteria were met because soils were moist, and trees were full foliage. However, the damage location just south of the Fresno County line and timing of the damage places this damage in proximity to severe storm damage in south-central Fresno County at Raisin City/Caruthers/and Easton.
Feb.14, 1998	\$50,000 (Property)	Afternoon convective activity on the 14th provided wind gusts to 40 MPH at 1610 PST damaging powerlines and dropping service to 1800 electric customers in the Lemoore area.
May 14, 2003	\$10,000 (Property)	A thunderstorm outflow 6.5 miles NW of the town of Lemoore and ENE of NAS Lemoore swept southward on the afternoon of the 14th. Damage occurred to fences, dairy barns, and small structures. Eyewitnesses also reported the presence of a gustnado along the outflow that focused damage along the vortex's 15-yard wide, 3/8-mile path length. Gusty wind contributed to downed power lines setting off about 4 minor fires around the southwestern portion of the San Joaquin Valley. Damage was primarily to agricultural commodities destroyed by the wind-caused fires.
April 2, 2019	\$1,000 (Property)	A low-pressure system moved across the Pacific Northwest and northern California on April 2. While most of the moisture associated with this system remained to the north of our area, a cooler and unstable airmass moved over the area during the afternoon behind a cold front which pushed through the area. Scattered showers and thunderstorms developed in the post-frontal unstable atmosphere during the afternoon and produced locally heavy rainfall along with small hail and strong winds gusts. The front itself brought locally strong wind gusts to the Kern County Mountains where a few low impact indicator sites measured gusts exceeding 55 mph.
Hail		
Nov. 22, 1996	\$2,000 (Property)	Associated with the tornadic supercell at Lemoore N.A.S. was hail damage to vehicles. Side and front windows on vehicles were smashed by large hail stones during storm passage. Post storm survey determined that hail stones reached up to 2.5 inches in diameter.
May 31, 2002	N/A	Remnants of Hurricane Alma interacted with a closed mid-latitude low providing moisture for a de-stabilizing air mass over Interior Central California in the late evening hours of Friday, May 31st. The resulting widespread, late evening convection led to strong, gusty wind in wet microbursts and street flooding from localized, torrential rains. The most visual damage occurred with a series of very small microbursts evidenced by crop damage in North Kings County. Also, a late report of 3/4+" hail was received from North Kings County.
April 28, 2005	N/A	Mid-day and afternoon thunderstorms during the 28th led to many reports of hail. Damage from hail on the 28th and other days of

		unseasonably persistent rain into early May resulted in significant crop damage in Central California. These damage figures will be reported in the May 2005 Storm Data.
March 10, 2006	N/A	Associated with the severe thunderstorms was locally heavy rain. Lemoore, in Kings County, received 0.48" of rain in about an hour that led to extensive street flooding. A late afternoon thunderstorm along Highway 41 just north of the Fresno/Madera County Line brought small hail and icy rain onto the roadway as well as impacting crops in the vicinity.
Lightning		
April 28, 2005	N/A	Early afternoon thunderstorm activity brought locally heavy rain (0.88"), hail, and reports of funnel clouds around the city of Lemoore.

Source: NCEI Storms Event Database 2023

Among those most vulnerable during heavy rain, thunderstorm, hail, and lightning events are those with access or functional needs, those who are electricity dependent, and those who live in aging or mobile homes. Severe weather hazards associated with heavy rain, thunderstorms, hail, and lightning are an overall medium significance hazard for the City of Lemoore. Refer to Chapter 4 for a discussion of these severe weather hazards risk relative to the City of Lemoore and the County.

D.3.6.11 Severe Weather: High Wind/Tornado

Between 1968 and 2022, the NCEI Storm Events Database recorded a total of 98 instances of high wind, strong wind, and tornado events in Kings County.³ Of these 98 events, 15 were recorded in Lemoore, including one high wind event on February 3, 2000, that resulted in one death and four injuries. In addition to these events, the USDA declared three disaster designations, one in 2016 and two in 2017, due to high wind events. Table D-21 summarizes the high wind and tornado events recorded by the NCEI in Lemoore.

Table D-21 High Wind and Tornado Events in Lemoore, 1968-2022

Date	Property Damage	Summary
Tornado		
March 5, 1994	\$0	Thunderstorms rolled through the central San Joaquin Valley spawning a funnel cloud and a tornado along with damaging hail in Lemoore. The tornado was reported to have touched down for only about 15 seconds and no damage was reported. The hail and strong winds caused \$6 million in crop damage.
Nov. 22, 1996	\$250,000	This tornado was observed to be very slow moving with cell movement northwest to southeast and a path length of one mile or so over barren ground in the mid-field of Lemoore NAS. Storm damage to the Lemoore NAS administrative section was substantial but no injuries occurred. Damage included roof removal of the base recycling center, wind damage to roofs on several administrative structures, powerlines and poles, and fixed structures.
High Wind		
Feb. 3, 2000	\$100,000	Lemoore had sustained wind at 21 knots on the South San Joaquin Valley floor. Over 4,500 customers in the South San Joaquin Valley lost power due to

³ The NCEI Storm database defines high winds as sustained non-convective winds of 35 knots (40 mph) or greater lasting for 1 hour or longer, or gusts of 50 knots (58 mph) or greater for any duration (or otherwise locally/regionally defined). Events with winds less than High Wind criteria, resulting in fatalities, injuries, or significant property damage are encoded as a Strong Wind events.

Date	Property Damage	Summary
		downed trees, along with several weather-related vehicle accidents, including one with a fatality due to areas of blowing dust 5 miles southeast of Shafter.
Oct. 21, 2000	\$0	Gusty wind along the west side of the San Joaquin Valley resulted in wind speeds up to 41 MPH at Kettleman Hills and 37 MPH at Lemoore NAS.
May 2, 2001	\$0	A strong gradient wind situation began to develop on the 1st and peaked on the 2nd of the month. Lemoore NAS reported a peak gust of 37 knots (43 MPH) and broken tree limbs were reported in several locations on the San Joaquin Valley floor.
March 13, 2002	\$0	The West Side of the Central and Southern San Joaquin Valley experienced gusty wind, with the Kettleman Hills reporting gusts up to 42 MPH and Lemoore reporting gusts up to 37 MPH. Local utility reports indicated 6,000 customers went without power in the Central San Joaquin Valley due to downed power lines and trees.
June 8, 2002	\$0	Higher than normal wind speeds caused concerns in the Central and Southern San Joaquin Valley. Northwest wind gusted to 38 MPH at Lemoore on the morning of the 8th. On the east side of the Valley, wind did not quite reach wind advisory levels although speeds were noted at 26 MPH in Hanford.
June 9, 2002	\$0	Another day of strong onshore pressure gradients brought gusty wind to the west side of the Central and Southern San Joaquin Valley. Sustained wind of 30 MPH and gusts to 36 MPH occurred at Lemoore NAS while gusts reached 43 MPH at Kettleman Hills.
Strong Winds		
Dec. 14, 2002	\$5,000	Numerous locations around the Central and South San Joaquin Valley reported downed trees and powerlines. Lemoore NAS reported sustained winds of 33 MPH while the west side near Kettleman Hills reached gusts of 55 MPH.
Feb. 19, 2003	\$5,000	On the South San Joaquin Valley floor, wind speeds reached 37 MPH at Hanford and 44 MPH at Bakersfield. The strong wind caused a major power outage affecting 12,000 customers in the city of Lemoore and an additional 18,000 customers elsewhere in Kings and Southwest Fresno Counties.
May 14, 2003	\$150,000	A thunderstorm outflow northwest of Lemoore and east-northeast of Lemoore NAS caused damage to fences, dairy barns, and small structures. A gustnado focused damage along the vortex's path length. Gusty wind contributed to downed power lines, setting off about four minor fires around the southwestern portion of the San Joaquin Valley. Damage was primarily to agricultural commodities destroyed by the wind-caused fires.
Jan. 2, 2006	\$100,000	Lemoore received just over three inches of rain in about 30 hours. Strong winds brought down several large trees in the city of Lemoore, including one 100-year-old tree onto a house.
March 21, 2009	\$500	A major storm arrived on the 21st, heralded by strong winds ahead of the cold front. Several gusts between 35 to 38 mph were recorded on the west side of the San Joaquin Valley. Coalinga dropped to a low of 25 degrees and Lemoore NAS had lows of 31.
April 9, 2019	\$5,000	California Highway patrol reported power lines down on the roadway in Lemoore.
Feb. 2, 2020	\$5,000	Public reports of trees blown down in the housing area of Lemoore NAS.

Source: NCEI Storms Event Database 2023

Tornadoes and windstorms pose a significant risk to both the residents and the property within the City of Lemoore. Vulnerability varies depending on the intensity of the event, with certain entities, including mobile homes, damaged vegetation, trees, and utility infrastructure, being particularly susceptible. While vulnerability might differ based on the strength of the event, due to the regional scale of these events, the risk to the City of Lemoore does not vary significantly

from the risk to the County as a whole. However, some communities designated as DACs in Census Tract 6031000200 may experience disproportionate impacts from severe weather events that result in long-term planned or unplanned power outages. And impacts can be particularly problematic for Medicare beneficiaries that rely on electricity-dependent medical equipment and devices to live independently in their homes.

High wind and tornado events are an overall medium significance hazard for the City of Lemoore and all jurisdictions within Kings County. Refer to Chapter 4 for a discussion of high wind and tornado risk relative to the City of Lemoore and the County.

D.4 CAPABILITY ASSESSMENT

Capabilities are the programs and policies currently in use to reduce hazard impacts or that could be used to implement hazard mitigation activities. This capabilities assessment is divided into five sections: regulatory mitigation capabilities, administrative and technical mitigation capabilities, fiscal mitigation capabilities, mitigation outreach and partnerships, and other mitigation efforts. To develop this capability assessment, the jurisdictional planning representatives reviewed a matrix of common mitigation activities to inventory which of these policies or programs and shared any updates or changes through the Lemoore Plan Update Guide. The team then supplemented this inventory by reviewing additional existing policies, regulations, plans, and programs to determine if they contribute to reducing hazard-related losses.

During the plan update process, this inventory was reviewed by the jurisdictional planning representatives and WSP consultant team staff to update information where applicable and note ways in which these capabilities have improved or expanded. Additionally, in summarizing current capabilities and identifying gaps, the jurisdictional planning representatives also considered their ability to expand or improve upon existing policies and programs as potential new mitigation strategies. The City of Lemoore’s capabilities are summarized below.

D.4.1 Regulatory Capability

The regulatory and planning capabilities table lists planning and land management tools typically used by local jurisdictions to implement hazard mitigation activities. Table D-22 below indicates those that are in place in the City of Lemoore.

Table D-22 City of Lemoore –Regulatory and Planning Capabilities

REGULATORY TOOL (ORDINANCES, CODES, PLANS)	YES/NO	COMMENTS
General Plan	Yes	2030 General Plan Adopted May 2008
Zoning ordinance	Yes	Code current through Ordinance 2023-01, passed February 21, 2023
Subdivision ordinance	Yes	Code of Ordinances Title 8 Chapter 7 Article J Subdivision Design Standards
Growth management ordinance		
Floodplain ordinance	Yes	Code of Ordinances Title 9 Chapter 8 Flood Damage Prevention
Other special purpose ordinance (stormwater, steep slope, wildfire)	Yes	2008 Storm Water Management Plan
Building code	Yes	Currently under the 2019 standards, will soon be updated to 2022
Fire Department ISO rating	Yes	Class 2 ISO
Erosion or sediment control program	Yes	Part of Storm Water Management Plan
Stormwater management program	Yes	Yes, August 2008

REGULATORY TOOL (ORDINANCES, CODES, PLANS)	YES/NO	COMMENTS
Site plan review requirements	Yes	Code of Ordinance Title 9 Chapter 2 Article B Planning Permits and Entitlements
Capital improvements plan	No	
Economic development plan	No	
Local emergency operations plan	Yes	Published in 2005
Other special plans	No	
Flood insurance study or other engineering study for streams	Yes	2014 FIS FEMA SFHA
Elevation certificates (for floodplain development)	Yes	
Other	No	

Lemoore General Plan 2030 (2008)

The 2030 Lemoore General Plan is a comprehensive planning document that has been collaboratively developed with input from City officials and residents, aiming to articulate a vision for the Lemoore community in the year 2030. It builds upon the cherished aspects of Lemoore, such as its relaxed pace of life, safe neighborhoods, sense of community, and small-town atmosphere, with a commitment to preserving and enhancing these qualities as the City grows. The plan translates these ideals into policies and actions that will guide decision-makers in shaping the City's physical development, service provision, and resource management over the next decade.

This General Plan serves several crucial purposes. It is legally mandated under State law and addresses issues related to urban development and resource conservation. It aligns local development processes with broader regional and statewide goals while remaining rooted in the input of Lemoore's residents. The plan focuses on concrete and achievable goals within the planning horizon, outlining specific actions for the City to take. These actions are unified under an overarching vision of a vibrant, safe, and appealing City with a small-town character, a robust and diverse economy, affordable housing, efficient transportation, and an exceptional quality of life.

Importantly, the General Plan is a long-term tool designed for continuous use. State law mandates that other city documents, such as specific plans, subdivision regulations, and zoning ordinances, must align with and be consistent with the General Plan. While it doesn't cover every aspect of city governance, it provides a foundational framework. It also outlines a long-term vision, guides various city departments and decision-making bodies, helps evaluate development proposals, assists in designing projects that preserve the community's character and environment, and underpins the development of more detailed plans and programs, such as zoning ordinances, specific plans, and the Capital Improvements Program. In summary, the 2030 Lemoore General Plan is a dynamic roadmap for Lemoore's future, reflecting its community values and aspirations.

Safety and Noise Element

The City's Safety and Noise Element identifies natural and man-made public and safety hazards in the City. It also establishes policies and programs to mitigate potential impacts through preventative and response measures. The City's Element addresses seismic hazards, wildfires, drainage and flood control, hazardous materials, health and safety services, and the community noise environment.

In response to the seismic hazards posed by earthquakes in the City, it is acknowledged that existing structures may be affected to varying degrees based on the earthquake's characteristics. New structures are required to adhere to the current California Uniform Building Code (UBC)

standards to ensure proper design, construction, and maintenance, thereby reducing exposure to geological hazards. Critical facilities like hospitals, fire and police stations, and emergency communication centers must be designed to remain functional after a significant seismic event, employing measures like flexible utility connections, building anchors, and reinforced concrete. The requirements of Zone II of the Uniform Building Code are deemed suitable for normal facilities in the City.

These guiding policies aim to minimize property damage and personal injury resulting from seismic and geological hazards. Implementing policies involve also early-stage geologic and seismic hazard assessments for proposed development sites; enforcement of appropriate building standards and codes; stricter safety provisions for critical-use structures; mitigation for structural alterations; utility resilience to seismic forces; and erosion controls. There are also policy standards and inspection requirements for above-ground storage tanks to reduce risks to life and property. These policies collectively aim to enhance safety and reduce vulnerabilities in the face of earthquake-related threats.

The Safety Element also outlines wildfire policies through a series of comprehensive policies and initiatives. These measures include ensuring Fire Department personnel are trained in wildfire prevention, response, and evacuation procedures, continuing the Weed Abatement Program administered by the Volunteer Fire Department to reduce fire hazards before the fire season, and enforcing the Uniform Fire Code through the approval of construction plans and final occupancy permits. Additionally, the City utilizes public awareness programs to educate the community about the dangers of open burning and ways homeowners can protect their properties from wildfires. Further, during drought periods, the City will actively update both the news media and City residents on current wildfire threat levels, fostering heightened awareness and preparedness within the community. These integrated efforts underscore the city's commitment to mitigating wildfire risks and ensuring the safety of its residents and businesses.

The City's Safety and Noise Element also contains goals and policies aimed at mitigated drainage and flood control, hazardous materials, and health and safety services. For example, the hazardous material policies prohibit the establishment or expansion of businesses meeting federal Emergency Planning and Community Right-to-Know Act (EPCRA) reporting requirements within a quarter mile of schools, hospitals, and residential neighborhoods. Policies require the remediation and cleanup of sites contaminated with hazardous substances, with the level of remediation determined by the City based on public health risks and compliance with federal and state standards. The coordination of the Hazardous Material Disclosure Program with the Kings County Health Department is also emphasized, ensuring the identification of facilities handling hazardous materials and enhancing emergency response capabilities. There is also a commitment to promoting the reduction, recycling, and safe disposal of household and business hazardous wastes through public education and awareness initiatives. These policies collectively underscore the City's commitment to environmental safety and responsible management of hazardous materials.

Zoning Ordinance (2023)

The Lemoore Zoning Ordinance, referred to as the Zoning Ordinance 8905, serves several purposes in regulating land development and use in accordance with the Lemoore City's General Plan. Its primary objectives are to ensure public health, safety, comfort, and convenience while promoting economic development, community aesthetics, and the protection of natural resources. The code outlines the authority granted to the City by the State of California and applies to all land uses, structures, subdivisions, and developments within the City. It repeals and supersedes previous zoning regulations, except for vested land use development permits. Compliance with the zoning code is required for establishing, constructing, or altering any land use or structure, and it sets minimum requirements to safeguard public welfare.

The Zoning Ordinance also addresses conflicts with other legal provisions and outlines the authority and responsibilities of various administrative bodies, such as the Planning Director, City Manager, Planning Commission, and City Council. Violations of the code may result in penalties, and the code emphasizes its role in ensuring public safety and regulating land development within the City's jurisdiction. Additionally, it includes provisions for handling zoning code changes for ongoing projects and emphasizes the importance of adhering to the code's standards and requirements. Finally, the Zoning Ordinance enacts the City Code of Lemoore as the official code of the City, outlines its adoption and maintenance, and establishes penalties for unauthorized alterations or tampering with the code.

Zoning Ordinance Article E: Fire Code

This article of the Zoning Ordinance outlines the adoption of various building and fire codes in the City. The City has adopted the 2016 California Fire Code, referencing the 2015 International Fire Code, and has made specific amendments to this code. Additionally, the article discusses the establishment and duties of the Bureau of Fire Prevention within the City, including its authority over various fire-related matters. The article also covers the adoption of the 2016 California Building Code, with references to the 2015 International Residential Code. Like the Fire Code, the Building Code is adopted with specific amendments. One such amendment relates to roof sheathing requirements. Lastly, the article adopts the 2016 California Administrative Code and specifies that all provisions of this code are now part of the administrative code of the City. The article concludes with sections related to appeals, violations, and the repeal of conflicting ordinances in the City.

City of Lemoore Municipal Code, Title 7, Chapter 7, Water and Sewer Regulations

The City's water and sewer regulations are outlined in Title 7 of the City's Municipal Code. Title 8, Chapter 4, Storm and Surface Water Drainage System and Title 8, Chapter 8, Flood Damage Prevention of the Municipal Code contain the City's regulations regarding hydrology, storm drainage, and flooding.

The City's approach to flood management and storm drainage involves several key measures. First, new development within flood-prone areas must adhere to the City's Flood Damage Prevention Ordinance. Second, there is a commitment to identify and address deficiencies in the existing storm drainage infrastructure in collaboration with regional and federal agencies.

The City plans to continually upgrade its storm drainage facilities in partnership with various agencies to meet future needs. New developments are required to conduct hydrologic studies and implement mitigation measures to minimize surface water runoff and flood risk. These measures may include the creation of retention basins, landscaped areas, pump stations, and permeable paving. Developers are also obligated to ensure ongoing maintenance of detention basins, either through the City or private entities, with a focus on wetland preservation and regulatory compliance. Additionally, there is a commitment to ensuring early warning systems and emergency response training in the event of a catastrophic failure of Pine Flat Dam for the safety of City staff and emergency services.

The floodplain management regulations state that the Floodplain Administrator (Public Works Director) plays a crucial role in enforcing and granting development permits. They are responsible for ensuring compliance, using flood data, notifying agencies of watercourse changes, and documenting floodplain development. These regulations apply citywide but don't guarantee complete flood protection. Development permits must meet specific requirements, including elevation criteria, and appeals can be made to the City Council. The regulations also include standards for construction, utilities, subdivisions, manufactured homes, and recreational vehicles, all aimed at reducing flood risks.

Variances from these rules are rare and granted under strict conditions, mainly for properties surrounded by lower structures, historic sites, or functionally dependent uses. City Council approval is required, often with additional conditions.

Storm Water Management Plan

The City of Lemoore has developed a Storm Water Management Plan (SWMP) in accordance with the National Pollution Discharge Elimination System's (NPDES) Phase II Rule, which designated Lemoore as a small Municipal Separate Storm Sewer System (MS4) under the NPDES Phase II General Permit. The California State Water Resources Control Board (SWRCB) is responsible for enforcing this rule for small MS4 operators in urban areas with fewer than 100,000 residents, including Lemoore, which is also recognized as a high-growth area. The SWMP must address various requirements, including implementing Best Management Practices (BMPs) to safeguard water quality, reducing illicit pollutant discharges, setting timelines for control measures, and designating responsible entities for implementation. The plan outlines six Minimum Control Measures (MCM) that focus on public education, public involvement, illicit discharge detection, construction site runoff control, post-construction stormwater management, and pollution prevention for municipal operations. Lemoore is currently following these measures to enhance and protect stormwater quality in the City.

Noise Management Policy

The City's noise management policies are multifaceted, encompassing both general noise and aircraft noise concerns. To ensure an acceptable noise environment for residents, the policies aim to enforce strict standards and compatibility of new developments with the noise environment. Sensitive areas like schools, hospitals, and senior care facilities will be protected from excessive noise. Specific measures include the enactment of a Noise Control Ordinance with noise measurement standards, required noise insulation standards for new residential development, and enforcement procedures. Noise compatibility standards will serve as criteria for new land uses, with stringent requirements for areas where noise levels exceed 65 dBA.

The policies also require acoustical design elements for new dwellings exposed to high noise levels, such as substantial weight and insulation for facades, sound-rated windows and doors, acoustic baffling, and mechanical ventilation systems. Developers will need to meet specific noise reduction criteria or seek approval from a Board-Certified Acoustical Engineer. Under the policies, noise studies and guidelines are established, and developers are required to mitigate noise impacts through various means, including noise source screening, setbacks, soundproofing, and noise walls.

For aircraft noise, noise studies and mitigation measures are required for projects with noise exposure exceeding acceptable levels, which may include insulation, disclosure programs, or aviation easements. The City also coordinates with NAS - Lemoore to incorporate their Air Installation Compatible Use Zone (AICUZ) study into zoning updates, with a focus on minimizing noise impacts on noise-sensitive development. These comprehensive policies underscore the City's commitment to managing noise effectively, ensuring an appropriate living environment for its residents.

Emergency Operations Plan (2005)

The California Emergencies Services Act mandates that every city, including Lemoore, prepare and maintain an Emergency Plan to address various emergency scenarios, such as natural disasters, man-made crises, or wartime emergencies. Lemoore's Emergency Operations Plan (EOP), established in 2005, serves as a blueprint for city staff in handling extraordinary emergency situations. It primarily focuses on large-scale disasters and prescribes response procedures. In the event of a county-wide disaster, the City follows the Kings County EOP. Guiding policies emphasize the need to bolster law enforcement, firefighting, and emergency response capabilities, with implementing policies requiring regular assessments of manpower, facilities, and equipment needs. The City commits to providing protection and support for public education programs related to crime prevention, fire protection, and safety. Specific policies include the development of additional police and fire stations, maintenance of mutual aid agreements, collaboration with various agencies, and ensuring adequate access for emergency

vehicles and fire protection measures in new developments. The Land Use Element also includes policies to ensure new development contributes to financing additional public safety facilities as needed to mitigate its impacts.

D.4.2 Administrative and Technical Capability

Table D-23 below identifies City personnel with responsibilities for activities related to mitigation and loss prevention in the City of Lemoore. Many positions are full time and/or filled by the same person. A summary of technical resources follows.

Table D-23 City of Lemoore –Personnel Capabilities

PERSONNEL RESOURCES	YES/NO	DEPARTMENT/POSITION	COMMENTS
Planner/engineer with knowledge of land development/land management practices	Yes	City planner/Engineer	
Engineer/professional trained in construction practices related to buildings and/or infrastructure	Yes	Engineer/Building Official	
Planner/engineer/scientist with an understanding of natural hazards	Yes	City planner/Engineer	
Personnel skilled in GIS	Yes	City planner/Engineer	
Full time building official	Yes	City planner/Engineer	
Floodplain manager	Yes	Public Works Director	
Emergency manager	Yes	Police Chief	
Grant writer	Yes	Analysis	
Other personnel	No		
GIS Data Resources (Hazard areas, critical facilities, land use, building footprints, etc.)	No		
Warning Systems/Services (Reverse 9-11, cable override, outdoor warning signals)	Yes	Police Department Dispatch	Outdoor Warning System
Other	No		

City Council

Lemoore is governed by the council-manager form of government. The City Council sets policy for the city and appoints a City Manager to oversee the day-to-day operations. The City has a City Council/City Manager form of local government. The City Council is responsible for approving all legislation and formulating City policies. The Council’s objectives include translating public attitudes and service requirements into policies and programs, so that desired levels of service can be provided efficiently and economically.

The Council also keeps abreast of current State and Federal legislation. By participation in the League of California Cities, Council members compare policies and techniques and procedures with other cities throughout the State. Close liaison is maintained with other Kings County elected officials to ensure that Lemoore’s policies and programs are coordinated with other public agencies.

City Attorney

The City Attorney provides legal advice and services to the City Council and City staff. A review of legal issues ensures that recommendation, policies and administrative procedures are

undertaken after consideration of sound professional advice. At Council direction, the City Attorney may also provide for appropriate representation for the City in all legal proceedings.

City Clerk

The City Clerk serves as the Clerk of the City Council and is responsible for the preparation of agendas, the recording and maintenance of all Council actions, and the preparation and filing of public notices. As the official records keeper for the City, the Clerk is responsible for the coordination and administration of City records, documents, and public files. The City Clerk manages all City Public Records Act (PRAs) requests. The Clerk is also the Elections Officer for the City and the Filing Officer/Official for Fair Political Practices Commission requirements.

City Manager

The City Manager is responsible for directing the administration of departments and divisions, preparing and submitting the Annual Budget, maintaining communication and good relations with the general public. The City Manager advises the Council on the City's financial condition, and makes recommendations considered necessary for the welfare of the City and efficient operation of government.

The City Manager also directs development and implementation of the City's General Plan and Utility Plans, strategic financial policy, personnel administration, and intergovernmental coordination/liason activities. Additionally, the City Manager's Office provides clerical and staff assistance to the City Council.

Community Development Department

The Community Development Department is responsible for providing information and administering building and planning functions including environmental studies, GIS, the Planning Commission, zoning code, economic development, planning applications, the General Plan, business resources, and housing and assessment documents.

Engineering Department

The primary function of the Engineering Department is to promote the orderly development of the City by providing general engineering services to regulate the construction of municipal structures, city streets, sewage disposal, water supply and storm drainage facilities. The Engineering Department is responsible for issuing encroachment and water/sewer connection permits, maintaining the City's maps, preparing the plans and specifications for most of the City's major projects, and providing drawings to help other departments.

The Engineering Department provides design and inspection services for most of the City's capital improvement programs. The Department also reviews and inspects all improvements to the City's infrastructure, including new subdivisions. Drawing and mapping services are also provided for other departments of the City. Moreover, the Department oversees traffic safety, solid waste and recycling services, and public transportation services.

Finance Department

The Finance Division provides financial services to all city departments, including cash management, preparations of financial reports, budget preparation and control, revenue and expenditure controls, accounts receivable, payroll, purchasing, business licenses, general accounting, and financial advice.

Fire Department

Lemoore has a volunteer fire department.

Parks and Recreation Department

The Lemoore Parks and Recreation Department provides a wide array of recreation programs. The Department is responsible for coordinating activities including youth programs, special classes, adult sports and activities, as well as community events.

Public Works Department

The Public Works Department maintains and improves the City’s infrastructure. Ensuring that your trash is picked up, water flowing, sewer lines are clear, and wastewater treated properly.

Police Department

The Lemoore Police Department is charged with the protection of life and property and the primary responsibility for crime prevention and suppression. The Police Department is a team of dedicated public servants who care about the Lemoore community and strive to serve with compassion, honesty, and respect. It offers programs and services throughout the year that allow the partnership with the community to grow.

Planning Commission

The Planning Commission is responsible for developing and adopting the General Plan for the City's physical development, including any adjacent land relevant to the planning process. The City Council, through ordinances or resolutions, along with State and Federal laws, can further define and govern the Planning Commission's powers, duties, and procedures, emphasizing the significance of adherence to regulatory frameworks in city planning.

D.4.3 Fiscal Capability

Table D-24 identifies financial tools or resources that the City could potentially use to help fund mitigation activities. There are currently no specific funding sources for hazard mitigation.

Table D-24 City of Lemoore –Available Financial Tools and Resources

FINANCIAL RESOURCES	ACCESSIBLE/ ELIGIBLE TO USE	HAS THIS BEEN USED FOR MITIGATION IN THE PAST?	COMMENTS
Community Development Block Grants	Eligible to Use	No	
Capital improvements project funding	Accessible	No	
Authority to levy taxes for specific purposes	Accessible	No	
Fees for water, sewer, gas, or electric services, new development	Accessible	No	Maintenance Districts
Incur debt through general obligation bonds	Accessible	No	Impact Fees
Incur debt through special tax bonds	Accessible	No	
Incur debt through private activities	Accessible	No	
Federal Grant Programs (Hazard Mitigation Grant Program)	Accessible	No	

D.4.4 Outreach and Partnerships

The City of Lemoore facilitates the coordination of emergency response efforts through its Emergency Operations Center (EOC), which is a central location of authority that allows for face-to-face coordination and decision making between City staff and outside organizations.

In an emergency, the City would activate its EOC to coordinate responses from various agencies, including the Kings County Sheriff's Department, Kings County Fire Department, American Red Cross, FEMA, and other mutual aid resources. Members of these agencies, along with City staff, would manage and respond to disasters.

To prepare for emergencies, the City does the following:

- Conducts frequent staff training
- Holds tabletop exercises
- Participates in the annual Countywide disaster drill
- Identifies resources to be used in emergencies
- Tests coordination efforts with external organizations

These efforts are designed to help ensure that the City and its emergency responders are well trained and equipped to coordinate and respond to any emergency. Moreover, as outlined in the Kings County 2015 EOP, the emergency response role of cities and special districts is generally focused on restoring their normal services or functional area of responsibility. During disasters, cities and some types of special districts will be more extensively involved in the emergency response by directly coordinating, communicating, and assisting local governments. If a city or special district does not send a representative to the EOC, then the Liaison Officer in the County's EOC will be responsible for establishing communications and coordination with the cities or special district liaisons.

Additionally, the City is involved with the Central San Joaquin Valley Risk Management Authority (CSJVRMA), a member-driven Joint Powers Authority providing cost-effective risk financing and loss control services to its members. CSJVRMA assists its members in managing and reducing various risks, from liability claims to workers' compensation, through a comprehensive range of services and resources tailored to their needs.

The City of Lemoore plans to conduct outreach related to hazard mitigation using various platforms, including the City's social media accounts, City bulletin boards and sending information via mail. The City will also work with local partners to assist with messaging the public. Additionally, emergency preparedness education materials can be translated into Spanish. Transportation and evacuation route signage could also be provided in Spanish.

D.4.5 Other Mitigation Efforts

The City of Lemoore has taken measures to support mitigation efforts including hiring a dedicated Public Works Inspector who is tasked with ensuring construction and improvement projects are compliant with current codes. Efforts to upgrade and maintain the City storm drainage system are ongoing, and the Stormwater Drainage Plan continues to be updated regularly. In 2023, the City hired a Water Conservation Officer to mitigate water waste and to coordinate water conservation education and public outreach.

D.4.5 Opportunities for Enhancement

Based on the capability assessment, the City of Lemoore has existing regulatory, administrative/technical, fiscal mechanisms in place that help to mitigate hazards. In addition to these existing capabilities, there are opportunities for the City to expand or improve on these policies and programs to further protect the community. These are organized below by regulatory, administrative/technical, fiscal, and outreach opportunities.

Regulatory Opportunities

The City of Lemoore has a comprehensive General Plan that provides a framework for community development. Consideration should be given to the creation of an Economic Development Plan to further facilitate sustainable growth and stimulate economic advancement. The creation of an updated EOP may also be considered, as it can contribute to effective emergency response strategies that consider the most recent hazard information. These strategic initiatives would not only bolster Lemoore's resilience but also enhance its capacity for sustained growth. The City should also incorporate the 2023-2028 Kings County MJHMP and City of Lemoore Annex by reference by amending the City of Lemoore Safety and Noise Element upon adoption of the MJHMP.

Administrative/Technical Opportunities

Subject to budget constraints, allocating resources for a dedicated staff member focused on a topic such as land development, building codes, natural hazard management, floodplain management, emergency response, or GIS, would yield enhanced capabilities in the coordination of land management. Additional future enhancements could encompass initiatives like equipping staff with hazard training related FEMA's Hazard Mitigation Assistance (HMA) grant program or the State's Prepare California Jumpstart program or pursuing hazard mitigation grant funding through collaborative efforts with Kings County and Cal OES.

Additional opportunities may exist to engage and educate key stakeholders within the City. Stakeholders may be interested in aligning efforts related to hazard mitigation and also supporting HMGP Sub applications and other hazard mitigation trainings.

Fiscal Opportunities

Based on the information provided through the Plan Update Guide, the City of Lemoore has ample opportunity to expand its financial capacity for mitigation planning. The utilization of these resources has the potential to support significant initiatives, such as the development of a Capital Improvements Plan or conducting an environmental study aimed at identifying optimal strategies for enhancing critical infrastructure, such as fortifying floodwater protections at well sites.

Outreach Opportunities

The City currently partners with local City and County departments to enhance hazard mitigation and climate adaptation efforts. The City has infrastructure in place to provide community education through its water conservation and environmental education outreach programs. The City can expand their outreach capabilities related to the implementation of the 2023-2028 Kings County MJHMP and the City of Lemoore Annex through continued public involvement with social media posts and advertisements that focus on projects successes related to the Annex Mitigation Strategy, as well as focused outreach to DACs, under-represented, and special-interest groups. The City can also develop outreach kits for partner organizations by expanding on the information included in the MJHMP Outreach Strategy included in Appendix F.

D.5 MITIGATION STRATEGY

D.5.1 Goals and Objectives

The City of Lemoore adopted the hazard mitigation goals and objectives developed by the HMPC and described in Section 5 Mitigation Strategy of the Base Plan. After reviewing the goals and objectives from the 2012 plan, the LPT noted no change in priorities for the updated 2023 plan.

Like the Mitigation Strategy in the Base Plan, this section outlines the City's roadmap for future hazard mitigation administration and implementation. The purpose of the strategy is to reduce

vulnerabilities from key priority hazards outlined in the risk assessment through regulatory tools and projects.

D.5.2 Progress on Previous Mitigation Actions

During the 2022-2023 planning process, the City’s LPT reviewed all the mitigation actions from the 2012 MJHMP. As shown in Table D-25, one mitigation action was completed. The remaining three mitigation actions were carried forward into the 2023-2028 MJHMP and Lemoore Mitigation Strategy.

Table D-25 Previous Mitigation Actions

ID	HAZARD(S) MITIGATED	DESCRIPTION / BACKGROUND / BENEFITS	STATUS
1	Multi-Hazard	Public Education Program for All Hazards	In Progress. This project entails establishing a training program to educate citizens about hazards and encourage households to have emergency kits, plans, and drills in place.
2	Drought	Long-Term Water Supply – Improve coordination, planning, and investment in long-term water supplies to meet demands of ongoing growth and development	In Progress. The City has installed a new well head and is actively pursuing funding sources to complete treatment and connection to water supply for development on the south side of town.
3	Multi-Hazard	Municipal GIS Program – Establish a centralized, inter-jurisdictional GIS program in partnership with the County of Kings to improve all phases of emergency management.	Ongoing. The City continues to participate in the Municipal GIS Program with the Kings County Planning Department
4	Multi-Hazard	Study the potential impacts of the High-Speed Rail Project	Complete. The High-Speed Rail Project is now under construction.

D.5.3 Continued Compliance with the NFIP

The following five FEMA NFIP requirements include:

- 1) Adoption of NFIP minimum floodplain management criteria via local regulation.
 - This includes ongoing activities such as enforcing local floodplain development regulations, issuing permits for appropriate development in SFHAs, and ensuring that this development is mitigated in accordance with the regulations. This will also include periodic reviews of the flood damage prevention ordinance to ensure that it is clear and up to date and reflects new or revised flood hazard mapping. Other actions related to continued NFIP compliance include:
 - Continued designation of a local floodplain manager at the City whose responsibilities include reviewing floodplain development permits to ensure compliance with the local floodplain management ordinances and rules;
 - Suggest changes to improve enforcement of and compliance with regulations and programs;
 - Participation in Flood Insurance Rate Map updates by adopting new maps or amendments to maps;

- Utilize Digital Flood Insurance Rate Maps in conjunction with GIS to improve floodplain management, such as improved risk assessment and tracking of floodplain permits; and
- Promoting and dispersing information on the benefits of flood insurance, including those in the households in the 500-year floodplain.

2) Adoption of the latest effective Flood Insurance Rate Map (FIRM), if applicable.

- The City of Lemoore joined the NFIP on April 3, 1987.. Maps in the flooding profile are current and the latest effective Flood Insurance Rate Map (FIRM) was adopted on September 16, 2015.

3) Implementation and enforcement of local floodplain management regulations to regulate and permit development in SFHAs.

- In addition to the mitigation actions identified herein the City will continue to comply with the NFIP. According to the Municipal Code, floodplain management is under the purview of the Public Works Department and this Department will continue to make every effort to remain in good standing with the program.

4) Appointment of a designee or agency to implement the addressed commitments and requirements of the NFIP.

- As noted, the Public Works Department is responsible for requirements under the NFIP.

5) Description of how participants implement the substantial improvement/substantial damage provisions of their floodplain management regulations after an event:

- The City of Lemoore, along with the County, actively manages floodplains, implementing regulations to minimize flood impact. After events, the City assesses damage and improvement needs, communicating obligations to property owners through various channels. Technical evaluations consider engineering criteria, guiding a streamlined permitting process for substantial improvements. The City also provides compliance assistance, supporting property owners in meeting regulatory requirements.
- The City has a provision in the zoning code pertaining to the development of Substantial Improvement and Substantial Damage Procedures:
 - Any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds fifty percent (50%) of the market value of the structure before the start of construction of the improvement. This term includes structures which have incurred "substantial damage", regardless of the actual repair work performed.
 - All new construction and substantial improvements of structures, including manufactured homes, shall be adequately anchored to prevent flotation, collapse, or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy.
 - Until a regulatory floodway is adopted, no new construction, substantial development, or other development (including fill) shall be permitted within zones A1-30 and AE, unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other development, will not increase the water surface elevation of the base flood more than one foot (1') at any point within the city.
 - For more information, please see the City's Flood Damage Prevention Ordinance: 8-8-3: ADMINISTRATION: (amlegal.com)

D.5.4 Mitigation Actions

As part of the 2022-2023 planning process, the City's LPT developed an updated list of hazard mitigation projects specific to the City. The process used to identify, develop, and prioritize these actions is described in Chapter 5 of the Base Plan. The City's LPT identified and prioritized 12 actions, including three actions carried forward from the 2012 MJHMP, and nine new actions summarized in Table D-26. These mitigation actions are based on the risk assessment and the HMPC's goals and objectives for the plan update. Background information as well as information on how the action will be implemented and administered, such as ideas for implementation, responsible office, partners, potential funding, estimated cost, and timeline also are described. Per the DMA requirement, actions have also been identified that address reducing losses to existing development and future development. Moreover, the LPT reviewed existing mitigation actions from the County's 2012 MJHMP and provided status updates on past hazard mitigation planning efforts.

The mitigation strategy includes only those actions and projects which reflect the actual priorities and capacity of the jurisdiction to implement over the next five years covered by this plan. It should further be noted, that although a jurisdiction may not have specific projects identified for each significant (medium or high) hazard for the five-year coverage of this planning process, each jurisdiction has focused on identifying those projects which are realistic and reasonable for them to implement. Should future projects be identified for significant hazards where the implementing jurisdiction has the capacity to implement, the jurisdiction would add those projects to their Annex. The City also recognizes that other mitigation actions proposed in the County's mitigation strategy will cover the significant hazards in the City that are not currently linked to a mitigation action.

Many of these mitigation actions are intended to reduce impacts to existing development. Those that protect future development from hazards, as required per the DMA 2000 regulations, are indicated by an asterisk in the action identification number. These actions include those that promote wise development and hazard avoidance, such as updating mapping and continued enforcement of floodplain development regulations. There is at least one mitigation actions for each natural hazard identified in the plan.

Table D-26 City of Lemoore Mitigation Action Plan

ID	GOAL(S) AND LIFELINES	HAZARD(S) MITIGATED	DESCRIPTION/BACKGROUND /BENEFITS	LEAD AGENCY AND PARTNERS	COST ESTIMATE	POTENTIAL FUNDING	PRIORITY	TIMELINE	STATUS/IMPLEMENTATION NOTES
L-1	Goal 1, Goal 3; Communications, Safety and Security	Drought, Earthquake, Extreme Heat, Flood, Fog, Freeze, Wildfire	Public Education Program for All Hazards	City of Lemoore, City Public Works, Kings County Health Department, Kings County OES	Low	General Fund, FEMA HMA HMGP, EMPC	High	Ongoing	In progress. This project entails establishing a training program to educate citizens about hazards and encourage households to have emergency kits, plans, and drills in place.
L-2	Goal 1, Goal 2, Goal 3, Goal 4; Water Systems	Drought	Long-Term Water Supply - Improve coordination, planning, and investment in long-term water supplies to meet demands of ongoing growth and development	City of Lemoore, Kings County Water District, Kings County, Kings County COG	Moderate	DWR Funds	High	Ongoing	In progress. The City has installed a new well head and is actively pursuing funding sources to complete treatment and connection to water supply for development on the south side of town.
L-3	Goal 1, Goal 3, Goal 4; Communications	Earthquake, Flood, Land Subsidence	Inter-jurisdictional GIS Program -- Establish a centralized, inter-jurisdictional GIS program to improve all phases of emergency management.	City of Lemoore Planning Department	Low	FEMA HMA HMGP, ESRI, General Fund	High	Medium Term	In progress. This project was completed as part of the 2012 MJHMP but carried forward in that plan as an ongoing effort. The City continues to participate in the Municipal GIS Program with the Kings County Planning Department.
L-4	Goal 1, Goal 3; Transportation	Dam Incidents, Earthquake, Flood, Subsidence, Landslide, Fog, Severe Storms, Wildfire	Develop a transportation routing app, similar to the Caltrans app, to divert traffic due to road conditions during hazard events	Kings County Public Works, Kings County Administration, Kings County, City of Lemoore	Low	FEMA HMA HMGP	Low	Medium Term	New Action in 2023.
L-5	Goal 1, Goal 2, Goal 3, Goal 4, Water Systems	Drought	Public Education Program for Water Supply and Conservation	City of Lemoore Administration Department, Finance Department	Low	FEMA HMA HMGP, DWR Grants	Medium	Short Term	New Action in 2023. The City of Lemoore recently hired a Water Conservation Officer to provide public education on water supply

ID	GOAL(S) AND LIFELINES	HAZARD(S) MITIGATED	DESCRIPTION/BACKGROUND /BENEFITS	LEAD AGENCY AND PARTNERS	COST ESTIMATE	POTENTIAL FUNDING	PRIORITY	TIMELINE	STATUS/IMPLEMENTATION NOTES
									and conservation measures.
L-6	Goal 1, Goal 2, Goal 3, Goal 4, Water Systems	Flood	Well Protection and Flood Mitigation - Protect Wells from Floodwaters during Future Flooding Events by Building Infrastructure and Protection around the Well Sites	City of Lemoore Public Works	High	FEMA HMA HMGP, DWR Funds, USDA DWSRF	Medium	Medium Term	New Action in 2023. The City of Lemoore Public Works Department has created berms around City wells and is researching additional protective measure solutions.
L-7	Goal 1, Goal 2; Safety and Security, Water Systems	Flood, Wildfire	Create a flood channel debris management plan to allow the flow of water, increase capacity, and remove fire hazards.	City of Lemoore, Kings County Public Works, Water and Irrigation Districts, City Public Works, Kings County	High	FEMA HMA HMGP	High	Medium Term	New Action in 2023. The City will coordinate with partner agencies to evaluate areas of concern and assist with local plan efforts.
L-8*	Goal 1, Goal 2, Goal 3, Goal 4; Safety and Security, Food, water, Shelter, Transportation	Drought, Subsidence	Conduct updated land subsidence study to understand elevations, shifts, and vulnerability.	City of Lemoore, Kings County Administration, Water Management Agencies	Moderate	DWR, USACE, Cal OES	Low	Short Term	New Action in 2023. The City currently performs subsidence studies at areas of concern.
L-9	Goal 3; Safety and Security, Communications	Cyber-attack	Use antivirus solutions, malware, and firewalls to block threats	Kings County, Avenal, Corcoran, Hanford, Lemoore	Moderate	General fund, HSGP	Medium	Ongoing	New Action in 2023 City of Lemoore IT staff will assess cyber security needs and seek solutions to improve security measures.
L-10	Goal 3; Health and Medical	Public Health Hazards	Utilize trainings and exercises, epidemiology and surveillance to control and combat public health risks	County Public Health Department	Moderate	General Fund	Low	Ongoing	New Action in 2023. The City does not have a Public Health Department, but will coordinate with the Kings County Public Health Department during public health emergencies.
L-11	Goal 1, Goal 3; Communications, Safety and Security	Dam Incidents	Develop plan addressing communication and evacuation for vulnerable populations in areas potentially impacted by Pine Flat Dam failure.	City of Lemoore, Kings County OES	Low	General Fund	Medium	Ongoing	New Action in 2023. The City will coordinate with Kings County OES to create a response plan

ID	GOAL(S) AND LIFELINES	HAZARD(S) MITIGATED	DESCRIPTION/BACKGROUND /BENEFITS	LEAD AGENCY AND PARTNERS	COST ESTIMATE	POTENTIAL FUNDING	PRIORITY	TIMELINE	STATUS/IMPLEMENTATION NOTES
									addressing the impacts of a dam failure.
L-12	Goals 1, 3-4; Safety and Security, Health and Medical, Energy, Transportation	Dam Incidents; Extreme Temperatures - Heat and Freeze, Earthquake, Severe Weather: Heavy Rain, Thunderstorms, Hail, and Lightning, Severe Weather: Wind and Tornado; Severe Weather: Dense Fog	Conduct a Public Survey on At-Risk Community Demographics and Disability Needs - A public survey will be developed around at-risk communities to understand those in the County with Access and Functional Needs (AFNs) and other disabilities, household emergency preparedness and evacuation and support needs, and medical devices and equipment needs at sheltering facilities.	Kings County Department of Public Health, Kings County Office of Emergency Services, Kings Partnership	Low	FEMA HMA HMGP	High	Short-Term	New in 2023

KEY:

*This key provides additional information on cost estimates, potential funding, community lifelines, and the timing for implementation for each action.

Cost Estimate

- Little to no cost
- Low: Less than \$10,000
- Moderate: \$10,000 – \$100,000
- High: \$100,000 – \$1,000,000
- Very High: More than \$1,000,000

Potential Funding

- APGP – California funding to local, regional, and tribal communities in integrated climate adaptation planning; supports climate-resilient projects in California.
- BRIC – Building Resilient Infrastructure and Communities Grant
- DWR Urban Community Drought Relief Grant Program – Grant program designed to strengthen drought resilience and better prepare communities for dry conditions.

- DWR Riverine Stewardship Program and Urban Stream Restoration Program – DWR program to fund five projects that will restore streams and creeks and reduce flood risks in California.
- EMPG – Emergency Management Performance Grant
- FEMA HMA HMGP – Federal Emergency Management Agency Hazard Mitigation Assistance Hazard Mitigation Grant Program
- HHPD – High Hazard Potential Dam Grant
- HSGP – Homeland Security Grant Program
- RWQCB – Regional Water Quality Control Board
- SHSGP – Homeland Security Grant Program
- USACE – U.S. Army Corps of Engineer Funding like Silver Jacket Program, Flood Risk Management Program
- USDA DWSRF – Program that help water systems finance infrastructure improvements to ensure compliance with drinking water standards and public health objectives.

FEMA Community Lifelines

- Safety and Security
- Food, Hydration, and Shelter
- Health and Medical
- Energy
- Communications
- Transportation
- Hazardous Materials
- Water Systems

Timeline

- Short Term: 1-2 years
- Medium Term: 3-5 years
- Long Term: 5+ years
- Ongoing: Action is implemented every year

D.6 IMPLEMENTATION AND MAINTENANCE

Moving forward, the City will use the mitigation action table in the previous section to track the progress on the implementation of each project. Implementation of the plan overall is discussed in Section 6 in the Base Plan.

D.6.1 Incorporation into Existing Planning Mechanisms

While an opportunity to integrate the 2012 Hazard Mitigation Plan into the City's other planning mechanisms did not arise, the information contained within this plan, including results from the Vulnerability Assessment and the Mitigation Strategy will be used by the City to help inform updates and the development of local plans, programs and policies. The Emergency Services and Public Works Department may utilize the hazard information when implementing the City's capital projects, and the Community Development Department Planning Division may utilize the hazard information when reviewing a site plan or other type of development applications. The City will also incorporate this MJHMP into the Safety and Noise Element of their General Plan.

As noted in Section 6 of the Base Plan, the City of Lemoore LPT representatives will report on efforts to integrate the hazard mitigation plan into local plans, programs and policies and will report on these efforts at the annual LPT plan review meeting.

D.6.2 Monitoring, Evaluation and Updating the Plan

The City will follow the procedures to monitor, review, and update this plan in accordance with Kings County as outlined in Section 6 of the Base Plan. The City will continue to involve the public in mitigation, as described in Section 6.2.1 of the Base Plan. The Police Chief and Community Development Director will be responsible for representing the City in the County HMPC, and for coordination with City staff and departments during plan updates. The City realizes it is important to review the plan regularly and update it every five years in accordance with the Disaster Mitigation Act Requirements as well as other State of California requirements.

D.6.3 Continued Public Involvement

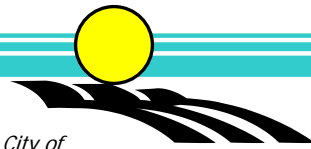
Continued public involvement is imperative to the overall success of the City's plan's implementation. The update process provides an opportunity to solicit participation from new and existing stakeholders and to publicize success stories from the plan implementation and seek additional public comment. The plan maintenance and update process will include continued public and stakeholder involvement and input through attendance at designated committee meetings, web postings, social media postings, press releases to local media, and through public hearings.

When the County's HMPC reconvenes for the update, they will coordinate with all stakeholders participating in the planning process—including those that joined the committee since the planning process began—to update and revise the plan. This process should involve the City's LPT. Public notice will be posted, and public participation will be invited, at a minimum, through available website postings and press releases to the local media outlets, primarily newspapers. Per DMA requirements the public will be provided an opportunity to provide input during the plan update process, and before the plan is finalized. This means the City will also advertise the plan update process within their jurisdiction using their local social media channels and relevant outreach tools and touchpoints. This can be accomplished through public surveys or meetings. Public comments will be solicited on the plan update draft by posting the plan online and soliciting review and comment for a minimum of two weeks.



D.7 REFERENCES

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- City of Lemoore. 2030 *General Plan*. May 2008. <https://lemoore.com/communitydevelopment/general-plan/>
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- National Centers for Environmental Information (NCEI). 2023. Storm events database. National Oceanic and Atmospheric Administration. <http://www.ncdc.noaa.gov/stormevents/>
- City of Lemoore Public Works (PW). "City of Lemoore Public Works" Accessed 15 Sept. 2023. lemoore.com/departments/public-works.
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- U.S. Census Bureau; American Community Survey, 2021 American Community Survey 5-Year Estimates, <https://data.census.gov/>
- Wallace, William J. and Riddell, Fritz A. "A Preliminary Analysis of Faunal Remains from Early Sites in the Tulare Lake Basin." *Contributions to Tulare Lake Archaeology I: Background to a Study of Tulare Lake's Archaeological Past.*, pp. 11-22. Tulare Lake Archaeological Research Group, 1991. https://books.google.com/books/about/Background_a_Study_of_Tulare_Lake_s_A.html?id=KG3pAAAACAAJ
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City of

LEMOORE

CALIFORNIA

711 West Cinnamon Drive • Lemoore, California 93245 • (559) 924-6744

Staff Report

Item No: 4-4

To: Lemoore City Council
From: Frank Rivera, Public Works Director
Date: May 13, 2024 Meeting Date: May 21, 2024
Subject: Notice of Completion – Tract No. 820 – Fairway Courtyards – Energy Homes, DBA: GJ Gardner Homes of California, Inc.

Strategic Initiative:

<input type="checkbox"/> Safe & Vibrant Community	<input checked="" type="checkbox"/> Growing & Dynamic Economy
<input type="checkbox"/> Fiscally Sound Government	<input type="checkbox"/> Operational Excellence
<input checked="" type="checkbox"/> Community & Neighborhood Livability	<input type="checkbox"/> Not Applicable

Proposed Motion:

Approve the filing of the Notice of Completion for Tract No. 820, GJ Gardner and authorize the City Manager or designee to sign the Notice of Completion.

Subject/Discussion:

GJ Gardner has completed the development of Tract No. 820 and is now requesting that a Notice of Completion be filed. This subdivision, consisting of 29 single- family lots and three separate out-lots is located east of Vine St. and south of Iona Ave. on Sandtrap Lane and Green Lane near the Lemoore Golf Course. Upon approval of the attached Notice of Completion a Maintenance Bond will be submitted by GJ Gardner for \$62,535, equaling 10% of the Performance Bond.

Financial Consideration(s):

There is no financial impact to City.

Alternatives or Pros/Cons:

Not Applicable.

Commission/Board Recommendation:

Not Applicable.

Staff Recommendation:

That City Council approve the filing of the Notice of Completion and authorize the City Manager or designee to sign.

Attachments:

- Resolution:
 - Ordinance:
 - Map
 - Contract
 - Other
- List: Notice of Completion

Review:

- Asst. City Manager
- City Attorney
- City Clerk
- City Manager
- Finance

Date:

- 5/16/24
- 5/16/24
- 5/13/24
- 5/13/24

Recording Requested By:

For the benefit of the
CITY OF LEMOORE

When Recorded Mail to:

City of Lemoore
Marisa Avalos, City Clerk
711 W. Cinnamon Drive
Lemoore, CA 93245

NOTICE OF COMPLETION

NOTICE IS HEREBY GIVEN THAT:

- 1. The undersigned is **OWNER** or Agent of the **OWNER** of the interest or estate stated below in the property hereinafter described.
- 2. The **FULL NAME** of the **OWNER** is City of Lemoore
- 3. The **FULL ADDRESS** of the **OWNER** is 711 W. Cinnamon Drive, Lemoore, CA 93245
- 4. The **NATURE OF THE INTEREST** or **ESTATE** of the undersigned is: In Fee.

(if other than fee, Strike "In Fee" and insert, for example, "Purchaser under contract of purchase," or "Lessee.")

- 5. The **FULL NAMES** and **FULL ADDRESSES** of **ALL PERSONS**, if any, **WHO HOLD SUCH INTEREST** or **ESTATE** with the undersigned as **JOINT TENANTS IN COMMON** are:

Names	Addresses
_____	_____

- 6. The full names and full addresses of the predecessors in interest of the undersigned if the property was transferred subsequent to the commencement of the work of improvement herein referred to:

Names	Addresses
_____	_____

- 7. A work of improvement on the property hereinafter described was **COMPLETED** May 21, 2024

- 8. The work of improvement completed is described as follows: Subdivision Tract 820 – Fairway Courtyards

29 single-family lots and three separate out-lots.

- 9. The **NAME OF THE ORIGINAL CONTRACTOR**, if any, for such work of improvement is: Energy Homes, DBA: GJ Gardner Homes of California, Inc.

- 10. The street address of said property is: Lots 1 through 32, inclusive, Fairway Courtyards, County Tract No. 820, in the City of Lemoore, County of Kings, State of California, according to the map thereof recorded in Volume 27 at Page 15 of Licensed Surveyors Plats, Kings County Records

- 11. The property on which said work of improvement was completed is in the City of Lemoore County of Kings, State of California, and is described as follows:

New subdivision of 29 single-family lots and three separate out-lots with new roads, curbs and gutters.

Verification for **NON-INDIVIDUAL** owner: I, the undersigned, declare under penalty of perjury under the laws of the State of California that I am the **City Manager** of the aforesaid interest or estate in the property described in the above notice; that I have read the said notice, that I know and understand the contents thereof, and that the facts stated therein are true and correct.

Date and Place

Kevin Northcraft, Interim City Manager



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Staff Report

Item No: 4-5

To: Lemoore City Council

From: Randon Reeder, Management Analyst

Date: May 13, 2024

Meeting Date: May 21, 2024

Subject: Budget Amendment – Cimarron Lift Station

Strategic Initiative:

- | | |
|---|--|
| <input type="checkbox"/> Safe & Vibrant Community | <input type="checkbox"/> Growing & Dynamic Economy |
| <input checked="" type="checkbox"/> Fiscally Sound Government | <input checked="" type="checkbox"/> Operational Excellence |
| <input checked="" type="checkbox"/> Community & Neighborhood Livability | <input type="checkbox"/> Not Applicable |

Proposed Motion:

Approve the budget amendment in the amount of \$75,658.60, to finish construction of Cimarron Lift Station Rehabilitation and authorize the City Manager, or designee, to execute the budget amendment.

Background:

On May 22, 2023 construction started for the rehabilitation of the Cimarron Lift Station. This project included rehabbing and lining the wet well, installing new pumps, installing new sensors, and installing a new control panel.

This project was met with multiple delays due to shipment delays with the control panel. Due to these delays, the budget was not carried over from the previous fiscal year and a budget amendment is required to finish the project in fiscal year 2024.

Financial Consideration(s):

This project will be paid for out of the wastewater enterprise fund (5100-885-0000-17008-560300).

Alternatives or Pros/Cons:

The Council could deny budget amendment.

Recommendation:

Approve the budget amendment in the amount of \$75,658.60, to finish construction of Cimarron Lift Station Rehabilitation and authorize the City Manager, or designee, to execute the budget amendment.

Attachments:

- Resolution:
 - Ordinance:
 - Map
 - Contract
 - Other
- List: Budget Amendment

Review:

- Asst. City Manager
- City Attorney
- City Clerk
- City Manager
- Finance

Date:

- 5/16/2024
- 5/16/2024
- 5/13/2024
- 5/13/2024



CITY OF LEMOORE
BUDGET AMENDMENT FORM

Date: 5/13/2024	Request By: Randon Reeder
Requesting Department:	

TYPE OF BUDGET AMENDMENT REQUEST:

- Appropriation Transfer within Budget Unit
- All other appropriations (Attach Council approved Staff Report)

FROM:

Fund	Department	Future Use	Project	Account	Current Budget	Proposed Increase/Decrease:	Proposed New Budget
							\$ -

TO:

Fund	Budget Unit	Future Use	Project	Account	Current Budget	Proposed Increase/Decrease:	Proposed New Budget
5100	885	0000	17008	560300	\$ 100,978.12	\$ 75,658.60	\$ 176,636.72

JUSTIFICATION FOR CHANGE/FUNDING SOURCE:

Moving from reserves to cover construction costs for Lift Station Rehab

APPROVALS:

Department Head:	Date:
City Manager:	Date:
Reserved for Finance	
Completed By:	Date:
Approved By:	Date:



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Staff Report

Item No: 4-6

To: Lemoore City Council
From: Frank Rivera, Public Works Director
Date: May 13, 2024 **Meeting Date:** May 21, 2024
Subject: Budget Amendment – Public Facility Maintenance District (PFMD) Zone 2

Strategic Initiative:

<input type="checkbox"/> Safe & Vibrant Community	<input type="checkbox"/> Growing & Dynamic Economy
<input checked="" type="checkbox"/> Fiscally Sound Government	<input checked="" type="checkbox"/> Operational Excellence
<input checked="" type="checkbox"/> Community & Neighborhood Livability	<input type="checkbox"/> Not Applicable

Proposed Motion:

Approve the budget amendment in the amount of \$13,000 to allow for sidewalk repairs within PFMD Zone 2.

Background:

Maintenance needs are continuously evaluated within the Public Facilities Maintenance District Zones. Staff did an evaluation and a need for sidewalk repairs within PFMD Zone 2 has been determined. These repairs are needed in advance of street projects to be ADA compliant.

Financial Consideration(s):

Maintenance needs in Public Facility Maintenance Districts are self-funded by the residents within their own districts.

Alternatives or Pros/Cons:

Council could deny budget amendment.

Recommendation:

Approve the budget amendment in the amount of \$13,000 to allow the sidewalk repairs and authorize the City Manager, or designee, to execute the budget amendment.

Attachments:

- Resolution:
 - Ordinance:
 - Map
 - Contract
 - Other
- List: Budget Amendment

Review:

- Asst. City Manager
- City Attorney
- City Clerk
- City Manager
- Finance

Date:

- 5/16/2024
- 5/16/2024
- 5/13/2024
- 5/13/2024



CITY OF LEMOORE
BUDGET AMENDMENT FORM

5/13/2024		Request By:	Christal Schisler
Requesting Department: Streets			

TYPE OF BUDGET AMENDMENT REQUEST:

- | | | |
|--|-------------------------------------|--|
| <input checked="" type="checkbox"/> Appropriation Transfer within Budget Unit | <input checked="" type="checkbox"/> | One Sided Journal Increase/Decrease |
| <input type="checkbox"/> All other appropriations (Attach Council approved Staff Report) | <input type="checkbox"/> | Expenditure to Expenditure or Revenue to Revenue |

FROM:

Full Account	Current Budget	Proposed Increase/Decrease:	Proposed New Budget
			\$ -

TO:

Full Account	Current Budget	Proposed Increase/Decrease:	Proposed New Budget
2402-900-0000-00000-530100	\$ 52,500.00	\$ 13,000.00	\$ 65,500.00
			\$ -
			\$ -

JUSTIFICATION FOR CHANGE/FUNDING SOURCE:

Reallocating funds for sidewalk repair.

APPROVALS:

Department Head:	Date:
City Manager:	Date:
Entered By:	Date:
Approved By:	Date:



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Staff Report

Item No: 4-7

To: Lemoore City Council
From: Josalynn Valdez, Finance Manager
Date: May 8, 2024 Meeting Date: May 21, 2024
Subject: Tyler Technology Software Implementation Update

Strategic Initiative:

<input type="checkbox"/> Safe & Vibrant Community	<input type="checkbox"/> Growing & Dynamic Economy
<input checked="" type="checkbox"/> Fiscally Sound Government	<input checked="" type="checkbox"/> Operational Excellence
<input checked="" type="checkbox"/> Community & Neighborhood Livability	<input type="checkbox"/> Not Applicable

Proposed Motion:

To receive and file the update.

Subject/Discussion:

Council requested that staff provide an update regarding software implementation every other City Council meeting. At present, we have 3 remaining modules to complete the Tyler software implementation. Energov building permits and business licenses (EPL), is currently being converted with an expected go live date of mid-August 2024. We have reached out to the City of Hanford to assist in the template building process. Enterprise Asset Management (EAM) will begin implementation in July 2024. The implementation process will take almost a year to complete. The Parks and Recreation module will begin after EPL has been completed and only requires 4 months for implementation.

Financial Consideration (s):

None.

Alternatives or Pros/Cons:

N/A.

Commission/Board Recommendation:

N/A.

Staff Recommendation:

To receive and file the update.

Attachments:

- Resolution:
- Ordinance:
- Map
- Contract
- Other

List:

Review:

- Asst. City Manager
- City Attorney
- City Clerk
- City Manager
- Finance

Date:

- 5/16/2024
- 5/16/2024
- 5/14/2024
- 5/13/2024



City of
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CALIFORNIA

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Staff Report

Item No: 6-1

To: Lemoore City Council
From: Ray Greenlee, Community Services Manager
Date: May 2, 2024 Meeting Date: May 21, 2024
Subject: Development of a Parks and Recreation Master Plan – Request for Proposals

Strategic Initiative:

<input checked="" type="checkbox"/> Safe & Vibrant Community	<input checked="" type="checkbox"/> Growing & Dynamic Economy
<input checked="" type="checkbox"/> Fiscally Sound Government	<input checked="" type="checkbox"/> Operational Excellence
<input checked="" type="checkbox"/> Community & Neighborhood Livability	<input type="checkbox"/> Not Applicable

Proposed Motion:

Approval of the development of a Parks and Recreation Master Plan – Request for Proposals (RFP).

Subject/Discussion:

As the City of Lemoore continues to grow Lemoore Parks and Recreation needs to have a Master Plan to meet the demands for green space, recreation facilities, and programs. The Master Plan will be a guiding document for future development and redevelopment for the community.

Financial Consideration(s):

Impact fees will cover the cost of the issuance of an RFP and also the cost of hiring a firm to provide services related to the development of the Master Plan document.

There will be no impact to the general fund.

Alternatives or Pros/Cons:

Pros:

- The City of Lemoore will have a clear roadmap to improve existing parks, facilities, and programs along with adding new green space, parks, facilities, and programs.

Cons:

- None.

Commission/Board Recommendation:

Not Applicable.

Staff Recommendation:

Staff recommends the approval of the development of a Parks and Recreation Master Plan – Request for Proposals (RFP).

Attachments:

- Resolution:
 - Ordinance:
 - Map
 - Contract
 - Other
- List:

Review:

- Asst. City Manager
- City Attorney
- City Clerk
- City Manager
- Finance

Date:

5/16/24
5/16/24
5/13/24
5/13/24

City of Lemoore

Request for Proposals

To Develop a Park and Recreation Master Plan

Due Date: July 1st, 2024

City of Lemoore

711 W. Cinnamon Drive

Lemoore, CA 93245

Invitation

The City of Lemoore is seeking proposals from qualified consulting firms to provide services to develop a Parks and Recreation Master Plan.

The plan should create a roadmap for ensuring just and fair quantity, proximity and connections to quality parks and green space, recreation facilities and programs throughout the community now and into the future. The City of Lemoore is seeking a system-wide approach to develop goals, policies and guidelines and prioritize strategies based on current and future funding scenarios.

The Parks and Recreation Master Plan that will be created from this work will be a guiding document for future development and redevelopment of the community's system of parks and green space, recreation, and programs over the next 5 yrs.

Background

The City of Lemoore located in Kings County has approximately a population of 27,000 Citizens which is growing with New Home Subdivisions, Commercial, Industrial and the Lemoore Naval Station. We are a community that supports Parks and Recreation programs.

Park & Recreation Context

The City of Lemoore currently has five (5) major Parks; three (3) of the Parks also serve as water retention basins. Kings Lions Complex Park / Ponding Basin (19th Ave & 198 Highway), Lemoore Youth Sports Complex Park (19th Ave and Cinnamon Drive), Lions Park / Ponding Basin (Fox and Fallen Leaf), Heritage Park / Ponding Basin (Hanford / Armona Dr. and Opal), Veterans Memorial Park (Bush and Fox).

The City of Lemoore has approximately a 70 thousand square foot indoor Recreation Center. Housing one (1) Indoor Soccer Field, two (2) Indoor Basketball Courts, one (1) Boxing Ring, one (1) Spring Floor, Dance and Meeting Room, Commercial Kitchen, Day Camp Room, P.A.L. Cross Fit Room, and a Locally leased Cross Fit Work Out Room.

Project Description

The City of Lemoore is seeking proposals from qualified consulting firms to provide services to Lemoore to develop a Parks and Recreation Master Plan. The City of Lemoore has a strong commitment to provide fair and just access to high-quality parks, green space, recreation facilities and programs for all members of the community and this master plan will help us achieve our commitment. Specifically, the consultant will collect and analyze data to develop a clear set of goals, policies and standards for the community's park system, green space, trails, recreation facilities and program development for the next 5 yrs. The consultant will work closely with Community Services Manager and Recreation staff, Parks and Recreation Commissioners, and City Council in preparing the Parks and Recreation Master Plan. The consultant will create a product for distribution to the public through web-based links, online surveys and other means and resources available.

The Master Plan needs to be reviewed by, Recreation Commissioners, Recreation Department, City Manager, and approved by City Council.

Scope of Work

Internal Assessment and Project Administration

- Provide the Parks and Recreation Commissioners, Parks and Recreation Management and Recreation Staff with a presentation of your approach to the planning process and provide progress reports as needed.
- Co-present approach to Master Plan presentation at City Council meetings when scheduled and provide progress reports as needed.
- Participate in progress meetings with the City of Lemoore Recreation Staff, as often as necessary, but not less than once per month until the final plan is approved.
- Supply handouts of all completed or partially completed progress as deemed necessary at least seven (7) working days before each progress meeting and or presentation. The Project Community Services Manager or designee shall schedule the meetings, as necessary, at key times during the development of the Master Plan.

Community Engagement

- Identify, describe, and implement a comprehensive strategy and methodology for community involvement in this Master Plan development process.
- Review existing engagement documents conducted by the Parks and Recreation Department surveys to compile information about community needs. Summarize and identify gaps in data.
- Provide well-organized and directed activities, techniques and formats that will ensure an equitable, inclusive, open, and proactive public participation process is achieved. These methods should solicit quality input from as many people as possible, including under-resourced populations and users and non-users of the services and facilities.
- Act as professional facilitators to gather specific information about services, use, preferences and any agency strengths, weaknesses, and opportunities.
- Provide written records and summaries of the results of all public processes and communications strategies that can be shared with the public.

- Help to build consensus and agreement on the plan and if consensus is not possible, provide information for informed and equitable decision making for the Parks and Recreation Commission, Recreation Staff, and/or other Steering Committees.

Resource and Data Collection

- Conduct analysis that considers the fair and just quantity, distribution, inclusivity, condition, cultural relevancy, connections and proximity of parks, green space, programs, recreation centers and services. Evaluation criteria should be based on the expressed values of the community and focus on improved health and the environment.
- Provide an assessment and analysis of the Parks and Recreation Department's current level of programs, services, and maintenance in relation to present and future goals, objectives, and directives.
- Compile an inventory and assessment of the existing parks, trails, green space, and facilities in Geographic Information System (GIS). Compare to national benchmarking tools.
- Provide a community-wide statistically valid community needs assessment survey on recreation and park programs and facilities. The return rate should accurately represent a sampling of the population, including vulnerable populations, so that an analysis can be segmented by race, gender, age, and other demographic groups.
- Review and interpret demographic trends and characteristics of the community, using information from the General Plan and other regional and local sources.

Implementation

- Develop an action plan that includes strategies, priorities, and an analysis of budget support and funding mechanisms for the short-, mid- and long-term for the park system, green space, trails and recreation programs and services. The action plan should prioritize strategies by their level of impact on social, health and environmental outcomes.
- Prioritize recommendations for needs regarding land acquisition, and the development of parks, trails, green space, and recreation facilities.
- Prioritize recommendations for maintenance, renovation and operations of parks, trails, and recreation facilities.
- Recommend collaborative partnerships and other solutions to minimize duplications or enhance opportunities for collaborative partnerships.
- Identify areas of service shortfalls and projected impact of future trends.
- Provide useable and workable definitions and recommendations for designated park and green space with acreages and parameters defined as appropriate.
- Develop recommendations for operations, staffing, maintenance, programming, and funding needs.
- Provide a clear plan for development of programming based on demand analysis.

Development of Final Plans and Supporting Materials

- The Master Plan must include written goals, objectives, policy statements, a financial and action plan that articulate a clear vision and “roadmap” and model for the Parks and Recreation Department’s future.
- A summary of existing conditions, inventories and system-wide metrics, distribution metrics, and population demographics and outcome metrics.
- Charts, graphs, maps, and other data as needed to support the plan and its presentation to the appropriate audiences.

All proposals should include the following information:

- A Letter of Submission that includes the name, address, and telephone number of the person(s) who is representing the firm.
- Background on the firm and its experience in preparing Master Plans for public agencies, as well as engagements involving communities that have characteristics like the City of Lemoore’s Community.
- A narrative that presents the services the firm would provide detailing the approach, methodology, deliverables, and client meetings.
- Identification of the personnel to be assigned to this engagement, including a résumé of related experience and estimated number of hours per person.
- A timeline for preparation and implementation of the Master Plan and its components.
- A summary of liability, errors, and omission insurance coverage the firm maintains.
- At least three (3) public agency references for projects of a similar nature. Include a description of the projects, including (at minimum) client, location, contact person, contact information (telephone/email address) and a summary of the project.
- Provide itemized project costs in a sealed envelope. The project cost for services should be a “not-to-exceed cost for services.”

Proposal Response

The proposal should contain all the information requested and any additional information necessary to summarize the overall benefit of the proposal to Lemoore. Proposing firms should submit the proposal no later than July 1st, 2024, by 2:00 P.M.

Submittals should be directed to:

City of Lemoore 711 W. Cinnamon Dr. Lemoore, CA 93245 Attn: City Clerk.

All proposals must be in a sealed envelope. Open envelopes and emails will not be accepted.

This solicitation does not commit the City of Lemoore to award a contract, to pay any cost incurred with the preparation of a proposal, or to procure or contract for services or supplies. The City of Lemoore reserves the right to accept or reject any or all proposals received in response to this request, to negotiate with any qualified source, or cancel in whole or part of this proposal process if it is in the best interest of the City of Lemoore. Following contract negotiations, prospective consultants may be required to submit revisions to their proposals. All proposers should note that any contract in accordance with this proposal is dependent upon the recommendation of the City Manager, Community Services Manager, and the approval of the Lemoore City Council.

Preliminary Project Schedule

The following tentative schedule is anticipated for selection, contract negotiations and contract award.

- Proposals due July 1st, 2024.
- Proposal review and interviews to take place July 17th, 2024.
- Contract award expected in August 2024.
- The timeline that is projected for the preparation and completion of the Parks and Recreation Master Plan is nine (9) months from the City Council award date. (Note: If no needs assessment survey is required, this timeline may shorten by two (2) months).

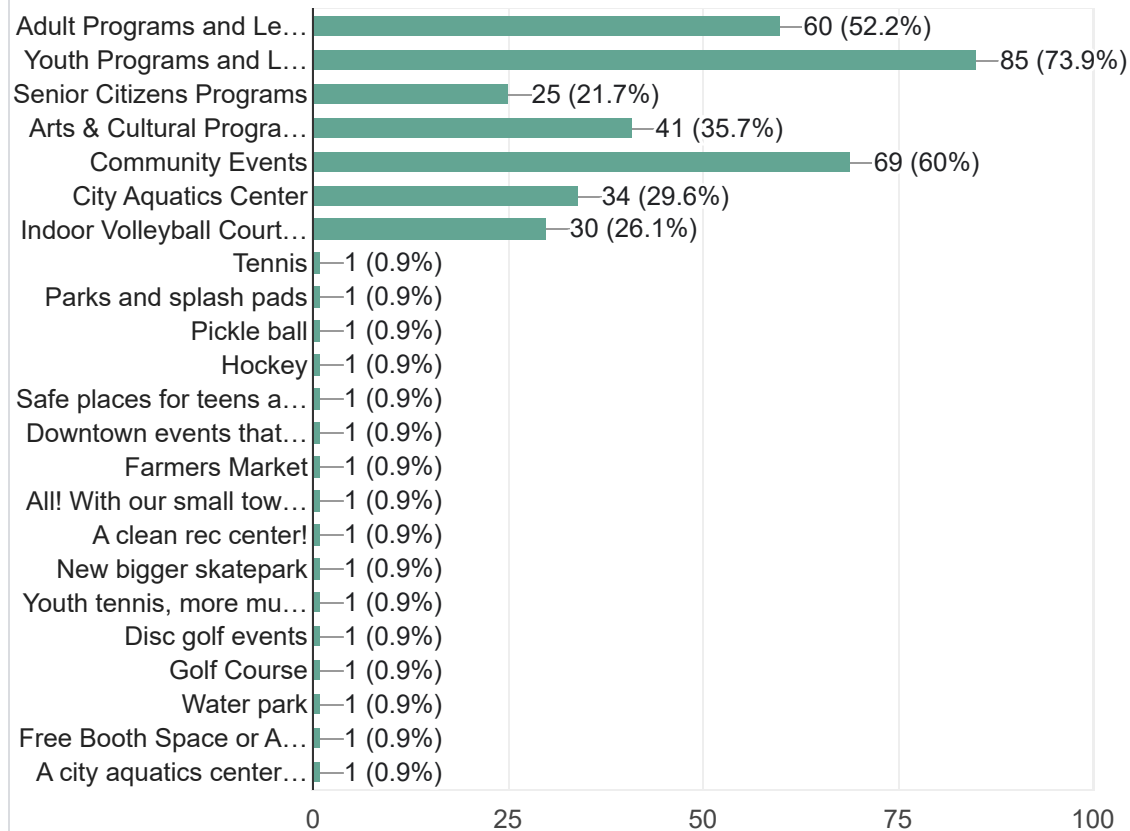
City of Lemoore Parks and Recreation Department Community Survey

115 responses

Which of the following programs and services are the most valuable to you and your family or would like see offered? (Check all that apply)



115 responses



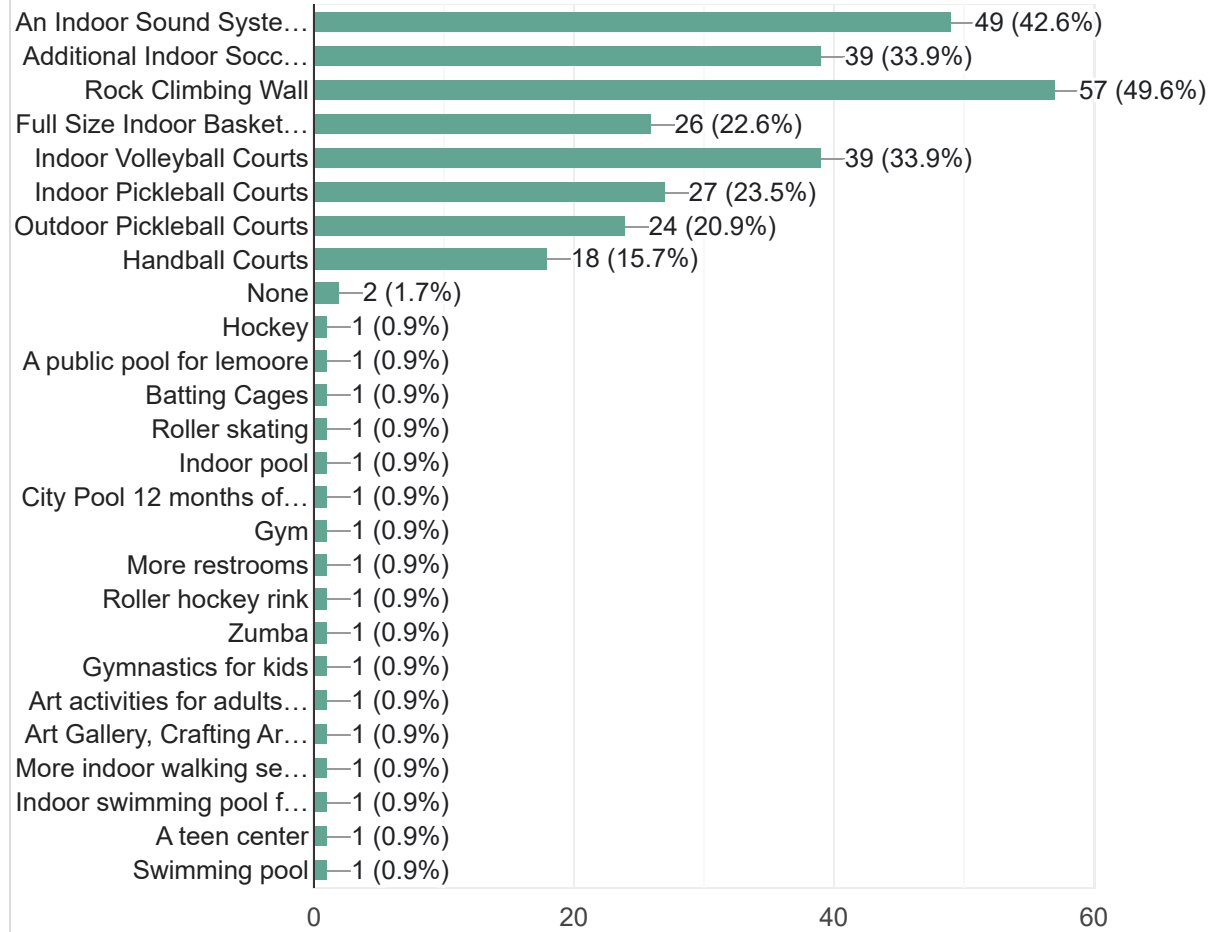
12/6/2022



Which of these would you like to see the City of Lemoore Recreation Department add to the Rec Center? (Check all that apply)



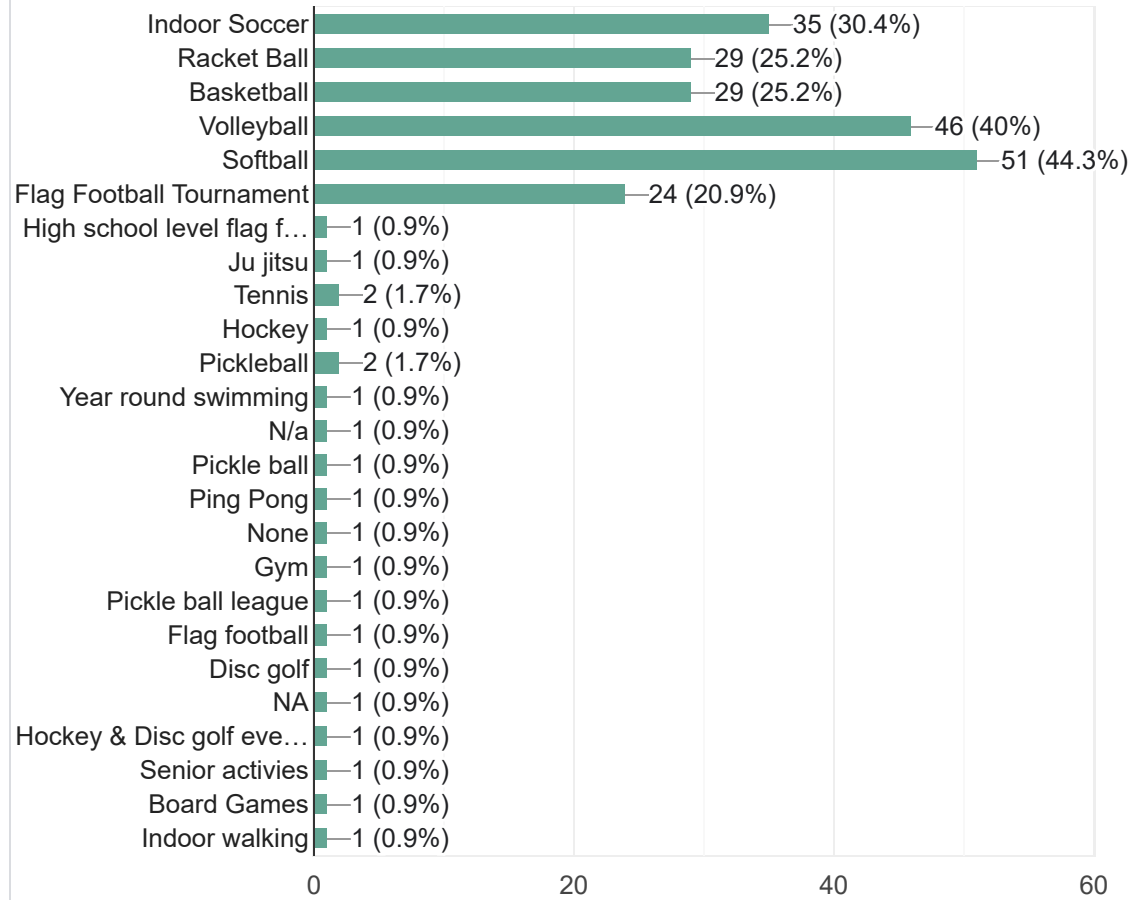
115 responses



Which of these City of Lemoore Adult Sports Programs would you like to see in the your community? (Check all that apply)



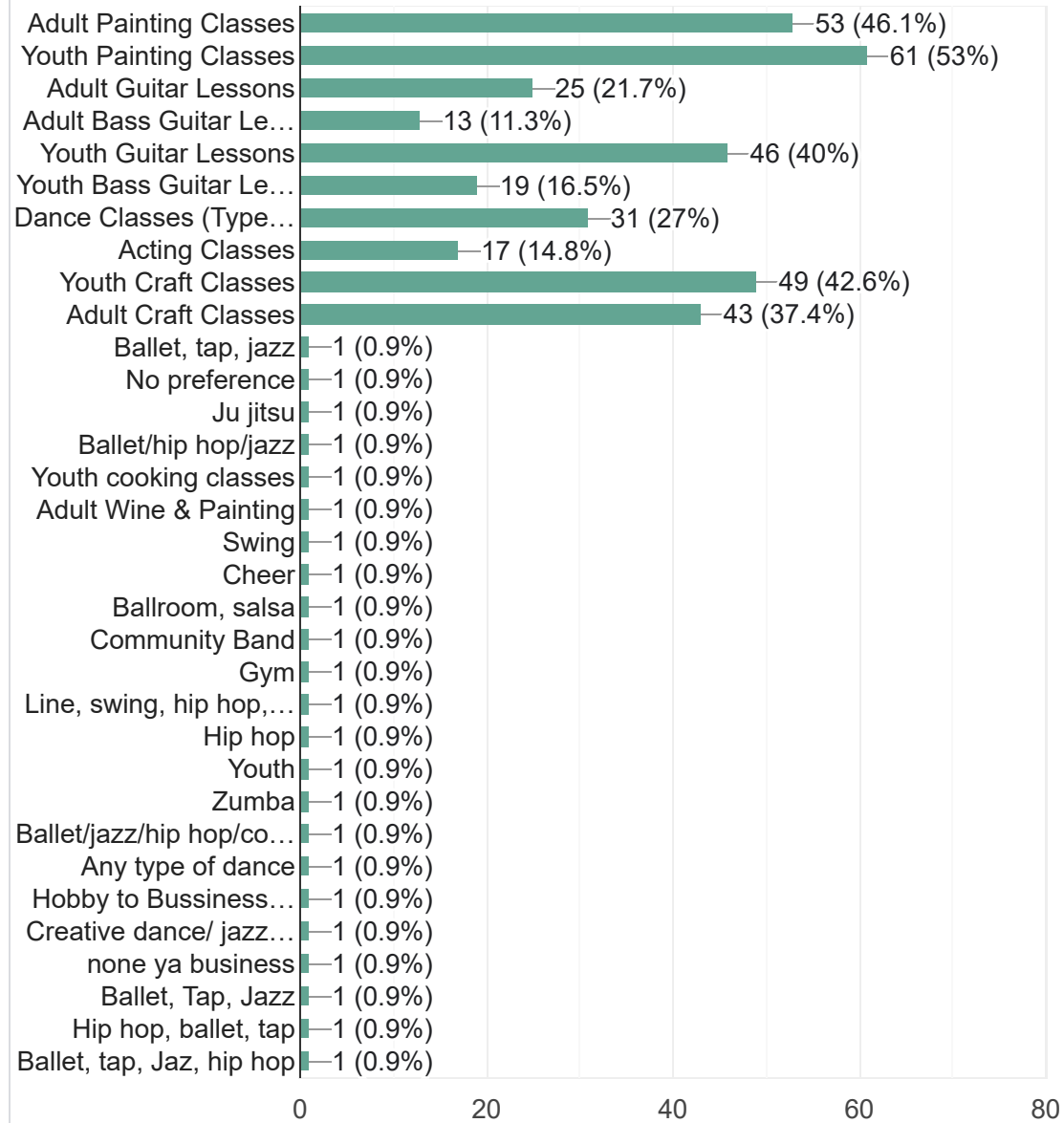
115 responses



Which of these City of Lemoore Arts & Cultural Programs would you like to see in the your community? (Check all that apply)

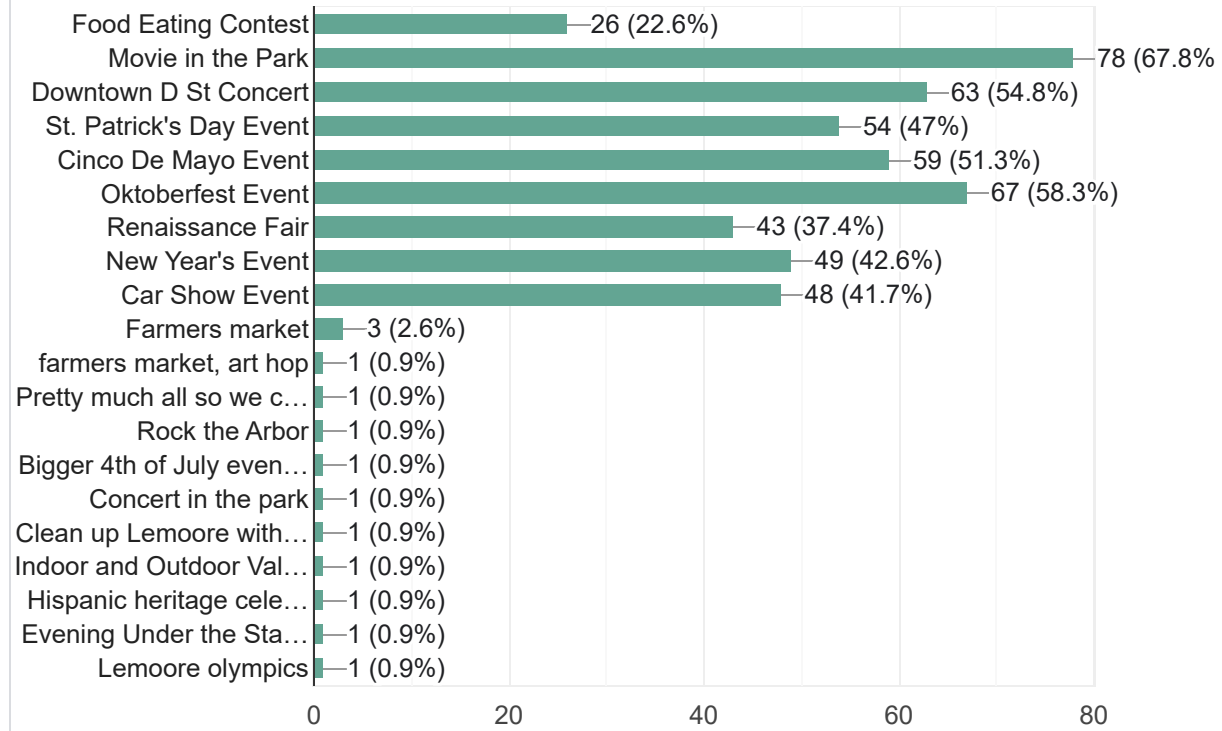


115 responses



Which of these City of Lemoore Community Events would you like to see in the your community? (Check all that apply) Copy

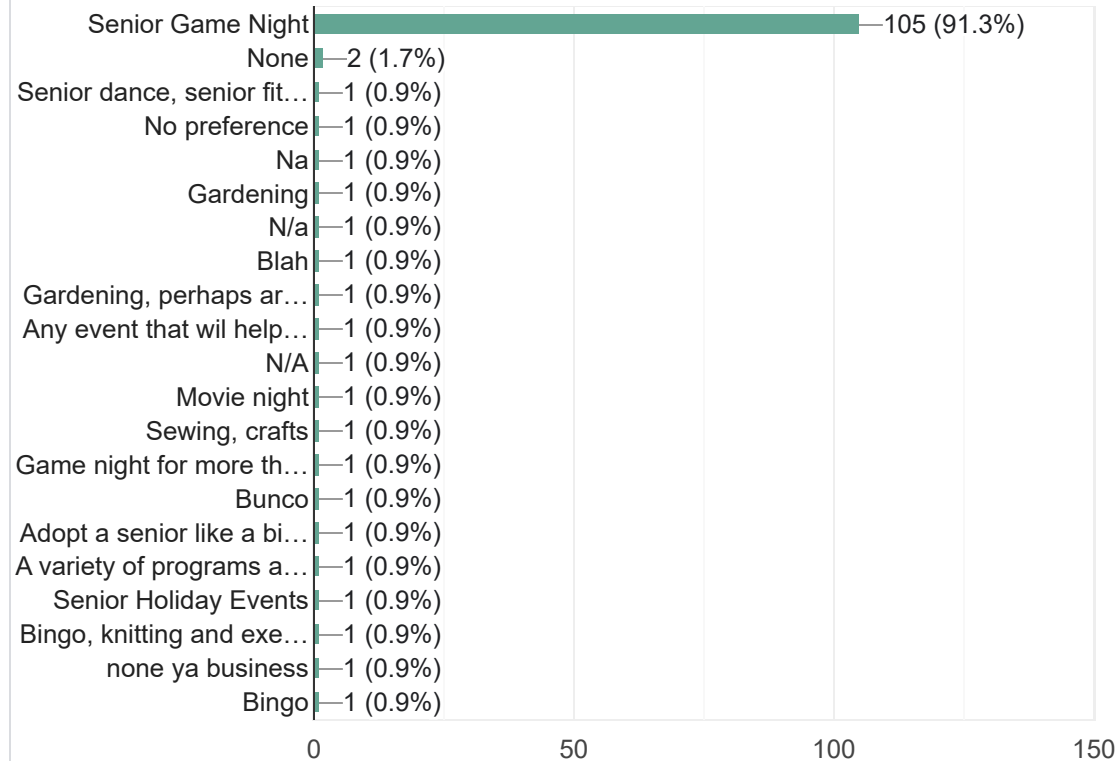
115 responses



Which of these City of Lemoore Senior Citizen Programs would you like to see in the your community? (Check all that apply)



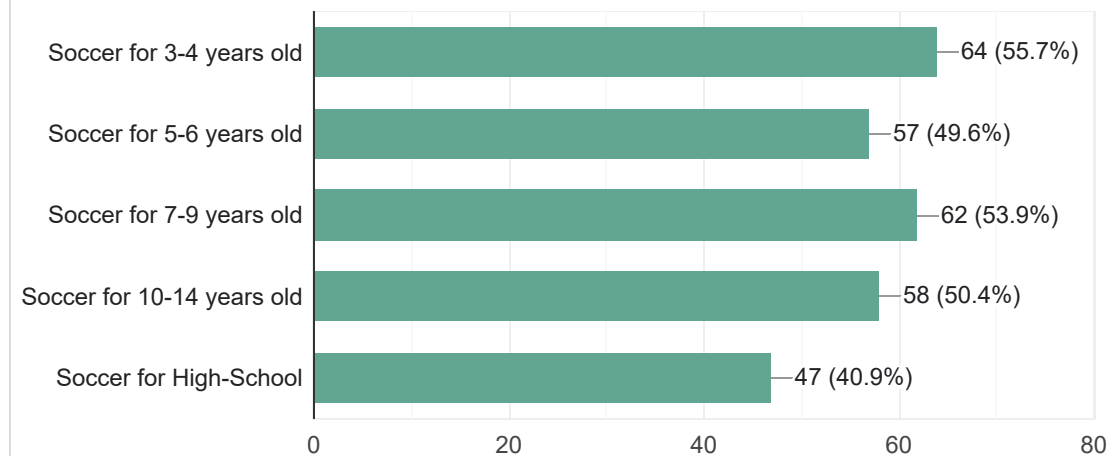
115 responses



Which of these City of Lemoore Youth Indoor Soccer Clinics would you like to see in the your community? (Check all that apply)



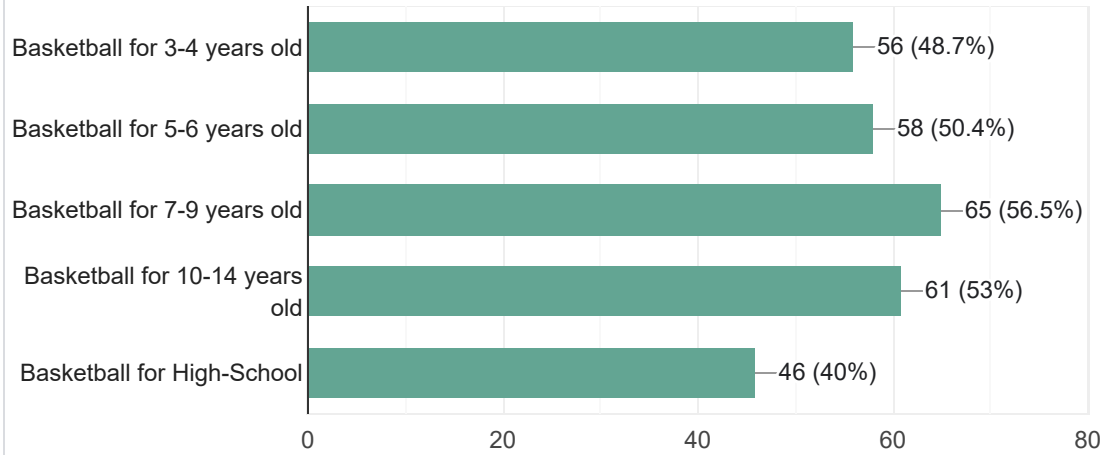
115 responses



Which of these City of Lemoore Youth Basketball Clinics would you like to see in the your community? (Check all that apply)



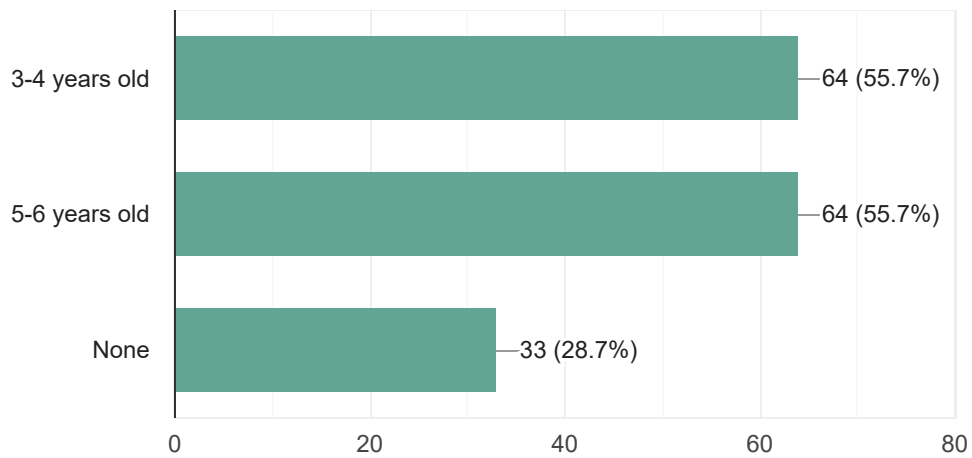
115 responses



Which of these City of Lemoore Youth T-Ball would you like to see in the your community? (Check all that apply)



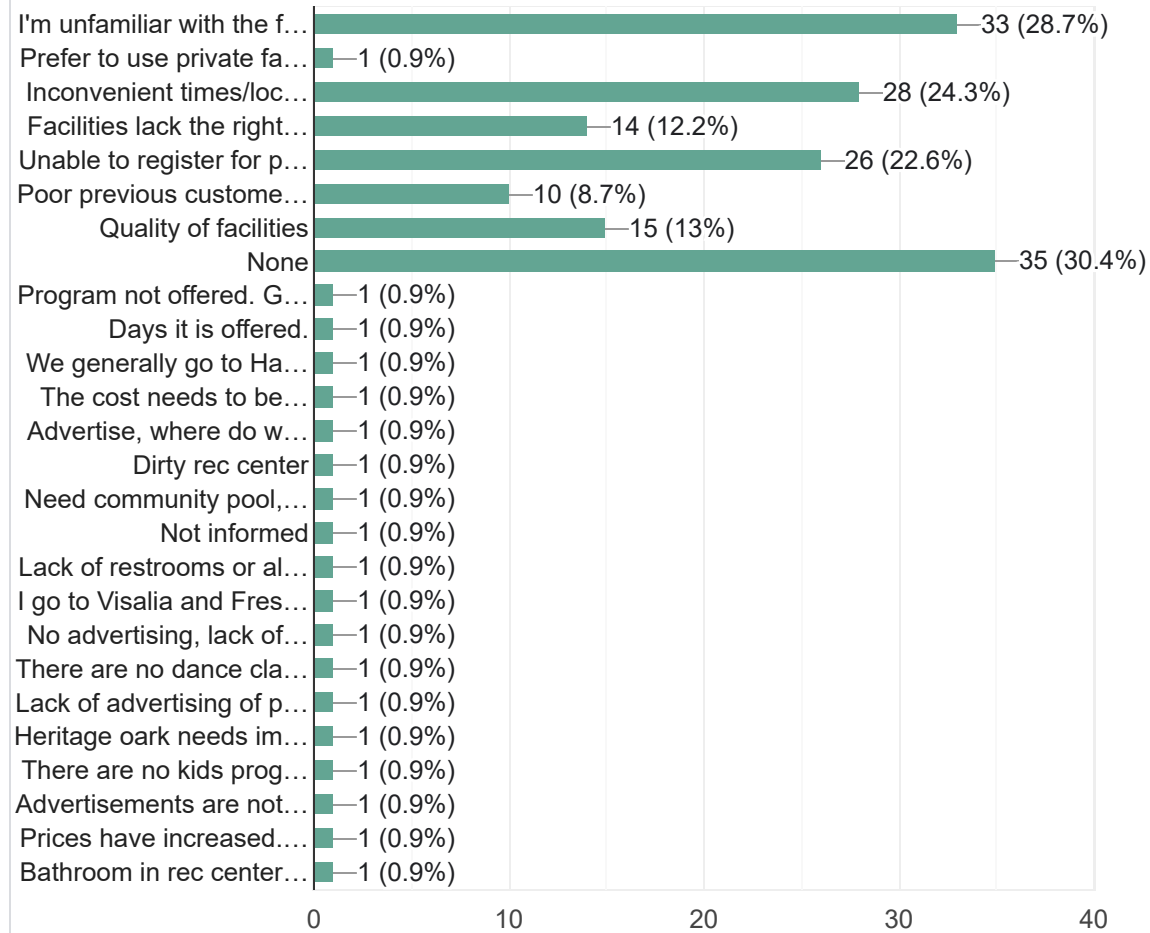
115 responses





Please check all of the items that prevent you or your family from using
 The City of Lemoore Parks and Recreation facilities and programs.
 (Check all that apply)

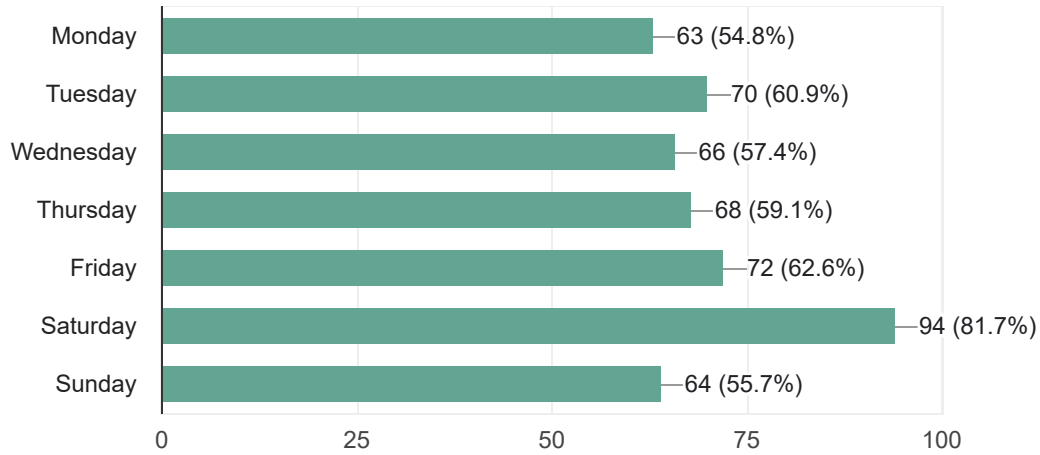
115 responses



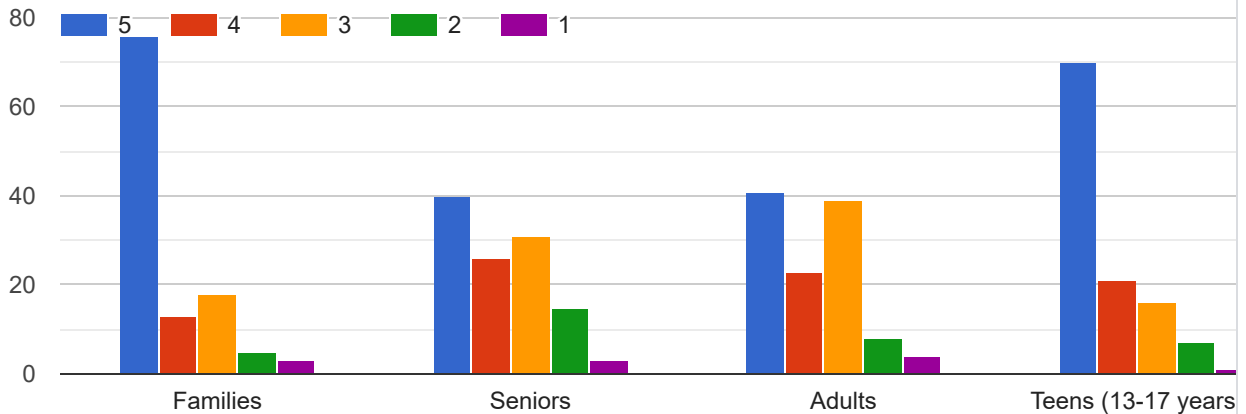
Which days are the most convenient to you or your family for programs and activities? (Check all that apply)



115 responses



Please prioritize which age groups need recreation opportunities (5 being the highest priority, 1 being the lowest priority)

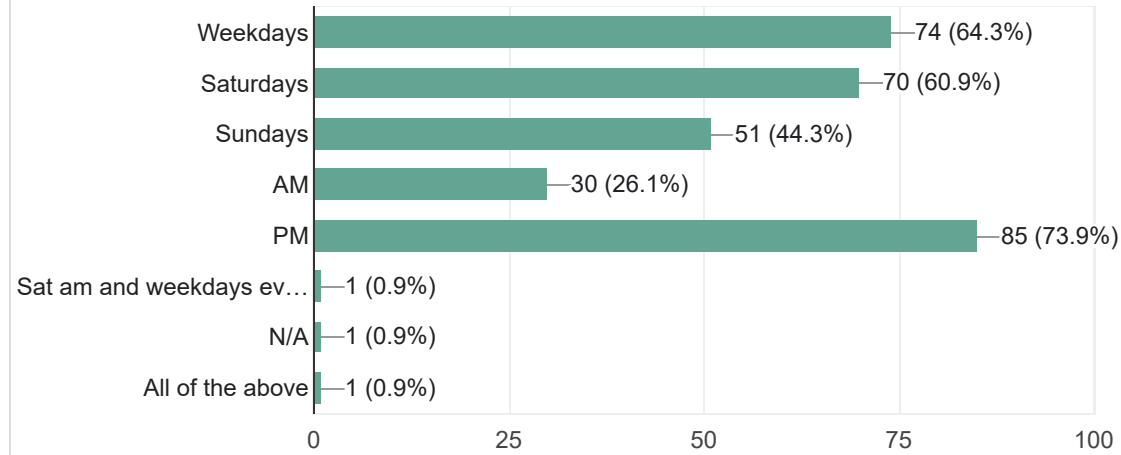


For youth sports programs, what days work for you or your family?



(Check all that apply)

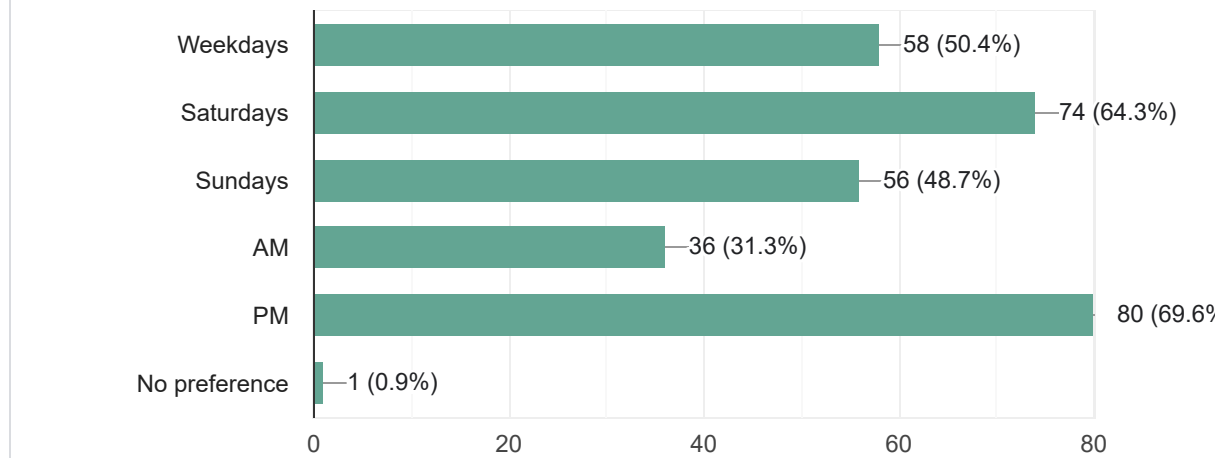
115 responses



For adult sports programming, what days work for you or your family? (Check all that apply)



115 responses



Please list any other programs, activities or suggestion you have.

115 responses

None

N/a

Na

None

N/A

NA

Hockey

Swim lessons!

Mother/son dance, father/daughter dance, family dance

Would love more adult workout group opportunities.

Water activities for kids/families in the summer! Or a community pool/aquatic center. It is too hot here to not have a pool

Community events such as breakfast with Santa, should be offered on Sundays when everyone is off

Add Ju jitsu

Early childhood education/enrichment for infants and toddlers

Photography

Indoor volleyball courts would be great, as it is one of the most expensive sports for kids to participating in, more indoor soccer to accommodate more kids.

I think for flag football they need to have play offs and a super bowl. I also think they need better uniforms or get the uniforms that were supposed to be ordered. Also the fields need to be filled in lots of holes. Having a medical staff at the fields.

What about doing some football ball clinics. We have several NFL players and past players that might be willing to help out with them.

I believe you all are doing a great job keep up the good work.

More adult activities

none

Thank you for helping our youth

Ice skating

Tennis for adults

Walking club

Mother son dance and campout

Keep up the good work

We liked all the previous programs you had before. Disappointing that you have canceled or are not doing some things that we have enjoyed in the past.

Have a dedicated director as previous

Expansion

Silver sneakers

Competition cheerleading

Better things in the downtown area

Anything else that I have an interest in and can AFFORD

Adult clay/ ceramics classes and a community pool

anything 3 yr old

A teen space

Programs to help kids and seniors



Downtown farmers market on d st or something like witches night out for adults because every event is only about kids but there's nothing for adults

Staff Rocks!!!!!!!!!!!!

Father,/daughter and Mother/son dances

Craft programs for kids

Splash Pads or indoor swimming pools

Pickle ball and Yoga

Consider a indoor skating and skate boarding. Most time kids skate around. The outdoor one is good but too small. Kids and young adults would like bigger and better ways to give themselves more opportunities to do tricks, and have fun. Also I know this is way off the subject but a race track for kids and adults. Drag race, drifting it would be a big jump and honestly it would draw attention.

Year round swim

None at the moment, I miss Rock the Arbor!

We need a place for seniors to work out and swim. We also need the softball program up and running better, no comp teams split them up like little league does. Make sure the bathrooms are open whenever someone is at the soccer complex. I really hate the ten boys and adult males peeing by trees around these young girls. And I hate having to run to a gas station for my girl to use the restroom. Also, the soap dispenser in them need to be ADA standard for them as well as for the littles who can't reach the soap in the back wall.

Pickle ball

Yoga

Sport clinic for the youth

Everything is too small, need more basketball courts, volleyball courts, tennis courts, skatepark, community pool

Bring back the farmers market

Better/advance notification for sign-ups for activities.

Gym



Agriculture activities relating to farming, farm animals, etc and links to local horseback riding lessons.

Facilities need TLC. Things get dirty quickly and are left. Some organization on the admin end with follow up to make sure people are contacted with proper information. Don't bite off too much and make the current experience better before more is added.

Shopping/vendor pop up opportunities, holiday strolls, good live music, farmers market on main street

Art programs for 2-4 year olds

Adult swim aerobics

Kids disc golf - we have a great free course at Heritage Park as well as a seasonal course at Hickey Park.

Pottery classes

Co Ed volleyball, women's basketball

Zumba

Mens softball

Our kids have to practice basketball outside in the cold at the park. I believe this is because they don't have access to perfectly good courts at the gym cause it's not open. Please make this available on weeknights.

Biking / running, especially a path that connects Lemoore and Hanford.

Ice Skating ring for the holidays

sky diving

Get the little library going or have someone else take over

Art class for youth

Yoga

Ballet

Gymnastics

Music lessons

Wrestling youth



Archery
Painting classes

More adult and senior activities that are not sport related.

Youth bowling league

Free Booth Space or Affordable Indoor and Outdoor Holiday Pop-Up Sale Events

Youth softball league

Indoor walking set times for adults

Youth Softball

Heritage park needs improvement

I want the old rec back. My daughter went from doing your mini music makers, LUGA's gymnastics program through the rec, tball, dance and indoor soccer. Only a couple of those have been brought back.

Also bring back the 4th of July parade. The kids loved decorating their bikes and were so bumped it wasn't brought back this year.

Would love to see the yard sale in the park brought back as well.

Self defense courses

Ninja warrior obstacle course

none ya business

adult leagues. advertise stuff online somewhere social media etc

Please have adult flag football with at least a trophy or medals for the prize.

More family holiday events

Mediation, yoga, arts (adults)

I think the city of Lemoore should really consider an aquatics center with programs. Many kids who are interested in aquatics are all having to travel to Hanford or out of the county for programs. Possible one more indoor field to accommodate more players/games. Also a jiu jitsu program.



Hot yoga

I think an adult flag football season would be better versus a tournament because it allows the adults to be more active. It also allow the adults to be more active in community as far as coaching opportunities for the youth, a flag football tournament would only be a weekend then then the adults are back to there normal lives of working and going home they have nothing to look forward to after a tournament. Same with the youth a lot of kids can't afford travel basketball or football so if there was a way for the kids to do flag football or basketball like how you guys do soccer I think it would be a help to everyone involved.

Stipen or child discount for coaches.

baseball

Kids not be excluded from sports due to cap on numbers!

Dance, Anything youth

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Google Forms







City of
LEMOORE
CALIFORNIA

711 West Cinnamon Drive • Lemoore, California 93245 • (559) 924-6744

Staff Report

To: Lemoore City Council
From: Christal Schisler, Deputy City Clerk
Date: May 16, 2024 **Meeting Date:** May 21, 2024
Subject: Activity Update

Strategic Initiative:	<input type="checkbox"/> Safe & Vibrant Community	<input type="checkbox"/> Growing & Dynamic Economy
	<input checked="" type="checkbox"/> Fiscally Sound Government	<input type="checkbox"/> Operational Excellence
	<input type="checkbox"/> Community & Neighborhood Livability	<input type="checkbox"/> Not Applicable

Reports

- Warrant Register – FY 23/24 April 25, 2024
- Warrant Register – FY 23/24 May 02, 2024
- Warrant Register – FY 23/24 May 09, 2024

ACCOUNTS PAYABLE EDIT

Detail Invoice List

Warrant Register 4/25/2024

CHECK RUN: MJ042524 04/25/2024
 DUE DATE: 04/25/2024

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ACCOUNTS PAYABLE EDIT

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ACCOUNTS PAYABLE EDIT

Detail Invoice List

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ACCOUNTS PAYABLE EDIT

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ACCOUNTS PAYABLE EDIT

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	1	5100-885-0000-00000-520100			Supplies		9.52		
							9.52		
7205	CENCAL AUTO & TRUCK P	0000		INV	04/25/2024	471932			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	6000-890-0000-00000-520100			Supplies		21.44		
							21.44		
7205	CENCAL AUTO & TRUCK P	0000		INV	04/25/2024	472031			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	6000-890-0000-00000-520100			Supplies		110.45		
							110.45		
7205	CENCAL AUTO & TRUCK P	0000		INV	04/25/2024	472020			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	5100-885-0000-00000-520100			Supplies		8.56		
							8.56		
							CHECK TOTAL		
							554.94		
5289	CUMMINS SALES AND SER	0000		INV	04/25/2024	Y4-5841			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	6000-890-0000-00000-520100			Supplies		462.92		
							462.92		
5289	CUMMINS SALES AND SER	0000		INV	04/25/2024	Y4-6630			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	6000-890-0000-00000-520100			Supplies		167.88		
							167.88		

ACCOUNTS PAYABLE EDIT

Detail Invoice List

CHECK RUN: MJ042524 04/25/2024
 DUE DATE: 04/25/2024

CASH ACCOUNT: 9999-000-0000-00000-100100						A/P Cash			
VENDOR	REMIT	PO	TYPE	DUE DATE	INVOICE	AMOUNT	VOUCHER	CHECK	
					CHECK TOTAL	630.80			
7642	ERIC ZENDEJAS	0000	INV	04/25/2024	ORI REC #8387&10024				
	ACCOUNT DETAIL				LINE AMOUNT				
	1	1000-000-0000-00000-202100		Cust Dep		250.00			
	2	1000-000-0000-00000-202100		Cust Dep		56.00			
					CHECK TOTAL	306.00			
7528	GLOBAL ROAD SEALING,	0000 351	INV	04/25/2024	2137-01				
	ACCOUNT DETAIL				LINE AMOUNT				
	1	2020-850-0000-23004-560300		CO Const		46,075.00			
					CHECK TOTAL	46,075.00			
799	GOLDEN STATE PETERBIL	0000	INV	04/25/2024	02P170317				
	ACCOUNT DETAIL				LINE AMOUNT				
	1	6000-890-0000-00000-520100		Supplies		169.86			
								169.86	
799	GOLDEN STATE PETERBIL	0000	INV	04/25/2024	02P170314				
	ACCOUNT DETAIL				LINE AMOUNT				
	1	6000-890-0000-00000-520100		Supplies		173.29			
								173.29	
799	GOLDEN STATE PETERBIL	0000	INV	04/25/2024	02P170313				
	ACCOUNT DETAIL				LINE AMOUNT				
	1	6000-890-0000-00000-520100		Supplies		54.40			
								54.40	
799	GOLDEN STATE PETERBIL	0000	INV	04/25/2024	02P170115				
	ACCOUNT DETAIL				LINE AMOUNT				
	1	6000-890-0000-00000-520100		Supplies		37.37			
								37.37	
799	GOLDEN STATE PETERBIL	0000	CRM	04/25/2024	02P170318				
	ACCOUNT DETAIL				LINE AMOUNT				
	1	6000-890-0000-00000-520100		Supplies		-37.37			
								-37.37	
799	GOLDEN STATE PETERBIL	0000	INV	04/25/2024	02P169952				
	ACCOUNT DETAIL				LINE AMOUNT				
	1	6000-890-0000-00000-520100		Supplies		40.93			

ACCOUNTS PAYABLE EDIT

Detail Invoice List

CHECK RUN: MJ042524 04/25/2024
 DUE DATE: 04/25/2024

CASH ACCOUNT: 9999-000-0000-00000-100100						A/P Cash			
VENDOR	REMIT	PO	TYPE	DUE DATE	INVOICE	AMOUNT	VOUCHER	CHECK	
799	GOLDEN STATE PETERBIL	0000	CRM	04/25/2024	02P170111	40.93			
	ACCOUNT DETAIL				LINE AMOUNT				
	1 6000-890-0000-00000-520100		Supplies		-40.93				
799	GOLDEN STATE PETERBIL	0000	INV	04/25/2024	02P171138	-40.93			
	ACCOUNT DETAIL				LINE AMOUNT				
	1 6000-890-0000-00000-520100		Supplies		150.75				
			CHECK TOTAL			150.75			
						548.30			
5546	INFOSEND	0000	196	INV	04/25/2024	259754			
	ACCOUNT DETAIL				LINE AMOUNT				
	1 5000-875-0000-00000-510170		Post Mail		3,597.72				
	2 5000-875-0000-00000-530100		Prof Cont		1,506.08				
			CHECK TOTAL			5,103.80			
						5,103.80			
2671	KELLER MOTORS	0000	INV	04/25/2024	5125103				
	ACCOUNT DETAIL				LINE AMOUNT				
	1 6000-890-0000-00000-520100		Supplies		277.96				
			CHECK TOTAL			277.96			
						277.96			
295	LEMOORE AUTO WRECKING	0000	INV	04/25/2024	18532				
	ACCOUNT DETAIL				LINE AMOUNT				
	1 6000-890-0000-00000-520100		Supplies		53.62				
			CHECK TOTAL			53.62			
						53.62			
314	LEMOORE AUTO SUPPLY	0000	INV	04/25/2024	7459-311265				
	ACCOUNT DETAIL				LINE AMOUNT				
	1 6000-890-0000-00000-520100		Supplies		286.06				
			CHECK TOTAL			286.06			
						286.06			
314	LEMOORE AUTO SUPPLY	0000	INV	04/25/2024	7459-311380				
	ACCOUNT DETAIL				LINE AMOUNT				
	1 6000-890-0000-00000-520100		Supplies		34.30				
			CHECK TOTAL			34.30			
						34.30			

ACCOUNTS PAYABLE EDIT

Detail Invoice List

CHECK RUN: MJ042524 04/25/2024
 DUE DATE: 04/25/2024

CASH ACCOUNT: 9999-000-0000-00000-100100						A/P Cash				
VENDOR		REMIT	PO	TYPE	DUE DATE	INVOICE	AMOUNT	VOUCHER	CHECK	
314	LEMOORE AUTO SUPPLY	0000		INV	04/25/2024	7459-311388				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	6000-890-0000-00000-520100			Supplies		22.51			
										22.51
314	LEMOORE AUTO SUPPLY	0000		INV	04/25/2024	7459-311675				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	6000-890-0000-00000-520100			Supplies		27.87			
										27.87
314	LEMOORE AUTO SUPPLY	0000		INV	04/25/2024	7459-311854				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	6000-890-0000-00000-520100			Supplies		34.59			
										34.59
314	LEMOORE AUTO SUPPLY	0000		INV	04/25/2024	7459-312021				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	1000-835-0000-00000-520100			Supplies		52.52			
										52.52
314	LEMOORE AUTO SUPPLY	0000		INV	04/25/2024	7459-312147				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	5100-885-0000-00000-520100			Supplies		20.68			
										20.68
314	LEMOORE AUTO SUPPLY	0000		INV	04/25/2024	7459-312263				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	1000-835-0000-00000-520100			Supplies		347.20			
										347.20
314	LEMOORE AUTO SUPPLY	0000		INV	04/25/2024	7459-312375				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	6000-890-0000-00000-520100			Supplies		13.93			
										13.93
314	LEMOORE AUTO SUPPLY	0000		INV	04/25/2024	7459-312530				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	5000-870-0000-00000-520100			Supplies		23.37			
										23.37
314	LEMOORE AUTO SUPPLY	0000		INV	04/25/2024	7459-312635				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	6000-890-0000-00000-520100			Supplies		19.07			
										19.07
						CHECK TOTAL	882.10			

ACCOUNTS PAYABLE EDIT

Detail Invoice List

CHECK RUN: MJ042524 04/25/2024
 DUE DATE: 04/25/2024

CASH ACCOUNT: 9999-000-0000-00000-100100						A/P Cash				
VENDOR		REMIT	PO	TYPE	DUE DATE	INVOICE	AMOUNT	VOUCHER	CHECK	
304	LEMOORE HARDWARE	0000		INV	04/25/2024	B459089				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	1000-835-0000-00000-520100			Supplies		23.42			23.42
304	LEMOORE HARDWARE	0000		INV	04/25/2024	A427293				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	5100-885-0000-00000-520100			Supplies		13.23			13.23
304	LEMOORE HARDWARE	0000		INV	04/25/2024	A427577				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	5100-885-0000-00000-520100			Supplies		11.39			11.39
304	LEMOORE HARDWARE	0000		INV	04/25/2024	A427582				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	5100-885-0000-00000-520100			Supplies		18.01			18.01
304	LEMOORE HARDWARE	0000		INV	04/25/2024	B459411				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	1000-825-0000-00000-520100			Supplies		23.29			23.29
304	LEMOORE HARDWARE	0000		INV	04/25/2024	B459416				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	1000-825-0000-00000-520100			Supplies		33.60			33.60
304	LEMOORE HARDWARE	0000		INV	04/25/2024	A427597				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	5100-885-0000-00000-520100			Supplies		10.18			10.18
304	LEMOORE HARDWARE	0000		INV	04/25/2024	A427601				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	5100-885-0000-00000-520100			Supplies		30.62			30.62
304	LEMOORE HARDWARE	0000		INV	04/25/2024	A427679				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	1000-835-0000-00000-520100			Supplies		36.24			36.24

ACCOUNTS PAYABLE EDIT

Detail Invoice List

CHECK RUN: MJ042524 04/25/2024
 DUE DATE: 04/25/2024

CASH ACCOUNT: 9999-000-0000-00000-100100				A/P Cash					
VENDOR		REMIT	PO	TYPE	DUE DATE	INVOICE	AMOUNT	VOUCHER	CHECK
304	LEMOORE HARDWARE	0000		INV	04/25/2024	A427739			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	5100-885-0000-00000-520100			Supplies		21.34		
							21.34		
304	LEMOORE HARDWARE	0000		INV	04/25/2024	A427750			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	1000-825-0000-00000-520100			Supplies		70.28		
							70.28		
304	LEMOORE HARDWARE	0000		INV	04/25/2024	B459609			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	5100-885-0000-00000-520100			Supplies		17.31		
							17.31		
304	LEMOORE HARDWARE	0000		CRM	04/25/2024	B459610			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	5100-885-0000-00000-520100			Supplies		-17.31		
							-17.31		
304	LEMOORE HARDWARE	0000		INV	04/25/2024	A427778			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	1000-825-0000-00000-520100			Supplies		46.30		
							46.30		
304	LEMOORE HARDWARE	0000		INV	04/25/2024	B459948			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	1000-835-0000-00000-520100			Supplies		49.79		
							49.79		
304	LEMOORE HARDWARE	0000		INV	04/25/2024	A428056			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	5100-885-0000-00000-520100			Supplies		10.82		
							10.82		
304	LEMOORE HARDWARE	0000		INV	04/25/2024	A428094			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	1000-825-0000-00000-520100			Supplies		64.18		
							64.18		
304	LEMOORE HARDWARE	0000		INV	04/25/2024	B460028			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	6000-890-0000-00000-520100			Supplies		10.18		
							10.18		

ACCOUNTS PAYABLE EDIT

Detail Invoice List

CHECK RUN: MJ042524 04/25/2024
 DUE DATE: 04/25/2024

CASH ACCOUNT: 9999-000-0000-00000-100100				A/P Cash					
VENDOR		REMIT	PO	TYPE	DUE DATE	INVOICE	AMOUNT	VOUCHER	CHECK
304	LEMOORE HARDWARE	0000		INV	04/25/2024	B460056			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	1000-825-0000-00000-520100			Supplies		94.29		
							94.29		
304	LEMOORE HARDWARE	0000		INV	04/25/2024	A428199			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	5100-885-0000-00000-520100			Supplies		17.79		
							17.79		
304	LEMOORE HARDWARE	0000		INV	04/25/2024	A428200			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	5100-885-0000-00000-520100			Supplies		4.82		
							4.82		
304	LEMOORE HARDWARE	0000		INV	04/25/2024	A428201			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	5100-885-0000-00000-520100			Supplies		3.06		
							3.06		
304	LEMOORE HARDWARE	0000		INV	04/25/2024	B460143			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	1000-850-0000-00000-520100			Supplies		47.83		
							47.83		
304	LEMOORE HARDWARE	0000		INV	04/25/2024	B460203			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	1000-825-0000-00000-520100			Supplies		57.04		
							57.04		
304	LEMOORE HARDWARE	0000		INV	04/25/2024	A428429			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	5100-885-0000-00000-520100			Supplies		24.44		
							24.44		
304	LEMOORE HARDWARE	0000		INV	04/25/2024	A428479			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	5100-885-0000-00000-520100			Supplies		12.22		
							12.22		
304	LEMOORE HARDWARE	0000		INV	04/25/2024	A428572			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	1000-825-0000-00000-520100			Supplies		16.29		
							16.29		

ACCOUNTS PAYABLE EDIT

Detail Invoice List

CHECK RUN: MJ042524 04/25/2024
 DUE DATE: 04/25/2024

CASH ACCOUNT: 9999-000-0000-00000-100100				A/P Cash					
VENDOR		REMIT	PO	TYPE	DUE DATE	INVOICE	AMOUNT	VOUCHER	CHECK
304	LEMOORE HARDWARE	0000		INV	04/25/2024	A428584			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	1000-825-0000-00000-520100			Supplies		15.27		
							15.27		
304	LEMOORE HARDWARE	0000		INV	04/25/2024	A428622			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	1000-825-0000-00000-520100			Supplies		9.16		
							9.16		
304	LEMOORE HARDWARE	0000		INV	04/25/2024	A428779			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	1000-825-0000-00000-520100			Supplies		74.33		
							74.33		
304	LEMOORE HARDWARE	0000		INV	04/25/2024	A428841			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	1000-840-0000-00000-520100			Supplies		33.60		
							33.60		
304	LEMOORE HARDWARE	0000		INV	04/25/2024	A428853			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	6000-890-0000-00000-520100			Supplies		28.52		
							28.52		
304	LEMOORE HARDWARE	0000		INV	04/25/2024	B460868			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	1000-825-0000-00000-520100			Supplies		61.12		
							61.12		
304	LEMOORE HARDWARE	0000		INV	04/25/2024	A429045			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	5000-870-0000-00000-520100			Supplies		15.21		
							15.21		
304	LEMOORE HARDWARE	0000		INV	04/25/2024	B460988			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	5100-885-0000-00000-520100			Supplies		54.48		
							54.48		
304	LEMOORE HARDWARE	0000		INV	04/25/2024	B461182			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	1000-835-0000-00000-520100			Supplies		16.87		
							16.87		

ACCOUNTS PAYABLE EDIT

Detail Invoice List

CHECK RUN: MJ042524 04/25/2024
 DUE DATE: 04/25/2024

CASH ACCOUNT: 9999-000-0000-00000-100100						A/P Cash				
VENDOR		REMIT	PO	TYPE	DUE DATE	INVOICE	AMOUNT	VOUCHER	CHECK	
304	LEMOORE HARDWARE	0000		INV	04/25/2024	A429324				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	1000-835-0000-00000-520100			Supplies		21.89			21.89
304	LEMOORE HARDWARE	0000		INV	04/25/2024	B461296				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	1000-825-0000-00000-520100			Supplies		12.21			12.21
304	LEMOORE HARDWARE	0000		INV	04/25/2024	B461297				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	1000-825-0000-00000-520100			Supplies		46.80			46.80
304	LEMOORE HARDWARE	0000		INV	04/25/2024	A429350				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	1000-835-0000-00000-520100			Supplies		47.87			47.87
304	LEMOORE HARDWARE	0000		INV	04/25/2024	B461310				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	1000-825-0000-00000-520100			Supplies		74.35			74.35
304	LEMOORE HARDWARE	0000		INV	04/25/2024	A429408				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	1000-835-0000-00000-520100			Supplies		9.78			9.78
304	LEMOORE HARDWARE	0000		INV	04/25/2024	A429422				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	1000-825-0000-00000-520100			Supplies		92.36			92.36
304	LEMOORE HARDWARE	0000		INV	04/25/2024	A429470				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	1000-850-0000-00000-520100			Supplies		107.96			107.96
304	LEMOORE HARDWARE	0000		INV	04/25/2024	A429486				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	1000-825-0000-00000-520100			Supplies		2.48			2.48

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Detail Invoice List

CHECK RUN: MJ042524 04/25/2024
 DUE DATE: 04/25/2024

CASH ACCOUNT: 9999-000-0000-00000-100100				A/P Cash					
VENDOR		REMIT	PO	TYPE	DUE DATE	INVOICE	AMOUNT	VOUCHER	CHECK
304	LEMOORE HARDWARE	0000		INV	04/25/2024	B461436			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	5100-885-0000-00000-520100			Supplies		18.50		
							18.50		
304	LEMOORE HARDWARE	0000		INV	04/25/2024	A429558			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	1000-850-0000-00000-520100			Supplies		32.56		
							32.56		
304	LEMOORE HARDWARE	0000		INV	04/25/2024	A429697			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	1000-835-0000-00000-520100			Supplies		8.14		
							8.14		
304	LEMOORE HARDWARE	0000		INV	04/25/2024	A429699			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	1000-825-0000-00000-520100			Supplies		90.18		
							90.18		
304	LEMOORE HARDWARE	0000		INV	04/25/2024	B461686			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	1000-825-0000-00000-520100			Supplies		161.85		
							161.85		
304	LEMOORE HARDWARE	0000		INV	04/25/2024	B461740			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	1000-825-0000-00000-520100			Supplies		25.28		
							25.28		
304	LEMOORE HARDWARE	0000		INV	04/25/2024	B461755			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	1000-825-0000-00000-520100			Supplies		146.29		
							146.29		
304	LEMOORE HARDWARE	0000		INV	04/25/2024	B461757			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	1000-825-0000-00000-520100			Supplies		81.40		
							81.40		
304	LEMOORE HARDWARE	0000		INV	04/25/2024	B461784			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	1000-835-0000-00000-520100			Supplies		73.32		
							73.32		

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CHECK RUN: MJ042524 04/25/2024
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CASH ACCOUNT: 9999-000-0000-00000-100100						A/P Cash				
VENDOR		REMIT	PO	TYPE	DUE DATE	INVOICE	AMOUNT	VOUCHER	CHECK	
304	LEMOORE HARDWARE	0000		INV	04/25/2024	B461835				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	1000-850-0000-00000-520100			Supplies		187.20			
							187.20			
							CHECK TOTAL			2,299.63
5184	LEMOORE TOWING	0000		INV	04/25/2024	20677				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	6000-890-0000-00000-530100			Prof Cont		50.00			
							50.00			
							CHECK TOTAL			50.00
7641	LOLITA MAMUAD	0000		INV	04/25/2024	ORIG RECEIPT #9834				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	1000-000-0000-00000-202100			Cust Dep		250.00			
							250.00			
							CHECK TOTAL			250.00
7148	LOOMIS	0000	59	INV	04/25/2024	13460566				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	1000-815-0000-00000-530100			Prof Cont		314.09			
							314.09			
							CHECK TOTAL			314.09
6120	O'REILLY AUTO PARTS	0000		INV	04/25/2024	3918-271427				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	6000-890-0000-00000-520100			Supplies		155.83			
							155.83			
6120	O'REILLY AUTO PARTS	0000		INV	04/25/2024	3918-272136				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	6000-890-0000-00000-520100			Supplies		16.08			
							16.08			
6120	O'REILLY AUTO PARTS	0000		INV	04/25/2024	3918-273465				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	6000-890-0000-00000-520100			Supplies		177.20			
							177.20			

ACCOUNTS PAYABLE EDIT

Detail Invoice List

CHECK RUN: MJ042524 04/25/2024
 DUE DATE: 04/25/2024

CASH ACCOUNT: 9999-000-0000-00000-100100						A/P Cash				
VENDOR		REMIT	PO	TYPE	DUE DATE	INVOICE	AMOUNT	VOUCHER	CHECK	
6120	O'REILLY AUTO PARTS	0000		INV	04/25/2024	3918-274206				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	6000-890-0000-00000-520100			Supplies		74.00			
							74.00			
6120	O'REILLY AUTO PARTS	0000		INV	04/25/2024	3918-274207				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	6000-890-0000-00000-520100			Supplies		314.12			
							314.12			
6120	O'REILLY AUTO PARTS	0000		INV	04/25/2024	3918-274280				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	6000-890-0000-00000-520100			Supplies		16.89			
							16.89			
							CHECK TOTAL			754.12
7629	OPTIMIZED INVESTMENT	0001	684	INV	04/25/2024	1177				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	1000-815-0000-00000-530100			Prof Cont		4,768.94			
							4,768.94			
							CHECK TOTAL			4,768.94
7639	PROTEUS INC.	0000		INV	04/25/2024	04172024				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	1000-000-0000-00000-410300			Bld Per		220.00			
							220.00			
							CHECK TOTAL			220.00
5425	PTM DOCUMENT SYSTEMS	0000		INV	04/25/2024	0088850				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	1000-860-0000-00000-520100			Supplies		116.95			
	2	1000-815-0000-00000-520100			Supplies		90.08			
							207.03			
							CHECK TOTAL			207.03
7640	RYAN GEORGE	0000		INV	04/25/2024	ORIG RECEIPT #4202				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	1000-000-0000-00000-420600			Rec Fee		97.00			
							97.00			
							CHECK TOTAL			97.00

ACCOUNTS PAYABLE EDIT

Detail Invoice List

CHECK RUN: MJ042524 04/25/2024
 DUE DATE: 04/25/2024

CASH ACCOUNT: 9999-000-0000-00000-100100						A/P Cash			
VENDOR	REMIT	PO	TYPE	DUE DATE	INVOICE	AMOUNT	VOUCHER	CHECK	
7353	SOLO MANAGEMENT SERVI	0000	123	INV	04/25/2024	119			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	1000-825-0000-00000-530100		Prof Cont		2,350.00			
								2,350.00	
								2,350.00	
								CHECK TOTAL	
5352	STERICYCLE, INC.	0000		INV	04/25/2024	8006769704			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	1000-830-0000-00000-530100		Prof Cont		323.36			
								323.36	
								323.36	
								CHECK TOTAL	
7586	TALUS COMMUNICATIONS,	0000	645	INV	04/25/2024	021324			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	4003-830-0000-22005-530100		Prof Cont		4,000.00			
								4,000.00	
								4,000.00	
								CHECK TOTAL	
458	KELLER FORD LINCOLN	0000		INV	04/25/2024	50239945			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	6000-890-0000-00000-520100		Supplies		25.29			
								25.29	
458	KELLER FORD LINCOLN	0000		INV	04/25/2024	50239946			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	6000-890-0000-00000-520100		Supplies		99.28			
								99.28	
								99.28	
								CHECK TOTAL	
								124.57	
140	INVOICES					74,439.04		74,439.04	
								-17,614,886.49	
								WARRANT TOTAL	
								CASH ACCOUNT BALANCE	

ACCOUNTS PAYABLE EDIT

Check Run Summary

CHECK RUN: MJ042524 04/25/2024
 DUE DATE: 04/25/2024

FUND	ACCOUNT	AMOUNT	AVLB BUDGET
1000	General 1000-000-0000-00000-202100	Customer Deposits 556.00	
1000	General 1000-000-0000-00000-410300	Building Permits 220.00	0.00
1000	General 1000-000-0000-00000-420600	Recreation Fees 97.00	0.00
1000	General 1000-815-0000-00000-520100	Supplies 90.08	206.01
1000	General 1000-815-0000-00000-530100	Professional Contract 5,083.03	-10,173.69
1000	General 1000-825-0000-00000-520100	Supplies 1,298.35	27,110.11
1000	General 1000-825-0000-00000-530100	Professional Contract 2,726.02	35,264.01
1000	General 1000-830-0000-00000-510130	Utilities 1,239.09	28,332.42
1000	General 1000-830-0000-00000-530100	Professional Contract 323.36	34,394.68
1000	General 1000-835-0000-00000-510130	Utilities 297.05	928.50
1000	General 1000-835-0000-00000-520100	Supplies 760.38	22,166.01
1000	General 1000-835-0000-00000-530100	Professional Contract 428.90	-1,792.23
1000	General 1000-840-0000-00000-520100	Supplies 33.60	2,123.34
1000	General 1000-850-0000-00000-520100	Supplies 375.55	35,250.22
1000	General 1000-850-0000-00000-530100	Professional Contract 740.00	121,496.60
1000	General 1000-860-0000-00000-520100	Supplies 116.95	3,573.70
CASH ACCOUNT 9999-000-0000-00000-100100 BALANCE -17,614,886.49		FUND TOTAL	14,385.36
2020	Local Transportation 2020-850-0000-23004-560300	Capital Outlay - Cons 46,075.00	6,500.00
CASH ACCOUNT 9999-000-0000-00000-100100 BALANCE -17,614,886.49		FUND TOTAL	46,075.00
4003	Police 4003-830-0000-22005-530100	Professional Contract 4,000.00	230,278.74
CASH ACCOUNT 9999-000-0000-00000-100100 BALANCE -17,614,886.49		FUND TOTAL	4,000.00
5000	Water 5000-870-0000-00000-520100	Supplies 38.58	177,889.64
5000	Water 5000-875-0000-00000-510170	Postage & Mailing 3,597.72	4,870.48
5000	Water 5000-875-0000-00000-530100	Professional Contract 1,506.08	-28,038.24
CASH ACCOUNT 9999-000-0000-00000-100100 BALANCE -17,614,886.49		FUND TOTAL	5,142.38
5100	Sewer 5100-885-0000-00000-520100	Supplies 397.81	397,902.11
5100	Sewer 5100-885-0000-00000-530100	Professional Contract 512.91	198,167.14

ACCOUNTS PAYABLE EDIT

CASH ACCOUNT 9999-000-0000-00000-100100		BALANCE -17,614,886.49	FUND TOTAL	910.72	
5200	Refuse	5200-880-0000-00000-530100	Professional Contract	412.81	122,234.25
			FUND TOTAL	412.81	
CASH ACCOUNT 9999-000-0000-00000-100100		BALANCE -17,614,886.49			
6000	Fleet Maintenance	6000-890-0000-00000-520100	Supplies	3,221.77	87,667.64
6000	Fleet Maintenance	6000-890-0000-00000-530100	Professional Contract	291.00	87,142.46
			FUND TOTAL	3,512.77	
CASH ACCOUNT 9999-000-0000-00000-100100		BALANCE -17,614,886.49			
			WARRANT SUMMARY TOTAL	74,439.04	
			GRAND TOTAL	74,439.04	

ACCOUNTS PAYABLE EDIT

Detail Invoice List

Warrant Register 05.02.24

CHECK RUN: MJ050224 05/02/2024
 DUE DATE: 05/02/2024

CASH ACCOUNT: 9999-000-0000-00000-100100						A/P Cash				
VENDOR		REMIT	PO	TYPE	DUE DATE	INVOICE	AMOUNT	VOUCHER	CHECK	
1259	ADVANCED PEST CONTROL	0000		INV	05/02/2024	0115922				
	ACCOUNT DETAIL					LINE AMOUNT				
	1				Prof Cont		75.00			
										75.00
										75.00
7384	ALEXANDER AVILA	0000		INV	05/02/2024	04292024				
	ACCOUNT DETAIL					LINE AMOUNT				
	1				Prof Cont		275.00			
										275.00
										275.00
7393	ANGEL PICENO	0000		INV	05/02/2024	04292024				
	ACCOUNT DETAIL					LINE AMOUNT				
	1				Prof Cont		150.00			
										150.00
										150.00
7208	AQUA-METRIC SALES COM	0000		INV	05/02/2024	INV0101237				
	ACCOUNT DETAIL					LINE AMOUNT				
	1				Supplies		334.80			
										334.80
7208	AQUA-METRIC SALES COM	0000	709	INV	05/02/2024	INV0099352				
	ACCOUNT DETAIL					LINE AMOUNT				
	1				Prof Cont		2,436.77			
										2,436.77
										2,771.57
2653	ARAMARK UNIFORM	0002		INV	05/02/2024	2580335352				
	ACCOUNT DETAIL					LINE AMOUNT				
	1				Prof Cont		27.66			
										27.66
2653	ARAMARK UNIFORM	0002		INV	05/02/2024	2580338691				
	ACCOUNT DETAIL					LINE AMOUNT				
	1				Prof Cont		27.66			
										27.66

ACCOUNTS PAYABLE EDIT

Detail Invoice List

CHECK RUN: MJ050224 05/02/2024
 DUE DATE: 05/02/2024

CASH ACCOUNT: 9999-000-0000-00000-100100						A/P Cash			
VENDOR		REMIT	PO	TYPE	DUE DATE	INVOICE	AMOUNT	VOUCHER	CHECK
2653	ARAMARK UNIFORM	0002		INV	05/02/2024	2580342019			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	5000-875-0000-00000-530100			Prof Cont		30.44		
							30.44		
2653	ARAMARK UNIFORM	0002		INV	05/02/2024	2580345851			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	5000-875-0000-00000-530100			Prof Cont		30.44		
							30.44		
									30.44
									CHECK TOTAL 116.20
7164	AT&T	0000		INV	05/02/2024	505730			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	1000-830-0000-00000-530100			Prof Cont		325.00		
							325.00		
									325.00
									CHECK TOTAL 325.00
5048	AT&T MOBILITY	0000		INV	05/02/2024	287305196021X041024			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	1000-840-0000-00000-510130			Utilties		240.48		
	2	1000-815-0000-00000-510130			Utilties		100.12		
	3	5000-875-0000-00000-510130			Utilties		95.09		
	4	6000-890-0000-00000-510130			Utilties		90.06		
	5	1000-825-0000-00000-510130			Utilties		265.39		
	6	1000-845-0000-00000-510130			Utilties		235.21		
	7	1000-855-0000-00000-510130			Utilties		95.09		
	8	5200-880-0000-00000-510130			Utilties		545.39		
	9	5100-885-0000-00000-510130			Utilties		722.31		
	10	1000-860-0000-00000-510130			Utilties		45.03		
	11	1000-805-0000-00000-510130			Utilties		219.05		
	12	1000-865-0000-00000-510130			Utilties		190.42		
							2,843.64		
									2,843.64
									CHECK TOTAL 2,843.64
7381	BRAYDEN DOLAN	0000		INV	05/02/2024	04292024			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	1000-855-0000-00000-530100			Prof Cont		275.00		
							275.00		
									275.00
									CHECK TOTAL 275.00

ACCOUNTS PAYABLE EDIT

Detail Invoice List

CHECK RUN: MJ050224 05/02/2024
 DUE DATE: 05/02/2024

CASH ACCOUNT: 9999-000-0000-00000-100100						A/P Cash			
VENDOR	REMIT	PO	TYPE	DUE DATE	INVOICE	AMOUNT	VOUCHER	CHECK	
6972	JESSICA BUEHLER	0000	720	INV	05/02/2024	20240320			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	1000-835-0000-00000-510150		Training		2,000.00			
								2,000.00	
								2,000.00	
3072	CA DEPARTMENT OF TRAN	0000	408	INV	05/02/2024	SL240695			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	1000-850-0000-00000-510130		Utilties		3,374.81			
								3,374.81	
								3,374.81	
2574	CHASE ELLSWORTH	0000		INV	05/02/2024	04232024			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	1000-830-0000-00000-510150		Training		157.00			
								157.00	
								157.00	
6459	CLEAN CUT LANDSCAPE M	0000	717	INV	05/02/2024	4772			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	1000-825-0000-00000-530100		Prof Cont		2,343.39			
								2,343.39	
								2,343.39	
4056	COMCAST	0000		INV	05/02/2024	197544457			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	1000-865-0000-00000-510130		Utilties		4,281.33			
								4,281.33	
								4,281.33	
7637	COUNTY OF FRESNO	0000	713	INV	05/02/2024	SO21579			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	1000-830-0000-00000-510150		Training		500.00			
								500.00	
								500.00	

ACCOUNTS PAYABLE EDIT

Detail Invoice List

CHECK RUN: MJ050224 05/02/2024
 DUE DATE: 05/02/2024

CASH ACCOUNT: 9999-000-0000-00000-100100						A/P Cash				
VENDOR		REMIT	PO	TYPE	DUE DATE	INVOICE	AMOUNT	VOUCHER	CHECK	
7259	CUSTOM TRUCK ONE SOUR	0000	714	INV	05/02/2024	31000826-0034				
	ACCOUNT DETAIL					LINE AMOUNT				
	1		1000-825-0000-00000-530120		Rent & Lea		3,767.10			
										3,767.10
7259	CUSTOM TRUCK ONE SOUR	0000	714	INV	05/02/2024	31000826-0035				
	ACCOUNT DETAIL					LINE AMOUNT				
	1		1000-825-0000-00000-530120		Rent & Lea		3,767.10			
										3,767.10
7259	CUSTOM TRUCK ONE SOUR	0000	714	INV	05/02/2024	31000826-0036				
	ACCOUNT DETAIL					LINE AMOUNT				
	1		1000-825-0000-00000-530120		Rent & Lea		3,767.10			
										3,767.10
7259	CUSTOM TRUCK ONE SOUR	0000	714	INV	05/02/2024	31000826-0037				
	ACCOUNT DETAIL					LINE AMOUNT				
	1		1000-825-0000-00000-530120		Rent & Lea		3,767.10			
										3,767.10
7259	CUSTOM TRUCK ONE SOUR	0000	714	INV	05/02/2024	31000826-0033				
	ACCOUNT DETAIL					LINE AMOUNT				
	1		1000-825-0000-00000-530120		Rent & Lea		3,767.10			
										3,767.10
										CHECK TOTAL
										18,835.50
7409	DAMIEN NICHOLSON	0000		INV	05/02/2024	04292024				
	ACCOUNT DETAIL					LINE AMOUNT				
	1		1000-855-0000-00000-530100		Prof Cont		575.00			
										575.00
										CHECK TOTAL
										575.00
2399	DEPARTMENT OF JUSTICE	0000	273	INV	05/02/2024	727279				
	ACCOUNT DETAIL					LINE AMOUNT				
	1		1000-860-0000-00000-530100		Prof Cont		92.00			
										92.00
										CHECK TOTAL
										92.00
6869	WELLS FARGO BANK, N.A	0000	24	INV	05/02/2024	902304				
	ACCOUNT DETAIL					LINE AMOUNT				
	1		5200-880-0000-00000-530100		Prof Cont		1,868.80			
										1,868.80

ACCOUNTS PAYABLE EDIT

Detail Invoice List

CHECK RUN: MJ050224 05/02/2024
 DUE DATE: 05/02/2024

CASH ACCOUNT: 9999-000-0000-00000-100100						A/P Cash				
VENDOR		REMIT	PO	TYPE	DUE DATE	INVOICE	AMOUNT	VOUCHER	CHECK	
6869	WELLS FARGO BANK, N.A	0000	24	INV	05/02/2024	902744				
	ACCOUNT DETAIL					LINE AMOUNT				
	1				5200-880-0000-00000-530100	Prof Cont	1,868.80			
										1,868.80
										CHECK TOTAL
										3,737.60
7282	NOELIA A. ESPINOZA	0000		INV	05/02/2024	04292024				
	ACCOUNT DETAIL					LINE AMOUNT				
	1				1000-855-0000-00000-530100	Prof Cont	124.00			
										124.00
										CHECK TOTAL
										124.00
5866	FASTENAL COMPANY	0000		INV	05/02/2024	CALEM48552				
	ACCOUNT DETAIL					LINE AMOUNT				
	1				5000-870-0000-00000-520100	Supplies	46.96			
										46.96
5866	FASTENAL COMPANY	0000		CRM	05/02/2024	CALEM47600				
	ACCOUNT DETAIL					LINE AMOUNT				
	1				6000-890-0000-00000-520100	Supplies	-241.14			
										-241.14
5866	FASTENAL COMPANY	0000		INV	05/02/2024	CALEM48475				
	ACCOUNT DETAIL					LINE AMOUNT				
	1				5100-885-0000-00000-520100	Supplies	69.32			
										69.32
5866	FASTENAL COMPANY	0000		INV	05/02/2024	CALEM47798				
	ACCOUNT DETAIL					LINE AMOUNT				
	1				5100-885-0000-00000-520100	Supplies	106.18			
										106.18
5866	FASTENAL COMPANY	0000		INV	05/02/2024	CALEM47784				
	ACCOUNT DETAIL					LINE AMOUNT				
	1				5100-885-0000-00000-520100	Supplies	35.39			
										35.39
5866	FASTENAL COMPANY	0000	707	INV	05/02/2024	CALEM48474				
	ACCOUNT DETAIL					LINE AMOUNT				
	1				5100-885-0000-00000-520100	Supplies	1,990.56			
										1,990.56
										CHECK TOTAL
										2,007.27

ACCOUNTS PAYABLE EDIT

Detail Invoice List

CHECK RUN: MJ050224 05/02/2024
 DUE DATE: 05/02/2024

CASH ACCOUNT: 9999-000-0000-00000-100100						A/P Cash			
VENDOR	REMIT	PO	TYPE	DUE DATE	INVOICE	AMOUNT	VOUCHER	CHECK	
5758	MARK FERNANDES	0000	101	INV	05/02/2024	67			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	1000-825-0000-00000-530100		Prof Cont		2,300.00			
								2,300.00	
								2,300.00	
719	FRESNO CITY COLLEGE	0001		INV	05/02/2024	18109652			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	1000-830-0000-00000-510150		Training		178.00			
								178.00	
719	FRESNO CITY COLLEGE	0001		INV	05/02/2024	18123290			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	1000-830-0000-00000-510150		Training		75.00			
								75.00	
								253.00	
7638	FRUIT GROWERS LABORAT	0000		INV	05/02/2024	442283A			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	5100-885-0000-00000-530100		Prof Cont		56.00			
								56.00	
7638	FRUIT GROWERS LABORAT	0000		INV	05/02/2024	442280A			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	5100-885-0000-00000-530100		Prof Cont		56.00			
								56.00	
7638	FRUIT GROWERS LABORAT	0000		INV	05/02/2024	442539A			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	5100-885-0000-00000-530100		Prof Cont		56.00			
								56.00	
7638	FRUIT GROWERS LABORAT	0000		INV	05/02/2024	442018A			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	5100-885-0000-00000-530100		Prof Cont		56.00			
								56.00	
7638	FRUIT GROWERS LABORAT	0000		INV	05/02/2024	442023A			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	5100-885-0000-00000-530100		Prof Cont		56.00			
								56.00	

ACCOUNTS PAYABLE EDIT

Detail Invoice List

CHECK RUN: MJ050224 05/02/2024
 DUE DATE: 05/02/2024

CASH ACCOUNT: 9999-000-0000-00000-100100				A/P Cash					
VENDOR		REMIT	PO	TYPE	DUE DATE	INVOICE	AMOUNT	VOUCHER	CHECK
7638	FRUIT GROWERS LABORAT	0000		INV	05/02/2024	442537A			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	5100-885-0000-00000-530100			Prof Cont		56.00		
							56.00		
7638	FRUIT GROWERS LABORAT	0000		INV	05/02/2024	441805A			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	5100-885-0000-00000-530100			Prof Cont		56.00		
							56.00		
							CHECK TOTAL		392.00
7412	GABRIELLE AGUILAR	0000		INV	05/02/2024	04292024			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	1000-855-0000-00000-530100			Prof Cont		305.00		
							305.00		
							CHECK TOTAL		305.00
68	GARY V. BURROWS, INC.	0000		INV	05/02/2024	150508			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	5000-870-0000-00000-520100			Supplies		59.07		
							59.07		
							CHECK TOTAL		59.07
7383	GISELLE ALANA CURIEL	0000		INV	05/02/2024	04292024			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	1000-855-0000-00000-530100			Prof Cont		108.50		
							108.50		
							CHECK TOTAL		108.50
7493	GOLDEN BELL PRODUCTS	0001	634	INV	05/02/2024	18726			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	5100-885-0000-00000-520100			Supplies		3,256.63		
							3,256.63		
							CHECK TOTAL		3,256.63
5814	CITY OF HANFORD	0000	96	INV	05/02/2024	1610			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	1000-830-0000-00000-530100			Prof Cont		18,047.63		
							18,047.63		
							CHECK TOTAL		18,047.63

ACCOUNTS PAYABLE EDIT

Detail Invoice List

CHECK RUN: MJ050224 05/02/2024
 DUE DATE: 05/02/2024

CASH ACCOUNT: 9999-000-0000-00000-100100						A/P Cash			
VENDOR		REMIT	PO	TYPE	DUE DATE	INVOICE	AMOUNT	VOUCHER	CHECK
5814	CITY OF HANFORD	0000	147	INV	05/02/2024	1610.			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	1000-835-0000-00000-530100		Prof Cont			13,535.72		
									13,535.72
5814	CITY OF HANFORD	0000	141	INV	05/02/2024	1610..			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	5000-870-0000-00000-530100		Prof Cont			4,511.90		
	2	5100-885-0000-00000-530100		Prof Cont			4,511.90		
	3	5200-880-0000-00000-530100		Prof Cont			4,511.90		
									13,535.70
									45,119.05
6405	EINERSON'S PREPRESS	0000		INV	05/02/2024	16822			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	1000-805-0000-00000-520100		Supplies			141.68		
	2	1000-840-0000-00000-520100		Supplies			141.68		
	3	1000-820-0000-00000-520100		Supplies			141.68		
	4	1000-845-0000-00000-520100		Supplies			141.68		
									566.72
									566.72
5546	INFOSEND	0000	710	INV	05/02/2024	260323			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	5000-870-0000-00000-510160		Print Pub			2,505.19		
									2,505.19
5546	INFOSEND	0000	702	INV	05/02/2024	260322			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	5200-880-0000-00000-510160		Print Pub			727.32		
									727.32
									3,232.51
3091	JAM SERVICES, INC	0000		INV	05/02/2024	178138			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	1000-850-0000-00000-520100		Supplies			246.68		
									246.68
									246.68

ACCOUNTS PAYABLE EDIT

Detail Invoice List

CHECK RUN: MJ050224 05/02/2024
 DUE DATE: 05/02/2024

CASH ACCOUNT: 9999-000-0000-00000-100100						A/P Cash				
VENDOR	REMIT	PO	TYPE	DUE DATE	INVOICE	AMOUNT	VOUCHER	CHECK		
5935	JOE JIMMEYE	0000	INV	05/02/2024	04292024					
	ACCOUNT DETAIL					LINE AMOUNT				
	1	1000-855-0000-00000-530100		Prof Cont		350.00				
									350.00	
									350.00	
3088	JONES TOWING, INC.	0000	691	INV	05/02/2024	81368				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	1000-830-0000-00000-530100		Prof Cont		625.00				
									625.00	
									625.00	
242	JORGENSEN COMPANY	0000		INV	05/02/2024	6126439				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	5100-885-0000-00000-530100		Prof Cont		169.79				
									169.79	
									169.79	
2782	JOSALYNN VALDEZ	0000		INV	05/02/2024	04292024				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	1000-860-0000-00000-510150		Training		3,000.00				
									3,000.00	
									3,000.00	
6788	KART	0000		INV	05/02/2024	12312023				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	7102-900-0000-00000-590200		Cust Dis		40.00				
	2	7102-900-0000-00000-590200		Cust Dis		20.00				
	3	7102-900-0000-00000-590200		Cust Dis		50.00				
									110.00	
6788	KART	0000		INV	05/02/2024	01312024				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	7102-900-0000-00000-590200		Cust Dis		120.00				
	2	7102-900-0000-00000-590200		Cust Dis		10.00				
	3	7102-900-0000-00000-590200		Cust Dis		28.00				
									158.00	

ACCOUNTS PAYABLE EDIT

Detail Invoice List

CHECK RUN: MJ050224 05/02/2024
 DUE DATE: 05/02/2024

CASH ACCOUNT: 9999-000-0000-00000-100100						A/P Cash			
VENDOR		REMIT	PO	TYPE	DUE DATE	INVOICE	AMOUNT	VOUCHER	CHECK
6788	KART	0000		INV	05/02/2024	02282024			
ACCOUNT DETAIL						LINE AMOUNT			
	1	7102-900-0000-00000-590200			Cust Dis		80.00		
	2	7102-900-0000-00000-590200			Cust Dis		30.00		
							110.00		
						CHECK TOTAL	378.00		
1250	KINGS CO. SHERIFF'S O	0000	134	INV	05/02/2024	QTR. 3			
ACCOUNT DETAIL						LINE AMOUNT			
	1	1000-830-0000-00000-530100			Prof Cont		46,505.81		
							46,505.81		
						CHECK TOTAL	46,505.81		
2849	KINGS COUNTY ECONOMIC	0000	137	INV	05/02/2024	2930			
ACCOUNT DETAIL						LINE AMOUNT			
	1	1000-805-0000-00000-530100			Prof Cont		1,666.67		
							1,666.67		
						CHECK TOTAL	1,666.67		
7610	KINNESHA L. BAKERJONE	0000		INV	05/02/2024	04292024			
ACCOUNT DETAIL						LINE AMOUNT			
	1	1000-855-0000-00000-530100			Prof Cont		139.50		
							139.50		
						CHECK TOTAL	139.50		
40	LARRY AVILA	0000		INV	05/02/2024	04292024			
ACCOUNT DETAIL						LINE AMOUNT			
	1	1000-855-0000-00000-530100			Prof Cont		300.00		
							300.00		
						CHECK TOTAL	300.00		
286	LAWRENCE TRACTOR CO.,	0000	719	INV	05/02/2024	661851			
ACCOUNT DETAIL						LINE AMOUNT			
	1	1000-850-0000-00000-520100			Supplies		1,128.11		
							1,128.11		
						CHECK TOTAL	1,128.11		

ACCOUNTS PAYABLE EDIT

Detail Invoice List

CHECK RUN: MJ050224 05/02/2024
 DUE DATE: 05/02/2024

CASH ACCOUNT: 9999-000-0000-00000-100100						A/P Cash				
VENDOR		REMIT	PO	TYPE	DUE DATE	INVOICE	AMOUNT	VOUCHER	CHECK	
306	LEMOORE HIGH SCHOOL	0000		INV	05/02/2024	04242024				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	7100-900-0000-00000-590110			Imp Ct Out		17,597.62			
										17,597.62
306	LEMOORE HIGH SCHOOL	0000		INV	05/02/2024	04222024				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	7100-900-0000-00000-590110			Imp Ct Out		10,721.55			
										10,721.55
306	LEMOORE HIGH SCHOOL	0000	28	INV	05/02/2024	318249				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	6000-890-0000-00000-520130			Sub CNG		1,520.49			
										1,520.49
306	LEMOORE HIGH SCHOOL	0000	28	INV	05/02/2024	318365				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	6000-890-0000-00000-520130			Sub CNG		2,164.36			
										2,164.36
306	LEMOORE HIGH SCHOOL	0000	28	INV	05/02/2024	318464				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	6000-890-0000-00000-520130			Sub CNG		1,263.13			
										1,263.13
										CHECK TOTAL
										33,267.15
301	LEMOORE UNION SCHOOL	0001		INV	05/02/2024	04222024				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	7100-900-0000-00000-590110			Imp Ct Out		26,396.42			
										26,396.42
301	LEMOORE UNION SCHOOL	0001		INV	05/02/2024	04222024				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	7100-900-0000-00000-590110			Imp Ct Out		16,082.33			
										16,082.33
										CHECK TOTAL
										42,478.75
7609	LEONEL MARTINEZ JR	0000		INV	05/02/2024	04292024				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	1000-855-0000-00000-530100			Prof Cont		150.00			
										150.00
										CHECK TOTAL
										150.00

ACCOUNTS PAYABLE EDIT

Detail Invoice List

CHECK RUN: MJ050224 05/02/2024
 DUE DATE: 05/02/2024

CASH ACCOUNT: 9999-000-0000-00000-100100						A/P Cash				
VENDOR		REMIT	PO	TYPE	DUE DATE	INVOICE	AMOUNT	VOUCHER	CHECK	
6156	LEPRINO FOODS CO.	0000	382	INV	05/02/2024	2024Q1				
	ACCOUNT DETAIL					LINE AMOUNT				
	1				5100-885-0000-00000-530100	Prof Cont	63,974.74			
										63,974.74
										63,974.74
										CHECK TOTAL
7426	MACEY MARTIN	0000		INV	05/02/2024	04292024				
	ACCOUNT DETAIL					LINE AMOUNT				
	1				1000-855-0000-00000-530100	Prof Cont	124.00			
										124.00
										124.00
										CHECK TOTAL
7175	MATHESON TRI-GAS INC.	0000	711	INV	05/02/2024	0029418287				
	ACCOUNT DETAIL					LINE AMOUNT				
	1				5000-870-0000-00000-530100	Prof Cont	600.00			
										600.00
										600.00
										CHECK TOTAL
7463	MAYA SOLEIL RUIZ	0001		INV	05/02/2024	04292024				
	ACCOUNT DETAIL					LINE AMOUNT				
	1				1000-855-0000-00000-530100	Prof Cont	77.50			
										77.50
										77.50
										CHECK TOTAL
1889	NORTHERN SAFETY CO. I	0001		INV	05/02/2024	906139352				
	ACCOUNT DETAIL					LINE AMOUNT				
	1				5200-880-0000-00000-520100	Supplies	151.36			
										151.36
										151.36
										CHECK TOTAL
7317	ODP BUSINESS SOLUTION	0000		INV	01/25/2024	347885962001				
	ACCOUNT DETAIL					LINE AMOUNT				
	1				1000-815-0000-00000-520100	Supplies	116.67			
	2				5000-875-0000-00000-520100	Supplies	38.89			
										155.56
										155.56
										CHECK TOTAL
7317	ODP BUSINESS SOLUTION	0000		INV	05/02/2024	362717029001				
	ACCOUNT DETAIL					LINE AMOUNT				
	1				1000-805-0000-00000-520100	Supplies	36.94			
										36.94
										36.94
										CHECK TOTAL

ACCOUNTS PAYABLE EDIT

Detail Invoice List

CHECK RUN: MJ050224 05/02/2024
 DUE DATE: 05/02/2024

CASH ACCOUNT: 9999-000-0000-00000-100100						A/P Cash			
VENDOR	REMIT	PO	TYPE	DUE DATE	INVOICE	AMOUNT	VOUCHER	CHECK	
						36.94			
					CHECK TOTAL	192.50			
5941	OMEGA INDUSTRIAL SUPP	0000	718	INV	05/02/2024	#154864			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	1000-850-0000-00000-520100		Supplies		525.53			
						525.53			
					CHECK TOTAL	525.53			
363	PG&E	0000		INV	05/02/2024	9736454059-7 APR24			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	5100-885-0000-00000-510130		Utilties		24.64			
						24.64			
					CHECK TOTAL	24.64			
363	PG&E	0000		INV	05/02/2024	2343346692-9 APR24			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	1000-850-0000-00000-510130		Utilties		525.43			
						525.43			
					CHECK TOTAL	525.43			
363	PG&E	0000		INV	05/02/2024	8399228188-7 APR24			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	1000-850-0000-00000-510130		Utilties		117.51			
						117.51			
					CHECK TOTAL	117.51			
363	PG&E	0000		INV	05/02/2024	0475158959-1 APR24			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	1000-850-0000-00000-510130		Utilties		2,387.11			
						2,387.11			
					CHECK TOTAL	2,387.11			
363	PG&E	0000		INV	05/02/2024	4102932393-2 APR24			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	5000-870-0000-00000-510130		Utilties		4,693.57			
						4,693.57			
					CHECK TOTAL	4,693.57			

ACCOUNTS PAYABLE EDIT

Detail Invoice List

CHECK RUN: MJ050224 05/02/2024
 DUE DATE: 05/02/2024

CASH ACCOUNT: 9999-000-0000-00000-100100						A/P Cash			
VENDOR	REMIT	PO	TYPE	DUE DATE	INVOICE	AMOUNT	VOUCHER	CHECK	
363 PG&E	0000		INV	05/02/2024	3606272278-4 APR24				
ACCOUNT DETAIL						LINE AMOUNT			
1 1000-850-0000-00000-510130				Utilities		11,505.72			
						CHECK TOTAL			11,505.72
363 PG&E	0000		INV	05/02/2024	0907889927-6 APR24				
ACCOUNT DETAIL						LINE AMOUNT			
1 5000-870-0000-00000-510130				Utilities		34,172.88			
						CHECK TOTAL			34,172.88
876 QUAD KNOFF, INC.	0001	160	INV	05/02/2024	123034				
ACCOUNT DETAIL						LINE AMOUNT			
1 1000-820-0000-00000-530100				Prof Cont		4,947.50			
									4,947.50
876 QUAD KNOFF, INC.	0001	705	INV	05/02/2024	122960				
ACCOUNT DETAIL						LINE AMOUNT			
1 5100-885-0000-23012-530100				Prof Cont		4,642.50			
						CHECK TOTAL			9,590.00
7283 VICTORIA RUIZ	0000		INV	05/02/2024	04292024				
ACCOUNT DETAIL						LINE AMOUNT			
1 1000-855-0000-00000-530100				Prof Cont		125.00			
						CHECK TOTAL			125.00
423 SOCALGAS	0000		INV	05/02/2024	04331609000 APR24				
ACCOUNT DETAIL						LINE AMOUNT			
1 1000-825-0000-00000-510130				Utilities		107.98			
						CHECK TOTAL			107.98
423 SOCALGAS	0000		INV	05/02/2024	18821608009 APR24				
ACCOUNT DETAIL						LINE AMOUNT			
1 1000-825-0000-00000-510130				Utilities		59.34			

ACCOUNTS PAYABLE EDIT

Detail Invoice List

CHECK RUN: MJ050224 05/02/2024
 DUE DATE: 05/02/2024

CASH ACCOUNT: 9999-000-0000-00000-100100				A/P Cash				
VENDOR	REMIT	PO	TYPE	DUE DATE	INVOICE	AMOUNT	VOUCHER	CHECK
						59.34		
					CHECK TOTAL	59.34		
423	SOCALGAS	0000	INV	05/02/2024	03491607002 APR24			
	ACCOUNT DETAIL				LINE AMOUNT			
	1	1000-825-0000-00000-510130		Utilties		97.00		
						97.00		
					CHECK TOTAL	97.00		
423	SOCALGAS	0000	INV	05/02/2024	14251743192 APR24			
	ACCOUNT DETAIL				LINE AMOUNT			
	1	1000-825-0000-00000-510130		Utilties		521.47		
						521.47		
					CHECK TOTAL	521.47		
423	SOCALGAS	0000	INV	05/02/2024	14416046861 APR24			
	ACCOUNT DETAIL				LINE AMOUNT			
	1	1000-825-0000-00000-510130		Utilties		119.72		
						119.72		
					CHECK TOTAL	119.72		
423	SOCALGAS	0000	INV	05/02/2024	16931611004 APR24			
	ACCOUNT DETAIL				LINE AMOUNT			
	1	1000-825-0000-00000-510130		Utilties		24.21		
						24.21		
					CHECK TOTAL	24.21		
423	SOCALGAS	0000	INV	05/02/2024	18191607227 APR24			
	ACCOUNT DETAIL				LINE AMOUNT			
	1	1000-825-0000-00000-510130		Utilties		145.65		
						145.65		
					CHECK TOTAL	145.65		

ACCOUNTS PAYABLE EDIT

Detail Invoice List

CHECK RUN: MJ050224 05/02/2024
 DUE DATE: 05/02/2024

CASH ACCOUNT: 9999-000-0000-00000-100100						A/P Cash			
VENDOR	REMIT	PO	TYPE	DUE DATE	INVOICE	AMOUNT	VOUCHER	CHECK	
6266 SPARKLETTS	0000		INV	05/02/2024	14853050040324				
ACCOUNT DETAIL						LINE AMOUNT			
1	1000-805-0000-00000-510130			Utilties		34.33			
2	1000-815-0000-00000-510130			Utilties		30.47			
3	1000-820-0000-00000-510130			Utilties		34.33			
4	1000-840-0000-00000-510130			Utilties		34.33			
5	1000-845-0000-00000-510130			Utilties		34.33			
6	5000-870-0000-00000-510130			Utilties		145.97			
7	5000-875-0000-00000-510130			Utilties		30.47			
							344.23		
CHECK TOTAL							344.23		
5352 STERICYCLE, INC.	0000		INV	05/02/2024	8006669276				
ACCOUNT DETAIL						LINE AMOUNT			
1	1000-805-0000-00000-530100			Prof Cont		9.00			
2	1000-820-0000-00000-530100			Prof Cont		9.00			
3	1000-825-0000-00000-530100			Prof Cont		3.00			
4	1000-840-0000-00000-530100			Prof Cont		9.00			
5	1000-845-0000-00000-530100			Prof Cont		9.00			
6	1000-855-0000-00000-530100			Prof Cont		3.00			
7	5000-870-0000-00000-530100			Prof Cont		6.00			
8	5200-880-0000-00000-530100			Prof Cont		6.00			
9	5100-885-0000-00000-530100			Prof Cont		6.00			
							60.00		
CHECK TOTAL							60.00		
5352 STERICYCLE, INC.	0001		INV	05/02/2024	80006769877				
ACCOUNT DETAIL						LINE AMOUNT			
1	1000-805-0000-00000-530100			Prof Cont		9.63			
2	1000-820-0000-00000-530100			Prof Cont		9.63			
3	1000-825-0000-00000-530100			Prof Cont		3.21			
4	1000-840-0000-00000-530100			Prof Cont		9.63			
5	1000-845-0000-00000-530100			Prof Cont		9.63			
6	1000-855-0000-00000-530100			Prof Cont		3.21			
7	5000-870-0000-00000-530100			Prof Cont		6.42			
8	5200-880-0000-00000-530100			Prof Cont		6.43			
9	5100-885-0000-00000-530100			Prof Cont		6.43			
							64.22		

ACCOUNTS PAYABLE EDIT

Detail Invoice List

CHECK RUN: MJ050224 05/02/2024
 DUE DATE: 05/02/2024

CASH ACCOUNT: 9999-000-0000-00000-100100						A/P Cash			
VENDOR	REMIT	PO	TYPE	DUE DATE	INVOICE	AMOUNT	VOUCHER	CHECK	
					CHECK TOTAL	64.22			
2799	TELSTAR INSTRUMENTS,	0000	706	INV	05/02/2024	120896			
	ACCOUNT DETAIL					LINE AMOUNT			
	1 5100-885-0000-00000-530100			Prof Cont		778.00			
								778.00	
2799	TELSTAR INSTRUMENTS,	0000	712	INV	05/02/2024	119321			
	ACCOUNT DETAIL					LINE AMOUNT			
	1 5000-870-0000-00000-530100			Prof Cont		1,692.00			
								1,692.00	
					CHECK TOTAL	2,470.00			
6058	UNIVAR	0000	98	INV	05/02/2024	52041698			
	ACCOUNT DETAIL					LINE AMOUNT			
	1 5000-870-0000-00000-520110			Sup Chl		1,808.24			
								1,808.24	
6058	UNIVAR	0000	98	INV	05/02/2024	52027895			
	ACCOUNT DETAIL					LINE AMOUNT			
	1 5000-870-0000-00000-520110			Sup Chl		2,903.94			
								2,903.94	
6058	UNIVAR	0000	98	INV	05/02/2024	52041699			
	ACCOUNT DETAIL					LINE AMOUNT			
	1 5000-870-0000-00000-520110			Sup Chl		3,484.73			
								3,484.73	
6058	UNIVAR	0000	98	INV	05/02/2024	52041697			
	ACCOUNT DETAIL					LINE AMOUNT			
	1 5000-870-0000-00000-520110			Sup Chl		1,742.36			
								1,742.36	
					CHECK TOTAL	9,939.27			
5818	UNWIRED BROADBAND, IN	0000		INV	05/02/2024	INV01970165			
	ACCOUNT DETAIL					LINE AMOUNT			
	1 1000-865-0000-00000-530100			Prof Cont		98.55			
								98.55	
5818	UNWIRED BROADBAND, IN	0000		INV	05/02/2024	INV01973361			
	ACCOUNT DETAIL					LINE AMOUNT			
	1 1000-865-0000-00000-530100			Prof Cont		210.00			
								210.00	

ACCOUNTS PAYABLE EDIT

Detail Invoice List

CHECK RUN: MJ050224 05/02/2024
 DUE DATE: 05/02/2024

CASH ACCOUNT: 9999-000-0000-00000-100100						A/P Cash			
VENDOR	REMIT	PO	TYPE	DUE DATE	INVOICE	AMOUNT	VOUCHER	CHECK	
					CHECK TOTAL	308.55			
2109	VALERIE CAZARES	0000	INV	05/02/2024	04292024				
	ACCOUNT DETAIL				LINE AMOUNT				
	1 1000-830-0000-00000-510150			Training	28.00				
					CHECK TOTAL	28.00			
116	VERIZON WIRELESS	0000	INV	05/02/2024	9961841477				
	ACCOUNT DETAIL				LINE AMOUNT				
	1 1000-830-0000-00000-510130			Utilities	2,378.64				
					CHECK TOTAL	2,378.64			
116	VERIZON WIRELESS	0000	INV	05/02/2024	9960857881				
	ACCOUNT DETAIL				LINE AMOUNT				
	1 5000-870-0000-00000-510130			Utilities	50.01				
					CHECK TOTAL	50.01			
474	WEST VALLEY SUPPLY	0000	INV	05/02/2024	114480				
	ACCOUNT DETAIL				LINE AMOUNT				
	1 1000-825-0000-00000-520100			Supplies	50.68				
						50.68			
474	WEST VALLEY SUPPLY	0000	INV	05/02/2024	114784				
	ACCOUNT DETAIL				LINE AMOUNT				
	1 1000-825-0000-00000-520100			Supplies	393.63				
						393.63			
474	WEST VALLEY SUPPLY	0000	INV	05/02/2024	114785				
	ACCOUNT DETAIL				LINE AMOUNT				
	1 1000-825-0000-00000-520100			Supplies	393.63				
						393.63			
474	WEST VALLEY SUPPLY	0000	INV	05/02/2024	114806				
	ACCOUNT DETAIL				LINE AMOUNT				
	1 1000-825-0000-00000-520100			Supplies	114.55				
						114.55			

ACCOUNTS PAYABLE EDIT

Detail Invoice List

CHECK RUN: MJ050224 05/02/2024
 DUE DATE: 05/02/2024

CASH ACCOUNT: 9999-000-0000-00000-100100						A/P Cash			
VENDOR	REMIT	PO	TYPE	DUE DATE	INVOICE	AMOUNT	VOUCHER	CHECK	
474 WEST VALLEY SUPPLY	0000		INV	05/02/2024	114456				
ACCOUNT DETAIL					LINE AMOUNT				
1 5100-885-0000-00000-520100			Supplies			124.84			
						124.84			
						CHECK TOTAL		1,077.33	
7238 WESTSCAPES	0000	627	INV	05/02/2024	21114				
ACCOUNT DETAIL					LINE AMOUNT				
1 2402-900-0000-00000-530100			Prof Cont			13,424.08			
						13,424.08			
7238 WESTSCAPES	0000	721	INV	05/02/2024	21115				
ACCOUNT DETAIL					LINE AMOUNT				
1 2402-900-0000-00000-530100			Prof Cont			663.55			
						663.55			
						CHECK TOTAL		14,087.63	
121 INVOICES						391,527.99		391,527.99	
								-17,947,260.57	
						WARRANT TOTAL			
						CASH ACCOUNT BALANCE			

ACCOUNTS PAYABLE EDIT

Check Run Summary

CHECK RUN: MJ050224 05/02/2024
 DUE DATE: 05/02/2024

FUND	ACCOUNT	AMOUNT	AVLB BUDGET
1000	General 1000-805-0000-00000-510130	Utilities 253.38	260.80
1000	General 1000-805-0000-00000-520100	Supplies 178.62	2,972.32
1000	General 1000-805-0000-00000-530100	Professional Contract 1,685.30	-11,870.88
1000	General 1000-815-0000-00000-510130	Utilities 130.59	476.57
1000	General 1000-815-0000-00000-520100	Supplies 116.67	206.01
1000	General 1000-820-0000-00000-510130	Utilities 34.33	104.67
1000	General 1000-820-0000-00000-520100	Supplies 141.68	1,058.32
1000	General 1000-820-0000-00000-530100	Professional Contract 4,966.13	94,165.40
1000	General 1000-825-0000-00000-510130	Utilities 1,340.76	81,850.87
1000	General 1000-825-0000-00000-520100	Supplies 952.49	20,028.27
1000	General 1000-825-0000-00000-530100	Professional Contract 4,724.60	32,839.41
1000	General 1000-825-0000-00000-530120	Rentals and Leases 18,835.50	212.76
1000	General 1000-830-0000-00000-510130	Utilities 2,378.64	25,869.91
1000	General 1000-830-0000-00000-510150	Training 938.00	42,243.23
1000	General 1000-830-0000-00000-530100	Professional Contract 65,503.44	3,439.28
1000	General 1000-835-0000-00000-510150	Training 2,000.00	410.00
1000	General 1000-835-0000-00000-530100	Professional Contract 13,535.72	-1,816.47
1000	General 1000-840-0000-00000-510130	Utilities 274.81	1,359.54
1000	General 1000-840-0000-00000-520100	Supplies 141.68	1,981.66
1000	General 1000-840-0000-00000-530100	Professional Contract 18.63	32,716.57
1000	General 1000-845-0000-00000-510130	Utilities 269.54	-18.28
1000	General 1000-845-0000-00000-520100	Supplies 141.68	3,210.41
1000	General 1000-845-0000-00000-530100	Professional Contract 18.63	15,469.58
1000	General 1000-850-0000-00000-510130	Utilities 17,910.58	-2,353.94
1000	General 1000-850-0000-00000-520100	Supplies 1,900.32	31,130.88
1000	General 1000-855-0000-00000-510130	Utilities 95.09	379.46
1000	General 1000-855-0000-00000-530100	Professional Contract 3,084.71	15,597.86
1000	General 1000-860-0000-00000-510130	Utilities 45.03	310.32
1000	General 1000-860-0000-00000-510150	Training 3,000.00	17,500.00
1000	General 1000-860-0000-00000-530100	Professional Contract 92.00	294.36
1000	General 1000-865-0000-00000-510130	Utilities 4,471.75	29,287.92
1000	General 1000-865-0000-00000-530100	Professional Contract 308.55	672.43

CASH ACCOUNT 9999-000-0000-00000-100100 BALANCE -17,947,260.57 FUND TOTAL 149,488.85

2402 PFMD Zone 2 2402-900-0000-00000-530100 Professional Contract 14,087.63 6,413.94

CASH ACCOUNT 9999-000-0000-00000-100100 BALANCE -17,947,260.57 FUND TOTAL 14,087.63

ACCOUNTS PAYABLE EDIT

5000	Water	5000-870-0000-00000-510130	Utilities	39,062.43	619,850.71
5000	Water	5000-870-0000-00000-510160	Printing & Publicatio	2,505.19	15,390.70
5000	Water	5000-870-0000-00000-520100	Supplies	440.83	165,448.81
5000	Water	5000-870-0000-00000-520110	Supplies - Chlorine	9,939.27	97,266.91
5000	Water	5000-870-0000-00000-530100	Professional Contract	9,253.09	762,989.09
5000	Water	5000-875-0000-00000-510130	Utilities	125.56	590.23
5000	Water	5000-875-0000-00000-520100	Supplies	38.89	414.55
5000	Water	5000-875-0000-00000-530100	Professional Contract	116.20	-28,154.44
CASH ACCOUNT 9999-000-0000-00000-100100			FUND TOTAL	61,481.46	
BALANCE -17,947,260.57					
5100	Sewer	5100-885-0000-00000-510130	Utilities	746.95	-6,169.93
5100	Sewer	5100-885-0000-00000-520100	Supplies	5,582.92	396,280.71
5100	Sewer	5100-885-0000-00000-530100	Professional Contract	69,838.86	184,262.92
5100	Sewer	5100-885-0000-23012-530100	Professional Contract	4,642.50	358,470.97
CASH ACCOUNT 9999-000-0000-00000-100100			FUND TOTAL	80,811.23	
BALANCE -17,947,260.57					
5200	Refuse	5200-880-0000-00000-510130	Utilities	545.39	3,442.02
5200	Refuse	5200-880-0000-00000-510160	Printing & Publicatio	727.32	8,083.56
5200	Refuse	5200-880-0000-00000-520100	Supplies	151.36	24,824.17
5200	Refuse	5200-880-0000-00000-530100	Professional Contract	8,261.93	122,221.82
CASH ACCOUNT 9999-000-0000-00000-100100			FUND TOTAL	9,686.00	
BALANCE -17,947,260.57					
6000	Fleet Maintenance	6000-890-0000-00000-510130	Utilities	90.06	1,160.63
6000	Fleet Maintenance	6000-890-0000-00000-520100	Supplies	-241.14	87,522.78
6000	Fleet Maintenance	6000-890-0000-00000-520130	Supplies - CNG	4,947.98	4,575.06
CASH ACCOUNT 9999-000-0000-00000-100100			FUND TOTAL	4,796.90	
BALANCE -17,947,260.57					
7100	School and County Imp	7100-900-0000-00000-590110	Impact Fees - County	70,797.92	-212,937.00
CASH ACCOUNT 9999-000-0000-00000-100100			FUND TOTAL	70,797.92	
BALANCE -17,947,260.57					
7102	Kings Area Rural Tran	7102-900-0000-00000-590200	Custodial Disbursemen	378.00	-2,036.00
CASH ACCOUNT 9999-000-0000-00000-100100			FUND TOTAL	378.00	
BALANCE -17,947,260.57					

ACCOUNTS PAYABLE EDIT

WARRANT SUMMARY TOTAL	391,527.99
GRAND TOTAL	391,527.99

ACCOUNTS PAYABLE EDIT

Detail Invoice List

Warrant Register 05/09/24

CHECK RUN: MJ050924 05/09/2024
 DUE DATE: 05/09/2024

CASH ACCOUNT: 9999-000-0000-00000-100100						A/P Cash			
VENDOR	REMIT	PO	TYPE	DUE DATE	INVOICE	AMOUNT	VOUCHER	CHECK	
7384	ALEXANDER AVILA	0000	INV	05/09/2024	05062024				
	ACCOUNT DETAIL				LINE AMOUNT				
	1	1000-855-0000-00000-530100		Prof Cont		25.00			
								25.00	
								25.00	
7573	AMERICAN LEGAL PUBLIS	0000	732	INV	05/09/2024	33219			
	ACCOUNT DETAIL				LINE AMOUNT				
	1	1000-810-0000-00000-510160		Print Pub		4,635.30			
								4,635.30	
								4,635.30	
5516	AT&T	0000	INV	05/09/2024	000021577851				
	ACCOUNT DETAIL				LINE AMOUNT				
	1	4003-830-0000-22005-530100		Prof Cont		30.76			
								30.76	
								30.76	
5516	AT&T	0000	INV	05/09/2024	000021605555				
	ACCOUNT DETAIL				LINE AMOUNT				
	1	1000-865-0000-00000-510130		Utilties		113.05			
								113.05	
								113.05	
7381	BRAYDEN DOLAN	0000	INV	05/09/2024	05062024				
	ACCOUNT DETAIL				LINE AMOUNT				
	1	1000-855-0000-00000-530100		Prof Cont		225.00			
								225.00	
								225.00	
7058	COMCAST	0000	INV	05/09/2024	8155500370478534 APR				
	ACCOUNT DETAIL				LINE AMOUNT				
	1	5000-870-0000-00000-510130		Utilties		199.30			
								199.30	
								199.30	

ACCOUNTS PAYABLE EDIT

Detail Invoice List

CHECK RUN: MJ050924 05/09/2024
 DUE DATE: 05/09/2024

CASH ACCOUNT: 9999-000-0000-00000-100100						A/P Cash			
VENDOR	REMIT	PO	TYPE	DUE DATE	INVOICE	AMOUNT	VOUCHER	CHECK	
7058	COMCAST	0000	INV	05/09/2024	8155500370011046				
	ACCOUNT DETAIL				LINE AMOUNT				
	1	1000-835-0000-00000-510130		Utilties		53.87			
					CHECK TOTAL	53.87			
7409	DAMIEN NICHOLSON	0000	INV	05/09/2024	05062024				
	ACCOUNT DETAIL				LINE AMOUNT				
	1	1000-855-0000-00000-530100		Prof Cont		150.00			
					CHECK TOTAL	150.00			
7319	DIGITECH INTERGRATION	0000	INV	05/09/2024	7751				
	ACCOUNT DETAIL				LINE AMOUNT				
	1	1000-865-0000-00000-530100		Prof Cont		190.00			
					CHECK TOTAL	190.00			
7311	ENTERPRISE FM TRUST	0000	553	INV	05/09/2024	FBN5034112			
	ACCOUNT DETAIL				LINE AMOUNT				
	1	1000-840-0000-00000-530120		Rent & Lea		1,758.46			
								1,758.46	
7311	ENTERPRISE FM TRUST	0000	644	INV	05/09/2024	FBN5034112.			
	ACCOUNT DETAIL				LINE AMOUNT				
	1	6000-890-0000-00000-530120		Rent & Lea		927.14			
								927.14	
7311	ENTERPRISE FM TRUST	0000	554	INV	05/09/2024	FBN5034112..			
	ACCOUNT DETAIL				LINE AMOUNT				
	1	5100-885-0000-00000-530120		Rent & Lea		1,750.00			
								1,750.00	
7311	ENTERPRISE FM TRUST	0000	115	INV	05/09/2024	FBN5034112...			
	ACCOUNT DETAIL				LINE AMOUNT				
	1	1000-830-0000-00000-530120		Rent & Lea		8,735.41			
					CHECK TOTAL	8,735.41			
					CHECK TOTAL	13,171.01			

ACCOUNTS PAYABLE EDIT

Detail Invoice List

CHECK RUN: MJ050924 05/09/2024
 DUE DATE: 05/09/2024

CASH ACCOUNT: 9999-000-0000-00000-100100						A/P Cash			
VENDOR	REMIT	PO	TYPE	DUE DATE	INVOICE	AMOUNT	VOUCHER	CHECK	
5866	FASTENAL COMPANY	0000	INV	05/09/2024	CALEM47678				
	ACCOUNT DETAIL				LINE AMOUNT				
	1	6000-890-0000-00000-520100		Supplies		251.06			
								251.06	
5866	FASTENAL COMPANY	0000	INV	05/09/2024	CALEM48655				
	ACCOUNT DETAIL				LINE AMOUNT				
	1	5100-885-0000-00000-520100		Supplies		212.36			
								212.36	
								CHECK TOTAL	
								463.42	
7412	GABRIELLE AGUILAR	0000	INV	05/09/2024	05072024				
	ACCOUNT DETAIL				LINE AMOUNT				
	1	1000-855-0000-00000-530100		Prof Cont		108.50			
								108.50	
								CHECK TOTAL	
								108.50	
68	GARY V. BURROWS, INC.	0000	29	INV	05/09/2024	150993			
	ACCOUNT DETAIL				LINE AMOUNT				
	1	6000-890-0000-00000-520120		Sup Fuel		13,092.57			
								13,092.57	
								CHECK TOTAL	
								13,092.57	
7383	GISELLE ALANA CURIEL	0000		INV	05/09/2024	05062024			
	ACCOUNT DETAIL				LINE AMOUNT				
	1	1000-855-0000-00000-530100		Prof Cont		62.00			
								62.00	
								CHECK TOTAL	
								62.00	
7528	GLOBAL ROAD SEALING,	0000	351	INV	05/09/2024	2137-01R			
	ACCOUNT DETAIL				LINE AMOUNT				
	1	2020-850-0000-23004-560300		CO Const		2,425.00			
								2,425.00	
								CHECK TOTAL	
								2,425.00	
521	GRAINGER	0000		INV	05/09/2024	9102118933			
	ACCOUNT DETAIL				LINE AMOUNT				
	1	5100-885-0000-00000-520100		Supplies		206.44			
								206.44	

ACCOUNTS PAYABLE EDIT

Detail Invoice List

CHECK RUN: MJ050924 05/09/2024
 DUE DATE: 05/09/2024

CASH ACCOUNT: 9999-000-0000-00000-100100						A/P Cash			
VENDOR		REMIT	PO	TYPE	DUE DATE	INVOICE	AMOUNT	VOUCHER	CHECK
521	GRAINGER	0000		INV	05/09/2024	9103291085			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	5100-885-0000-00000-520100			Supplies		32.29		
									32.29
									238.73
7385	ISAAC EVAN ALBARRAN	0000		INV	05/09/2024	05062024			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	1000-855-0000-00000-530100			Prof Cont		175.00		
									175.00
									175.00
5935	JOE JIMMEYE	0000		INV	05/09/2024	05062024			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	1000-855-0000-00000-530100			Prof Cont		225.00		
									225.00
									225.00
7648	KEVIN NORTHCRAFT	0000		INV	05/09/2024	05012024			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	1000-805-0000-00000-530100			Prof Cont		717.57		
									717.57
									717.57
6543	KINGS INDUSTRIAL OCC.	0000		INV	05/09/2024	230348			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	1000-860-0000-00000-530100			Prof Cont		95.00		
									95.00
									95.00
6543	KINGS INDUSTRIAL OCC.	0000		INV	05/09/2024	230064			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	1000-860-0000-00000-530100			Prof Cont		95.00		
									95.00
									190.00
234	KINGS WASTE AND RECYC	0000	30	INV	05/09/2024	04302024 ACCT. #357			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	5200-880-0000-00000-530100			Prof Cont		103,592.90		
									103,592.90

ACCOUNTS PAYABLE EDIT

Detail Invoice List

CHECK RUN: MJ050924 05/09/2024
 DUE DATE: 05/09/2024

CASH ACCOUNT: 9999-000-0000-00000-100100						A/P Cash			
VENDOR	REMIT	PO	TYPE	DUE DATE	INVOICE	AMOUNT	VOUCHER	CHECK	
234	KINGS WASTE AND RECYC	0000	INV	05/09/2024	05012024 ACCT. #357				
	ACCOUNT DETAIL				LINE AMOUNT				
	1	5200-880-0000-00000-530100		Prof Cont		275.00			
						275.00			
					CHECK TOTAL	103,867.90			
7610	KINNESHA L. BAKERJONE	0000	INV	05/09/2024	05062024				
	ACCOUNT DETAIL				LINE AMOUNT				
	1	1000-855-0000-00000-530100		Prof Cont		77.50			
						77.50			
					CHECK TOTAL	77.50			
7180	LAFCO	0000	728	INV	05/09/2024	2023-2024			
	ACCOUNT DETAIL				LINE AMOUNT				
	1	1000-820-0000-00000-530100		Prof Cont		19,025.00			
						19,025.00			
					CHECK TOTAL	19,025.00			
286	LAWRENCE TRACTOR CO.,	0000	INV	05/09/2024	668643				
	ACCOUNT DETAIL				LINE AMOUNT				
	1	5100-885-0000-00000-520100		Supplies		102.92			
						102.92			
					CHECK TOTAL	102.92			
304	LEMOORE HARDWARE	0000	INV	05/09/2024	B458922				
	ACCOUNT DETAIL				LINE AMOUNT				
	1	1000-835-0000-00000-520100		Supplies		76.39			
						76.39			
304	LEMOORE HARDWARE	0000	INV	05/09/2024	B459041				
	ACCOUNT DETAIL				LINE AMOUNT				
	1	1000-825-0000-00000-520100		Supplies		29.52			
						29.52			
304	LEMOORE HARDWARE	0000	INV	05/09/2024	A427589				
	ACCOUNT DETAIL				LINE AMOUNT				
	1	5000-870-0000-00000-520100		Supplies		11.20			
						11.20			

ACCOUNTS PAYABLE EDIT

Detail Invoice List

CHECK RUN: MJ050924 05/09/2024
 DUE DATE: 05/09/2024

CASH ACCOUNT: 9999-000-0000-00000-100100						A/P Cash				
VENDOR		REMIT	PO	TYPE	DUE DATE	INVOICE	AMOUNT	VOUCHER	CHECK	
304	LEMOORE HARDWARE	0000		INV	05/09/2024	B459564				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	5100-885-0000-00000-520100			Supplies		42.59			42.59
304	LEMOORE HARDWARE	0000		INV	05/09/2024	A428466				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	5100-885-0000-00000-520100			Supplies		28.51			28.51
304	LEMOORE HARDWARE	0000		INV	05/09/2024	B460480				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	5100-885-0000-00000-520100			Supplies		79.44			79.44
304	LEMOORE HARDWARE	0000		INV	05/09/2024	A428780				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	1000-825-0000-00000-520100			Supplies		110.63			110.63
304	LEMOORE HARDWARE	0000		INV	05/09/2024	B460908				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	1000-835-0000-00000-520100			Supplies		63.12			63.12
304	LEMOORE HARDWARE	0000		INV	05/09/2024	A429382				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	5100-885-0000-00000-520100			Supplies		12.22			12.22
304	LEMOORE HARDWARE	0000		INV	05/09/2024	A429643				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	1000-825-0000-00000-520100			Supplies		113.08			113.08
304	LEMOORE HARDWARE	0000		INV	05/09/2024	A429713				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	5100-885-0000-00000-520100			Supplies		17.48			17.48
304	LEMOORE HARDWARE	0000		INV	05/09/2024	A429715				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	5100-885-0000-00000-520100			Supplies		41.73			41.73

ACCOUNTS PAYABLE EDIT

Detail Invoice List

CHECK RUN: MJ050924 05/09/2024
 DUE DATE: 05/09/2024

CASH ACCOUNT: 9999-000-0000-00000-100100						A/P Cash				
VENDOR		REMIT	PO	TYPE	DUE DATE	INVOICE	AMOUNT	VOUCHER	CHECK	
304	LEMOORE HARDWARE	0000		INV	05/09/2024	A429853				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	1000-825-0000-00000-520100			Supplies		27.50			27.50
304	LEMOORE HARDWARE	0000		INV	05/09/2024	B461824				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	1000-850-0000-00000-520100			Supplies		34.60			34.60
304	LEMOORE HARDWARE	0000		INV	05/09/2024	A430104				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	5000-870-0000-00000-520100			Supplies		43.61			43.61
304	LEMOORE HARDWARE	0000		INV	05/09/2024	A430116				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	1000-825-0000-00000-520100			Supplies		42.04			42.04
304	LEMOORE HARDWARE	0000		INV	05/09/2024	A430170				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	5000-870-0000-00000-520100			Supplies		31.21			31.21
304	LEMOORE HARDWARE	0000		INV	05/09/2024	A430178				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	5000-870-0000-00000-520100			Supplies		34.63			34.63
304	LEMOORE HARDWARE	0000		INV	05/09/2024	B462205				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	1000-850-0000-00000-520100			Supplies		51.57			51.57
304	LEMOORE HARDWARE	0000		INV	05/09/2024	A430189				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	1000-850-0000-00000-520100			Supplies		132.88			132.88
304	LEMOORE HARDWARE	0000		INV	05/09/2024	A430232				
	ACCOUNT DETAIL					LINE AMOUNT				
	1	5100-885-0000-00000-520100			Supplies		18.20			18.20

ACCOUNTS PAYABLE EDIT

Detail Invoice List

CHECK RUN: MJ050924 05/09/2024
 DUE DATE: 05/09/2024

CASH ACCOUNT: 9999-000-0000-00000-100100						A/P Cash			
VENDOR		REMIT	PO	TYPE	DUE DATE	INVOICE	AMOUNT	VOUCHER	CHECK
304	LEMOORE HARDWARE	0000		INV	05/09/2024	A430244			
	ACCOUNT DETAIL					LINE AMOUNT			
	1				Supplies		9.75		
							9.75		
304	LEMOORE HARDWARE	0000		INV	05/09/2024	B462305			
	ACCOUNT DETAIL					LINE AMOUNT			
	1				Supplies		60.77		
							60.77		
304	LEMOORE HARDWARE	0000		INV	05/09/2024	B462345			
	ACCOUNT DETAIL					LINE AMOUNT			
	1				Supplies		67.20		
							67.20		
304	LEMOORE HARDWARE	0000		INV	05/09/2024	B462379			
	ACCOUNT DETAIL					LINE AMOUNT			
	1				Supplies		34.62		
							34.62		
304	LEMOORE HARDWARE	0000		INV	05/09/2024	A430424			
	ACCOUNT DETAIL					LINE AMOUNT			
	1				Supplies		15.04		
							15.04		
							CHECK TOTAL		1,229.53
306	LEMOORE HIGH SCHOOL	0000	28	INV	05/09/2024	318482			
	ACCOUNT DETAIL					LINE AMOUNT			
	1				Sub CNG		1,495.63		
							1,495.63		
							CHECK TOTAL		1,495.63
7441	LEMOORE HIGH SCHOOL B	0001		INV	05/09/2024	ORIG RECEIPT #9364			
	ACCOUNT DETAIL					LINE AMOUNT			
	1				Cust Dep		250.00		
							250.00		
							CHECK TOTAL		250.00
301	LEMOORE UNION SCHOOL	0001		INV	05/09/2024	ORIG RECEIPT #824025			
	ACCOUNT DETAIL					LINE AMOUNT			
	1				Cust Dep		250.00		
							250.00		
							CHECK TOTAL		250.00

ACCOUNTS PAYABLE EDIT

Detail Invoice List

CHECK RUN: MJ050924 05/09/2024
 DUE DATE: 05/09/2024

CASH ACCOUNT: 9999-000-0000-00000-100100						A/P Cash			
VENDOR	REMIT	PO	TYPE	DUE DATE	INVOICE	AMOUNT	VOUCHER	CHECK	
					CHECK TOTAL	250.00			
7646	LORENA RAMOS	0000	INV	05/09/2024	ORIG RECEIPT #776				
	ACCOUNT DETAIL				LINE AMOUNT				
	1	1000-000-0000-00000-202100		Cust Dep	250.00				
					CHECK TOTAL	250.00			
4051	MATSON ALARM CO., INC	0000	INV	05/09/2024	4590593				
	ACCOUNT DETAIL				LINE AMOUNT				
	1	5000-870-0000-00000-530100		Prof Cont	59.50				
					CHECK TOTAL	59.50			
7317	ODP BUSINESS SOLUTION	0000	INV	05/09/2024	361515113001				
	ACCOUNT DETAIL				LINE AMOUNT				
	1	1000-805-0000-00000-520100		Supplies	36.75				
					CHECK TOTAL	36.75			
7070	PANTERRA NETWORKS, IN	0000	INV	05/09/2024	INV-22232-42024				
	ACCOUNT DETAIL				LINE AMOUNT				
	1	1000-865-0000-00000-510130		Utilties	1,580.27				
					CHECK TOTAL	1,580.27			
876	QUAD KNOPF, INC.	0001	224	INV	05/09/2024	123068			
	ACCOUNT DETAIL				LINE AMOUNT				
	1	5100-885-0000-18003-530100		Prof Cont	2,993.67				
						2,993.67			
876	QUAD KNOPF, INC.	0001	97	INV	05/09/2024	123069			
	ACCOUNT DETAIL				LINE AMOUNT				
	1	1000-845-0000-00000-530100		Prof Cont	588.80				
						588.80			
876	QUAD KNOPF, INC.	0001	97	INV	05/09/2024	123070			
	ACCOUNT DETAIL				LINE AMOUNT				
	1	1000-845-0000-00000-530100		Prof Cont	913.86				
						913.86			

ACCOUNTS PAYABLE EDIT

Detail Invoice List

CHECK RUN: MJ050924 05/09/2024
 DUE DATE: 05/09/2024

CASH ACCOUNT: 9999-000-0000-00000-100100						A/P Cash			
VENDOR		REMIT	PO	TYPE	DUE DATE	INVOICE	AMOUNT	VOUCHER	CHECK
876	QUAD KNOPF, INC.	0001	97	INV	05/09/2024	123071			
	ACCOUNT DETAIL					LINE AMOUNT			
	1 1000-845-0000-00000-530100				Prof Cont	2,646.45			
							2,646.45		
876	QUAD KNOPF, INC.	0001	97	INV	05/09/2024	123074			
	ACCOUNT DETAIL					LINE AMOUNT			
	1 1000-845-0000-00000-530100				Prof Cont	720.72			
							720.72		
876	QUAD KNOPF, INC.	0001	581	INV	05/09/2024	123075			
	ACCOUNT DETAIL					LINE AMOUNT			
	1 5000-870-0000-00000-530100				Prof Cont	7,177.00			
							7,177.00		
876	QUAD KNOPF, INC.	0001	97	INV	05/09/2024	123077			
	ACCOUNT DETAIL					LINE AMOUNT			
	1 1000-845-0000-00000-530100				Prof Cont	3,169.08			
							3,169.08		
876	QUAD KNOPF, INC.	0001	97	INV	05/09/2024	123076			
	ACCOUNT DETAIL					LINE AMOUNT			
	1 1000-845-0000-00000-530100				Prof Cont	1,311.30			
							1,311.30		
876	QUAD KNOPF, INC.	0001	160	INV	05/09/2024	123078			
	ACCOUNT DETAIL					LINE AMOUNT			
	1 1000-820-0000-00000-530100				Prof Cont	986.58			
							986.58		
876	QUAD KNOPF, INC.	0001		INV	05/09/2024	123083			
	ACCOUNT DETAIL					LINE AMOUNT			
	1 1000-820-0000-00000-530100				Prof Cont	139.32			
							139.32		
876	QUAD KNOPF, INC.	0001	97	INV	05/09/2024	123073			
	ACCOUNT DETAIL					LINE AMOUNT			
	1 1000-845-0000-00000-530100				Prof Cont	2,379.42			
							2,379.42		
						CHECK TOTAL	23,026.20		
7161	QUADIENT LEASING USA,	0000		INV	05/09/2024	Q1296338			
	ACCOUNT DETAIL					LINE AMOUNT			
	1 1000-000-0000-00000-120100				Prepays	517.21			
							517.21		

ACCOUNTS PAYABLE EDIT

Detail Invoice List

CHECK RUN: MJ050924 05/09/2024
 DUE DATE: 05/09/2024

CASH ACCOUNT: 9999-000-0000-00000-100100						A/P Cash			
VENDOR	REMIT	PO	TYPE	DUE DATE	INVOICE	AMOUNT	VOUCHER	CHECK	
					CHECK TOTAL	517.21			
5227	RJMS CORPORATION	0000	546	INV	05/09/2024	MF0J02			
	ACCOUNT DETAIL					LINE AMOUNT			
	1 1000-830-0000-00000-560200			Vehicles		40,323.83			
					CHECK TOTAL	40,323.83			
4054	SELF-HELP ENTERPRISES	0001	295	INV	05/09/2024	LEMADM APR-24			
	ACCOUNT DETAIL					LINE AMOUNT			
	1 2100-900-0000-00000-530100			Prof Cont		991.95			
					CHECK TOTAL	991.95			
6157	SHAR - CRAFT INCORPOR	0000	729	INV	05/09/2024	55576			
	ACCOUNT DETAIL					LINE AMOUNT			
	1 5100-885-0000-00000-520100			Supplies		661.79			
					CHECK TOTAL	661.79			
6117	SIGNWORKS	0000		INV	05/09/2024	30106			
	ACCOUNT DETAIL					LINE AMOUNT			
	1 6000-890-0000-00000-520100			Supplies		185.80			
					CHECK TOTAL	185.80			
6759	SWANA	0001		INV	05/09/2024	2025 -1414631			
	ACCOUNT DETAIL					LINE AMOUNT			
	1 5200-880-0000-00000-510140			Meet Dues		275.00			
					CHECK TOTAL	275.00			
6663	SUSP, INC	0000	185	INV	05/09/2024	2316			
	ACCOUNT DETAIL					LINE AMOUNT			
	1 5000-870-0000-00000-530100			Prof Cont		126,993.85			
					CHECK TOTAL	126,993.85			

ACCOUNTS PAYABLE EDIT

Detail Invoice List

CHECK RUN: MJ050924 05/09/2024
 DUE DATE: 05/09/2024

CASH ACCOUNT: 9999-000-0000-00000-100100							A/P Cash		
VENDOR	REMIT	PO	TYPE	DUE DATE	INVOICE	AMOUNT	VOUCHER	CHECK	
7586	TALUS COMMUNICATIONS,	0000	599	INV	05/09/2024	03.07.2024			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	1000-865-0000-00000-560100			ME > \$5k	8,211.41			
					CHECK TOTAL	8,211.41			
7278	TYLER TECHNOLOGIES, I	0000	139	INV	05/09/2024	045-462962			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	1000-815-0000-00000-530100			Prof Cont	5,120.00			
					CHECK TOTAL	5,120.00			
6058	UNIVAR	0000	98	INV	05/09/2024	52061928			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	5000-870-0000-00000-520110			Sup Chl	1,989.20			
					CHECK TOTAL	1,989.20			
5842	U.S. BANK EQUIPMENT F	0000		INV	05/09/2024	527852313			
	ACCOUNT DETAIL					LINE AMOUNT			
	1	1000-800-0000-00000-530120			Rent & Lea	28.86			
	2	1000-805-0000-00000-530120			Rent & Lea	38.72			
	3	1000-810-0000-00000-530120			Rent & Lea	108.67			
	4	1000-815-0000-00000-530120			Rent & Lea	1,037.17			
	5	1000-820-0000-00000-530120			Rent & Lea	276.30			
	6	1000-830-0000-00000-530120			Rent & Lea	1,941.68			
	7	1000-835-0000-00000-530120			Rent & Lea	217.26			
	8	1000-840-0000-00000-530120			Rent & Lea	52.36			
	9	1000-845-0000-00000-530120			Rent & Lea	232.01			
	10	1000-855-0000-00000-530120			Rent & Lea	337.74			
	11	5000-870-0000-00000-530120			Rent & Lea	185.29			
	12	5000-875-0000-00000-530120			Rent & Lea	634.46			
	13	5100-885-0000-00000-530120			Rent & Lea	1.53			
	14	6000-890-0000-00000-530120			Rent & Lea	111.36			
	15	1000-860-0000-00000-530120			Rent & Lea	586.05			
					CHECK TOTAL	5,789.46			

ACCOUNTS PAYABLE EDIT

Detail Invoice List

CHECK RUN: MJ050924 05/09/2024
 DUE DATE: 05/09/2024

CASH ACCOUNT: 9999-000-0000-00000-100100						A/P Cash			
VENDOR	REMIT	PO	TYPE	DUE DATE	INVOICE	AMOUNT	VOUCHER	CHECK	
1547 VERITIV OPERATING COM	0000	725	INV	05/09/2024	619-36301215				
ACCOUNT DETAIL					LINE AMOUNT				
1 1000-825-0000-00000-520100				Supplies		501.94			
						501.94			
					CHECK TOTAL	501.94			
5439 VORTEX INDUSTRIES, IN	0001	703	INV	05/09/2024	42-1740658				
ACCOUNT DETAIL					LINE AMOUNT				
1 1000-825-0000-00000-530100				Prof Cont		3,885.00			
						3,885.00			
					CHECK TOTAL	3,885.00			
7647 WENDY COLLINS	0000		INV	05/09/2024	ORIG RECEIPT #7068				
ACCOUNT DETAIL					LINE AMOUNT				
1 1000-000-0000-00000-202100				Cust Dep		250.00			
						250.00			
					CHECK TOTAL	250.00			
89 INVOICES					WARRANT TOTAL	383,438.72			
					CASH ACCOUNT BALANCE			-18,528,959.87	

ACCOUNTS PAYABLE EDIT

Check Run Summary

CHECK RUN: MJ050924 05/09/2024
 DUE DATE: 05/09/2024

FUND	ACCOUNT	AMOUNT	AVLB BUDGET
1000	General 1000-000-0000-00000-120100	Prepaid Expenses 517.21	
1000	General 1000-000-0000-00000-202100	Customer Deposits 1,000.00	
1000	General 1000-800-0000-00000-530120	Rentals and Leases 28.86	-476.69
1000	General 1000-805-0000-00000-520100	Supplies 36.75	2,935.57
1000	General 1000-805-0000-00000-530100	Professional Contract 717.57	-12,588.45
1000	General 1000-805-0000-00000-530120	Rentals and Leases 38.72	8,752.16
1000	General 1000-810-0000-00000-510160	Printing and Publicat 4,635.30	2,252.90
1000	General 1000-810-0000-00000-530120	Rentals and Leases 108.67	643.74
1000	General 1000-815-0000-00000-530100	Professional Contract 5,120.00	-10,173.69
1000	General 1000-815-0000-00000-530120	Rentals and Leases 1,037.17	-1,215.66
1000	General 1000-820-0000-00000-530100	Professional Contract 20,150.90	94,026.08
1000	General 1000-820-0000-00000-530120	Rentals and Leases 276.30	1,899.09
1000	General 1000-825-0000-00000-520100	Supplies 859.33	19,670.88
1000	General 1000-825-0000-00000-530100	Professional Contract 3,885.00	32,839.41
1000	General 1000-830-0000-00000-530120	Rentals and Leases 10,677.09	-13,526.36
1000	General 1000-830-0000-00000-560200	Vehicles 40,323.83	56,986.10
1000	General 1000-835-0000-00000-510130	Utilities 53.87	874.63
1000	General 1000-835-0000-00000-520100	Supplies 206.71	21,461.45
1000	General 1000-835-0000-00000-530120	Rentals and Leases 217.26	-1,017.75
1000	General 1000-840-0000-00000-530120	Rentals and Leases 1,810.82	21,834.29
1000	General 1000-845-0000-00000-530100	Professional Contract 11,729.63	15,469.58
1000	General 1000-845-0000-00000-530120	Rentals and Leases 232.01	3,963.32
1000	General 1000-850-0000-00000-520100	Supplies 219.05	30,911.83
1000	General 1000-855-0000-00000-530100	Professional Contract 1,048.00	14,549.86
1000	General 1000-855-0000-00000-530120	Rentals & Leases 337.74	273.46
1000	General 1000-860-0000-00000-530100	Professional Contract 190.00	94.36
1000	General 1000-860-0000-00000-530120	Rentals & Leases 586.05	682.44
1000	General 1000-865-0000-00000-510130	Utilities 1,693.32	27,594.60
1000	General 1000-865-0000-00000-530100	Professional Contract 190.00	482.43
1000	General 1000-865-0000-00000-560100	Machinery & Equipment 8,211.41	25,671.69

FUND TOTAL 116,138.57

CASH ACCOUNT 9999-000-0000-00000-100100 BALANCE -18,528,959.87

2020	Local Transportation 2020-850-0000-23004-560300	Capital Outlay - Cons 2,425.00	6,500.00
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FUND TOTAL 2,425.00

CASH ACCOUNT 9999-000-0000-00000-100100 BALANCE -18,528,959.87

2100	Lemoore Housing Autho 2100-900-0000-00000-530100	Professional Contract 991.95	1,090,862.00
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Report generated: 05/09/2024 13:47:47
 User: Maritza Jones (mjones)
 Program ID: apwarrrt

ACCOUNTS PAYABLE EDIT

CASH ACCOUNT 9999-000-0000-00000-100100			BALANCE -18,528,959.87	FUND TOTAL	991.95
4003	Police	4003-830-0000-22005-530100		Professional Contract	30.76
				FUND TOTAL	30.76
CASH ACCOUNT 9999-000-0000-00000-100100			BALANCE -18,528,959.87		
5000	Water	5000-870-0000-00000-510130		Utilities	199.30
5000	Water	5000-870-0000-00000-520100		Supplies	135.69
5000	Water	5000-870-0000-00000-520110		Supplies - Chlorine	1,989.20
5000	Water	5000-870-0000-00000-530100		Professional Contract	134,230.35
5000	Water	5000-870-0000-00000-530120		Rentals & Leases	185.29
5000	Water	5000-875-0000-00000-530120		Rentals & Leases	634.46
				FUND TOTAL	137,374.29
CASH ACCOUNT 9999-000-0000-00000-100100			BALANCE -18,528,959.87		
5100	Sewer	5100-885-0000-00000-520100		Supplies	1,526.49
5100	Sewer	5100-885-0000-18003-530100		Professional Contract	2,993.67
5100	Sewer	5100-885-0000-00000-530120		Rentals & Leases	1,751.53
				FUND TOTAL	6,271.69
CASH ACCOUNT 9999-000-0000-00000-100100			BALANCE -18,528,959.87		
5200	Refuse	5200-880-0000-00000-510140		Meetings & Dues	275.00
5200	Refuse	5200-880-0000-00000-530100		Professional Contract	103,867.90
				FUND TOTAL	104,142.90
CASH ACCOUNT 9999-000-0000-00000-100100			BALANCE -18,528,959.87		
6000	Fleet Maintenance	6000-890-0000-00000-520100		Supplies	436.86
6000	Fleet Maintenance	6000-890-0000-00000-520120		Supplies - Fuel	13,092.57
6000	Fleet Maintenance	6000-890-0000-00000-520130		Supplies - CNG	1,495.63
6000	Fleet Maintenance	6000-890-0000-00000-530120		Rentals & Leases	1,038.50
				FUND TOTAL	16,063.56
CASH ACCOUNT 9999-000-0000-00000-100100			BALANCE -18,528,959.87		
					WARRANT SUMMARY TOTAL
					383,438.72
					GRAND TOTAL
					383,438.72