



CHICO
CLIMATE ACTION COMMISSION
REGULAR MEETING AGENDA
THURSDAY, FEBRUARY 10, 2022 - 6:00 P.M.
(VIRTUAL MEETING)

Chico

CLIMATE ACTION COMMISSION

Cheri Chastain, Chair
Mark Stemen, Vice Chair
Ann Bykerk-Kauffman
Ashley Koller
Brian Kress
Kirk Monfort
Joshua Pierce

**Copies of this agenda
available from:**
Community Development Department
411 Main Street, 2nd Floor
Chico, CA 95928
(530) 879-6800

Or

www.chico.ca.us

Posted: February 3, 2022
Prior to: 5:00 p.m.

The Commission appreciates your cooperation in turning off all cell phones during this meeting.

City Staff

Brendan Vieg – Community Development Director
Molly Marcussen – Associate Planner



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Information and Procedures Concerning Climate Action Commission Meetings

Public Participation:

All members of the public may address the Climate Action Commission on any item listed on the agenda. Public participation in the hearing process is encouraged.

Please step up to the podium microphone when addressing the Commission.

Each speaker will be asked to voluntarily state his/her name before speaking, and after speaking to voluntarily write his/her name on a record to be maintained by the City Staff.

The Commission and City staff will ensure order and decorum during all Commission meetings. Persons demonstrating rude, boisterous or profane behavior will be called to order by the Chair. If such conduct continues, the Chair may call a recess, requesting the removal of such person(s) from the Council Chamber, adjourn the meeting or take other appropriate action.

Time Limit:

Presentations should be limited to a maximum of three (3) minutes, unless otherwise determined by the Chair.

A speaker may not defer his/her time to other speakers.

Groups or organizations are encouraged to select a spokesperson to speak on their behalf. Each subsequent speaker is encouraged to submit new information, rather than repeating comments made by prior speakers.

Written Material:

The Climate Action Commission may not have sufficient time to fully review written materials presented at the public hearing. Interested parties are encouraged to provide written materials at least eight (8) days prior to the public hearing to allow distribution with the Climate Action Commission's agenda packet to provide adequate time for review by the Climate Action Commission. Written materials submitted in advance of the public hearing must be submitted to the City of Chico, Community Development Department, 411 Main Street, 2nd Floor, or by mail to: P. O. Box 3420, Chico, CA 95927. Materials related to an item on this agenda submitted to the Climate Action Commission after distribution of the agenda packet are available for public inspection in the Community Development Department at 411 Main Street, 2nd Floor, Chico, CA 95928 during normal business hours.

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Special Presentations:

Special presentations which include slides, films, etc. during the course of a meeting will only be allowed with **prior** approval of the Climate Action Commission.

Business from the Floor:

The Chair will invite anyone in the audience wishing to speak to the Climate Action Commission to identify themselves and the matter

they wish to discuss which would involve matters not already on the posted agenda.

The Commission may also be direct that a matter be placed on a future agenda, provide direction to staff, or request that staff research a particular issue. No action may be taken until a subsequent meeting.

Agenda Copies are:

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Agenda Items:

The agenda items will be considered in the order listed unless the Commission requests a change. In order that all items may be considered, any item may be continued to another meeting if it appears there will be insufficient time for full consideration of the item.

Items Not Appearing on Posted Agenda:

This agenda was posted on the Council Chamber bulletin board at least 72 hours in advance of this meeting. For each item not appearing on the posted agenda, upon which the Climate Action Commission wishes to take action, the Commission must make one of the following determinations:

1. Determine by a majority vote that an emergency exists as defined in Government Code Sec. 54956.5.
2. Determine by a two-thirds vote, or by a unanimous vote if less than two-thirds of the Climate Action Commission is present, that need to take immediate action and that the need for action came to the attention of the City subsequent to the agenda being posted.

Use of Cell Phones During Meetings:

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Any aggrieved person or persons dissatisfied with a Climate Action *Commission* decision may appeal that decision to the City Council within 10 calendar days. In accordance with Government Code Section 65009, if any person(s) challenges the action of the Climate Action *Commission*, said person(s) may be limited to raising only those issues that were raised at the public hearing described in this notice, or in written correspondence delivered to the Climate Action *Commission* at, or prior to, the public hearing.

CITY OF CHICO
CLIMATE ACTION COMMISSION
REGULAR MEETING OF THURSDAY, FEBRUARY 10, 2022
Municipal Center - 421 Main Street - Council Chambers - 6:00 pm
(Virtual Meeting)

PUBLIC PARTICIPATION: *This meeting is being conducted in accordance with Executive Order N-29-20. Members of the public may virtually attend the meeting using the City’s Zoom platform.*

Zoom public participants may use the following information to remotely view and participate in the Climate Action Commission meeting online:

Event Name: Climate Action Commission Meeting

Date/Time: Thursday, February 10, 2022, at 6:00 PM

Event URL: <https://us06web.zoom.us/j/83181630451?pwd=Znc5YzdKdUZSOTFiQXVQSE1SRXZyQT09>

Password: Climate22

Meeting ID: 831 8163 0451

Call-in #: +1 669 900 6833 or +1 408 638 0968 **Call-in Password:** 793454546

1. CALL TO ORDER

1.1. Roll Call

2. CONSENT AGENDA

*All matters listed under the Consent Agenda are considered routine and will be enacted by one motion. There will be no separate discussion of these items unless requested by a member of the Climate Action Commission. A member of the public may request that an item be removed, provided the item does not relate to a noticed hearing which has been closed to further public comment. **Items removed from the Consent Agenda will be considered immediately following the approval of the Consent Agenda.***

2.1. Approval of Minutes

January 13, 2021 (**Attachment A**)

3. ITEMS FOR DISCUSSION

3.1. SB 379 Engagement Update (Climate Adaptation and Resiliency)

In March 2021, the city released a survey to collect community feedback on potential strategies to comply with SB 379 (see **Attachment B**). Associate Planner Molly Marcussen and CivicSpark Fellow Nick Hart will provide the commission with an update regarding this engagement, as well as other planning items related to SB 379.

3.2. Guest Speaker Discussion

The commission will hold a discussion regarding future guest speakers and presentations related to implementing the Climate Action Plan.

4. BUSINESS FROM THE FLOOR/PUBLIC COMMENT

Members of the public may address the Commission at this time on any matter not already listed on the agenda, with comments being limited to three minutes. The Commission cannot take any action at this meeting on requests made under this section of the agenda.

5. REPORTS & COMMUNICATIONS

These items are provided for the Commission 's information. Although the Commission may discuss the items, no action can be taken at this meeting. Should the Commission determine that action is required, the item or items may be included for action on a subsequent posted agenda.

6. ADJOURNMENT

Adjourn to the Adjourned Regular Meeting of Thursday, March 10, 2022.

CITY OF CHICO
CLIMATE ACTION COMMISSION
REGULAR MEETING OF THURSDAY, JANUARY 13, 2022
Municipal Center - 421 Main Street - Council Chambers - 6:00 pm
(Virtual Meeting)

Commissioners Present: Cheri Chastain, Chair
Mark Stemen, Vice Chair
Ann Bykerk-Kauffman
Ashley Koller
Brian Kress
Kirk Monfort
Joshua Pierce

Commissioners Absent:

Staff Members Present: Brendan Vieg, Community Development Director
Molly Marcussen, Associate Planner

1. CALL TO ORDER

Chair Cheri Chastain called the meeting to order at 6:03.

1.1. Roll Call

Commissioners were present as noted above. Commissioner Bykerk-Kauffman joined the meeting at 6:08.

1.2. Swearing in of Newly Appointed Climate Action Commissioners

City Clerk acknowledged that she has previously done the oaths of office in person at city hall.

2. CONSENT AGENDA

2.1. Approval of Minutes

Vice Chair Stemen moved to approve the minutes. Commissioner Monfort seconded. Minutes approved 6-0-1 (Bykerk-Kauffman absent for voting).

3. SELECTION OF CHAIR AND VICE CHAIR

Commissioner Stemen nominated Commissioner Chastain to serve as Chair for the commission. Commission voted 6-0-1 (Bykerk-Kauffman absent for voting) in favor of Commissioner Chastain to serve as Chair. Chair Chastain nominated Commissioner Stemen to serve as Vice Chair for the commission. Commission voted 6-0-1 (Bykerk-Kauffman absent for voting) for Commissioner Stemen to serve as Vice Chair.

4. ITEMS FOR DISCUSSION

4.1. SB 379 UPDATE (Climate Adaptation and Resiliency)

CivicSpark Fellow Nick Hart provided the commission with an update regarding the City's climate adaptation and resiliency project efforts associated with SB 379 (see PowerPoint Presentation as **Attachment A**).

5. BUSINESS FROM THE FLOOR/PUBLIC COMMENT

None.

6. **REPORTS & COMMUNICATIONS**

None.

7. **ADJOURNMENT**

Adjourn to the Adjourned Regular Meeting of Thursday, February 10, 2022.

CLIMATE ADAPTATION AND RESILIENCY

City of Chico
2021 Update

OUTLINE

1. SB-379,
Definitions

2. Exploring
Chico's
Vulnerability

3. Existing
Adaptations

4. Next
Steps

SENATE BILL 379

States that local governments need to address climate adaptation and resiliency in their General Plan's safety element by 2022.

The first step was conducting a Climate Change Vulnerability Assessment to identify the risks that climate change poses to the local jurisdiction.

This presentation will outline the findings from this assessment, which began in 2017 and was updated in 2021.

REPRESENTATIVE CONCENTRATION PATHWAYS (RCP'S)

Identified by the Intergovernmental Panel on Climate Change, RCP's identify likely global emissions scenarios:

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

The state of California recommends using RCP 8.5 for mid-century projections as a conservative approach

CHICO'S VULNERABILITY

Exposure

-

Sensitivity & Potential Impacts

-

Existing Adaptive Capacity

EXPOSURE

Increased Temperature & Extreme Heat

-

Changes in Precipitation Patterns &
Snowpack

-

Increased Flooding Events

-

Increased Wildfire Risk

CHANGES IN CAL-ADAPT PROJECTIONS UNDER RCP 4.5

	Historical Average	2050 (2040-2060)	2090 (2070-2099)
High Temperature	75.1°F	79.6°F ▲ 0.5°F	81.1°F ▲ 0.5°F
Low Temperature	48.4°F	52.5°F	53.8°F
Extreme Heat Days	4	18	24 ▲ 1
Precipitation	27.6"	30.4" ▼ 2.4"	30.6" ▼ 1.9"
N. Sierra Snowpack (Water Inch Equivalent)	8.0"	3.7" ▲ 0.1"	2.8" ▲ 0.1"

CHANGES IN CAL-ADAPT PROJECTIONS UNDER RCP 8.5

	Historical Average	2050 (2040-2060)	2090 (2070-2099)
High Temperature	75.1°F	80.5°F ▲ 0.5°F	84.2°F
Low Temperature	48.4°F	53.5°F	57.2°F
Extreme Heat Days	4	21	40 ▼ 1
Precipitation	27.6"	31" ▼ 2.4"	33.6" ▼ 2.2"
N. Sierra Snowpack (Water Inch Equivalent)	8.0"	3.1" ▲ 0.1"	1.0" ▲ 0.93"

SENSITIVITY & POTENTIAL IMPACTS

INCREASED TEMPERATURE & EXTREME HEAT

POPULATION IMPACTS

- Decreasing desirability of outdoor activity
- Increase in heat exposure illness and injury
- Quality of Life impacts due to PSPS events
- Exacerbated impacts for low-income and vulnerable communities
- Potential for increase in violent and domestic crime rates
- Decrease in air quality due to ozone formation and other secondary impacts of extreme heat

STRUCTURAL IMPACTS

- Impacts on electric utilities
 - Demand spikes
 - Decreasing efficiency of lines
- Impacts to transportation infrastructure
 - Roadways
 - Rail
- Impacts on flora and fauna adapted to historical environmental conditions
- Increased demand for health services related to heat illnesses
- Disproportionate impacts on small and medium businesses
 - Product loss due to power outages, decreased manufacturing capacity, etc.

DROUGHT & FLOODING

POPULATION IMPACTS

- Floodwater distributing pollutants throughout the community
- Impacts on aquatic species such as salmon, some of which are culturally significant
- Drought conditions supporting increases in vector-borne illnesses such as mosquito-borne viruses.
- Increased water scarcity and price impacting Quality of Life
- Disproportionate impacts on those considered socially vulnerable

STRUCTURAL IMPACTS

- Increasing flood severity necessitates reevaluation of flood plain designations
- Potential for overloading of storm drain systems and wastewater facilities
- Critical infrastructure may be vulnerable to increased flood severity
- Drought leading to higher draw on groundwater reserves without natural or artificial recharge
 - Possibility of subsidence events due to overdraft
- Impacts on flora and fauna adapted to historical environmental conditions

WILDFIRE

POPULATION IMPACTS

- Increased incidence of wildfire in the Wildland-Urban Interface
- Increased property damage due to wildfire
- Roadway closures impacting isolated individuals or households
- Increase in air pollutants released by fire within and outside of Chico leading to adverse health outcomes
- Increased likelihood of population surges due to displacement by fires outside of Chico

STRUCTURAL IMPACTS

- Direct and indirect impacts to electrical infrastructure (system failures, PSPS events)
- Impacts to open spaces and roadways decreasing recreational and commercial opportunities
- Increase cost burden of managing large fires which don't meet criteria for state relief funding
- Increase in follow-up incidents such as landslides in burn areas
- Increased sediment in waterways from fires within the watersheds which Chico is a part of
- Decrease in carbon sequestration capacity due to forest loss
- Impacts on fishery productivity reducing biodiversity and related economic activity

ADAPTIVE CAPACITY

SCORING SYSTEM

-

INCREASED TEMPERATURE &
EXTREME HEAT

-

CHANGES IN PRECIPITATION
PATTERNS

-

INCREASED FLOODING EVENTS

-

WILDFIRE

SCORING SYSTEM

Adaptive Capacity Score	Meaning
Low Adaptive Capacity	Adaptive solutions are available, but they are expensive, technologically difficult, and/or politically unpopular. Alternatives may not exist that can provide similar services. Some assets may not have feasible means to adapt.
Medium Adaptive Capacity	Some adaptation methods are available, but not always feasible. Adapting may create significant challenges for some sensitivities. Some alternatives exist within the jurisdiction area that can provide similar services.
High Adaptive Capacity	Adaptation solutions are feasible for most or all sensitivities. There may be occasional or small-scale challenges to implementing adaptation methods, but populations and assets can adapt with little or no effort. Many alternatives exist in the area that can provide similar services.

INCREASED TEMPERATURE & EXTREME HEAT

MEDIUM / LOW ADAPTIVE CAPACITY

- The Butte County Office of Emergency Services provides the City of Chico and Butte County with information on how to stay safe during periods of extreme heat through the CodeRED application.
- The City of Chico participates in several Property Assessed Clean Energy (PACE) financing programs. PACE programs offer special financing options to help homeowners finance home energy and water efficiency upgrades and save money on energy and water bills.
- The City has a Residential Energy Conservation Ordinance (RECO), commonly referred to as the “Retrofit Program”, requiring property owners to provide certain energy and water conservation upgrades upon the sale of residential properties.
- Urban greening and urban forestry in the City are supported by numerous organizations and agencies, including the Urban Forest Master Plan.
- Capital Projects currently underway within the City are utilizing materials suited to extreme heat
- As a part of the Sustainable Solutions Turnkey program, the City has moved to replace the current HVAC system with a more efficient and more climate-friendly solution.
- The City of Chico operates pop-up cooling shelters during incidents of extreme heat. However, as of 2021, no heating/cooling centers which utilize mechanical HVAC exist.

CHANGES IN PRECIPITATION PATTERNS (DROUGHT)

MEDIUM ADAPTIVE CAPACITY

- California Water Service (Cal Water) supplies the City of Chico with water sourced from a groundwater basin. Cal Water offers rebates and programs for both commercial and residential customers that support water conservation activities. Cal Water also provides water conservation kits free to customers, containing a variety of water conserving tools.
- The 2030 General Plan contains policies and actions which support conservation and groundwater recharge.
- RECO
- Butte County's Department of Water and Resource Conservation (BCDWRC) implements programs to protect Butte County's water resources. Additionally, BCDWRC oversees the Sustainable Groundwater Management Act (SGMA)
- The City is implementing the State-required Low Impact Development (LID) program as part of its permit process with the State. Throughout Chico, the City has installed several bioswales, which are landscape elements designed to concentrate or remove debris and pollution from surface water.
- As a part of the Sustainable Solutions Turnkey Program, the City has approved an upgrade of the irrigation systems across City facilities which will lead better management of irrigation water usage.
- In 2021, the City has adopted a Vegetative Fuels Master Plan which seeks to manage the City's many green spaces for wildfire risk while improving ecological health, biodiversity, wildlife habitat, community safety, and ecosystem services such as contributions to the local water system.

INCREASED FLOODING EVENTS

MEDIUM / LOW ADAPTIVE CAPACITY

- The City continues to undertake projects to upgrade drainage infrastructure.
- The City is currently developing and adopting an updated, holistic Storm Water Master Plan. This will help ensure that current and future water-related infrastructure is built to handle increased flows, which will prevent flooding.
- The City of Chico 2030 General Plan addresses flooding in the Safety Element Goal S-2
- The 2018 Stormwater Resource Plan identified 17 projects within local watersheds for implementation in the next 20 years.
- The Erosion and Sediment Control Plan mitigates increases in sediment runoff from small construction projects.
- The Post Construction Standards Plan guides large developers in implementing Low Impact Development standards to meet requirements related to runoff increases.

WILDFIRE

LOW ADAPTIVE CAPACITY

- Upper Park managers currently burn 40-100+ acres of grasslands a year, with the aim of benefiting the native plants, which have evolved to be fire adapted. The current burning program aims to control yellow star thistle and reduce fuel loads that accumulate in the Park. Fuels are further managed using grazing herds in Bidwell Park and other open spaces throughout the City.
- Infrastructure development in the City of Chico must comply with the 2019 California Fire Code, which includes standards to reduce the safety risks associated with fire. This includes the incorporation of 100 feet of defensible space, which limits the proximity of combustible vegetation to new structures. (City of Chico Municipal Code, Title 19, 2021).
- Butte County Air Quality Management District (BCAQMD) takes actions to reduce exposure to harmful pollutants related to wildfire (e.g., Particulate Matter, or PM) by implementing no-burn days during periods of poor air quality. BCAQMD also provides resources to educate the public on daily air quality status, provides alerts on poor air quality days, and provides educational material on the health impacts of air pollution.
- The City of Chico 2030 General Plan addresses fire in the Safety Element. This applies to both developed and undeveloped areas within the City.
- In 2021, the City has adopted a Vegetative Fuels Master Plan which seeks to manage the City's many green spaces for wildfire risk while improving ecological health, biodiversity, wildlife habitat, community safety, and ecosystem services such as contributions to the local water system.
- Code Enforcement staff have contracted with several local businesses to manage weed growth on vacant lots.
- In 2021, the City received a grant from FEMA to develop defensible space in areas surrounding Lindo Channel.
- On Extreme Heat days, Upper Park Road is closed to motor vehicles and certain activities are prohibited in the park to prevent risk of wildfire events.

CONCLUSIONS

Key Findings

-

Next Steps

KEY FINDINGS

	Adaptive Capacity Rating	Risk Certainty Rating	Onset Timeframe
Increased Temperature	Low/Medium	High	Current
Changes to Precipitation Patterns	Medium	Medium	Current
Increased Wildfire Risk	Low	Medium	Midterm
Increased Flooding	Low/Medium	High	Current

Current: Impacts Currently. Near Term: 2023-2040, Mid-term: 2040-2070. Long-term: 2070-2100

NEXT STEPS

As a result of these findings, and in pursuit of compliance with mandates set out in Senate Bill 379, the City of Chico has set about developing amendments to the Safety Element of its General Plan to incorporate responses to these vulnerabilities.

Currently, a draft of proposed Goals, Policies, and Actions is being circulated amongst staff as a part of the review process. Once staff arrives at a satisfactory draft, it will be presented to the Climate Action Commission and the Planning Commission for review prior to City Council.

Stakeholder Survey Text

The City of Chico is in the process of updating the Safety Element of its General Plan to meet requirements of California Senate Bill 379 (SB 379), specifically “to address climate adaptation and resiliency strategies.” Signed into law in 2015, SB 379’s statewide requirement for addressing adaptation and resilience within the safety element of cities and counties ensures California is more resilient to the threats of climate change.

Over the past 5 years, the City of Chico and neighboring communities have witnessed the effects of climate change first hand. In February 2017, intense storms lead to heavy damage of the Oroville Dam spillway, leading to more than 180,000 people evacuating to Chico and surrounding areas over fears of an uncontrolled release of water from Lake Oroville. In November 2018, the Camp Fire devastated the Town of Paradise and surrounding Ridge area, and overnight more than 19,000 survivors from Paradise, Concow, and Magalia found refuge in Chico. And most recently, in August 2020, the displacement of foothill communities from the North Complex Fire further highlighted the vulnerability of neighboring communities to wildfire and the City’s need for effective disaster recovery planning. The City seeks to address these issues by becoming SB 379 compliant and bolstering its adaptive capacity to respond to these types of impacts.

To assist in the update, the City is seeking community input via this survey.

The survey is broken down into 4 parts:

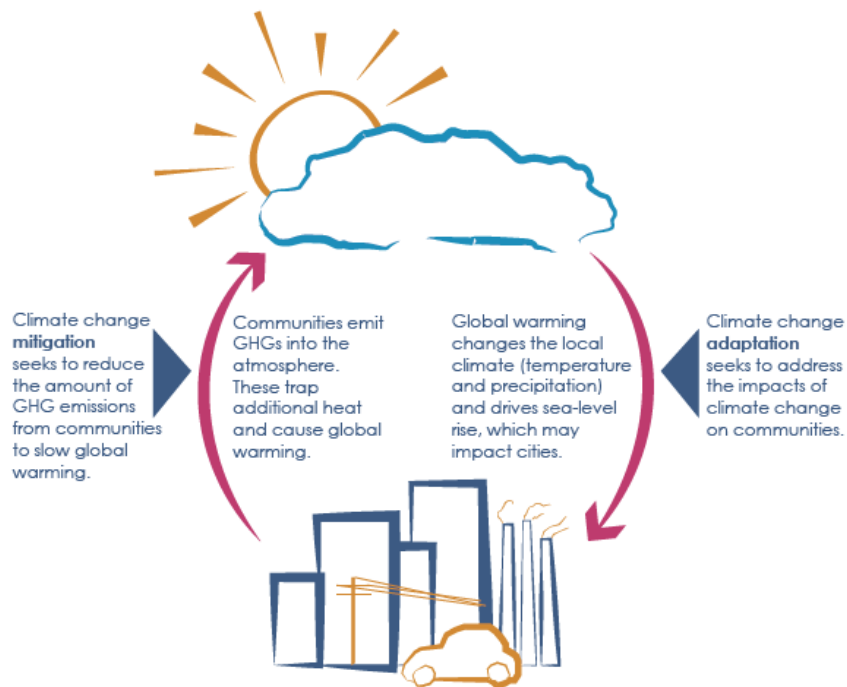
1. Useful Background Information
 - 1.1 What is Adaptation?
 - 1.2 Climate Change Impacts
 - 1.3 Emission Scenarios
2. Questions
3. Solutions Exercise
4. Demographic Questions

Thank you for taking the time to participate!

1. Useful Background Information

This section provides important context on how climate change will affect Chico. Understanding this information will assist you in completing Section 2 (Questions) and Section 3 (Solutions Exercise).

1.1 What is adaptation?



1.2 Climate Change Impacts

The following information is sourced from Cal-Adapt, a climate change scenario planning tool created by the State of California, California Energy Commission, and UC Berkeley for the purpose of visualizing how climate change will affect California at the local level. Additional information about Cal-Adapt and its use in Chico can be found in the [City of Chico Climate Change Vulnerability Assessment \(2018\)](#).

1. **Increased Temperatures:** Temperatures are expected to increase in Chico from a maximum average of 75°F to 80°F and a minimum average from 48.5°F to 53°F (depending on emissions scenarios) by 2050.
2. **Increased Frequency of Extreme Heat Days:** An Extreme Heat Day is considered to be 104.5°F or higher. Depending on emission scenarios, Chico will experience an increase from 4 Extreme Heat Days to between 21 to 27 Extreme Heat Days by 2050. Extreme heat disproportionately affects vulnerable communities (i.e., those experiencing homelessness, elderly, etc.) and stresses public health systems. Furthermore, heat waves (4 or more consecutive days of extreme heat) are projected to increase from 1 heat wave event to 2-3 by 2050.
3. **Changes to Precipitation Patterns:** Climate change modifies the frequency, intensity, and duration of storm events. In the case of Chico, where overall precipitation is expected to increase by 10-12% (depending on emissions scenarios), typical precipitation patterns during the winter, when Chico receives most of its annual precipitation, will experience more intense periods of precipitation, leading to a higher risk of flooding, while the summer months will include longer periods of drought. These changes lead to multiple challenges such as an increased strain on flood control measures. Finally, with increased temperatures leading to a greater frequency of rainfall, snowpack will reduce significantly in the Sierra Nevada Mountains, resulting in reduced ground water resources for municipal and agricultural use.

4. **Increased Wildfire Risk:** While Chico is not expected to experience a significantly increased wildfire risk to the community, surrounding areas are projected to see a continued increase in acres burned from wildfires. These changes lead to growing public health concerns within Chico from diminished air quality and long-term respiratory issues. Furthermore, surrounding communities affected by increased wildfire risk may increase the likelihood of climate migration into Chico (e.g., Camp Fire).

1.3 Emission Scenarios

Based on the information gathered from Cal-Adapt, two plausible scenarios define future outcomes affecting Chico. Both scenarios follow different paths depending on the response to climate change and the subsequent environmental impacts that follow.

<u>Low Emission Scenario</u>	<u>Historical Average</u> (1961-1990)	<u>2050</u> (2040-2060)	<u>2090</u> (2070-2099)
Temperature	75.1°F	79.6°F	81.1°F
Extreme Heat Days above 104.5°F	4	21	31
Precipitation	27.6"	30.4"	30.6"
Snowpack Sierra Nevada Mountains (North Sierra Region)	8.0"	3.7"	2.8"
Wildfire Low Population Scenario	202.1 acres	178.9 acres	169.5 acres

In a low emissions scenario, where Chico and neighboring cities, counties, and states enact robust measures to mitigate the effects of climate change, community members face moderate strain to its public health system and overall water supply. Sharp increases in extreme heat days as well as a sharp decrease in snowpack exacerbate these strains on Chico. However, compared to the high emissions scenario, where the stress posed by climate change is more serious, community members will be more resilient to these stressors due to effective policy measures implemented by the City and other actors.

<u>High Emission Scenario</u>	<u>Historical Average</u> (1961-1990)	<u>2050</u> (2040-2060)	<u>2090</u> (2070-2099)
Temperature	75.1°F	80.5°F	84.2°F
Extreme Heat Days above 104.5°F	4	27	56
Precipitation	27.6"	31.0"	33.6"
Snowpack Sierra Nevada Mountains (North Sierra Region)	8.0"	3.1"	1.0"

Wildfire Low Population Scenario	201.9 acres	173.2 acres	179.2 acres
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In a high emissions scenario, where Chico and neighboring cities, counties, and states do not effectively respond to climate change, community members will face a harsher existence. Most notably, significant increases in the amount of extreme heat days will stress public health systems, exacerbate heat-related illness, and long-term respiratory issues to those most vulnerable or with pre-existing conditions. Furthermore, coupled with increasing but less frequent periods of precipitation, as well as dramatic decreases in snowpack from the Sierra Nevada, community members will face stress on water supplies across sectors. Finally, though wildfire scenario projections are consistent with historical trends, the community faces exacerbated air quality and public health issues due to increased wildfire risk from neighboring forests.

2. Questions

Which of the following four impacts do you believe will affect you? (Check all that applies)

1. Increased Temperatures
2. Increased Frequency of Extreme Heat Days
3. Changes to Precipitation Patterns
4. Increased Wildfire Risk

What specific challenges do you have responding to these impacts? (Optional)
[comment box]

From 1 (High Priority) to 4 (Low Priority), how would you prioritize the need to respond to these impacts?

- Increased Temperatures
- Increased Frequency of Extreme Heat Days
- Changes to Precipitation Patterns
- Increased Wildfire Risk

Explain your reasoning (Optional)
[comment box]

3. Solutions Exercise

In this section, you will be given three scenarios with a list of solutions to choose from. There are no wrong answers. Additional background and examples of local climate adaptation and resiliency measures to support your feedback can be found [here](#)

Extreme Heat:

For residents like John, who cannot afford to replace his broken air conditioner, the mid-summer heat in California has been brutal. John spends his free time searching for cooler temperatures under the shade of the City's urban forest, waiting for the heat to subside. He wonders if he'll be able to sleep as temperatures stagnate above 80°F throughout the night.

You are a city official tasked with the responsibility of finding a solution to the City's increasing urban heat island effect. Using the measures below, in what order would you respond to provide relief to residents like John?

- Cooling Centers
- Tree Planting
- Cool surfaces
- Targeted Outreach Campaigns
- Zoning
- Other: (please specify)
[comment box]

Explain your reasoning (Optional)
[comment box]

Wildfires:

For years, your community has faced increased strain from intense wildfires, with neighboring foothill communities experiencing the loss of many homes. Your community continues to grow and is contemplating development closer to wildfire-prone areas.

Using the measures below, in what order would you seek to address adaptation and resiliency to wildfires?

- Strengthening Partnerships Between Key Actors
- Wildfire Education
- Land-Use Decisions
- Other: (please specify)
[comment box]

Explain your reasoning (Optional)
[comment box]

Changes to Precipitation Patterns:

For 50 years, your City's flood control measures have kept residents, structures, and infrastructure safe. However, as precipitation patterns have slowly shifted towards more intense periods of rainfall, the City's flood control system may no longer be adequate to handle increased flood risk. Furthermore, area farmers have begun to worry extended periods of drought will threaten crop yields.

Using the measures below, in what order would you seek to respond to these challenges?

- Enhance Public Infrastructure (i.e., raising bridges, etc.)
- Upgrade Existing Flood Control Infrastructure
- Engage Tribal Communities with Traditional Ecological Knowledge
- Other: (please specify)
[comment box]

Explain your reasoning (Optional)
[comment box]

4. Demographic Questions (Optional)

What age group do you belong to?

- 24 & Under
- 25-35
- 36-54
- 55+

Please select the population group(s) that you most closely identify with.

- American Indian / Alaska Native
- Asian / Asian American
- Black or African American
- Hispanic, Latino, Latina, or Latinx
- Middle Eastern or North African
- Native Hawaiian or other Pacific Islander
- White
- I prefer not to answer
- Another option not listed (please specify)
[comment box]

What area of Chico do you live in? (Zip Code)

- 95926
- 95928
- 95973
- other

Check one or more options that reflect your gender.

- Woman
- Man
- Non-Binary
- Transgender
- I prefer not to answer
- Another option not listed here (please specify)
[comment box]

Climate Adaptation Survey Report

Introduction: In late March of 2021, The City of Chico released a short survey with the purpose of collecting feedback on how the City should comply with SB-379. Passed in 2015, Senate Bill 379 requires cities and counties to update the Safety Element of their respective General Plans with “climate adaptation and resiliency strategies.”. This report shall reveal the results of the survey, resulting in adaptation strategies compliant with SB-379.

Methods: The survey was designed and released on SurveyMonkey. Consisting of 4 parts: A background information section listed key information about climate change, its impacts on Chico, and emissions scenarios from CalAdapt to depict how different emissions reductions affect Chico’s climate. Secondly, a short questions section asked participants to rank climate change impacts that will most affect them, and how the City should prioritize responding to them. Thirdly, a solutions exercise gave participants three scenarios applying climate change impacts in Chico to similar communities. The participants were then given a range of solutions to choose from in order to address these impacts. Finally, a short section collecting demographic information from the participants.

Results:

In the two weeks that the survey was active, 115 responses were recorded with an average time spent of 8 minutes and 57 seconds. During the survey period, the most active days of response were during the first week, with 83 responses compared to 32 in the final week.

Demographics:

In terms of demographics, 112 participants responded to the following questions:

Percentages can exceed 100% because the total number of answer choices selected can be greater than the number of respondents that answered the question

1. What age group do you belong to?
 - 38% (43 participants) were between 36-54
 - 29% (32 participants) were 55+
 - 24% (27 participants) between 25-35
 - 9% (10 participants) were 24 and under.

2. Please select the population group(s) that you most closely identify with.
 - 70% of responses (78 participants) identified as white
 - 12% (13 participants) identified as Hispanic, Latino, Latina, or Latinx
 - 5% (6 participants) identified as American Indian / Alaska Native
 - 4% (5 participants) as Asian / Asian American
 - 1% (1 participant) identified as Black / African American
 - 1% (1 participant) identified as Middle Eastern or North African
 - 17% (19 participants) preferred not to answer
 - 4% (4 participants) chose another option not listed

3. What area of Chico do you live in? (Zip Code)

- 49% (55 participants) live in 95926
 - 36% (40 participants) live in 95928
 - 12.5% (14 participants) live in 95973
 - 3% (3 participants) live in 95963 or 95965
4. Check one or more options that reflect your gender
- 50% (56 participants) responded as a woman
 - 34% (38 participants) responded as a man
 - 2% (2 participants) responded as non-binary
 - 1% (1 participant) responded as transgender
 - 13% (15 participants) preferred not to answer
 - 4% (4 participants) listed another option

Questions:

1. Which of the following four impacts do you believe will affect you?
 - 84 of 115 responses (73%) indicated that all four impacts would affect the participants.

2. (Optional) What specific challenges do you have responding to these impacts?
 - “Being able to afford my air conditioning bill/possible increase in homeowners insurance due to fire risk. Mine has already jumped due to the Camp Fire.
 - “Energy costs. My kids and I have to walk everywhere.”
 - “I have medical problems with breathing so I would like to see information about warming and cooling centers.”
 - “I don’t own a car, so fleeing from my home in the case of a wildfire is challenging. Electric outages are already quite common, so I wonder what we’ll do when it gets hotter for longer. Air quality impact from fires.”
 - “As a bike commuter and walker heat without shade is bad”
 - “These are beyond my control as is my ability to response to them”

3. From 1 (High Priority) to 4 (Low Priority), how would you prioritize the need to respond to these impacts?
 - Based on all 115 responses, the impacts are prioritized in the order:
 1. Increased Wildfire Risk
 2. Changes to Precipitation Patterns
 3. Increased Frequency of Extreme Heat Days
 4. Increased Temperature

4. (Optional) Explain your reasoning
 - “From what we have experienced from the Camp firestorms to the Bear/NorthComplex firestorms, every aspect of our daily survival is most impacted by these fires – a vicious feedback loop – which increase drought, decrease rain, raise temps, threaten more lives through homelessness – the all

pervasive PTSD and sufferings of thousands of people spiraling down the econ ladder.”

- “I am so concerned about exacerbated wildfire risk due to all of the issues listed above. I am so worried about Bidwell Park catching fire. I just kind of feel like we (Chico) could be next if we don’t take precautionary steps. Also, NO ONE should be allowed to camp in Bidwell Park due to fire risk alone.”
- “Water storage capacity for local use needs to be increased to account for reduced snowpack.”
- “Wildfires and floods destroy lives, homes and habitats and smoke from wildfires increases

Solutions Exercise:

1. For Residents...You are a city official tasked with the responsibility of finding a solution to the City’s increasing urban heat island effect. Using the measures below, in what order would you respond to provide relief to residents like John?
 - Based on all 115 responses, the impacts are prioritized in the order:
 1. Tree Planting
 2. Cooling Centers
 3. Cool Surfaces
 4. Targeted Outreach Campaigns
 5. Zoning
2. (Optional) Explain your reasoning
 - “High temperatures are somewhat random, so quick measures would be the most responsive. Having the ability to open cooling centers would be most effective. Tree Planting can be done on private and public lands, and outreach campaigns could teach the benefits of tree planting and awareness of cooling centers. Transportation for elderly and the disabled should be provided for cooling centers, if possible. Cool surfaces and zoning are important, but are long-term and semi-permanent measures that will take more time to put in place.”
 - “I think cooling centers are a wonderful resource especially since they can also offer a variety of other resources.”
 - “Chico’s present expansion will results in new structures, communities, and neighborhoods popping up at a quick rate. Using specialized blacktop surfaces or special building materials constructed to be heat resistant will assist in keeping temperatures around these areas down. Targeted outreach programs offering repair expense assistance or low cost loans to those experiencing cooling outages would greatly prevent the described situation below.”
3. For years, your community has faced increased strain from intense wildfire...using the measures below, in what order would you seek to address adaptation and resiliency to wildfires?
 - Based on all 115 responses, the impacts are prioritized in the order:
 1. Land-use Decisions
 2. Strengthening Partnerships Between Key Actors
 3. Wildfire Education

4. (Optional) Explain your reasoning
 - “We should not be developing into the foothills. This will simply increase the chance of urban fire spread just like Paradise. The fire will start in the foothills and move into the urban areas. It’s easier to prescribe burn open grassland – and easier to stop a fire in that landscape than it is to stop it once it reaches the urban landscape. With decreased groundwater, we might not have the water resources to fight the fire anyway.
 - “In Chico we can’t control a lot besides land use decisions. So we should decide to manage the forest we can and have defensible space and talk to indigenous people who know about the forest and can act on Federal Land.
 - “Recent adaptations, like use of non-combustible building materials and anti-fire equipment, in areas with new buildings (like Paradise) will assist individuals who own property or rent buildings in wildfire areas. Partnerships with key actors, such as contractors and the city, contractors and material manufacturers, local government and federal government, federal government and disaster relief agencies will all assist with preventing and combating wildfires. Land use decisions will also prevent high-risk buildings and industries from operating in areas prone to wildfires.
5. For 50 years, your City’s flood control measures have kept residents, structures, and infrastructure safe...Using the measures below, in what order would you seek to respond to these challenges.
 - Based on all 115 responses, the impacts are prioritized in the order:
 1. Upgrade Existing Flood Control Infrastructure
 2. Engage Tribal Communities with Traditional Ecological Knowledge
 3. Enhance Public Infrastructure (i.e., raising bridge, etc.)
6. (Optional) Explain your Reasoning
 - “Reducing flood damage may be more of a priority simply because it’s damage prevention, which is a major responsibility of government. Many enhancements of public infrastructure could be very expensive and may not be feasible any time soon (bridges, especially). Traditional ecological knowledge may or may not prove useful, but I think that could be a wonderful resource and would be great for building relationships between the City and tribal communities. I think one avenue that could be researched, concerning farming, is converting irrigation methods to ones that are more efficient. Also looking for ways for farmers to capture more water on their land either in a reservoir or by allowing it to drain back into the water table.”
 - “I live in Chico’s “golden triangle” and have already experience the storm drain system backing up and flooding properties during severe thunderstorms. It will only get worse if the City doesn’t deal with it’s poorly designed storm water system. There is an areas where two different systems meet and that intersection is not served well by either system. It’s the “fringe” area of the systems.

Key Takeaways:

- When it comes to how climate change will impact them, an overwhelmingly majority of respondents worry about every impact, however when it comes to which ones the City should prioritize, tackling the increasing risk of wildfire while addressing growing fears of flooding and drought is of the highest priority.
 - Stakeholders favor more direct action from the City through Land-use planning to prevent development in areas at high risk of wildfire as well as strengthening partnerships between key actors to reinforce these goals.
 - Flooding was a concern among respondents with the belief that upgrading existing flood control infrastructure was most important. However, many responded on the need for partnerships between the Mechoopda and neighboring indigenous groups in order to achieve these goals.
- Increased Frequency to Extreme Heat and Increased Temperatures were the least prioritized based on survey results, indicating the need for greater outreach on its effects to Chico.
 - Respondents favored nature-based solutions such as tree planting to adapt and mitigate the City's existing urban heat island effect. Furthermore, with cooling solutions such as cooling centers and cool surfaces being favored after tree planting, the public sees the immediate need to address existing outcomes of extreme heat. With extreme heat and increased temperatures being least prioritized, robust outreach is necessary to be interwoven within these solutions, in order to properly educate the public.