Greenhouse Gas Reduction Fund
Investments in and around Orange County
Observations on Place, Purse, and Politics
ACKNOWLEDGEMENTS

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Overview

Background
California is well-known for its policy-driven efforts to reduce greenhouse gas emissions (GHGs) aimed at slowing global climate change. The state’s signature cap-and-trade program supports this goal by placing regulatory limits on GHG emissions and using market-based mechanisms to incentivize transitions toward cleaner ways of doing business. The program generates revenue, housed within the Greenhouse Gas Reduction Fund (GGRF), which is invested in California communities for a diverse array of projects that aim to reduce GHG emissions and yield other co-benefits. Directed by state law, a minimum percentage of these revenues must be channeled toward the state’s most disadvantaged communities, as identified by a data-driven tool called CalEnviroScreen. Because environmental burdens and capacity to respond are not distributed equally across communities in California, resources should be set aside, protected, and prioritized for the “hardest hit” areas in order to forward social and economic equity.

Purpose
The purpose of this report is to increase understanding of current GGRF investment trends in Orange County, California and its borderlands with a lens toward assessing whether, and to what extent, inequities may exist in how funds are disbursed within the county and region.

Context: Why examine the GGRF in Orange County and its borderlands?
Though the GGRF represents a major funding source for climate mitigation activities statewide, resource demand continues to outpace supply in many program areas. It is important to monitor, track, and evaluate GGRF expenditures to ensure that these massive revenues, which are likely to continue, are distributed equitably across the substantial demand that exists.

Orange County is an interesting place in which to examine these expenditures because local environment and climate justice efforts have been growing in recent years. By focusing on Orange County and its neighbors (Los Angeles, San Bernardino, Riverside, Imperial, and San Diego Counties), this study seeks to offer a data-driven view of the current state of GGRF projects to aid those who seek to coalesce around environmental and climate justice locally, collaborate regionally, and/or mobilize statewide.

Approach
This study draws upon data released by the California Air Resources Board for cumulative GGRF appropriations from program inception through November 30, 2016, and provides a comparative “moment-in-time” analysis of funding for implemented projects in six southern California counties, with special attention to Orange County. We concentrate our attention on spending within state-designated “disadvantaged communities” and use equity as a framing device through which to evaluate and interpret the distribution of GGRF dollars. We also raise questions about impacts to Native Nations and ways to better capture those perspectives in program implementation, but this report falls short of employing fully decolonized methodologies.

Observations
This study surfaces five observations within the broad categories of place, purse, and politics.

Place
1. Relative to neighboring counties, the number of disadvantaged communities in Orange County is small and has decreased over time due to changing methods for calculating disadvantage
2. Where disadvantage does exist, it tends to cluster spatially

Purse
3. The overwhelming majority of GGRF dollars in Orange County and neighboring counties (with the exception of Imperial) have been spent within the Sustainable Communities and Clean Transportation program
Purse (continued)

4. Treating dollars for regional (multi-county) and place-based projects in disadvantaged communities the same overstates the degree of investment in these places.

Politics

5. Political support for state environmental and climate justice bills from Orange County legislators has been low in recent years, even in districts with a high number of disadvantaged communities.

Recommendations for Orange County

Next Steps for Research
Future research and action in the following areas should be prioritized:

• Assess the role that democratic community engagement has played (to date) in the distribution of GGRF projects and dollars in Orange County.
• Prepare a call for research with disadvantaged community residents to learn about their awareness of GGRF projects, their perception(s) of benefit, and their proposals for improvement.
• Replicate an equity analysis, such as this one, annually to continually monitor, assess, and improve program implementation.
• Augment equity analyses of cap-and-trade and the GGRF with decolonizing approaches that fully embrace and affirm the sovereignty of Native Nations.

Recommendations for Practitioners
Civic leaders who seek to maximize single and multi-county GGRF investments in disadvantaged communities should look to the examples of San Diego and Riverside to better understand how those neighboring counties have achieved high rates of GGRF spending within disadvantaged communities.

Guidance for Advocacy and Philanthropy
Community leaders and advocates should hold accountable the State Senate and Assembly representatives in north Orange County whose districts have benefited from investments in disadvantaged communities. This effort may include working with local Native Nations, Indigenous-led environmental and cultural organizations, and statewide environmental or climate justice coalitions. Philanthropists have a role to play, too, which could include prioritizing grants for projects with robust democratic community engagement and a deep commitment to social justice, investing in mechanisms to keep Native Nations and grassroots, community-based organizations apprised of GGRF program opportunities including funding applied and collaborative research, and bridging gaps between these groups and program administrators.
Background
In 2006, California passed the Global Warming Solutions Act, also known as AB 32 (Nuñez and Pavley), which set aggressive statewide targets for reducing greenhouse gas (GHG) emissions to curb climate change. The state’s cap-and-trade program is one of the primary policy vehicles for achieving these goals, and has been in operation since 2012. Using market-based mechanisms to incentivize GHG emission reductions among California’s biggest emitters, cap-and-trade also generates substantial revenue that is deposited to the Greenhouse Gas Reduction Fund (GGRF). Dollars in this fund must be invested in California communities for projects that support reduction of GHG emissions and yield other social, economic, or environmental co-benefits.

State legislation also dictates how GGRF dollars should be spent in relation to California communities most vulnerable to environmental harm. AB 1532 (Perez, 2012) states that GGRF investments should be directed toward the most disadvantaged communities and households in the state, while also mandating reporting transparency on funded projects and outcomes. SB 535 (de León, 2012) stipulates that at least 10% of GGRF dollars must be spent within and at least 25% must benefit designated “disadvantaged communities” (commonly referred to as DACs). The state identifies disadvantaged communities using CalEnviroScreen, a science-based tool that aggregates and indexes multiple environmental and population data points for every census tract in California in order to pinpoint those communities with the greatest pollution burden and population vulnerability.

In 2016, AB 1550 (Gomez) evolved these thresholds further by mandating that 25% of GGRF dollars be spent within disadvantaged communities and an additional 25% be directed toward low-income households. Another 2016 bill, AB 2722 (Leyva), created the Transformative Climate Communities program funded by the GGRF to further prioritize robust place-based climate mitigation and adaptation investment in the most vulnerable communities across the state, including Native Nations. Collectively, this suite represents the cornerstone of California’s current policy and legislative efforts to slow climate change by curbing its emissions statewide, and to resource equitably all communities in the transition away from fossil fuel dependence (Figure 1).

Purpose and Uses
The purpose of this report is to increase understanding of current GGRF investment trends in Orange County and its borderlands with a lens toward assessing whether, and to what extent, inequities may exist in how funds are disbursed within the county and region. This report is designed to provide analytical, data-driven grounding for community and civic leaders (e.g., activists, organizers, local government staff, elected officials, students, etc.) with an interest in the current state of California’s efforts to operationalize equity-oriented climate mitigation and adaptation.

What is cap-and-trade?
In California, cap-and-trade describes a state-administered program designed to incentivize transitions toward more climate-friendly ways of doing business among the state’s biggest GHG emitters. The program places a limit, or “cap,” on the amount of GHGs that regulated facilities are allowed to emit without penalty, which decreases by approximately 3% each year. If a regulated facility does not meet its “cap” obligations, it may avoid penalties in several ways. These include paying to reduce GHG emissions in another location (also known as purchasing “offsets”) or purchasing one or more of a limited supply of credits at quarterly auctions (also known as trading “allowances”). Since fewer credits are available over time, each credit becomes more costly and the price of failing to meet emissions “caps” increases.¹
AB 32
Requires CA to reduce GHG emissions to 1990 levels by 2020

2006

Cap-and-Trade

2016
SB 32
Requires CA to reduce GHG emissions to 40% below 1990 levels by 2030

2017
AB 398
Authorizes extension of Cap-and-Trade through 2030

2012
AB 1532
Specifies that funds should be directed to the state’s most disadvantaged communities & households

2012
SB 535
Mandates that at least 10% of GGRF spending is within DACs and at least 25% benefits DACs

2016
AB 1550
Mandates that 25% of GGRF spending is within DACs and 25% goes to low-income households

2016
AB 2722
Creates a program funded by the GGRF for holistic, tribal or neighborhood-led climate resilience planning

Figure 1. Relationships of key California climate legislation to cap-and-trade and the Greenhouse Gas Reduction Fund

Context

Why examine the GGRF?

Opponents and proponents for cap-and-trade tend to agree that GGRF revenues generated by the program offer promising possibilities for communities in California. In addition, the GGRF represents a major funding pool for climate mitigation activities statewide, which has substantially augmented pre-cap-and-trade funding for emissions reduction. In the four funding cycles since the program’s inception, the state legislature has appropriated nearly $3.4 billion to the GGRF from cap-and-trade revenues. In FY2017-18 an additional $2.2 billion in appropriations are anticipated. To put this quantity into perspective, anticipated GGRF revenues through FY2017-18 are 14 times greater than the overall projected costs for the damage and restoration of the Oroville dam following its February 2017 spillway breach. With the passage of SB 32 and AB 398, the GGRF is positioned to continue receiving substantial flows of revenue for at least the next decade, maybe longer.

Though fiscal resources in the GGRF are sizable relative to pre-cap-and-trade funding, statewide demand continues to outpace supply in many program areas. For example, within the Sustainable Communities and Clean Transportation program area, the Affordable Housing and Sustainable Communities (AHSC) program received 147 concept applications requesting $760 million in its first GGRF funding cycle. Though the AHSC received one of the largest GGRF appropriations that year (second only to High Speed Rail), the Strategic Growth
Council—which administers the AHSC program—was only able to fund 28 projects totaling $122 million, or 1 in 5 projects that applied. It is important to monitor, track, and evaluate GGRF expenditures to ensure that these massive revenues, which are likely to continue, are distributed equitably across the substantial demand that exists.

**Why focus on Orange County and its borderlands?**

Environmental justice issues abound in this region. The area now known as Orange County is within the ancestral territories of the Tongva and Acjachemen Nations, whose people have lived on and cared for these lands and waters since time immemorial. Before and throughout Orange County’s history, Tongva and Acjachemen communities have advocated locally, statewide, and internationally against genocide and for protection of their sacred places. Within this context, several environmental movements and campaigns linked to conservation, restoration, and protection of natural resources have emerged in Orange County over time. While such efforts have included leadership from Native and non-Native communities, for Native communities and allies, these efforts have always been about securing environmental justice.

Beyond the fringes of Orange County, from Wilmington and East LA to Jurupa Valley and National City, movements and campaigns for environmental justice related to improving air quality, remediating toxic soil, and relocating polluting industries have emerged. These neighboring movements have not historically taken deep root or emerged from within the county. Recent activism and shifting population trends suggest that Orange County may be on the cusp of change.

In recent years, Native and non-Native organizers in north Orange County cities like Huntington Beach, Santa Ana, and Costa Mesa have drawn attention to local land use and air quality issues, surfacing environmental justice concerns such as the legacy of settler colonialism and disproportionate impacts on Native Nations, low-income communities, and communities of color. Building on these efforts, community activists have the potential to scale their work beyond the neighborhood and municipality levels to highlight broader systemic issues contributing to environmental injustice.

By focusing on Orange County and its neighbors (Los Angeles, San Bernardino, Riverside, Imperial, and San Diego Counties), this study seeks to offer a data-driven view of the current state of GGRF projects to aid those who seek to coalesce around environmental and climate justice locally, collaborate regionally, and/or mobilize statewide.

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**Climate Justice: Why give priority to “disadvantaged communities” in the GGRF?**

Living, working, and playing near sources of GHG emissions (such as factories and freeways) generally poses greater risk to human health, and these burdens of proximity are not shared equally by all Californians. Frequently, communities bearing the disproportionate environmental burden of being co-located with a big emitter also experience other markers of economic or social disadvantage, which can make it harder for them to respond to these burdens. Countering this dynamic is often described as the work of building environmental justice. Because environmental burdens and capacity to respond are not distributed equally across communities in California, resources should be set aside, protected, and prioritized for the “hardest hit” areas in order to forward social and economic equity. Just climate policy would incorporate and reflect the state’s commitment to these norms.
Endnotes


4 Several programs receiving GGRF dollars existed prior to cap-and-trade and were funded from other sources, including consumer taxes. In these cases, the GGRF either replaces or significantly supplements those other revenue streams.


5 Ibid.


10 While GHGs pose less direct harm to human health than particulate matter (PM) found in air pollution, a high correlation exists in California between regulated GHG emitters and large releases of toxic air pollution. In a recent study, researchers found that 61 percent of the state’s top-emitting facilities for both GHGs and PM10 reported increases in localized greenhouse gases in the first years of Cap-and-Trade’s implementation (2013-14), versus 51 percent increases for all facilities. In this case, many high-emitting companies used offset projects outside California to meet their compliance obligations. The neighborhoods surrounding companies with emissions increases tended to be low-income with a higher share of people of color than neighborhoods surrounding big emitters who reduced their local emissions.


11 Also known as the lands of the Kumeyaay, Quechan, Cahuilla, Cupeño, Luiseño, Acjachemen, Tongva and Island Tongva, Serrano, Chemehuevi, Mojave, and Maricopa.
This analysis draws on data released by the California Air Resources Board for cumulative GGRF appropriations from program inception through November 30, 2016.

Once appropriated by the legislature, GGRF dollars are filtered through nearly a dozen state agencies with different allocation, selection, and awarding processes and timelines, before ultimately being “implemented” in California communities (Figure 2). Therefore, the analysis that follows does not include information about projects “in the pipeline” in Orange County and its borderlands, or those implemented after the FY16-17 reporting period. The dollars reported should be considered a “moment in time” snapshot of implemented projects rather than a comprehensive overview of all funded projects.

These diverse and diffuse disbursement processes also make it difficult to report definitively the extent to which funded projects align with local needs. Instead, this report seeks to illuminate broad trends in the ways GGRF dollars have been spent to date, which point toward specific research, policy, and/or political actions that could continue moving the GGRF toward more equitable outcomes.

In compliance with SB 535 (2012), the Air Resources Board tracks how many dollars and projects “benefit” or are located “within” disadvantaged communities. The following analysis uses the term disadvantaged community (DAC) where necessary to demonstrate official alignment with state law. However, this term is highly problematic for the ways that it foregrounds a deficit-based narrative.

### Flow of Funds

<table>
<thead>
<tr>
<th>Appropriated</th>
<th>The Legislature authorizes an agency to make expenditures or incur financial obligations from the GGRF for a specified purpose and period of time.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allocated</td>
<td>An agency distributes funds or establishes an expenditure limit for a program or subprogram.</td>
</tr>
<tr>
<td>Selected</td>
<td>An agency announces funding recipients (e.g., Board action, or public announcement) prior to executing grant agreements; not yet awarded.</td>
</tr>
<tr>
<td>Awarded</td>
<td>An agency commits funding to a project (e.g., executed a contract; transferred funds to an administering agency).</td>
</tr>
<tr>
<td>Implemented</td>
<td>Final funding recipient receives funds and projects have attributable GHG and disadvantaged community benefits.</td>
</tr>
</tbody>
</table>

**Figure 2.** Stages of GGRF disbursement process, with definitions. The processes and decision points directing the flow of funds through these stages varies by program and/or agency. Additional information is available from the California Air Resources Board.
about an entity as complex, dynamic, and multi-dimensional as a community. This categorization is also deficient in its over-reliance on residence-based definitions of community, which tend to underrepresent or erase groups with relationships to land that are not solely ownership or tenancy-based, such as people experiencing homelessness and Native American Tribal members residing outside their ancestral homelands. Though the term is widely used and codified in state law, this report registers its limitations and false perception of permanence for qualities as mutable and non-neutral as “disadvantage.”

Finally, this analysis employs an equity lens as a framing device through which to evaluate and interpret the distribution of GGRF dollars. In brief, equity describes the principle that people and places should receive the resources that they need based upon the reality of their circumstances. This concept is distinct from equality, which describes the principle that all people and places should receive the same resources regardless of their circumstance or need. In this case, employing an equity lens means recognizing disparate environmental burdens and impacts, and attempting to direct resources in ways that begin to correct imbalances rather than perpetuating or worsening existing cleavages between communities.

Endnotes


This examination of GGRF spending with a focus on disadvantaged communities in Orange County and its borderlands was guided by three questions related to place, purse, and politics.

- **PLACE**: What is the scale of “disadvantage” locally and where are disadvantaged communities located?
- **PURSE**: How are GGRF dollars being spent county-wide, and within disadvantaged communities?
- **POLITICS**: How supportive are local legislators of environmental and climate laws, like SB 535 (2012), that seek to mitigate disproportionate environmental burdens on communities experiencing disadvantage?

These three themes illuminated five key messages about the spatial distribution of disadvantaged communities (place), the disbursement of GGRF dollars across programs and projects (purse), and the degree to which state legislators have supported environmental and climate justice legislation in recent sessions (politics). The following section highlights key findings and discussion of implications.

**Place**

**Observation 1: State-designated “disadvantage” in Orange County is small and decreasing relative to neighboring counties**

Under SB 535 (2012), disadvantaged communities are defined as census tracts disproportionately burdened by multiple sources of pollution with population characteristics that make them more sensitive to these pollution burdens, as determined by CalEnviroScreen. Drawing on multiple pollution and population indicators for all census tracts in California, the tool gives each tract a score and the top 25% receive a disadvantaged community designation. Since 2014, regulators have been using a version of the tool called CalEnviroScreen 2.0 to locate disadvantaged communities and track which GGRF projects “benefit” or are located “within” those places.

A new version, CalEnviroScreen 3.0, was released in 2017 with several new indicators and a modified scoring methodology, which has yielded an updated list of disadvantaged communities. In short, some communities may have been considered “disadvantaged” in previous funding cycles but are no longer considered “disadvantaged” for future funding cycles, and vice versa. These shifts do not necessarily imply the conditions in the community have dramatically worsened or improved, but rather the formulas and data points for calculating disadvantage have changed (see box “What changed between CalEnviroScreen 2.0 and 3.0?”). While CalEnviroScreen represents an important resource for identifying and prioritizing investment toward communities facing the greatest environmental burdens statewide, it is important to remember that the tool is only as strong as its underlying data inputs.

**What changed between CalEnviroScreen 2.0 and 3.0?**

According to the Office of Environmental Health Hazard Assessment (OEHHA), the state agency tasked with updating CalEnviroScreen, there are 5 types of changes between versions 2.0 and 3.0.

1. More recent data for all indicators
2. Improvements in the way some indicators are calculated, and additions to some indicators to better reflect environmental conditions or population vulnerability to pollution
3. Addition of two new indicators reflecting health and socioeconomic vulnerability to pollution
5. Change in overall scoring methodology to emphasize the contribution of the four components (exposures, environmental effects, sensitive populations, and socioeconomic factors) to the overall CalEnviroScreen score.
For Orange County, this shift from CalEnviroScreen 2.0 to 3.0 has meant that fewer communities will be considered “disadvantaged” by the state in future funding cycles (Figure 3). According to CalEnviroScreen 2.0, in Orange County disadvantaged communities comprise nearly 15% of census tracts (home to more than half a million people). According to CalEnviroScreen 3.0, in Orange County disadvantaged communities comprise nearly 12% of census tracts (home to nearly 400,000 people). This is a 25% reduction in designated disadvantaged communities between versions.

Relative to neighboring counties, Orange County experienced the largest reduction in DAC-designations and some of the greatest changes in overall number of DACs between CalEnviroScreen 2.0 and 3.0. San Bernardino and Riverside Counties each lost a modest number of DAC designations between versions (3 and 4 tracts, respectively), whereas Imperial, Los Angeles, and San Diego Counties each experienced a slight increase in DAC designations (2, 3, and 11, respectively).

### CalEnviroScreen 2.0 Disadvantaged Community (DAC) Designations by County

<table>
<thead>
<tr>
<th>County</th>
<th>Census Tracts</th>
<th>Total DACs</th>
<th>% DACs</th>
<th>Population</th>
<th>DAC Population</th>
<th>% DAC Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Imperial</td>
<td>31</td>
<td>13</td>
<td>41.94%</td>
<td>174,528</td>
<td>69,634</td>
<td>39.90%</td>
</tr>
<tr>
<td>Los Angeles</td>
<td>2,343</td>
<td>1,018</td>
<td>43.45%</td>
<td>9,818,605</td>
<td>4,348,000</td>
<td>44.28%</td>
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<tr>
<td>Orange</td>
<td>582</td>
<td>86</td>
<td>14.78%</td>
<td>3,010,232</td>
<td>526,857</td>
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<tr>
<td>Riverside</td>
<td>453</td>
<td>104</td>
<td>22.96%</td>
<td>2,189,641</td>
<td>527,851</td>
<td>24.11%</td>
</tr>
<tr>
<td>San Bernardino</td>
<td>369</td>
<td>159</td>
<td>43.09%</td>
<td>2,035,210</td>
<td>856,563</td>
<td>42.09%</td>
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<tr>
<td>San Diego</td>
<td>627</td>
<td>26</td>
<td>4.15%</td>
<td>3,095,313</td>
<td>116,595</td>
<td>3.77%</td>
</tr>
</tbody>
</table>

†Data source: 2010 US Census

### CalEnviroScreen 3.0 Disadvantaged Community (DAC) Designations by County

<table>
<thead>
<tr>
<th>County</th>
<th>Census Tracts</th>
<th>Total DACs</th>
<th>% DACs</th>
<th>Population</th>
<th>DAC Population</th>
<th>% DAC Population</th>
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<td>48.39%</td>
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<td>Los Angeles</td>
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<td>1,021</td>
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<td>168,218</td>
<td>5.43%</td>
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†Data source: 2010 US Census

### Net Disadvantaged Community Change Between CalEnviroScreen 2.0 and 3.0 by County

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<th>County</th>
<th>Census Tracts</th>
<th>% Change</th>
<th>Population</th>
<th>% DAC Population</th>
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<td>11</td>
<td>29.73%</td>
<td>51,623</td>
<td>30.69%</td>
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</tbody>
</table>

Figure 3. Disadvantaged community designations by county, CalEnviroScreen 2.0 and 3.0.
Figure 4. Orange County disadvantaged communities designated by CalEnviroScreen 2.0 and 3.0
**Observation 2: “Disadvantage” within Orange County and the southern California region tends to cluster spatially**

Though disadvantaged community status shifts between versions of CalEnviroScreen, both versions agree that the most vulnerable and environmentally burdened communities within Orange County are clustered in north Orange County (Figure 4). With one exception, all are located north and west of the 55 freeway in low-lying, non-coastal areas. According to CalEnviroScreen 3.0, more than half of the county’s DAC residents live in the cities of Anaheim or Santa Ana (118,423 and 109,925 residents respectively). Disadvantaged communities with more than 15,000 residents can also be found in the cities of Fullerton, Buena Park, Garden Grove, La Habra, and Westminster. Other cities containing at least one disadvantaged community include Costa Mesa, Huntington Beach, Orange, Placentia, and Stanton.

Regionally, we find the largest CalEnviroScreen 3.0 population clusters of disadvantaged communities in Los Angeles County and the urbanized swath of southwestern San Bernardino County and western Riverside County (Figure 5). The total number of people living in disadvantaged communities in Los Angeles County (4.3 million) is more than double the number of people living in disadvantaged communities in Orange, Riverside, San Bernardino, Imperial, and San Diego Counties combined. On the other end of the population spectrum Imperial County has the greatest concentration of disadvantaged communities with half of its census tracts and population receiving disadvantaged community designations from CalEnviroScreen 3.0.

These same regional clusters also include some of the highest scoring, and therefore most environmentally burdened and vulnerable, census tracts in CalEnviroScreen 3.0. Ten percent of all census tracts in Los Angeles County fall into this category, followed by 8% of San Bernardino County census tracts and 3% of tracts across the border in western Riverside County.

Though quantifying disadvantage is problematic and subject to shifting baselines dependent on the indicators considered (as seen in different outputs between CalEnviroScreen 2.0 and 3.0), tools like CalEnviroScreen can help us see the location and severity of disadvantage to help target climate investments that support community resilience.

![CalEnviroScreen 3.0 Disadvantaged Communities in Southern California](image-url)

*Figure 5.* Southern California disadvantaged communities designated by CalEnviroScreen 3.0
Purse

Observation 3: The overwhelming majority of GGRF dollars for implemented projects in Orange County have been spent on Sustainable Communities and Clean Transportation programs

GGRF dollars are appropriated to state agencies according to three broad program areas:

- Sustainable Communities and Clean Transportation (approximately 80% of funds appropriated)
- Energy Efficiency and Clean Energy (approximately 10% of funds appropriated)
- Natural Resources and Waste Diversion (approximately 10% of funds appropriated)

Of the $88.6 million dollars that have come to Orange County, almost 98% have been spent on Sustainable Communities and Clean Transportation programs (Figure 6). These include efforts to reduce greenhouse gas emissions by incentivizing transitions to more fuel-efficient cars, trucks, buses, transit, and rail, and to increase the accessibility of housing, employment centers, and key destinations through low-carbon transportation options (Figure 7). One-third of these funds have been spent through rebate and voucher programs for the purchase of cleaner personal vehicles, and nearly half have been spent on the purchase of fuel-efficient locomotives operated by a rail line that passes through Orange County (see next finding for more discussion of regional projects like this one).

Less than 1% of GGRF dollars spent in Orange County are associated with Energy Efficiency and Clean Energy programs. Most of this spending is directed toward weatherization and solar projects for single-family and small multi-family residences in disadvantaged communities. The remaining 2% of GGRF spending in Orange County is associated with Natural Resources and Waste Diversion programs. This spending includes $750,000 in shared funding with Los Angeles and San Bernardino Counties for a tree-planting project and $1,055,827 in funding for a climate adaptation project in a subsiding salt marsh in Seal Beach.

The percentage of GGRF dollars received by program area are similar to neighboring counties, with the exception of Imperial County (Figure 6). Whereas Los Angeles, Orange, Riverside, San Bernardino, and San Diego Counties all received more than 90% of their GGRF dollars in the Sustainable Communities and Clean Transportation

<table>
<thead>
<tr>
<th>Program Area</th>
<th>% of Total</th>
<th>% of Total</th>
<th>% of Total</th>
<th>% of Total</th>
<th>Total Dollars Implemented</th>
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<tr>
<td>Sustainable Communities &amp; Clean Transportation</td>
<td>10.1%</td>
<td>89.9%</td>
<td>0.0%</td>
<td>100.0%</td>
<td>$733,593</td>
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<tr>
<td>Energy Efficiency &amp; Clean Energy</td>
<td>95.0%</td>
<td>1.8%</td>
<td>3.2%</td>
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<td>Natural Resources &amp; Waste Diversion</td>
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<td>0.3%</td>
<td>2.0%</td>
<td>100.0%</td>
<td>$88,616,913</td>
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<td>$0</td>
<td>$733,593</td>
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<tr>
<td>Los Angeles</td>
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<tr>
<td>Orange</td>
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<td>$1,805,827</td>
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<td>Riverside</td>
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<td>$3,000,000</td>
<td>$62,709,020</td>
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<tr>
<td>San Bernardino</td>
<td>$61,472,466</td>
<td>$1,569,578</td>
<td>$4,810,285</td>
<td>$67,852,324</td>
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<tr>
<td>San Diego</td>
<td>$142,111,288</td>
<td>$1,041,889</td>
<td>$1,000,285</td>
<td>$144,153,462</td>
<td></td>
</tr>
</tbody>
</table>

Data source: California Air Resources Board

Figure 6. GGRF spending by program area, comparison of 6 southern California counties
Orange County
Total GGRF Dollars Implemented: $88,616,913

Clean Vehicle Rebates
$28,530,399

Fleet Modernization and Vouchers*
$1,789,847

Low Carbon Transit Operations
$7,116,546

Transit and Intercity Rail
$45,176,000

Affordable Housing & Sustainable Communities
$3,925,000

Energy Efficiency & Solar
$267,927

Residential Water Efficiency
$5,367

Urban and Community Forestry
$750,000

Wetlands Restoration
$1,055,827

*Sustainable Communities and Clean Transportation Programs

*Natural Resources and Waste Diversion

*This category includes the Enhanced Fleet Modernization Program, Hybrid and Zero Emission Truck and Bus Voucher Incentive Project, and Public Fleet Pilot Project

Figure 7. Profiles of GGRF spending on implemented projects in Orange County
program area, only 10% of GGRF dollars for implemented projects in Imperial County were attached to this program. Instead, Imperial County’s primary relationship to the Greenhouse Gas Reduction Fund is in the area of residential energy efficiency and weatherization (nearly 90% of dollars received).

In addition to interacting with GGRF programs in different ways than its neighbors, Imperial County has also received significantly less funding than other southern California counties (total dollars implemented in Imperial County are less than 1% of total dollars implemented in Orange County). Given the high proportion of disadvantaged communities within Imperial County (see Figure 3), these contrasts beg important questions about regional equity and the fit between local funding needs and program terms. For example, are urbanized regions better positioned than rural regions to access GGRF revenues because they meet eligibility requirements for well-resourced transportation programs? Do eligibility requirements for competitive programs privilege some regions over others? What role does staff capacity play for agency or organization applicants in the success of awards from competitive programs? Investigating these kinds of questions warrants a closer comparative examination across counties or regions by GGRF program or project area.5

Observation 4: Funding for large, regional projects that receive “within DAC credit” is obscuring the breadth and depth of GGRF investment in disadvantaged communities

On the surface, Orange County is exceeding SB 535 (2012) thresholds with 62% of implemented dollars spent within DACs and 78% of implemented dollars benefiting DACs.6 Though these percentages are substantially higher than the minimums set by SB 535 (2012), they represent some of the lowest percentage spending in the region (Figure 8). Spending within DACs is on par with Los Angeles County (60%) and San Diego County (64%), but pales in comparison with Riverside and Imperial Counties (91% each). All southern California counties invested over 85% of their funds in projects that benefit disadvantaged communities with half spending more than 95%, except Orange County.

Though Orange County’s rates of spending within DACs may not be the highest among neighboring counties, they still represent a substantial amount of revenue ($54,906,865). To date, the majority (82.5%) of these funds have been spent on transit and intercity rail projects, including over $40 million for the purchase of 10 fuel efficient locomotives that run through five of the six southern California counties under study (Figure 9).

Disadvantaged Community Spending by County, All vs. Single-County Projects

<table>
<thead>
<tr>
<th>County</th>
<th>Dollars Within DACs</th>
<th>% of Total</th>
<th>Dollars Benefitting DACs</th>
<th>% of Total</th>
<th>Total Dollars Implemented</th>
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<tbody>
<tr>
<td>Imperial</td>
<td>$665,110</td>
<td>91%</td>
<td>$729,440</td>
<td>99%</td>
<td>$733,593</td>
</tr>
<tr>
<td>Los Angeles</td>
<td>$167,571,149</td>
<td>60%</td>
<td>$249,609,887</td>
<td>89%</td>
<td>$278,982,050</td>
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<tr>
<td>Orange</td>
<td>$54,906,865</td>
<td>62%</td>
<td>$69,463,147</td>
<td>78%</td>
<td>$88,616,913</td>
</tr>
<tr>
<td>Riverside</td>
<td>$57,141,779</td>
<td>91%</td>
<td>$60,115,903</td>
<td>96%</td>
<td>$62,709,020</td>
</tr>
<tr>
<td>San Bernardino</td>
<td>$59,036,807</td>
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<td>$66,251,264</td>
<td>98%</td>
<td>$67,852,324</td>
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<tr>
<td>San Diego</td>
<td>$91,820,710</td>
<td>64%</td>
<td>$127,321,944</td>
<td>88%</td>
<td>$144,153,462</td>
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</table>

<table>
<thead>
<tr>
<th>County</th>
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<td>$729,440</td>
<td>99%</td>
<td>$733,593</td>
</tr>
<tr>
<td>Los Angeles</td>
<td>$110,626,451</td>
<td>56%</td>
<td>$168,256,689</td>
<td>85%</td>
<td>$197,628,852</td>
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<td>Orange</td>
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<td>$40,509,327</td>
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<td>Riverside</td>
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<td>$16,753,317</td>
<td>87%</td>
<td>$19,346,434</td>
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<td>San Bernardino</td>
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<td>San Diego</td>
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<td>62%</td>
<td>$58,755,717</td>
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<td>$75,587,235</td>
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</tbody>
</table>

Data source: California Air Resources Board

Figure 8. Disadvantaged community spending by county, including break-out of single-county projects
Projects like these surface important distinctions in the ways multi-county vs. single-county projects benefit local residents. For example, each dollar committed to the construction of affordable housing near transit in Santa Ana ($3,925,000 for The Depot at Santiago) is likely to have a place-based impact on the Logan neighborhood because the project is, by its nature, rooted in a specific disadvantaged community. On the other hand, each dollar committed to purchasing “clean” natural gas buses for a bus rapid transit line ($2,320,000 for OCTA) is likely to have a more diffuse impact on individual disadvantaged communities because the nature of the investment is not directly place-based. Both investments should translate to benefits for residents of disadvantaged communities, but we must be careful not to assume that dollars spent on multi-county investments will have the same local impact as dollars that are invested solely in a single disadvantaged community.

In Orange County, dollars spent on regional, multi-county projects represent 86% of all GGRF spending within disadvantaged communities (Figure 10). By this account it is misleading to suggest that $54.9 million dollars, or 62% of all GGRF revenues received in Orange County, have been spent within local disadvantaged communities. Instead we can determine that only $7.5 million dollars are wholly linked to households or other specific sites in Orange County DACs. This sum represents only 8.5% of all implemented dollars in Orange County. Even if we consider these revenues as a percentage of all revenues received specifically for Orange County projects, it still represents only 19% of all non-regional dollars.

Orange County is not alone in this challenge of adequately representing DAC investments for multi-county and single-county projects (Figure 11). Multi-county projects represent nearly 90% of credited investments within San Bernardino DACs and they count for almost 80% in Riverside County. In Los Angeles and San Diego Counties they account for 30-50% of spending within DACs. By stripping away multi-county projects from the analysis,
Absent a reliable methodology for better parsing the degree of local investment that stems from a multi-county GGRF project, it is important to understand and identify how these kinds of projects might give an inflated perception of the degree of investment occurring in disadvantaged communities and counties.

Figure 10. Breakdown of single vs. multi-county projects within disadvantaged communities in Orange County

Figure 11. Percentage of single county vs. multi-county projects within disadvantaged communities, by county
Politics

Observation 5: Generally, OC legislators’ level of support for environmental and climate justice legislation is low

As a county with designated disadvantaged communities that also receives substantial GGRF investments, we would expect to see a relatively high degree of support among Orange County representatives for legislation that seeks to relieve environmental burdens on these places. However, in the recent 2016 state legislative session, that has not been the case. The California Environmental Justice Alliance’s (CEJA) 2016 Legislative Scorecard shows the rate at which elected representatives supported or opposed 13 environmental and/or climate justice (EJ/CJ) bills that came up for a vote in each house. Rates of support ranged from 8% (Aye vote for one EJ/CJ bill that came to a vote) to 100% (Aye vote for every EJ/CJ bill that came to a vote). In brief, every legislator in the state supported at least one EJ/CJ bill in the 2016 session, and many supported every EJ/CJ bill that came to a vote. All districts were represented except District 21, which was vacant for the majority of the legislative term.

Orange County’s State Senators, all Republican, demonstrated some of the lowest levels of support for EJ/CJ legislation, with voting records of 8%-15% (Figures 12 and 14). Even in north Orange County where disadvantaged communities are more prevalent, the region’s Senators tended to vote against environmental and climate justice legislation. With the exception of a sliver in northwest Orange County...
County around the city of Buena Park (represented by Democrat Tony Mendoza) Orange County represents the biggest bloc of coastal opposition to environmental and climate justice legislation in the state.

Voting rates in the State Assembly closely mirror trends in the State Senate. Rates of support for EJ/CJ legislation remain low, 8%-23%, with the exception of Tom Daly’s district (D-69) at 54% (Figures 13 and 14). Though this voting rate is the highest in Orange County, it is among the lowest for Democratic Assemblymembers. Statewide, trends toward coastal support and inland opposition for EJ/CJ legislation are less pronounced, although Orange County remains a noticeable coastal holdout opposed to such bills.

Notably, two Orange County seats have transferred parties and representatives since the 2016 legislation session. The data reported for Senate District 29 visualize Robert (Bob) Huff’s (Republican) voting record and the district is now represented by Josh Newman (Democrat). Similarly, the data for Assembly District 65 represents Young Kim’s (Republican) voting record, and the district is now represented by Sharon Quirk-Silva (Democrat). These transitions of power may present opportunities for increasing legislative support from local representatives for EJ/CJ bills, particularly if constituents are organized in surfacing these issues to their newly elected officials.

**Figure 13.** 2016 California State Assembly voting record (by district) on climate and environmental justice legislation
Figure 14. Relationship between Orange County CalEnviroScreen 3.0 disadvantaged communities and AB 1550 low-income communities and legislator support for EJ/CJ Bills (2016 Legislative Session)
Endnotes

1 Census tracts with environmental burden scores in the top 5% of all tracts statewide that lack an overall CalEnviroScreen score (usually due to data reliability issues in the population data) are also designated as disadvantaged communities. Orange County contains two such disadvantaged communities according to CalEnviroScreen 3.0. In alignment with OEHHA’s custom, this report represents such census tracts with the label “ScoreUnavailable.”

2 CalEnviroScreen 2.0 and 3.0 scores are each based on 20 indicators that fall under the umbrella of Pollution Burden (exposure indicators and environmental effects indicators) or Population Characteristics (population sensitivity indicators and socioeconomic indicators).


4 Within this program area, 60% of appropriated funds are for continuing appropriations to 4 agencies and programs: High Speed Rail project (25%), Affordable Housing and Sustainable Communities program (20%), Transit and Intercity Rail Capital program (10%), and the Low Carbon Transit Operations program (5%).

5 The Liberty Hill Foundation has put forward an approach to this kind of analysis for Los Angeles County, including targeted recommendations for state agencies to maximize equity in GGRF-resourced projects and programs.

6 Though DAC investment mandates are monitored across the full fund rather than county-by-county, it is useful for a regional equity analysis to compare county-scale investments against these fund-wide minimums.

RECOMMENDATIONS FOR ORANGE COUNTY

While identifying and prioritizing investment toward disadvantaged communities are important steps in pursuit of community equity, there is still much work to be done in Orange County and statewide.

Next Steps for Research

Building on the analysis presented here, greater understanding is needed about the relationship between funding agencies and disadvantaged communities in Orange County. Specifically, what role has democratic community engagement with members of disadvantaged communities played in Orange County’s funded projects? To the extent that funded projects already manifest excellent community engagement, it would be valuable to identify those projects, understand the strategies they employ, and lift up their methods. To the extent that funded projects do not manifest excellent community engagement, administrators should look to the successful examples and apply their methodologies. What would it take to innovate and scale those strategies that demonstrate excellent community engagement to other project or program areas in Orange County and beyond? Statewide, we see a budding example of this approach in the final guidelines for the new Transformative Climate Communities program. The Strategic Growth Council developed the guidelines in consultation with community groups and environmental and climate justice advocacy groups.

Next steps should also include preparing a call for research with disadvantaged community residents to learn about their awareness of GGRF projects, their perception(s) of benefit, and their proposals for improvement. Professional associations, such as the National Association of Climate Resilience Planners (nacrp.org), have also developed resources to support community-based organizations seeking to develop, advocate for, and implement community-driven climate resilience solutions with deeply democratic approaches.

As programs and funding structures continue to evolve, Orange County and southern California would benefit from annual updates to the analysis provided in this report. With CalEnviroScreen 3.0 in place and AB 1550 (2016) queued up for implementation, how does funding to disadvantaged communities and low-income households in Orange County change? How do these trends compare to neighboring counties or statewide norms? What gaps should be addressed? What projects or programs offer the greatest opportunity for aligning disadvantaged community needs with resources available? Given the scale of the GGRF and the complexity of its investments, annual updates to this analysis will provide a more robust, long-term picture of the ways these fiscal resources are reaching California communities.

Finally, researchers should augment equity analyses of cap-and-trade and the GGRF with decolonizing approaches that fully embrace and affirm the sovereignty of Native Nations. Among a range of potential questions, such an analysis might explore how and to what extent agencies are complying with state government-to-government tribal consultation guidelines. What might be learned from an analysis based on ancestral and current tribal boundaries, rather than county jurisdictions or census tracts? To be deeply decolonial, such an analysis should be led or guided by a plurality of Native American voices.

Recommendations for Practitioners

Orange County can begin ramping up investments to disadvantaged communities by examining how neighboring counties are finding success. For example, though San Diego County has fewer disadvantaged communities than Orange County, GGRF dollars flow to these places at a higher rate than in Orange County. Environmental professionals, practitioners, and agency administrators could also learn from Riverside County about its success prioritizing dollars to disadvantaged communities. Though Orange and Riverside have comparable numbers of DAC residents (based on CalEnviroScreen 2.0), Riverside demonstrates a substantially higher rate of funding within DACs (91%) than Orange (62%). These trends hold even when comparing single-county projects. Both Riverside and San Diego demonstrate that it is possible to prioritize investments to disadvantaged communities even if these places represent a minority of the overall county.
Guidance for Advocacy and Philanthropy

Orange County is a strategic and important site to grow local advocacy with state representatives for environmental and climate justice legislation. Efforts should concentrate on districts containing disadvantaged communities that have benefited from GGRF investments, but have not received political support for those policies. These priorities include Assembly districts 72 (Travis Allen-Republican) and 65 (Sharon Quirk-Silva-Democrat), and Senate districts 34 (Janet Nguyen-Republican) and 29 (Josh Newman-Democrat). Additional advocacy should also be directed to Assembly District 69 (Tom Daly-Democrat) to sustain and grow budding environmental and climate justice support demonstrated by its representative. Statewide coalitions like the California Environmental Justice Alliance (CEJA, caleja.org) play a key role in amplifying local capacity for advocacy and organizing those actions for maximum policy impact in Sacramento.

Following the example of Liberty Hill Foundation in Los Angeles (www.libertyhill.org/environmental-justice), community foundations and other philanthropists have a role to play, too. Through grant-making, foundations and philanthropists can prioritize projects with robust democratic community engagement and a deep commitment to social justice and decolonization. Funders can also invest in mechanisms to keep Native Nations and grassroots, community-based organizations apprised of GGRF program opportunities including applied and collaborative research, and bridge gaps between these groups and state agencies or program administrators.4

Looking Forward

With the passage of AB 398 (2017), the cap-and-trade program and GGRF stand to exist for at least another decade, so it is important to evolve the best process for calibrating benefit with burden. The new legislation includes substantial concessions to big polluters, including billions of dollars available in emissions allowances and the possibility for satisfying GHG reduction obligations through international carbon offsets with ethical issues of their own.5 Concessions like these do little to relieve the environmental and health burdens faced by communities already experiencing disadvantage, and in some cases may worsen local impacts. Implementation and monitoring matters. As the nuts and bolts of this new legislation are operationalized, it is imperative to examine the data from previous funding cycles and to involve all affected communities in the design of programs and projects through which dollars will flow.

Endnotes

3 It is important to note that the election of Sharon Quirk-Silva and Josh Newman to these districts represents a transition of political power and therefore a different political opportunity requiring different strategy than in districts with more entrenched oppositional leadership.