California Climate Change Investments 2023-2024

Environmental Justice to Protect Vulnerable Communities

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FRESNO STATE

Central Valley Health Policy Institute

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Executive Summary

Introduction

California faces many climate risks from rising temperatures, prolonged heat waves, and extreme weather, which poses significant public health risks, including heat-related illnesses, deaths, and increased diseases like valley fever. Infrastructure will be affected by rising energy demands and vulnerabilities in transportation and water storage, as seen in the 2017 Oroville spillway damage. Vulnerable populations, especially communities of color, have been disproportionately affected by disparities such as heat islands, poor infrastructure, and limited resources. Environmental justice policies, like the SAFER program and SB 1000, worked to address these disparities and promote equitable access to health and environmental benefits. Local community-based organizations (CBOs) and projects such as Transform Fresno, are well-positioned to leverage state initiatives, fostering resilience in communities most impacted by climate change.

Methods

Grants were sourced from the California Grants Portal between December 2023 and April 2024, focusing on opportunities with deadlines after April 2024 or ongoing applications. Keywords like “Climate Change,” “Environmental Justice,” and “Climate Resilience” were used to search, and grants that involved community-based organizations (CBOs) were prioritized. 17 unique goals and objectives were identified across the grants, resulting in 114 total goals and objectives across all grants. These goals and objectives were categorized into four groups using Chat GPT: Community and Community Health, Policy and Research, Environmental Monitoring and Risk Assessment, and Infrastructure. The goals and frequencies of grants, dollars offered, and funding agencies were presented in figures created using Google Sheets and Canva.

Findings

- Identified grant goals and objectives were categorized, 46% fall under Policy and Research, with 38% in Community and Community Health, 9% in Infrastructure, and 7% for Environmental Monitoring and Risk Assessment.
- The agencies were positioned to invest $2.08 billion, with California Department of Transportation (CDOT) allocated the largest amount ($1.63 billion), Strategic Growth Council (SGC) and the California Energy Commission (CEC) contributing $792 million and $160 million.
- Nine state agencies offered 32 grants related to climate change and environmental justice goals for CBOs: CDOT, SGC, CEC, California Environmental Protection Agency (CalEPA), California Air Resources Board (CARB), California Department of Education (CDE), California Public Utilities Commission (CPUC), Governor's Office of Planning and Research (OPR), and San Joaquin Valley Air Pollution Control District (SJVAPCD).

Executive Summary

    - SGC has most the grants (n=7), followed by the California Department of Transportation and the Governor's Office of Planning and Research (OPR) at (n=5) each.
    - Majority of identified grant goals focus on research and planning for climate change needs, followed by improving residential infrastructure and addressing infrastructure research needs. Other goals include networking communities toward climate change goals (9.48%) and developing climate change policies (7.76%).

- These agencies have the most identified goals and objectives: SGC at (f=29), followed by CDOT (f=24) and OPR (f=21). These agencies address climate change through policy, infrastructure, and research/planning.

Discussion

This report identified over $2 billion in state funding for community-engaged climate change and environmental justice (EJ), with 46% allocated to policy and research, 38% for community health, 9% for infrastructure, and 7% for environmental monitoring. The California Department of Transportation (CDOT) leads with $1.6 billion, focusing on research, infrastructure, and public transit for disadvantaged communities. Key grants like the Sustainable Communities and Climate Adaptation Grants offered opportunities for community-based organizations (CBOs) to collaborate and promote equity. California's funding priorities emphasized research and community connections, empowering CBOs to advocate for vulnerable populations and support community-centered climate policies.

Introduction

According to the State of California's fourth Climate Change Assessment (Bedsworth et al., 2018), higher temperatures, longer heat waves, and increasingly variable precipitation are becoming more pronounced. These changes would pose a risk to public health; between 1999 and 2009, nineteen heat-related events resulted in about 11,000 excess hospitalizations. “Heat-health events (HHEs), which may better predict risk to populations vulnerable to heat, will worsen drastically throughout the state,” the report claims. The state's residents will likely face increased risks of injury, illness, and death from wildfires and smoke, drought, landslides, and other extreme weather events. Heat-related impacts may include heat-related illnesses and deaths, lost wages, increased mental health issues, and an expected increase in diseases such as valley fever (La, 2024, HHS, 2022, Lazo, 2023).

Infrastructure will likely to be affected as climate change will increase demand for energy and mitigation requires new types of energy sources. In 2017, 80% of the state’s annual greenhouse gas (GHG) emissions came from the energy sector (Bedsworth et al., 2018). Rising temperatures will increase annual electricity demand for homes, driven mainly by the increased use of air conditioning units. Extreme weather events can pose a risk to transportation infrastructure, over 1,000 miles of levees are vulnerable to collapse from earthquakes, rising sea levels, and potentially increasingly severe storms (Bedsworth et al., 2018). Water storage facilities also will encounter challenges with climate change. Researchers identified that climate change was a contributing factor to damage to the Oroville spillway which cost an estimated $1.1 billion to repair in 2017 (Michaelis et al., 2022).

In spite of these challenges, a opportunity for climate change-related investments in underserved communities may enhance community resilience amidst climate change stressors. The climate crisis disproportionately hurts California’s vulnerable populations (Smith et al., 2022). Vulnerable populations are people who may live near areas prone to climate-related health hazards, have existing medical conditions, live in areas with poorly maintained, aging infrastructure, limited access to resources, and have barriers to care, social service, and nutritious food (U.S. EPA, 2022). The effects of heat and wildfire smoke due to climate change primarily can harm many of the same at-risk communities in California, including children and the elderly, outdoor workers, and the homeless (LAO, 2022). In Fresno County, many communities of color resided in high-risk areas with greater climate threats. African Americans and Latinos are 8.6 and 4.5 times, respectively, more likely than whites to have residence in high-risk areas where less tree canopy and more impervious surfaces can create a heat island effect (California Department of Public Health, 2023).

In supporting these communities, environmental justice proved to be a path toward fair and sustainable environmental policies. Environmental justice is defined by the State of California Department of Justice as “the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies.” (California Department of Justice, 2011). Environmental justice policies provide health benefits for communities. Since 2019, the Safe and Affordable Funding for Equity and Resilience (SAFER) drinking water program has provided over 900,000 Californians access to clean and affordable drinking water (State Water Resources Control Board, 2024). Other policies in California such as SB 1000 required local governments to identify disadvantaged communities and address environmental justice in the general plan. SB 1000 encouraged public engagement in local government planning and decision-making processes, reduced harmful pollutants and the associated health risks in environmental justice communities, and promoted equitable access to health-inducing benefits, such as healthy food options, housing, public facilities, and recreation (California Department of Justice, 2019). Additionally, an agreement between California’s Alliance for Renewable Clean Hydrogen Energy Systems (ARCHES) and the US Department of Energy for $12.6 billion intended to reduce the state’s reliance on fossil fuels and a carbon-neutral economy by 2045. ARCHES estimates that 220,000 jobs will be created and, once it is fully built out, ARCHES DOE projects are likely to lower healthcare costs by $2.95 billion per year as air quality improves (Carbullido, 2024). California’s environmental justice policies outlines possible pathways for improving the San Joaquin Valley’s (SJV) climate matters.

To partake on this pathway, local community-based organizations (CBOs) are well-suited to take advantage of these state initiatives for the SJV. Since CBOs have nurtured relationships with their local community, it has allowed them to lead outreach efforts and encouraged community self-advocacy. CBOs would connect residents to their local government to open dialogue about their lived experiences, thereby integrating common experiences into local policy. As such, local CBOs have a unique opportunity to improve the environment of their communities through state-led climate change-related grants. For example, Transform Fresno, a project that secured $70 million through the California Strategic Growth Council’s Transformative Climate Communities Program. Funding was intended to revitalize economic and environmental hardship in downtown, Chinatown, and Southwest Fresno (Transform Fresno, 2024). In the spirit of these efforts, this report positioned itself to highlight funding opportunities that local CBOs could engage with in addressing local climate concerns.

Methods

Grants were primarily sourced from California grant databases (California Grants Portal, n.d.) during the search period between December 2023 - April 2024. The team included grants with deadlines after April 2024 or those with ongoing applications. Keywords used in searching were “Climate Change”, “Environmental Justice”, “Air Pollution”, “Extreme Heat”, “Climate Resilience”, “Community Change”, and “Climate Adaptation”. The research team utilized a spreadsheet to organize grant opportunities, with goals and objectives, required activities, maximum funds deposited, intended applicants, and submission deadline if available.

The inclusion criteria for grants included grants that allowed CBOs to apply or had requirements for grantees to collaborate or engage communities with CBOs. Excluded grants were those that did not involve CBOs as potential collaborators or applicants and those that were dedicated only to infrastructure. Categorical analysis was used to identify the common goals and objectives across the grants. The process involved reviewing each grant’s goals and objectives, and a list of these goals and objectives was generated. For this report, “n” denoted the number of grants, and “f” represented the number of goals and objectives identified.

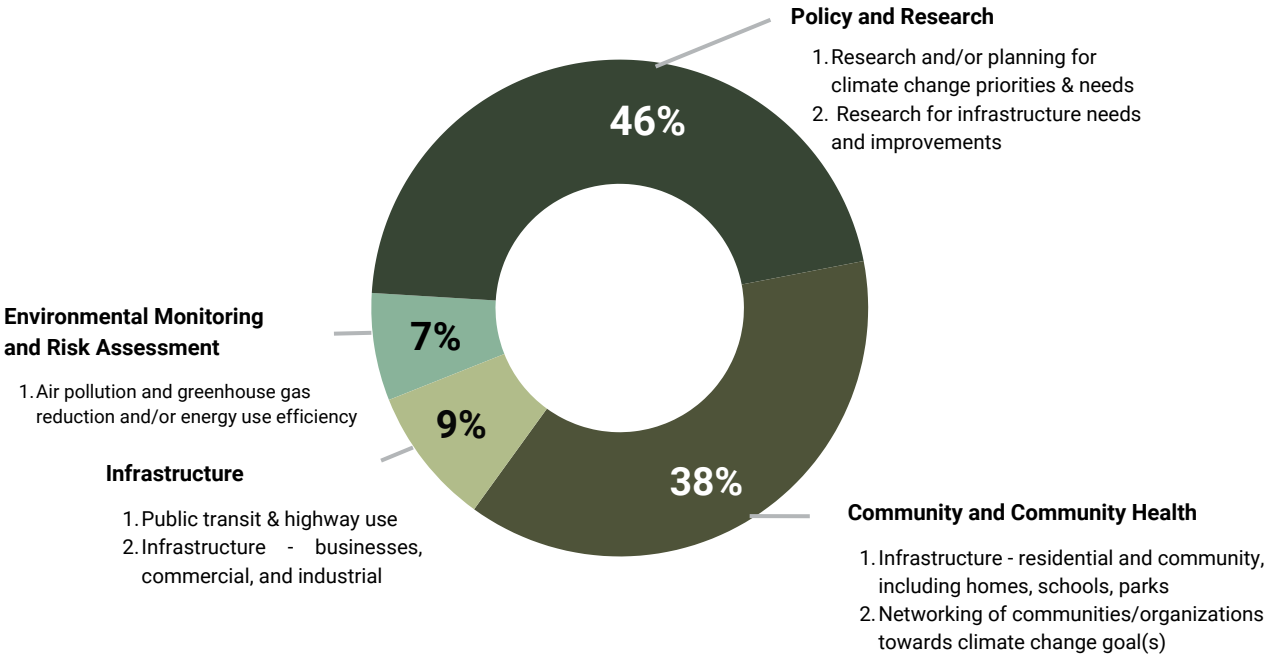
The team identified a total of 17 unique grant goals and objectives, including the following examples: (1) Climate change policy development and/or improvements; (2) Networking of communities/organizations towards climate change goal(s); (3) Addition of greenspace - Residential/community and school neighborhoods. One or more goals and objectives could be assigned to each grant depending on whether the grant opportunity had multiple goals and objectives, resulting in a total of f=114 goals and objectives across all included grants.

To have this list organized further, the list of unique grants and objectives was inputted into ChatGPT, which organized the input into categories and then edited by the research staff to reflect climate change and community-oriented engagement. The goals and objectives were categorized into the following, final categories: Community and Community Health, Environmental Monitoring and Risk Assessment, Policy and Research, and Infrastructure (Open AI, 2024). Figure 1 is the percent distribution of the identified grant goals and objectives by category. Figure 2 highlights funding by each agency with the frequency and percentage of grants. Figure 3 is a heatmap with the sum of identified goals and objectives for each agency as well as the total sum of goals and objectives. A full list of the goals and objectives, organized by each category, their frequencies, and percent frequency is summarized in a table in Appendix A. Data visualization used in this report was created using Google Sheets and Canva.

Findings

Figure 1

Distribution of Identified Goals and Priorities of State Grants by Main Categories

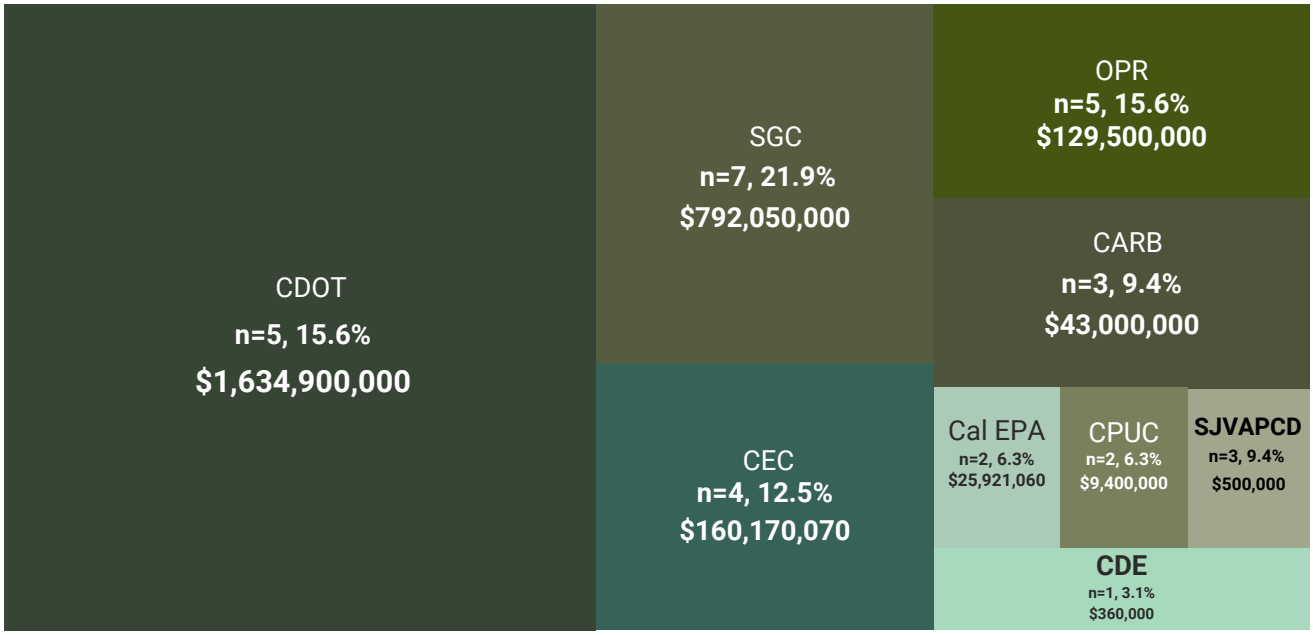


Note: Categories are bolded. The most frequently used goals and objectives are numerated.

Grant goals and objectives were grouped under four categories: Policy and Research, Community and Community Health, Environmental Monitoring and Risk Assessment, and Infrastructure. Goals and objectives such as '"Infrastructure - residential and community, including homes, schools, parks" were not placed under the larger infrastructure category because these investments are used to benefit residents directly and it was placed under the Community and Community Health category. Only goals and objectives that benefit businesses, commercial and industrial infrastructure as well transportation improvements were included in the Infrastructure category. A complete description of goals and objectives identified, frequencies of mention (f), and overarching categories were organized into a table in Appendix A. Figure 1 highlighted the distribution of goals and objectives across each major category. 46% of the total identified goals and objectives fell under the Policy and Research category. Most frequent goals and objectives included research for climate change and infrastructure needs and improvements. The next category Community and Community Health is 38%. This category focused on networking communities and organizations toward climate change goals and infrastructure improvements in residential areas. Infrastructure aimed to create improvements in transportation, businesses, commercial, and industrial infrastructure and had a total of 9% of grant goals and objectives. Lastly, 7% of the grant and objectives went under Environmental Monitoring and

Risk Assessment to reduce air pollution and greenhouse gasses and increase energy efficiency.

Figure 2
Frequency and Percentage of Grants, and Dollars Offered by State Agencies



A total of 9 state agencies offered n=32 grants related to climate change and environmental justice goals and objectives for CBOs: California Environmental Protection Agency (CalEPA), California Air Resources Board (CARB), California Department of Education (CDE), California Department of Transportation (CDOT), California Energy Commission (CEC), California Public Utilities Commission (CPUC), Governor's Office of Planning and Research (OPR), California Strategic Growth Council (SGC), and San Joaquin Valley Air Pollution Control District (SJVAPCD). Figure 2 shows the total amount of funding as well as the number and percent frequency of grants distributed by each state agency. SGC offered the most grants at 21.9% (n=7). SGC funded a range of projects for equitable programs and policies for climate resilience as indicated by Figure 3. CDOT and OPR offered the same amount of grants at 15.6% (n=5) each. The other agencies had 46.9% of the total grants. The agencies wanted to invest a total of $2,082,956,130 into CBOs to enhance efforts in climate change and environmental justice. CDOT (n=5) had the largest allocation at $1,634,900,000 to improve infrastructure and research climate needs. Following this, SGC (n=7) and CEC (n=4) offer the next highest amounts at $792 million and $160 million. The other agencies include CalEPA, CARB, CDE, CPUC, OPR, and SJVAPCD collectively contributed a total of $208 million to combat climate change.

Figure 3

Heat map on the number of goals and objectives(f) identified by agency.

	SGC	CDOT	OPR	CEC	CARB	Cal EPA	CPUC	SJVAPCD	CDE	Total Counts
Research and/or planning for climate change priorities & needs	7	4	5	4		1				21
Infrastructure - residential and community, including homes, schools, parks	3	4		3	3			2		15
Research for infrastructure needs and improvements	4	4	3	3			1			15
Networking of communities/organizations towards climate change goal(s)	5		2	1		1	2			11
Climate change policy development and/or improvements	4		1	1	1	1	1			9
Air pollution and greenhouse gas reduction and/or energy use efficiency	1	3		3	1					8
Climate change/environmental justice education and/or advocacy			2		1	2	1		1	6
Public transit & highway use		5								5
Research and/or planning for climate change hazard prevention			4			1				5
Enhancing community-centered policy, activities, advocacy, and/or opportunities	3						1			4
Infrastructure - businesses, commercial, and industrial		3		1						4
Increased access to energy efficient and/or clean air technologies - residents/communities								3		3
Climate change-related displacement/sheltering	2									2
Heat-related disease, challenges, or outcomes			2							2
Research and/or advocacy for drought/water quality concerns and challenges			2							2
Addition of greenspace - Residential/community and school neighborhoods										1
Preventative Health - Childhood health		1								1
Codes Per Agency	**29**	**24**	**21**	**16**	**6**	**6**	**6**	**5**	**1**	**114**

Frequency of Each Code

7-9 **4-6** **1-3**

The majority of identified grant goals and objectives seeked to provide funds for research/planning for climate change needs 18.10% goals and objectives identified (f=21), 12.93% of goals and objectives sought to improve residential infrastructure (f=15), A total of 12.93% goals and objectives were identified as research infrastructure needs and improvements (f=15), 9.48% aimed to network communities/organizations towards climate change goal(s) (f=11), and 7.76% develop or improve climate change policies (f=9). The heat map (Figure 3) showed each state agency with environmental grant priorities focusing on a specific challenge/need related to climate change.

SGC had the largest amount of goals and objectives identified at f=29. CDOT and OPR had the next highest counts of goals and objectives at f=24 and f=21. These agencies worked to tackle climate change in different ways, through policy, infrastructure, and research/planning.

Discussion

State Investment Priorities

This report set out to identify potential funding that state agencies allocated for community engaged climate change policy. In the search, there was over $2 billion for climate change and EJ. The research team found that a significant proportion of grant goals and objectives are intended for policy and research (46%) to address climate change. Additionally, 38% of goals and objectives fell under the Community and Community Health category, 9% was for Infrastructure, and 7% fit under the Environmental Monitoring and Risk Assessment category. The California Department of Transportation (CDOT) offered the most climate-related funding at $1.6 billion. CDOT focused on research and planning for climate change priorities & needs, Infrastructure - residential and community, including homes, schools, and parks, research for infrastructure needs and improvements, and public transit & highway use, especially for disadvantaged communities.

A statement by the California State Transportation Agency (CalSTA), which oversees multiple agencies including CDOT, highlights the central purpose behind the CDOT grants. According to their website, CalSTA is dedicated to building racial equity and helping those in disadvantaged communities “by connecting individuals to jobs, healthcare, education, and other opportunities lie at the heart of what we do and why” (CalSTA, 2020). To reflect CalSTA’s motivations, three avenues of funding from CDOT include the following grants found in the study: the Sustainable Communities Grant, the Climate Adaptation Grant, and the Transit and Intercity Rail Capital Program. The Sustainable Communities Grant was intended to support and implement Regional Transportation Plan (RTP) Sustainable Communities Strategies/Alternative Planning Strategies (SCS/APS) and to ultimately reduce

the State's GHG reduction target of 40 and 80 percent below 1990 levels by 2030 and 2050, respectively. 50% of projects identified need to serve underserved communities. The Climate Adaptation Grants supported local and regional identification of transportation-related climate vulnerabilities through the development of climate adaptation plans, as well as project-level adaptation planning to identify adaptation projects and strategies for transportation infrastructure. Like the previous grant, 50% of all projects should support underserved communities. Lastly, the Transit and Intercity Rail Capital Program is likely to help disadvantaged communities and low-income communities and households by reducing emissions of greenhouse gasses, expanding and improving transit service to increase ridership, integrating the rail service of the state's various rail operations, including integration with the high-speed rail system and Improving transit safety.

These grants and others could open the door for more collaboration between CBOs and local government/agencies. Both parties could benefit from the relationship, CBOs engaging the community and the agencies fulfilling their promise of equity. CBOs that have access to the funding can champion their community, and encourage residents to speak out on the equity disparities their family, friends, and community experience. It allows the agencies to hear directly from the community to pinpoint what can provide the most benefit. Built on the opportunity to implement community-driven solutions, new funding from the voter approved Climate Bond proposed $2.65 billion in 2025-2026 for climate change and ARCHES is likely to offer additional opportunities in the future for CBOs to collaborate. Over the next eight years, the state budget aims to allocate $44.6 billion.

Limitations

This report had a couple of limitations. First, this was not a comprehensive list of all climate grants currently available. Grants for large infrastructure projects were typically awarded to agencies and private companies with the necessary resources and equipment to carry out the necessary activities. Community-based organizations (CBOs) were generally not eligible for those large infrastructure project funding grants unless specifically mentioned in the grant terms, thus, they were excluded from the analysis. The $2 billion may not be the total funding available. Secondly, past methods that used categorical analysis on grants were applied in studies analyzing gender differences in funding opportunities among National Institutes of Health grants for specialized fields of medicine (Eloy et al., 2013; Svider et al., 2014). In terms of using categorical analysis on grants aimed at community-engaged activity and climate change matters, the work presented in this paper appears unique to the research team's knowledge.

Conclusion

The state of California's funding priorities focused on research while encouraging connections between communities, organizations, and climate change goals. This means that vulnerable populations may have a greater chance of ensuring their needs are met and protected from climate change. Investments can provide CBOs opportunities to uplift disadvantaged individuals to become advocates and provide insight for community leaders to create EJ and community solutions. When CBOs and residents collaborated in investment decisions, they contributed to equitable investments, such that vulnerable groups received resources to mitigate climate change and improved environmental justice (Lim, L. & Fahnestock, V., 2024). CBOs engaged residents to sit in local government meetings and workshops to advocate and advise officials to promote community-centered climate change policy.

If residents feel their needs are taken seriously by their local government, this could increase enthusiasm to enact change in disadvantaged communities. Lastly, while some funding is on a one-time basis, there is still an opportunity for CBOs to learn from previously funded projects. CBOs can see the successes and failures of these completed projects. Communities invited to the planning and implementation process are important to close gaps in climate equity to improve the livelihood of vulnerable populations.

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APPENDIX A

Frequencies of Identified Goals and Objectives

List and frequency of grant goals and objectives identified in federal grant opportunities for grants searched from December 2023 to April 2024.

Category	Grant Codes	Frequency (f)	Percent Frequency
Community and Community Health (f= 44)	Infrastructure - residential and community, including homes, schools, parks	15	12.9%
	Networking of communities/organizations towards climate change goal(s)	11	9.5%
	Climate change/environmental justice education and/or advocacy	7	6.0%
	Enhancing community-centered policy, activities, advocacy, and/or opportunities	4	3.4%
	Increased access to energy efficient and/or clean air technologies - residents/communities	3	2.6%
	Heat-related disease, challenges, or outcomes	2	1.7%
	Preventative Health - Childhood health	1	0.9%
	Addition of greenspace - Residential/community and school neighborhoods	1	0.9%
Policy and Research (f=54)	Research and/or planning for climate change priorities & needs	21	18.1%
	Research for infrastructure needs and improvements	15	12.9%
	Climate change policy development and/or improvements	9	7.8%
	Research and/or planning for climate change hazard prevention	5	4.3%
	Research and/or advocacy for drought/water quality concerns and challenges	2	1.7%
	Climate change-related displacement/sheltering	2	1.7%
Environmental Monitoring and Risk Assessment (f=8)	Air pollution and greenhouse gas reduction and/or energy use efficiency	8	6.9%
Infrastructure (f=10)	Public transit & highway use	6	5.2%
	Infrastructure - businesses, commercial, and industrial	4	3.4%
	TOTAL	**116**	

APPENDIX B

Agency Acronyms

Table showing expanded federal agency acronyms

Agency Acronyms	
CalEPA	**California Environmental Protection Agency**
CARB	**California Air Resources Board**
CDE	**California Department of Education**
CDOT	**California Department of Transportation**
CEC	**California Energy Commission**
CPUC	**California Public Utilities Commission**
OPR	**Governor's Office of Planning and Research**
SGC	**California Strategic Growth Council**
SJVAPCD	**San Joaquin Valley Air Pollution Control District**