



City Council Special Meeting: Climate Smart San José and Carbon Neutral Resolution

Kerrie Romanow, Director, Environmental Services Department
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November 8, 2021

CLIMATE SMART SAN JOSE

A People-Centered Plan for a
Low-Carbon City



Overview

1. The Urgency of Climate Change
2. The Role of Cities
 - Climate Smart Plan
 - Accomplishments
 - Current Initiatives
3. Carbon Neutral San José by 2030

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The Urgency of Climate Change

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Climate Change AND San José: Science, Risks, and Solutions

Michael Mastrandrea

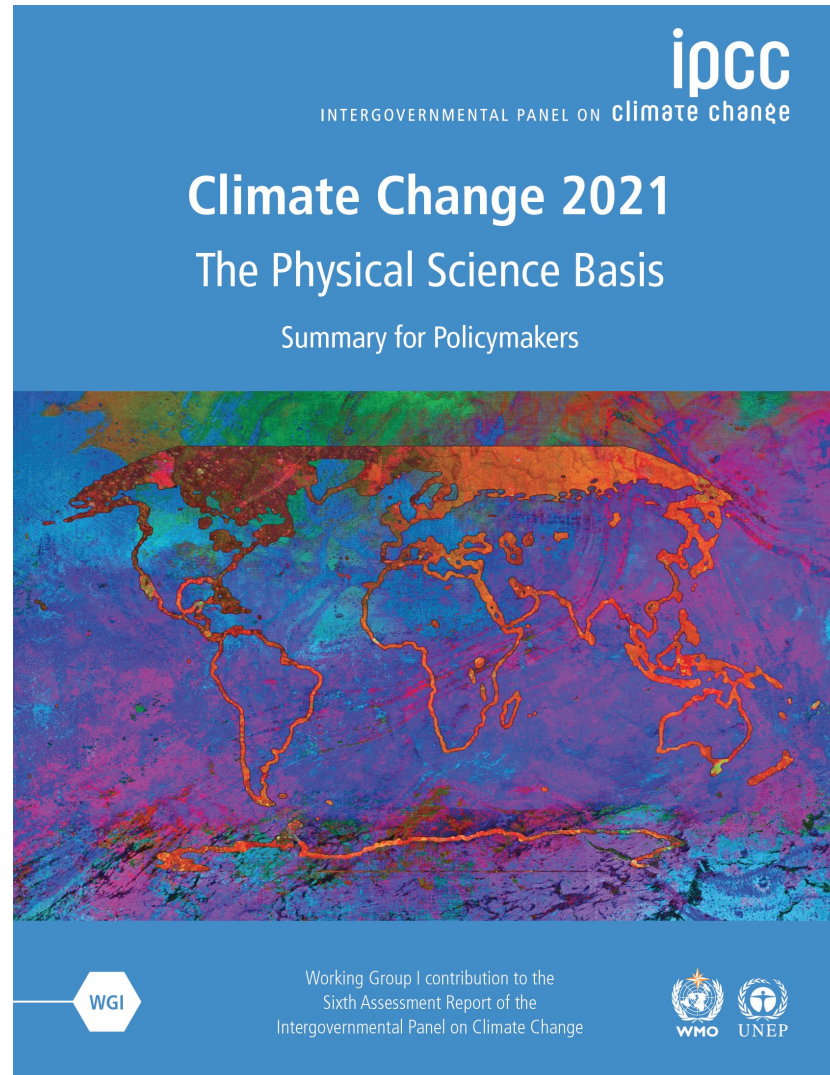
Climate and Energy Policy Program



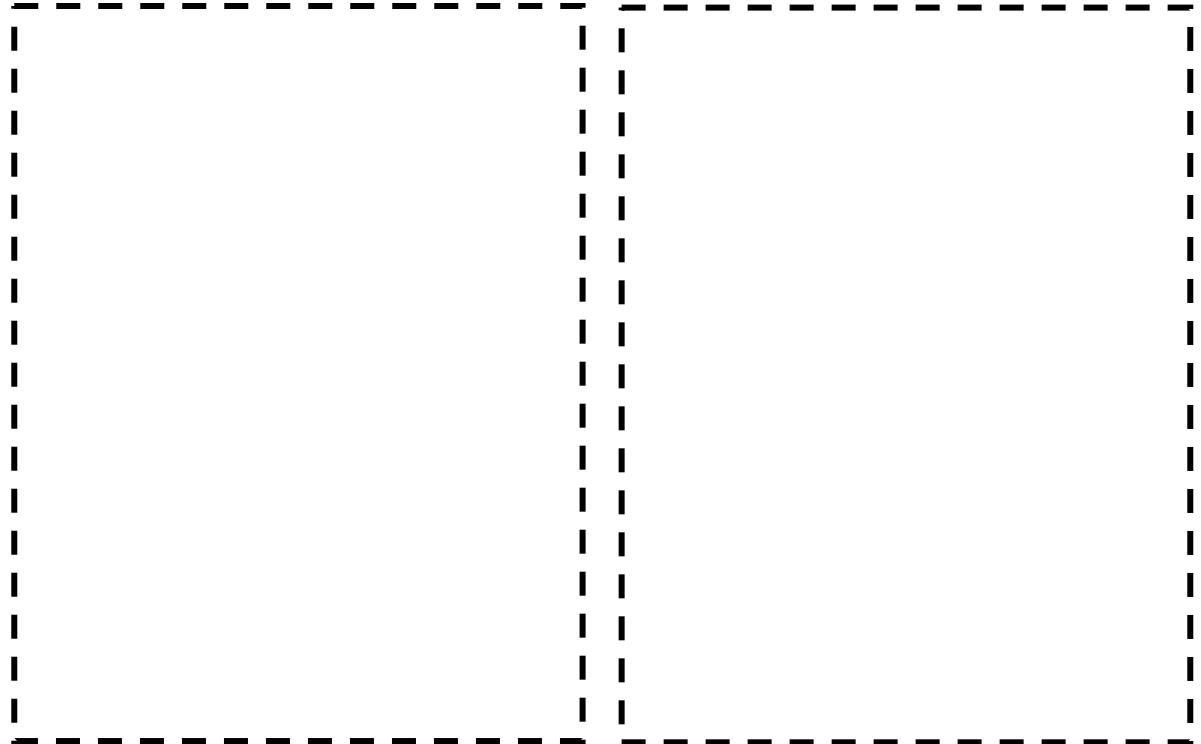
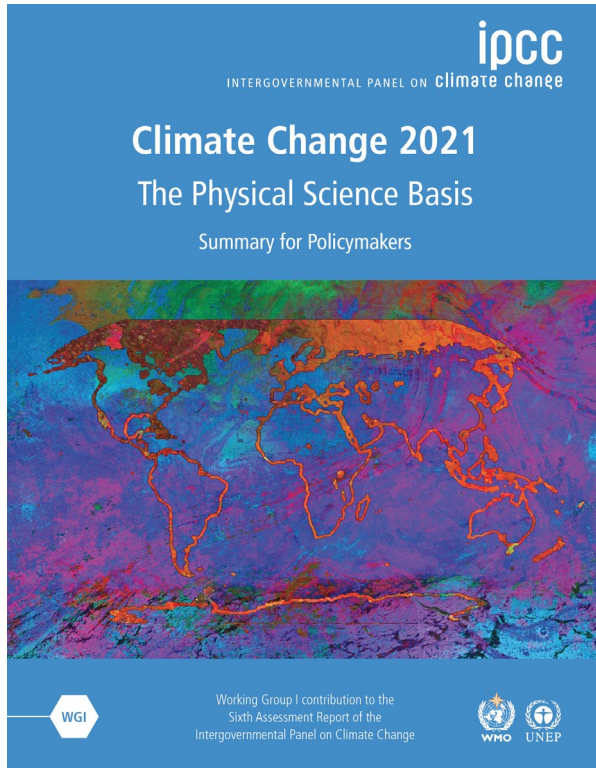
Scientific Consensus



IPCC Assessments



IPCC Assessment



WG1:

The Physical Science Basis
Released Aug. 9, 2021

WG2:

Impacts, Adaptation and Vulnerability
Expected Feb. 2022

WG3:

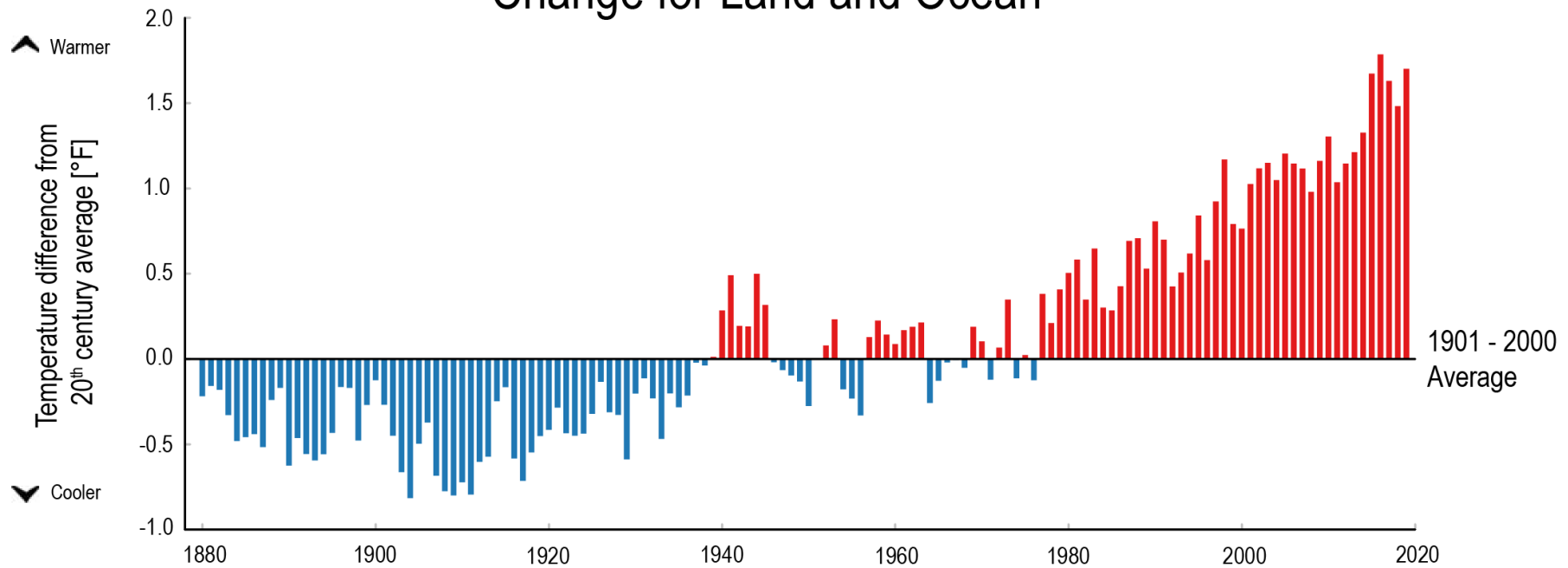
Mitigation of Climate Change
Expected Mar. 2022

IPCC Statements

- Climate change is widespread, rapid, and intensifying.
- Increasing magnitudes of warming increase the likelihood of severe, pervasive, and irreversible impacts. (AR5 WGII)

A Warming World

Annual Global Surface Temperature Change for Land and Ocean



Climate impacts are global and local

A Wildfire Is Heading For Lake Tahoe, Sending Ash Raining Down On Tourists

August 26, 2021 - 1:27 PM ET



APRIL 2017
97% CAPACITY

AUGUST 2021
14% CAPACITY

STEVENS CREEK RESERVOIR
SANTA CLARA COUNTY

Valley Water

These before-after images of Bay Area reservoirs show drought's severe impact



Hit by worst floods in a century, San Jose got little warning of impending disaster



A Single Fire Killed Thousands Of Sequoias. Scientists Are Racing To Save The Rest

September 17, 2021 - 9:00 AM ET



It's Official: NOAA Declares July 2021 Earth's Hottest Month on Record

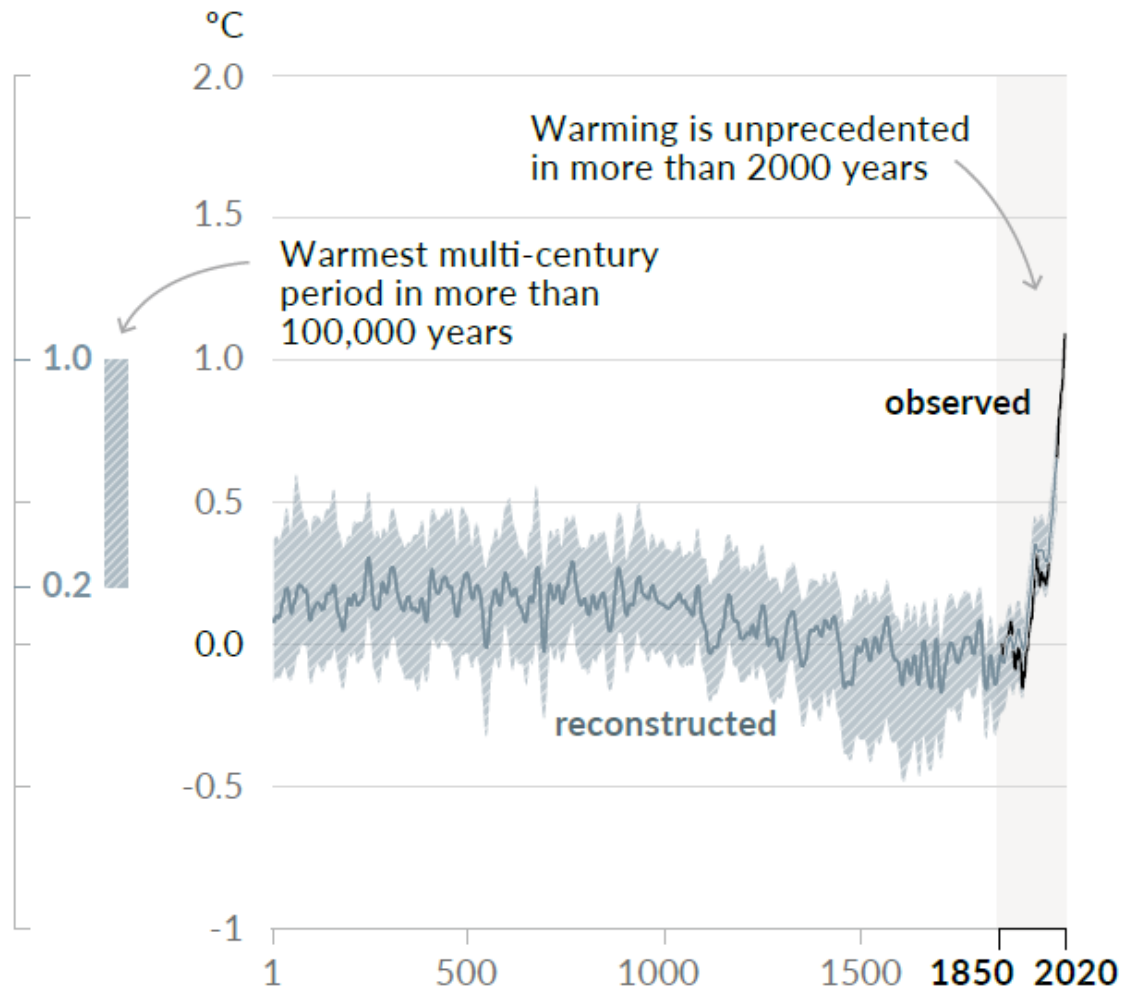


IPCC statements

- Many of the changes observed in the climate are unprecedented in thousands, if not hundreds of thousands of years.

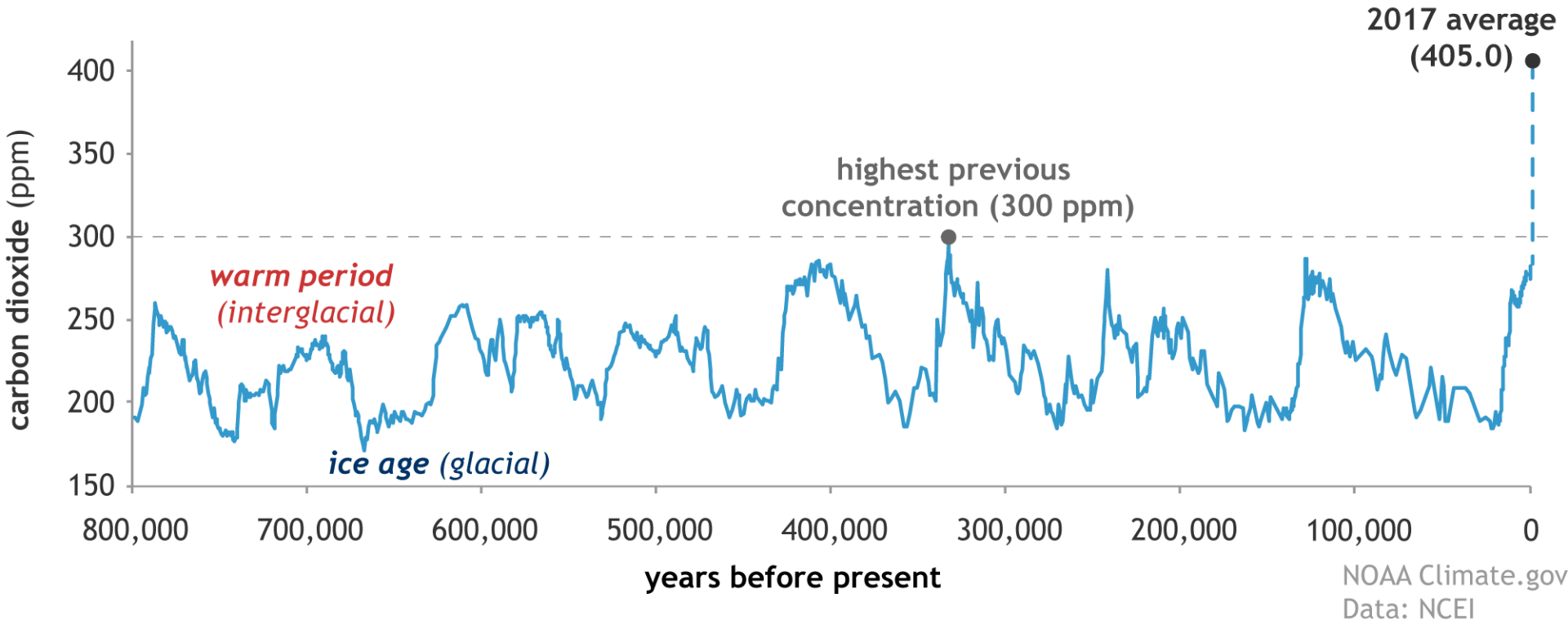
Climate change in context

a) Change in global surface temperature (decadal average)
as **reconstructed** (1-2000) and **observed** (1850-2020)



Climate change in context

CO₂ during ice ages and warm periods for the past 800,000 years

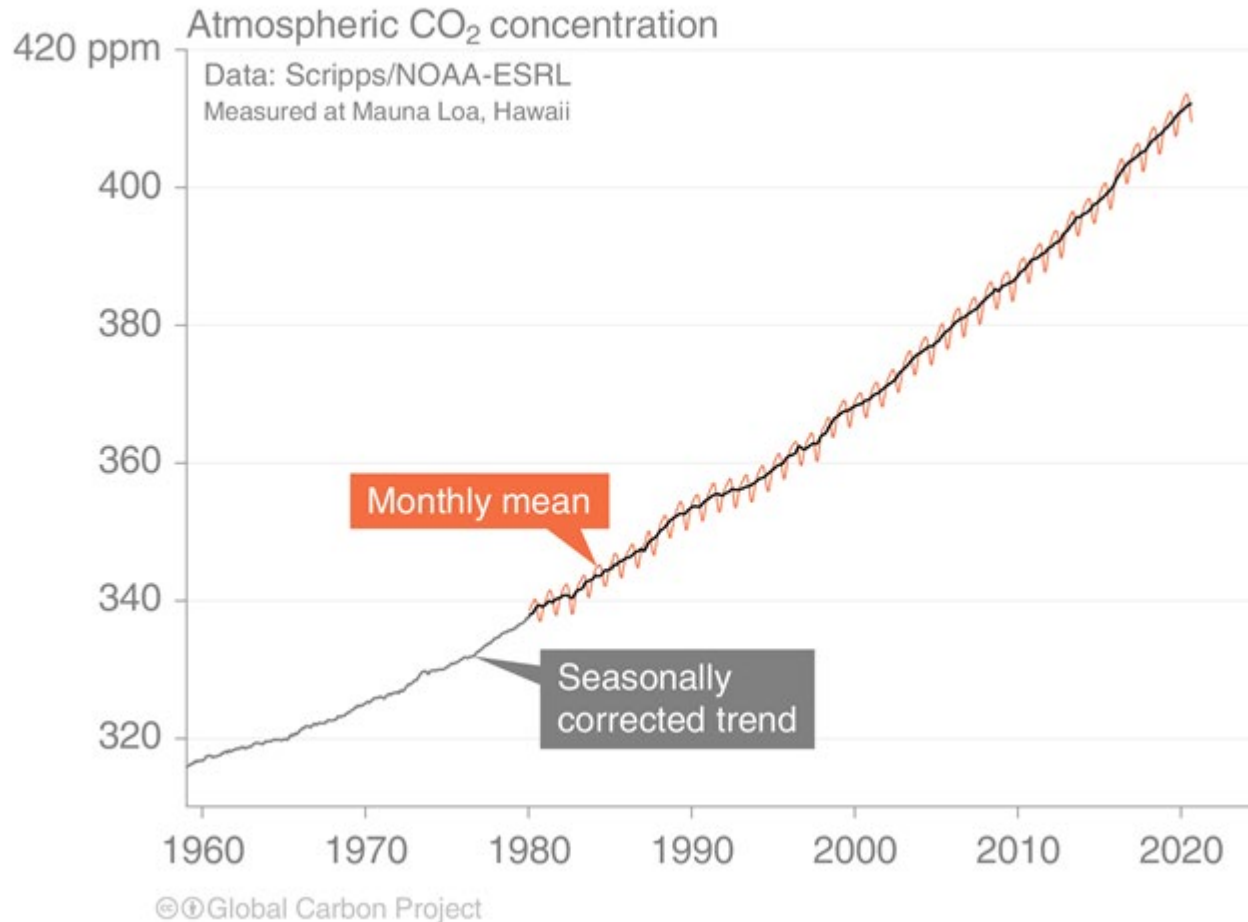


IPCC statements

- It is unequivocal that human influence has warmed the atmosphere, ocean and land.

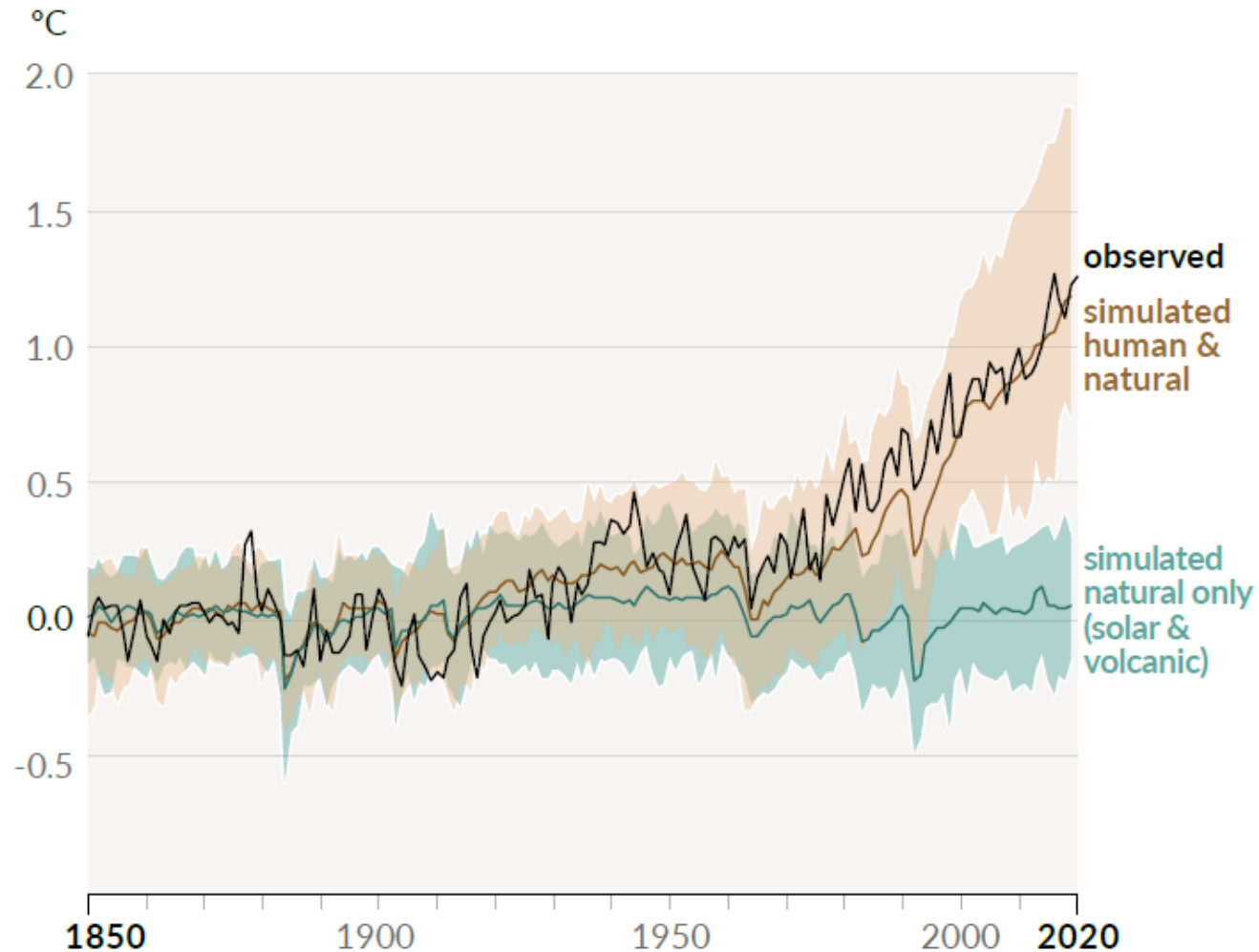
A Warming World

The global CO₂ concentration increased from ~277 ppm in 1750 to 410 ppm in 2019 (up 48%)



A Warming World

b) Change in global surface temperature (annual average) as **observed** and simulated using **human & natural** and **only natural** factors (both 1850-2020)



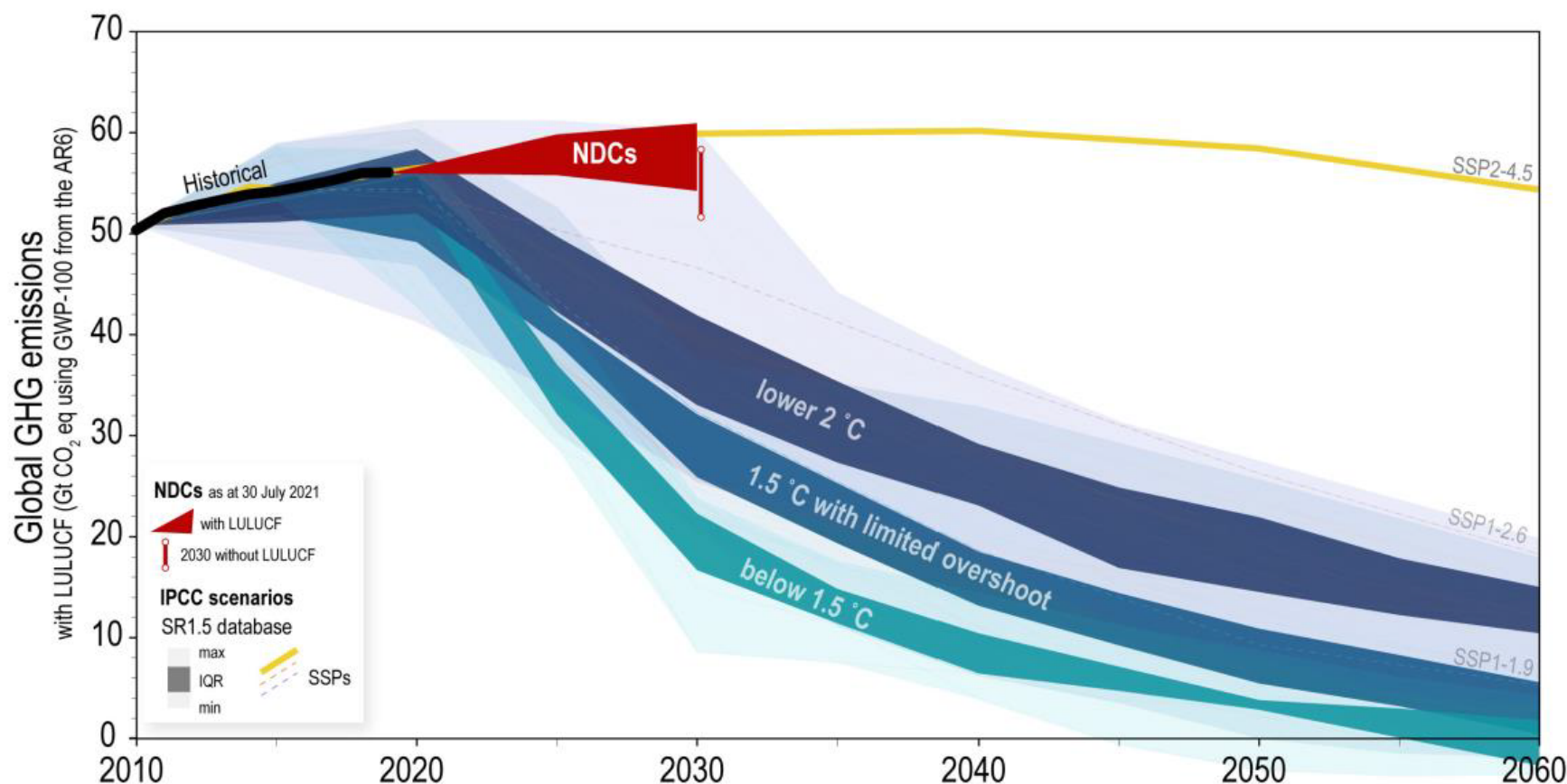
IPCC statements

- Future changes to our climate and how they affect us depend on the choices we make today.
- Strong and sustained reductions in emissions of carbon dioxide (CO₂) and other greenhouse gases would limit climate change.
- Unless there are immediate, rapid and large-scale reductions in greenhouse gas emissions, limiting warming to close to 1.5°C or even 2°C will be beyond reach.

Projecting future climate change

Figure 9

Comparison of global emissions under scenarios assessed in the Intergovernmental Panel on Climate Change Special Report on Global Warming of 1.5 °C with total global emissions according to nationally determined contributions



Climate solutions

- California and its cities have an outsized influence on climate solutions

Thank you

Michael Mastrandrea



woods.stanford.edu/climate-and-energy-policy-program

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The Role of Cities

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Cities Play a Key Role in the Fight Against Climate Change

San José should take a leadership role:

- 10th largest city in the U.S.
- home to a diverse population, including disadvantaged communities who will be most impacted by climate change



The Climate Challenge demonstrated the unique ability of cities to deepen and accelerate action

Climate Challenge cities are expected to collectively reduce emissions 32 percent below 2005 levels by 2025 (surpassing Paris Agreement goals!)

Climate Smart Pillars and Strategies

PILLARS of what residents want

Pillar 1

A Sustainable & Climate Smart City

Pillar 2

A Vibrant City of Connected & Focused Growth

Pillar 3

An Economically Inclusive City of Opportunity

Climate and water STRATEGIES

1.1

Transition to a renewable energy future

2.1

Densify our city to accommodate our future neighbors

2.3

Create clean, personalized mobility choices

3.1

Create local jobs in our city to reduce vehicle miles traveled

3.3

Make commercial goods movement clean and efficient

1.2

Embrace our Californian climate

2.2

Make homes efficient and affordable for our families

2.4

Develop integrated, accessible public transport infrastructure

3.2

Improve our commercial building stock

CHAPTERS		GOALS																						
THRIVING COMMUNITY	Diverse and Innovative Economy	IE-1 Land Use and Employment	IE-2 Business Growth and Retention	IE-3 Regional, State, & National Leadership	IE-4 Connections to Promote Economic Development	IE-5 Cultural Attractions	IE-6 Broad Economic Prosperity	IE-7 Clean Technology																
	Arts and Culture	AC-1 San José as the Silicon Valley Cultural Center	AC-2 High Impact Public Art																					
	Community Engagement	CE-1 Active Community Engagement	CE-2 Community Partnerships																					
	Fiscal Sustainability	FS-1 City Operations	FS-2 Cultivate Fiscal Resources	FS-3 Fiscally Sustainable Land Use Framework	FS-4 Promote Fiscally Beneficial Land Use	FS-5 Fiscally Sustainable Service Delivery	FS-6 Fiscally Sustainable Waste Management																	
ENVIRONMENTAL LEADERSHIP	Measurable Environmental Sustainability	MS-1 Green Building Policy Leadership	MS-2 Energy Conservation and Renewable Energy Use	MS-3 Water Conservation and Quality	MS-4 Healthful Indoor Environment	MS-5 Waste Diversion	MS-6 Waste Reduction	MS-7 Environmental Leadership and Innovation	MS-8 Environmental Stewardship	MS-9 Service Delivery	MS-10 Air Pollutant Emission Reduction	MS-11 Toxic Air Contaminants	MS-12 Objectional Odors	MS-13 Construction Air Emissions	MS-14 Reduce Consumption and Increase Efficiency	MS-15 Renewable Energy	MS-16 Energy Security	MS-17 Responsible Management of Water Supply	MS-18 Water Conservation	MS-19 Water Recycling	MS-20 Water Quality	MS-21 Community Forest		
	Environmental Resources	ER-1 Grassland, Oak Woodlands, Chaparral, and Coast Scrub	ER-2 Riparian Corridors	ER-3 Bay and Baylands	ER-4 Special-Status Plants and Animals	ER-5 Migratory Birds	ER-6 Urban Natural Interface	ER-7 Wildlife Movement	ER-8 Stormwater	ER-9 Water Resources	ER-10 Archaeology and Paleontology	ER-11 Extractive Resources												
	Environmental Considerations / Hazards	EC-1 Community Noise Levels and Land Use Compatibility	EC-2 Vibration	EC-3 Seismic Hazards	EC-4 Geologic and Soil Hazards	EC-5 Flooding Hazards	EC-6 Hazardous Materials	EC-7 Environmental Contamination	EC-8 Wildland and Urban Fire Hazards															
	Infrastructure	IN-1 General Provision of Infrastructure	IN-2 Infrastructure Management	IN-3 Water Supply, Sanitary Sewer, and Storm Drainage	IN-4 Wastewater Treatment and Water Reclamation	IN-5 Solid Waste Materials Recovery / Landfill	IN-6 Telecommunications																	
QUALITY OF LIFE	Vibrant Neighborhoods	VN-1 Vibrant, Attractive, and Complete Neighborhoods	VN-2 Community Empowerment	VN-3 Access to Healthful Foods	VN-4 Cultural Opportunities	VN-5 Private Community Gathering Facilities																		
	Community Design	CD-1 Attractive City	CD-2 Function	CD-3 Connections	CD-4 Compatibility	CD-5 Community Health, Safety, and Wellness	CD-6 Downtown Urban Design	CD-7 Urban Villages	CD-8 Building Height	CD-9 Access to Scenic Resources	CD-10 Attractive Gateways													
	Housing	H-1 Housing - Social Equity and Diversity	H-2 Affordable Housing	H-3 High Quality Housing and Great Places	H-4 Housing - Environmental Sustainability																			
	Education and Services	ES-1 Education	ES-2 Libraries	ES-3 Law Enforcement and Fire Protection	ES-4 Emergency Management	ES-5 Code Enforcement	ES-6 Access to Medical Services																	
	Parks, Open Space and Recreation	PR-1 High Quality Facilities and Programs	PR-2 Contribute to a Healthful Community	PR-3 Provide an Equitable Park System	PR-4 Community Identity	PR-5 Grand Parks	PR-6 Sustainable Parks and Recreation	PR-7 Interconnected Parks System	PR-8 Fiscal Management of Parks and Recreation Resources															
LAND USE AND TRANSPORTATION	Land Use Policies	LU-1 General Land Use	LU-2 Growth Areas	LU-3 Downtown	LU-4 Commercial	LU-5 Neighborhood Serving Commercial	LU-6 Industrial Preservation	LU-7 Attract New Industrial Uses	LU-8 Maintain Employment Lands	LU-9 High-Quality Living Environments	LU-10 Efficient Use of Residential and Mixed-Use Lands	LU-11 Residential Neighborhoods	LU-12 Urban Agriculture	LU-13 Landmarks and Districts	LU-14 Historic Structures of Lesser Significance	LU-15 Public Awareness	LU-16 Sustainable Practices	LU-17 Hillside / Rural Preservation	LU-18 Hillside Development Hazard Avoidance	LU-19 Urban Growth Boundary (Open Hillside / Agriculture Lands)	LU-20 Rural Agriculture			
	Transportation Policies	TR-1 Balanced Transportation System	TR-2 Walking and Bicycling	TR-3 Maximize Use of Public Transit	TR-4 Passenger Rail Service	TR-5 Vehicular Circulation	TR-6 Goods Movement	TR-7 Transportation Demand Management	TR-8 Parking Strategies	TR-9 Tier I Reduction of Vehicle Miles Traveled	TR-10 Tier II Vehicle Miles Traveled Reduction	TR-11 Regional and State VMT Reduction Efforts	TR-12 Intelligent Transportation System	TR-13 Attractive and Accessible Airport	TR-14 Safe Airport	TR-15 Moffett Field	TN-1 National Model for Trail Development and Use	TN-2 Trails as Transportation	TN-3 Accessible, Safe, and Well-Functioning Trails					
IMPLEMENTATION	Implementation	IP-1 Land Use / Transportation Diagram	IP-2 General Plan Phasing / Planning Horizons / Major Review	IP-3 General Plan Annual Review and Measureable Sustainability	IP-4 General Plan Annual Review Hearing Process	IP-5 Urban Village Planning	IP-6 Capital Improvement Program	IP-7 Specific Plans	IP-8 Zoning	IP-9 Subdivision	IP-10 Site Development	IP-11 Annexations	IP-12 Environmental Clearance	IP-13 Building Permits	IP-14 Citizen Participation and Community Engagement	IP-15 Development Fees, Taxes, and Improvement Requirements	IP-16 Implementation of the General Plan by Other Agencies	IP-17 Environmental Leadership / Stewardship	IP-18 Economic Development	IP-19 Housing Development				

Climate Smart San José Requires Activation of 73% of General Plan's Goals

KEY

CSSJ drives progress on this goal

CSSJ enables progress on this goal

CSSJ aligns with this goal

CSSJ does not actively consider this goal

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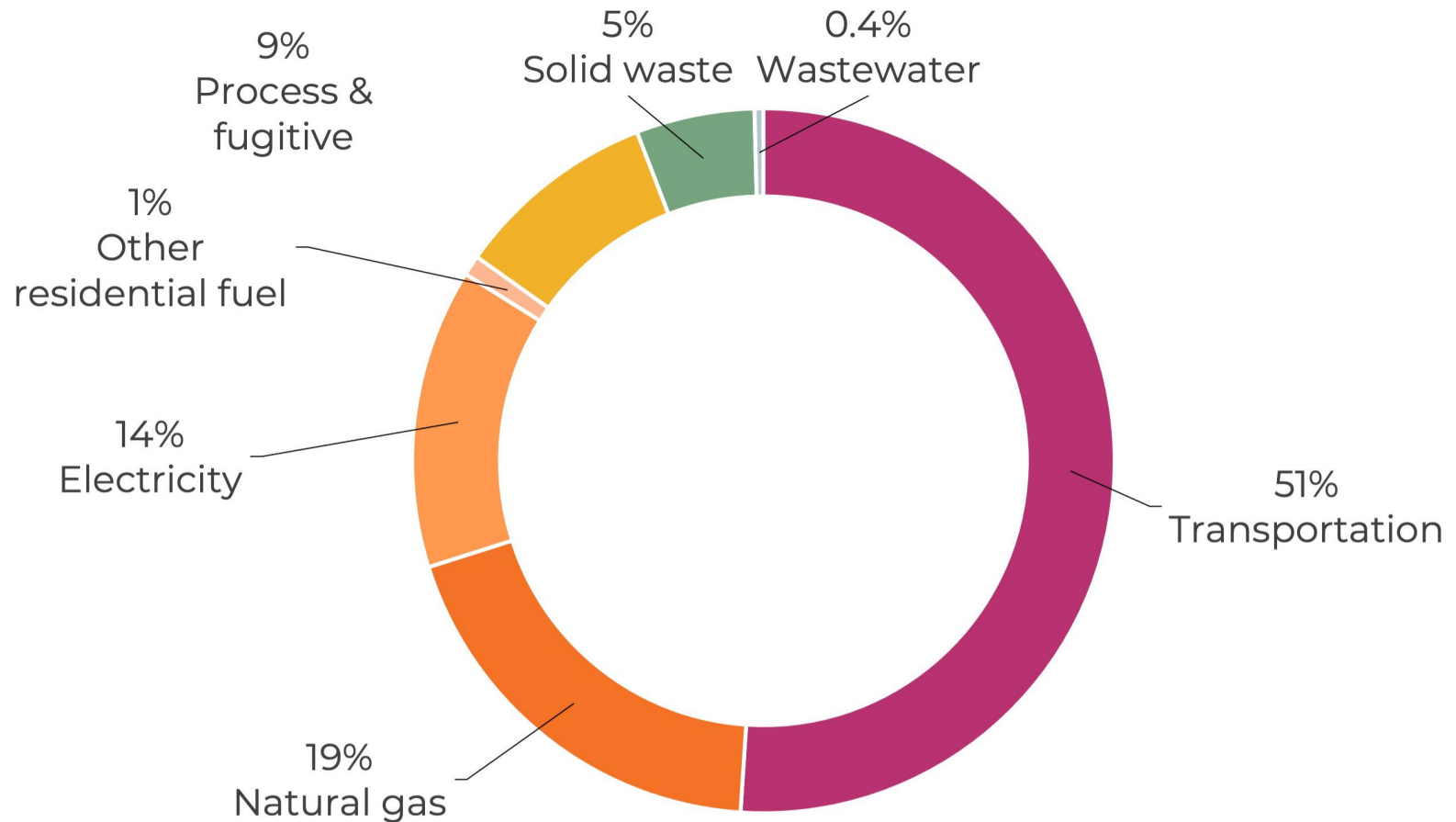
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Climate Smart Metrics and Tracking

A Dashboard for Tracking Progress

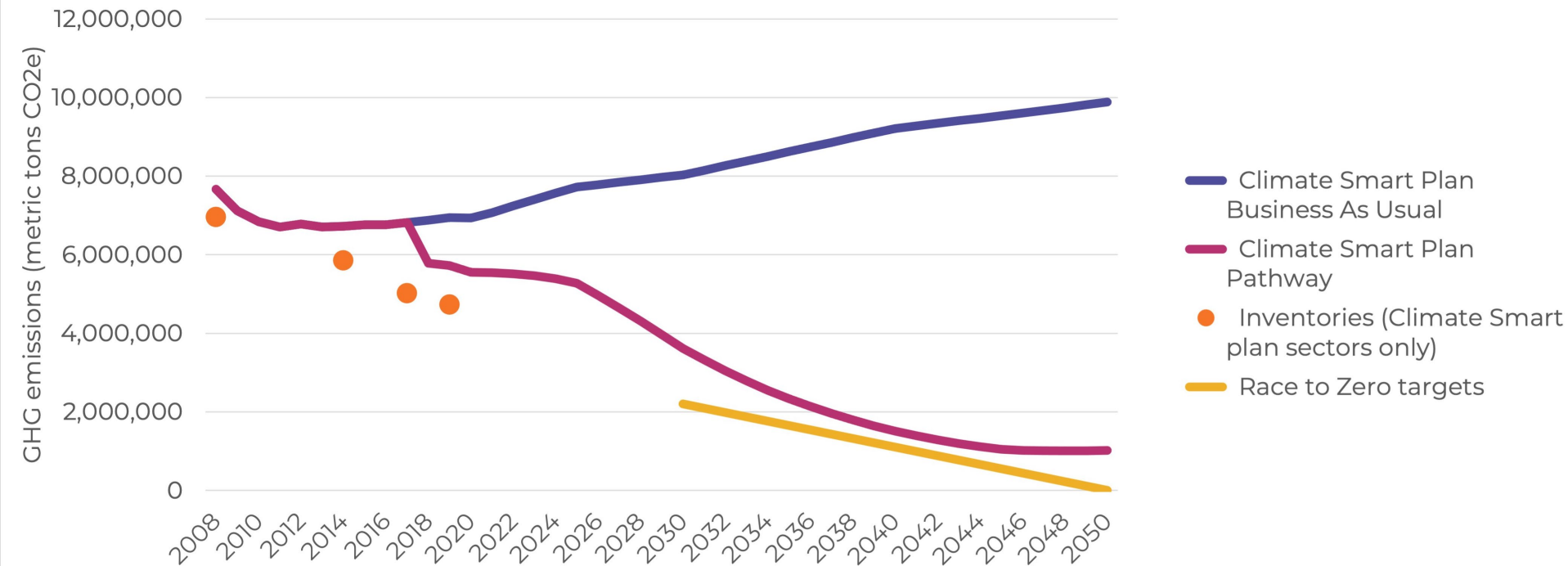
INDICATOR	METRIC	PROGRESS MILESTONES			
		TODAY	2030	2040	2050
RENEWABLE ENERGY	Share of eligible renewable energy generation in San José Clean Energy's (SJCE) portfolio	Percentage of SJCE's generation mix			
		-	60%	87%	100%
LOCAL RENEWABLES	Amount of renewable energy capacity installed in San José	Installed capacity of local renewables (MW)			
		131	668	1,113	1,430
TOTAL WATER CONSUMPTION	Total volume of water consumed in the city per day	Million gallons of water per day			
		116	107	76	-
RESIDENTIAL WATER USE	Residential water use per capita per day	Gallons of water per capita per day			
		60	42	20	-
REUSED & RECYCLED WATER SOURCES	Water captured and reused or treated then recycled	Percentage of demand met by reuse/recycling			
		5%	14%	23%	-
CITY DENSITY IN GROWTH AREAS	Density of new residents in planned growth areas	Resident population per square mile (new growth only)			
		2,372	5,224	7,015	8,727
COMPLETE STREETS	Percentage of primary streets in San José that meet California Complete Streets Act standards	Percentage of primary streets that are complete streets			
		40%	100%	100%	100%
TRANSIT-ORIENTED DEVELOPMENT (TOD)	Commercial space located within 1/2 mile of transit	Millions of square feet of commercial space			
		29	51	67	78
ZNE HOMES	Number of Zero Net Energy (ZNE) homes	Number of ZNE homes			
		<100	37,975	71,800	90,650
ALL-ELECTRIC HOMES	Percentage of homes that are all-electric	Percentage of homes that are all-electric			
		0%	47%	95%	100%
HOUSEHOLD ENERGY USE	Household energy use (gas and electricity)	Household energy consumption (kWh_e and kWh_{th})			
		14,988	10,626	6,547	5,704
ELECTRIC VEHICLES (EVs)	Percentage of passenger vehicles (including SUVs) that are electric	Percentage of passenger vehicles that are electric			
		6%	61%	78%	82%
REDUCED CAR DEPENDENCY	Reduction in passenger cars and SUVs from public or shared mobility	Equivalent numbers of cars taken off the roads			
		-	34,400	80,500	114,400
SINGLE-OCCUPANCY VEHICLES	Single-occupancy vehicle commute trips	Percentage of single-occupancy vehicle commute trips			
		82%	46%	24%	12%

San José 2019 GHG Emissions Profile



Charting the Path to Paris

Keeping Global Temperature Rise this Century Below 1.5°C



Accomplishments

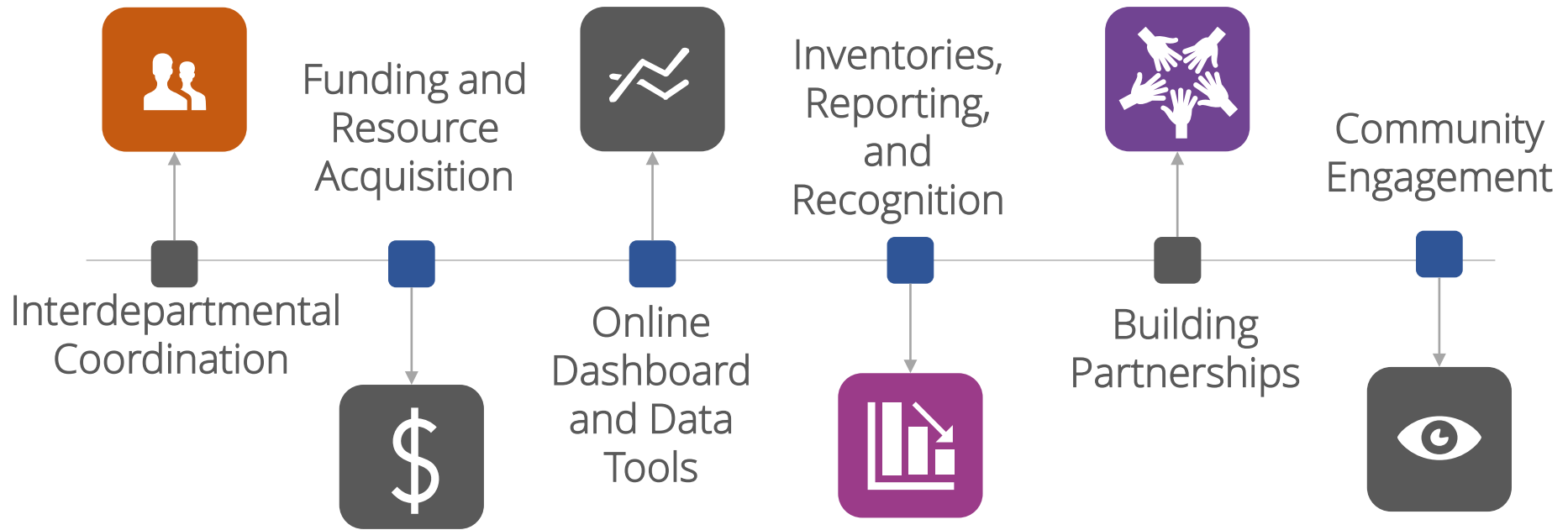
- ✓ San José Clean Energy (2019)
- ✓ Adoption of Natural Gas Infrastructure Prohibition Ordinance (2019)
- ✓ Installation of 53 miles of new bike lanes (2019 - 2020)
- ✓ Adoption of Electric Mobility Roadmap (2020)
- ✓ Installation of 2,000+ EV charging stations (2019-2021)

Awards

- Carbon Disclosure Project “A List” (2020)
- American Council for an Energy-Efficient Economy City Scorecard top ten (2020)
- Shining Cities Top 10 (2020)
- SPUR Impact Award (2020)
- Big U.S. city with best electric vehicle charging infrastructure (Rocky Mountain Institute, 2020)
- 10th Greenest City in America (WalletHub, 2021)



Climate Smart Initiatives – Core



Join the San José Climate Smart Challenge and live better today for tomorrow!

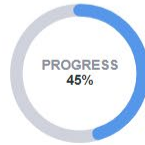
JOIN THE CHALLENGE

WHY JOIN? →



1,000

HOUSEHOLDS BY SEPTEMBER 2021
PARTICIPATION GOAL



250

TONS OF CO₂ BY SEPTEMBER 2021
REDUCTION GOAL

TOP COMMUNITY GROUP

Environmental Services Department

TOP TEAM

Guinea Pigs

Climate Smart Challenge

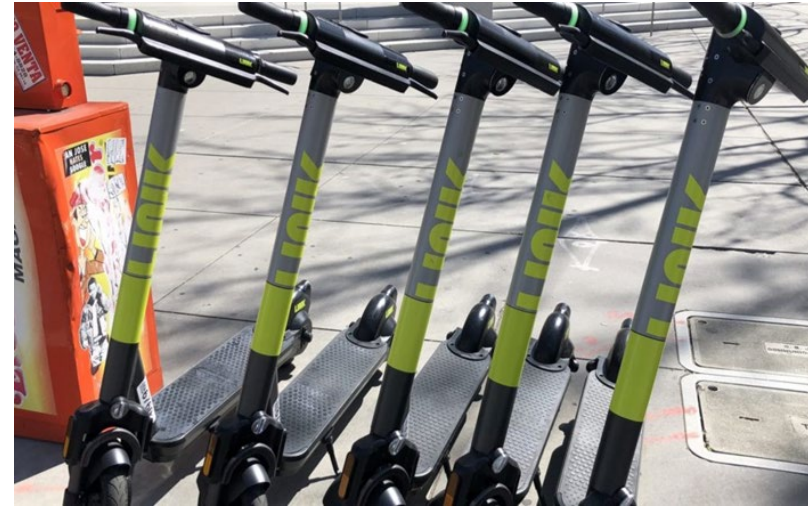
- Interactive web platform
- Lbs. CO₂ “points” per action taken
- Data aggregated by neighborhood and team
- Actions sorted by difficulty/ expense
- Significant potential for further community engagement

Climate Smart Initiatives – Transportation and Water



Transportation

- Electric Mobility Roadmap Implementation
- Parking and Transportation Demand Management Policy
- Access & Mobility Plan
- Delivering Zero Emissions Communities (DZEC) Initiatives



Water Conservation

- Advanced Metering Infrastructure (AMI) Deployment
- Integrated Water Infrastructure Program
- Water Efficient Landscaping Ordinance Update



Climate Smart Initiatives – Energy and Other



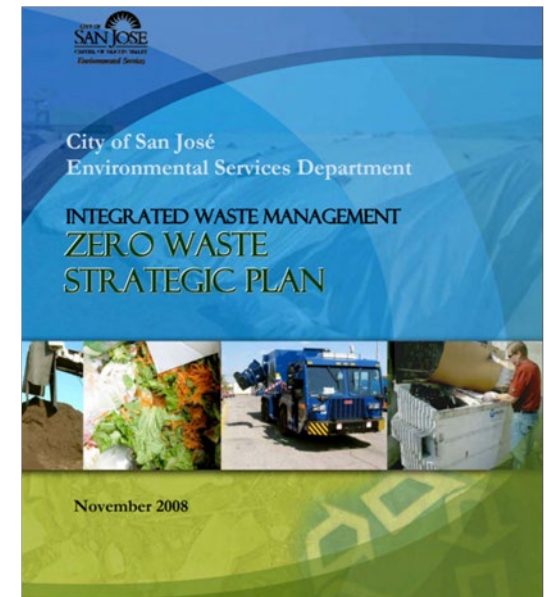
Energy

- San Jose Clean Energy (SJCE)
- Energy Efficiency Programs
- SJCE Solar Access (Disadvantaged Communities-Green Tariff Program)
- SJCE Integrated Resource Plan
- Existing Building Electrification Plan



Other

- Zero Emissions Neighborhood (ZEN) Pilot
- New Climate Smart Zero Waste Element
- New Climate Smart Natural and Working Lands (NWL) Element



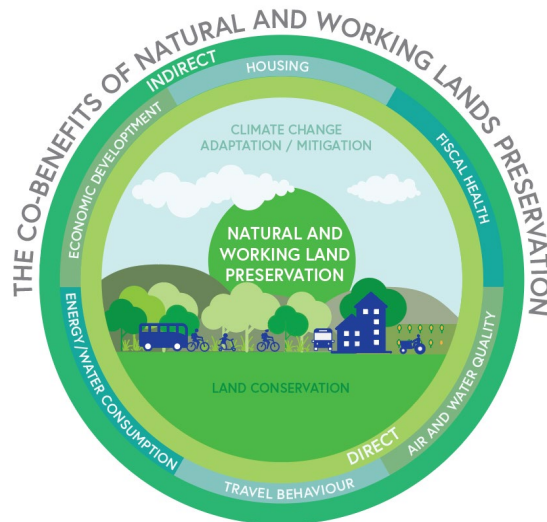
Climate Smart San José Project Highlight: Natural and Working Lands (NWL) Element

Jake Smith, Conservation GIS Coordinator
Santa Clara Valley Open Space Authority



What are Natural and Working Lands?

- Broad definition: Forests, woodlands, grasslands, shrubland, wetlands, riparian areas, rangeland, farmland, coastal areas, and urban greenspaces
- City designated: Areas with Open Space, Parklands, Habitat, Agriculture, and Open Hillside land use designations in the General Plan



SF Bay Wildlife Refuge



Alum Rock Park/ Sierra Vista Open Space Preserve



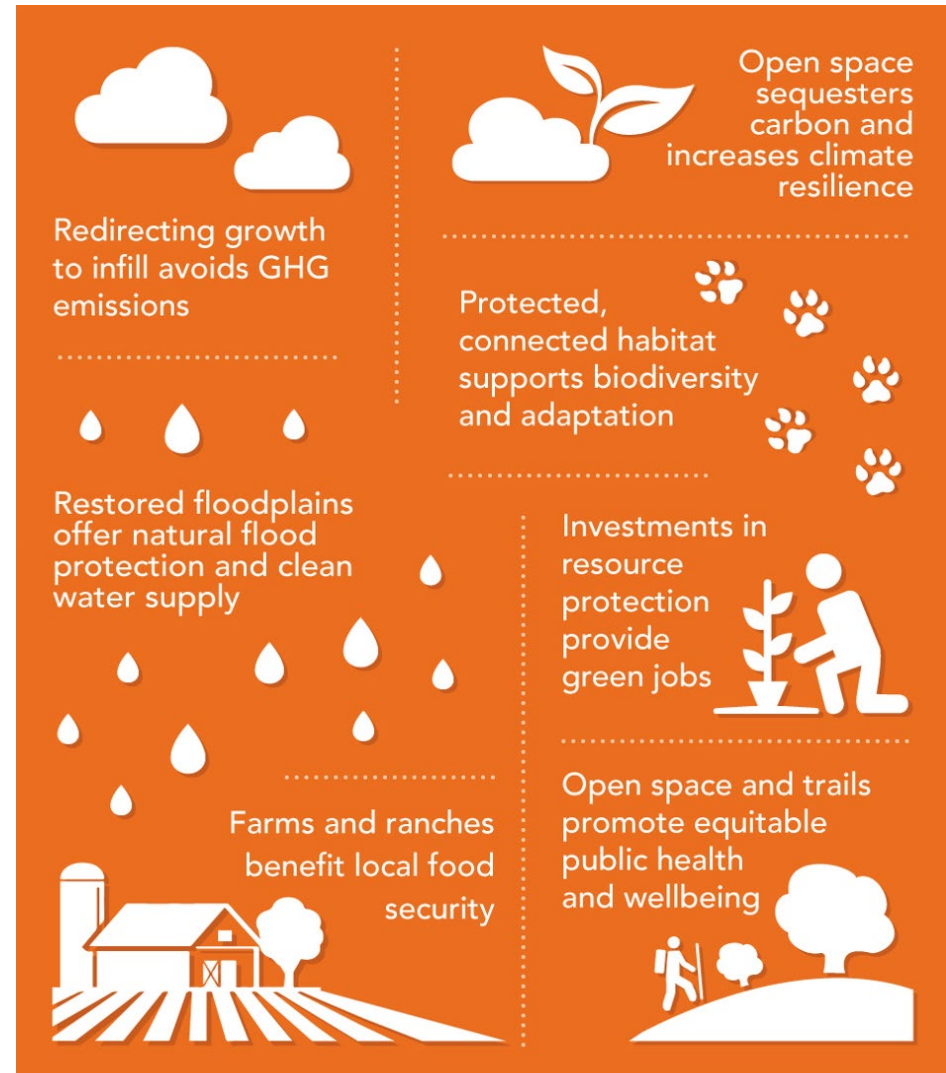
Guadalupe River Park



Coyote Valley

Examples of Natural and Working Land Strategies and Benefits

- NWL conservation and supportive policies
 - NWL protection, transfer of development, increased transit-oriented infill
- Land Restoration
 - Riparian, wetland, grassland, and oak woodland restoration
- Regenerative Agriculture
 - Cover crops, compost application, reduced tillage, mulching, prescribed grazing and rangeland planting
- Urban Greening
 - Street tree planting, urban forest expansion



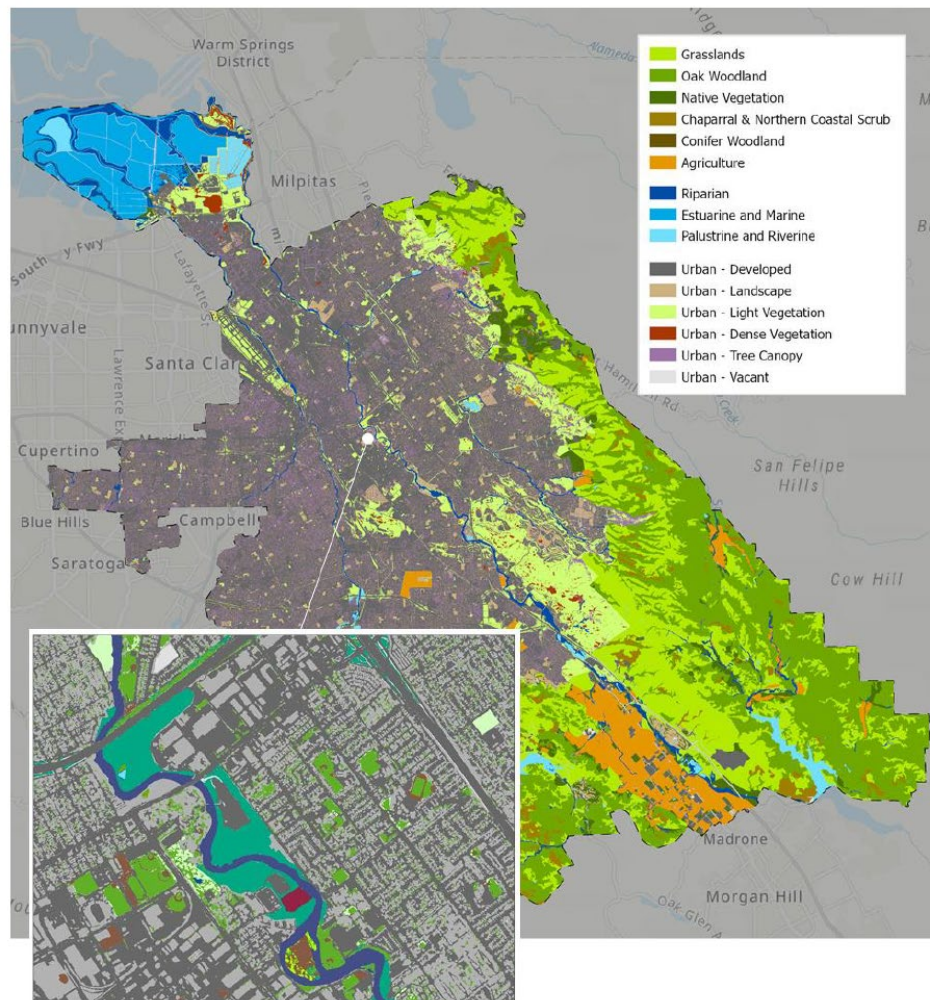
NWL Element - Purpose & Approach

Purpose

Explore how NWL strategies can support the City's environmental goals and greenhouse gas reduction targets.

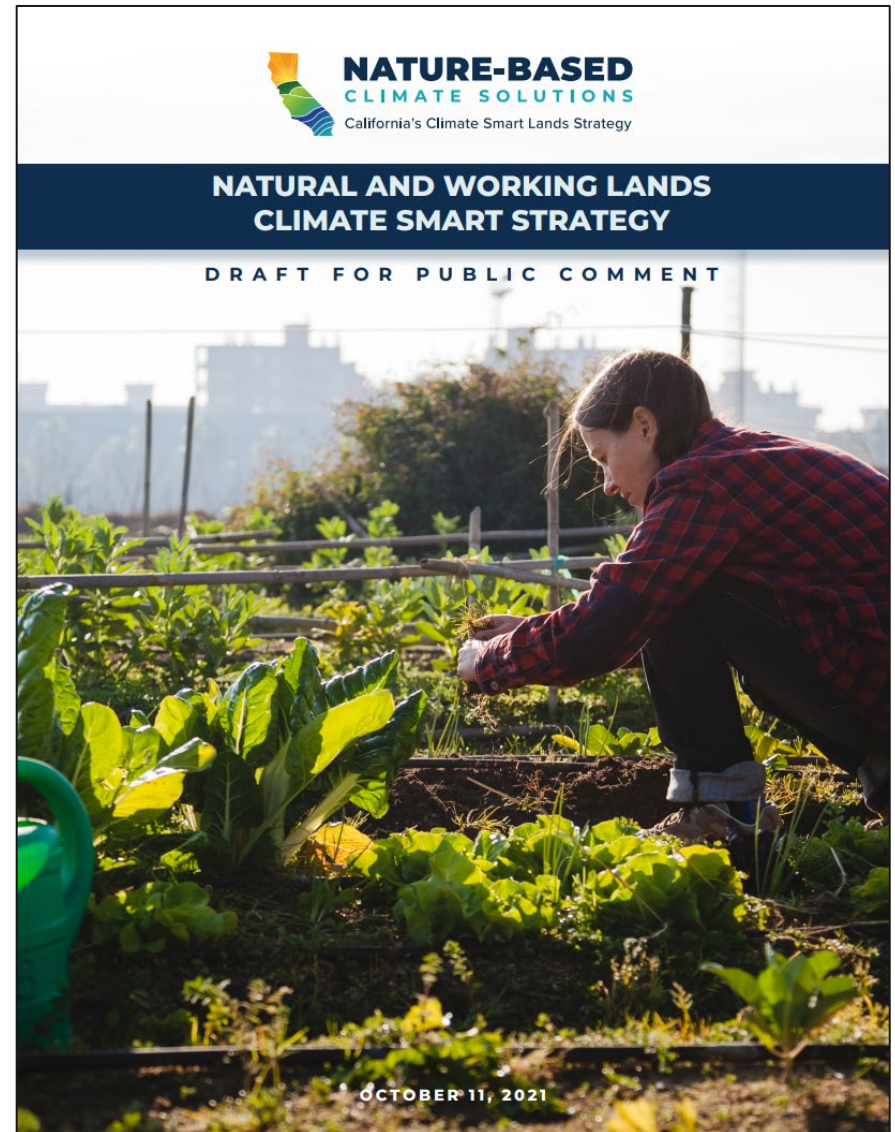
Approach

- Map NWL areas in San José
- Model and evaluate NWL strategies under different land use scenarios
- Identify NWL metrics, milestones, implementation strategies and next steps
- Incorporate into Climate Smart San José



NWL Element - Project Context

- State work
 - Protect 30% of NWLs by 2030 - “30 x 30”
 - NWL Climate Smart Strategy & Climate Adaptation Strategy Reports
 - SB-27: Carbon Sequestration
 - \$15B Climate/Green Job budget allocation
- General Plan 4-year Update
 - Coyote Valley Ag/Open Space Designation
 - Environmental Credits Program
- Coyote Valley Conservation Areas Master Plan

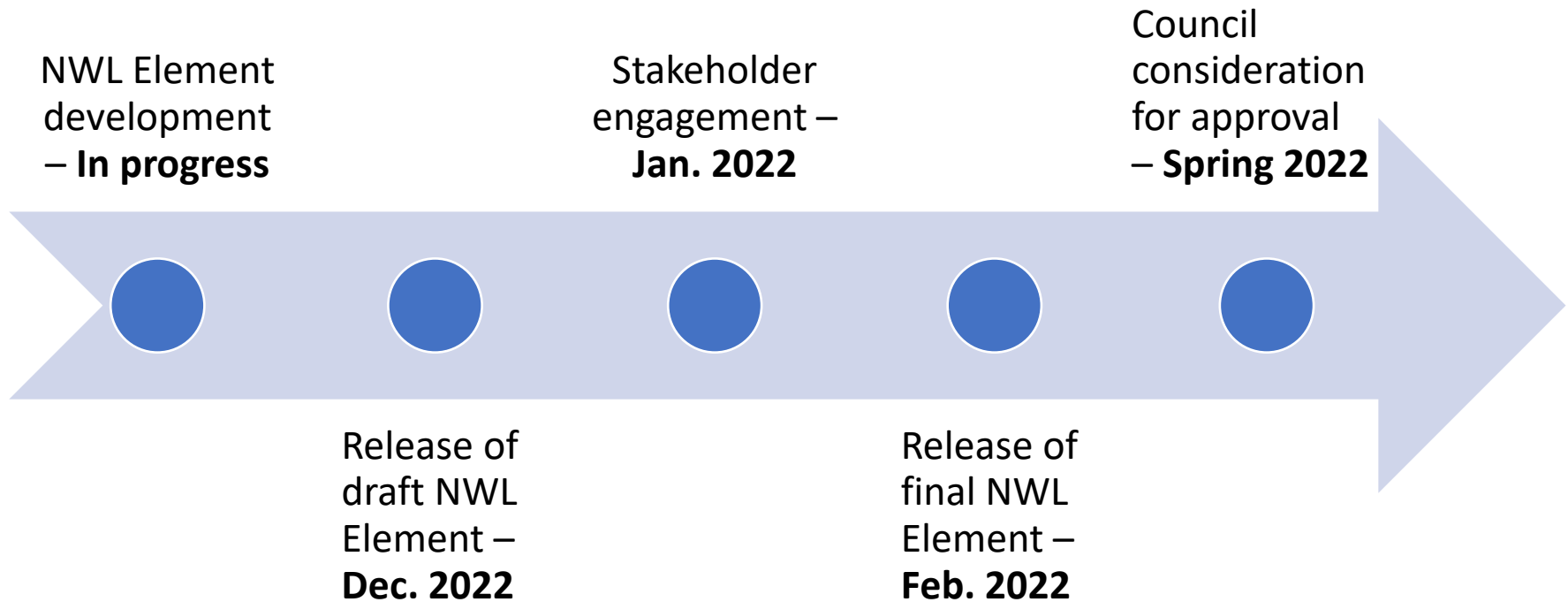


NWL Technical Report - Key Findings



- **NWLs are important to meeting our Climate Smart goals.** NWLs have the potential to significantly increase carbon sequestration and avoided GHG emissions, while providing important co-benefits to local communities.
- **How we grow matters.** Policies that support urban infill can take development pressure off NWLs.
- **NWLs are a generational investment.** Many NWL strategies have a long timeline, but a huge payoff once mature.

NWL Element - Next Steps



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Carbon Neutral San José by 2030

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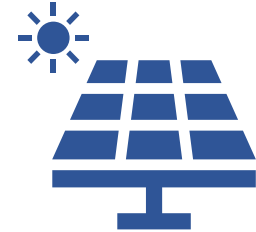
We are Here

- We know about the urgency of climate change
- Climate Challenge support, which has enabled significant progress, is ramping down
- We recognize the co-benefits of taking climate action and that there is a cost of doing nothing

Do we want to lead?



Recommendation to adopt a Carbon Neutral San José by 2030 Resolution



- **Commit** to address the urgency of climate change
- **Inspire** our community and Climate Smart funders
- **Lead** with boldness, making San José the largest U.S. city to have pledged to go Carbon Neutral by 2030

Recommendation: Approve the *Carbon Neutral San José by 2030 Resolution* to set a goal of carbon neutrality for San José by 2030.

