

WATTS RISING

A BASELINE AND PROGRESS REPORT ON EARLY IMPLEMENTATION
OF THE TRANSFORMATIVE CLIMATE COMMUNITIES PROGRAM GRANT

Report Period: Award Date (January 2018) through Month Three of Implementation (June 2019)

By: UCLA Luskin Center for Innovation, Program Evaluator

Commissioned by: California Strategic Growth Council



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Acknowledgments

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California Strategic Growth Council (SGC) (Contract Number: SGC18124)

Acknowledgments

We thank SGC for commissioning the UCLA Luskin Center for Innovation to conduct a five-year, third-party evaluation of the Round 1 Transformative Climate Communities Program (TCC) investments, which includes the Transform Fresno initiative. In particular, we thank Louise Bedsworth, Sandra Lupien, Saharnaz Mirzazad, Julia Nagle, and Sophie Young for prioritizing evaluation as a major component of TCC and for their attention to our informational requests.

In addition to our state partners at SGC, we'd also like to thank our partners at the California Department of Conservation—namely, Elena Davert and Elizabeth Hessom—for reviewing the accuracy of this report.

This report would also not have been possible without the support of a team of skilled undergraduate and graduate student researchers who helped with data collection, analysis, writing, editing, and document design. Specifically, we would like to recognize Deanna Cunningham, Emma French, Elena Hernandez, Sharon Sand, and Deja Thomas for their work on this document.

We owe a great deal of gratitude to Mara Elana Burstein of Natural Resources Strategies for copyediting this report and Nick Cuccia for layout and design.

We would also like to thank Bruce Mirken, Alvaro Sanchez, and Emi Wang at the Greenlining Institute for their thoughtful input on how to structure the content contained in this report.

Last, a big thank you to all of the Watts Rising project partners for sharing so much primary data with the evaluation team, as well as reviewing the content within this report for accuracy.

Disclaimer

The UCLA Luskin Center for Innovation appreciates the contributions of the aforementioned agencies. This report, however, does not necessarily reflect their views nor does it serve as an endorsement of findings. Any errors are those of the authors.

For More Information

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Cover image: Children and the Watts Towers (Photo Credit: Orr, LA Times 2015)

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EXECUTIVE SUMMARY



Watts Rising Collaborative Community Event. Photo credit: Economic and Workforce Development Department LA

THE TRANSFORMATIVE CLIMATE COMMUNITIES PROGRAM (TCC) is an innovative, new investment in community-scale climate action, with potentially broad implications. Launched in 2017 by the California State Legislature, TCC funds the implementation of neighborhood-level transformative plans that include multiple, coordinated projects to reduce greenhouse gas emissions. The program is also designed to provide an array of local economic, environmental, and health benefits to disadvantaged communities, while minimizing the risk of displacement. TCC empowers the communities most impacted by pollution to choose their own goals, strategies, and projects to enact transformational change — all with data-driven milestones and measurable outcomes.

The California Strategic Growth Council (SGC) serves as the lead administrator of TCC. In its first year, and through a competitive process, SGC awarded multimillion dollar grants to the City of Fresno (\$66.5 million), the Watts Neighborhood of Los Angeles (\$33.25 million), and the City of Ontario (\$33.25 million).

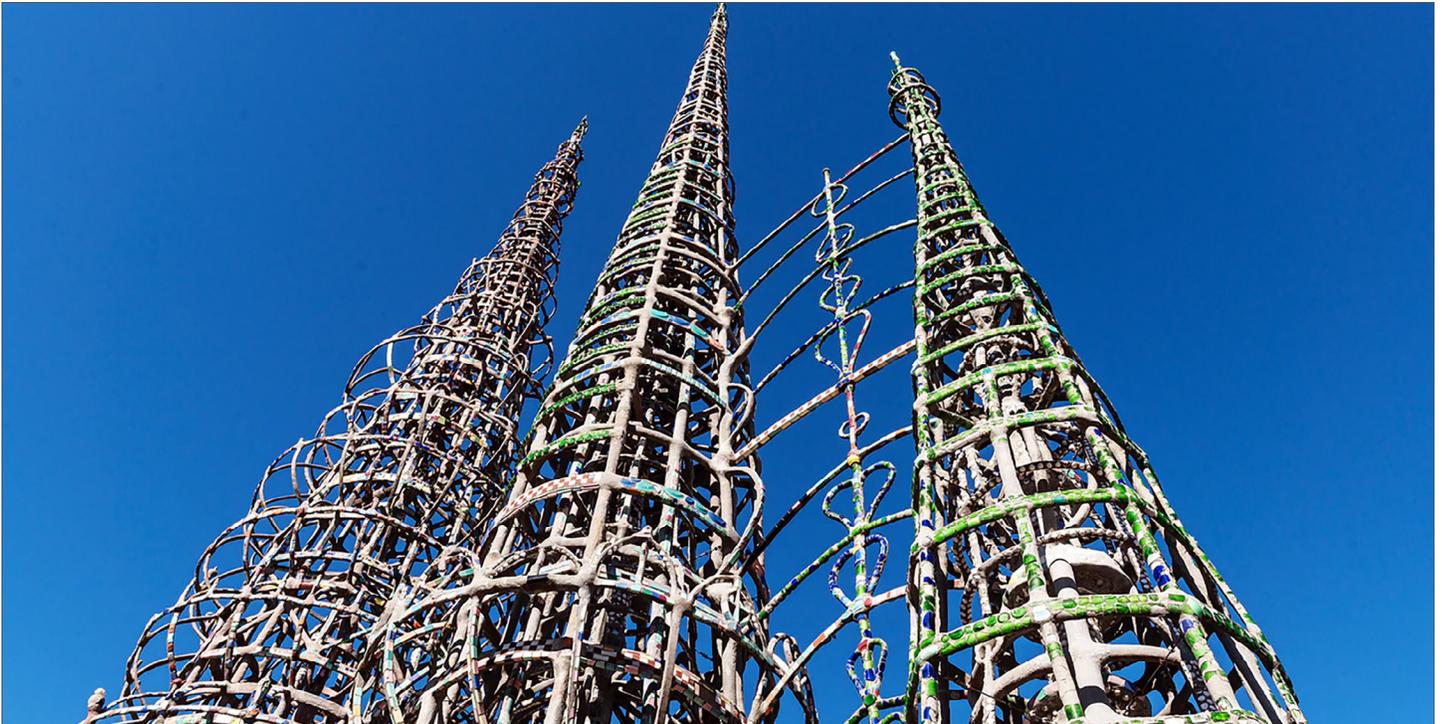
The UCLA Luskin Center for Innovation (LCI) is serving as the lead evaluator for this first round of funding. Researchers are working with the three communities to document their progress and evaluate the impacts of TCC investments through fiscal year (FY) 2022-2023. This is the first in a series of five annual reports that will provide an overview of the funded projects, key accomplishments, and estimated benefits of TCC investment in Watts.¹ This first annual report documents progress through the end of FY 2018-19, which only overlaps with about three months of program implementation (April 2019 through June 2019), so the focus of the report is on early accomplishments and baseline indicators. Future reports will provide updates on implementation milestones and select indicators where new data are available.

¹For annual reports that document TCC investments in Fresno and Watts, visit: <https://innovation.luskin.ucla.edu/climate/climate-investments/>

Key Accomplishments*

- Laid the foundation for grant success by refining project scopes and finalizing evaluation protocols;
- Executed grant agreement and kicked off implementation;
- Established partnerships and a governance structure to ensure meaningful community engagement and accountability;
- Kicked off outreach and community engagement efforts; and
- Completed the implementation of one leverage project.

*from award date (January 2018) through the end of FY 2018-'19 (June 2019)



Watts Towers. Photo credit: Carol M Highsmith, Rawpixel

Watts Today

Watts is a vibrant neighborhood of about 40,000 residents located in the southeastern part of the City of Los Angeles. The neighborhood has a long history of community organizing and is home to the Watts Towers and other homegrown arts and cultural landmarks. Watts is also located near many sources of air pollution including the intersection of Interstate 110 and 105 freeways, near rail and truck routes for the Port of Los Angeles, and under the flight path for Los Angeles International Airport. In addition, Watts residents face limited access to fresh food and quality, and affordable housing. These and other sources of public health concerns in the neighborhood could be exacerbated as a result of climate change and more extreme heat days. The Watts Transformative Climate Communities Program (TCC) grant seeks to address these environmental and economic challenges through a suite of coordinated projects, including developing low carbon transportation options, constructing affordable housing, planting thousands of trees, and supporting other amenities that respond to community needs.

Watts Rising

In 2017, the Housing Authority of the City of Los Angeles (HACLA) led efforts to submit a TCC grant. The grant was designed to support the following identified environmental and public health goals: (1) reduce local sources of air

pollution, (2) improve public health outcomes and address health disparities, (3) prevent displacement and its impact on physical and mental health, (4) address and mitigate non-greenhouse gas (GHG) emissions sources and exposure to pollution, and (5) create safe and secure public spaces. Furthermore, the following economic goals were identified: (1) access to job training, (2) access to high quality jobs and careers, (3) support and expand local businesses and organizations, (4) help youth identify and prepare for careers in GHG reduction fields, and (5) empower and educate residents to advocate for greater equity and provision of municipal services. HACLA hosted public meetings attended by residents and other key stakeholders to solicit input on project prioritization for TCC grant in support of the identified goals. Engagement efforts resulted in Watts Rising, a community-driven plan and initiative to transform a 2.6 square mile area of the City of Los Angeles through a suite of projects and plans that will reduce GHGs while also providing local environmental, health and economic co-benefits. In early 2018, SGC awarded \$33.25 million to the Watts Rising Collaborative, as part of TCC. Watts Rising also leverages \$168,935,187 in outside funds in additional support of this vision. Along with Fresno and Ontario – two other sites awarded Round 1 TCC funding – Watts will serve as one of the first communities in the country to pilot a community-led, multi-benefit, and place-based climate change mitigation program that specifically targets the needs of low-income households.

Projects

Watts Rising includes a total of 24 projects, 17 of which are funded by TCC dollars and seven of which are funded by

leveraged dollars. The TCC funded and leveraged projects work synergistically to achieve the broad goals of TCC. The TCC funded projects and leveraged projects are consolidated into seven distinct project types below:

TCC Funded Projects



Affordable Housing and Sustainable Communities —

Funds the construction of an 81-unit affordable housing development. Increasing the density of housing aims to reduce vehicle miles traveled (VMT), along with lowering housing costs and travel costs for Watts residents. This project will also plant trees, which sequester carbon and provide shading benefits, as well as provide bicycle safety and education courses, which promote clean modes of transportation.



Food Waste Prevention and Rescue —

Funds the development of a food rescue program that redistributes unsold food

from a local grocery store to the community at regular events, increasing the accessibility of fresh produce for consumption and reducing the amount of food waste. Rescued food that is unable to be redistributed is turned into compost that can be used locally for gardening and urban greening applications. This process helps to divert the amount of organic material sent to landfills, where it decomposes in the absence of oxygen and releases methane, a potent GHG.



Low Carbon Transportation —

Increases the fleet of electric vehicles (EV) for use by Watts residents, offsetting the miles driven

by cars that run on fossil fuels.



Rooftop Solar and Energy Efficiency —

Funds two projects aimed at installing free rooftop solar systems and increasing energy efficiency for residential properties. These two projects will enhance local generation of renewable energy, reduce the need to generate electricity via fossil fuels, and lower energy costs for property owners.



Transit Operations —

Electrifies the bus fleet that travels through the project area, and increases the frequency of bus service.

The transit operation project aims to improve transit ridership and reduce VMT.



Urban and Community Forestry —

Funds the planting of 2,250 trees. As the trees mature, they will sequester carbon and shade nearby buildings, which should reduce the demand for electricity for cooling purposes. The additional tree coverage will also reduce the urban heat island effect on hot days and absorb stormwater on rainy days.



Urban Greening —

Funds the planting of 475 trees and makes bicycle and pedestrian improvements. Similar to Urban and Community Forestry projects, Urban Greening

projects result in the sequestration of carbon through maturing trees and provide shading benefits. Bicycle and pedestrian improvements aim to reduce car travel by improving alternative mobility options.

Leveraged Projects



Affordable Housing and Sustainable Communities —

Funds the construction of a 135-unit affordable housing development.

A 31,299 square foot grocery store will also be constructed nearby. Together, these investments increase the density of the neighborhood and accessibility of local shopping options, which aim to reduce VMT, along with lowering housing costs for Watts residents. Additionally, these two projects will plant 380 trees.



Urban Greening and Active Transportation —

Funds the planting of 346 trees and other native species. Additionally, these projects makes bicyclist and pedestrian improve-

ments to over a mile of streets in Watts. These projects result in the sequestration of carbon through maturing trees and provide shading benefits. Bicycle and pedestrian improvements aim to reduce car travel by improving alternative mobility options.

Transformative Plans

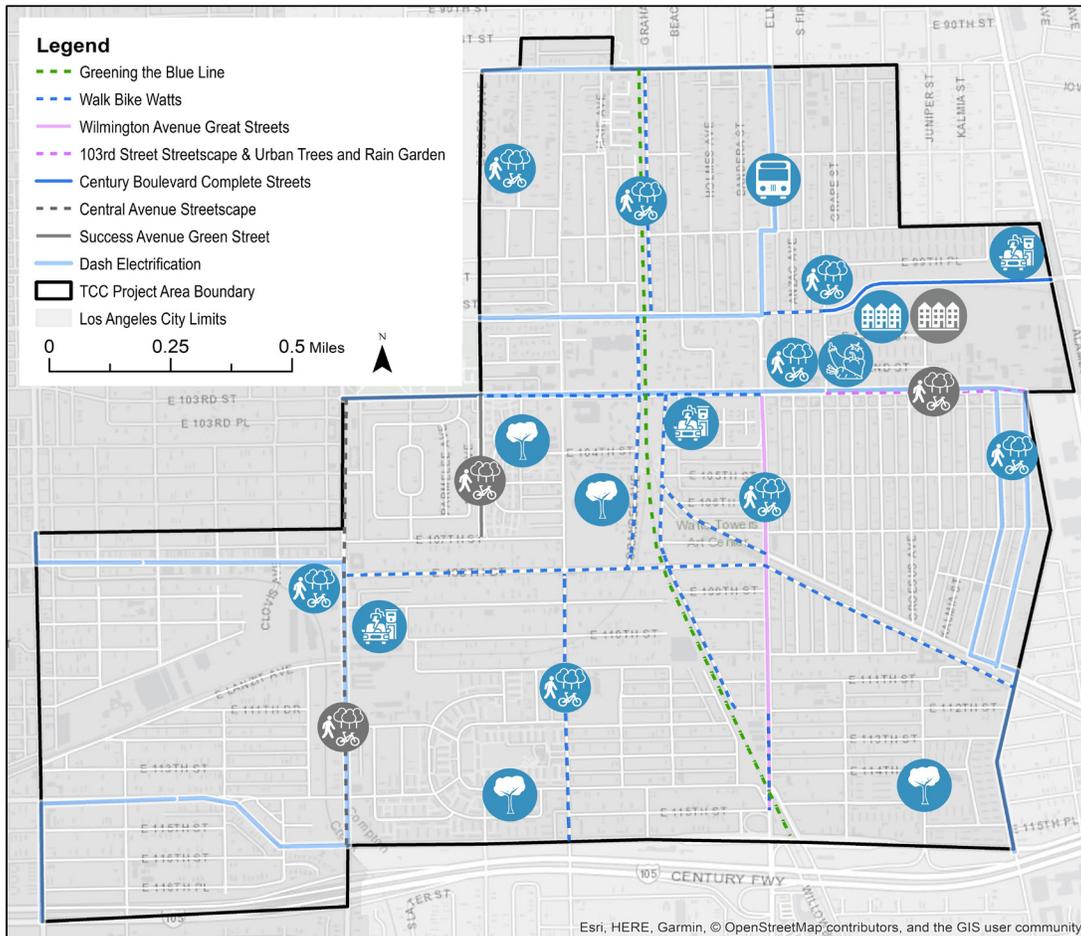
TCC is unique from other state-funded GHG reduction programs because it requires grantees to develop three transformative plans to maximize the benefits of the previously described project and to minimize unintended harms. Specifically, grantees were required to develop a community engagement plan, workforce development plan, and displacement avoidance plan. Respectively, these

three plans are designed to ensure that TCC investments reflect the community’s vision and goals, bring economic opportunities to disadvantaged and low-income communities, and minimize the risk of gentrification and displacement of existing residents and businesses. In the case of Watts Rising, these three plans have been adapted in the following ways:

Community Engagement Plan	Workforce Development Plan	Displacement Avoidance Plan
<ul style="list-style-type: none"> » Create Watts Rising Leadership Council » Engage Watts residents through each project 	<ul style="list-style-type: none"> » Connect residents with training and educational opportunities that provide them with new skills » Place residents in employment opportunities on TCC and leveraged projects 	<ul style="list-style-type: none"> » Produce and preserve affordable housing » Protect tenure of existing residents » Retain local small business community

The TCC funded projects and leveraged projects are consolidated into eight distinct project types summarized below, and are mapped below (where applicable):

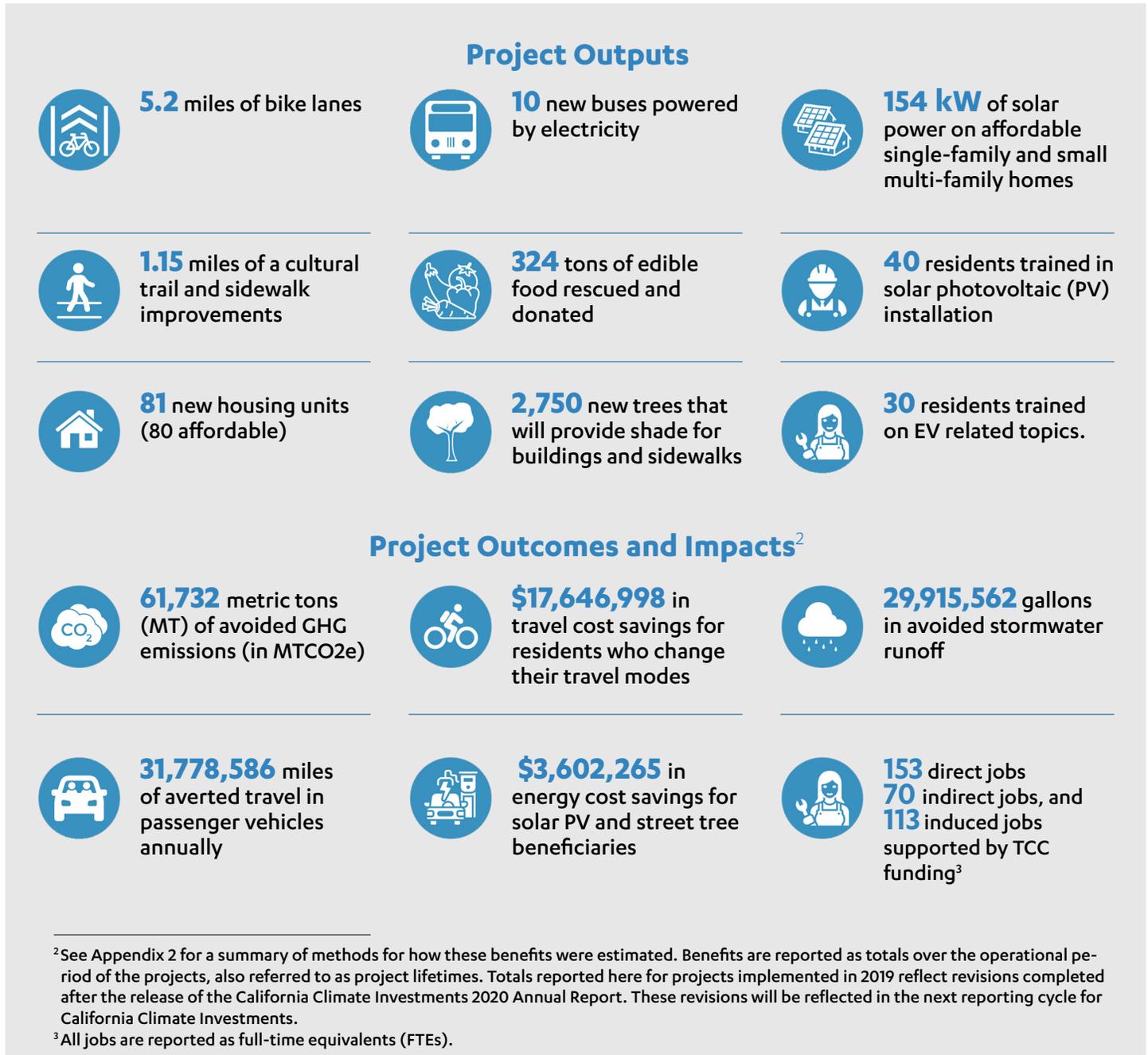
Planned TCC projects*



Anticipated Benefits

Watts Rising is slated to bring a number of benefits to residents of the TCC project area. The infographic below highlights a non-exhaustive list of these benefits, grouped by indicator type. This list includes outputs, outcomes, and impacts from TCC funded projects and does not include those from leveraged projects. Project outputs refer to the tangible goods and services that Watts Rising will deliver

by the end of project implementation. These outputs are expected to result in many positive outcomes and impacts. Outcomes refer to changes in stakeholder knowledge, attitudes, skills, behaviors, practices, or decisions, while impacts refer to changes in the environmental or human conditions that align with the objectives and goals of TCC.



Harder to quantify, but nevertheless important, is the leadership and collaboration capacity that will be created in Watts over the course of the TCC implementation process. This capacity could lay the foundation for many other funding and action-oriented opportunities that

leverage the TCC projects and plans to bring additional environmental, health, and economic benefits in Watts. In addition, lessons learned and best practices from Watts TCC could inform local climate action and investments well beyond Watts.

Early Accomplishments

Much has happened following SGC's announcement of Watts Rising's TCC award in 2018. From then through the close of the 2018-19 fiscal year (June 30, 2019), project partners have refined plans, built both capacity and governance structures, and taken initial steps necessary to implement an ambitious, unprecedented climate action initiative. These accomplishments are described in more detail below according to the time period in which they occurred.

Post Award Process (January 2018 - April 2019)

Laying the Foundation for Grant Success

In 2018, SGC announced that Watts Rising was awarded a Round 1 TCC grant. This kicked off a process known as post-award consultation in which SGC and HACLA participated in a comprehensive review of all projects and transformative plans to ensure that they are in compliance with TCC guidelines, and more broadly that the foundation is laid to maximize implementation success. This includes having a sound evaluation plan for tracking the outputs and outcomes from each project and transformative plan. The process involved refining the scope and modifying the budget of several projects compared to what was originally submitted in the Watts Rising proposal. The post-award consultation process led to the following outcomes:

- » **1 proposed urban community forestry project was removed from the final grant agreement: the majority of the trees were reallocated to another urban community forestry project**
- » **Minor adjustments were made to the scope of the low carbon transportation, low-income weatherization, and urban greening projects**

Post Grant Execution (April 2019 - June 2019)

Kicking Off Implementation

HACLA executed its grant agreement with SGC on April 23, 2019, a date which marks the end of post-award consultation and the beginning of program implementation. Given the timing of grant execution, this first annual report overlaps with only about four months of program implementation. Most of this early implementation period was spent on meeting SGC's readiness requirements (e.g., completing necessary California Environmental Quality Act documentation, obtaining permits, finalizing project maps and designs, developing operations and maintenance plans, etc.). Early implementation milestones include the following:

- » **4 of 17 TCC funded projects met SGC's full readiness requirements to start spending funds on building out infrastructure and rolling out services**
- » **11 of 17 TCC funded projects met partial readiness and have allowable pre-construction, community engagement, and workforce development activities**
- » **2 projects must meet full readiness or other conditions before starting implementation**

Establishing Partnerships and a Governance Structure

HACLA formed a number of partnerships in the community to facilitate TCC implementation. These include:

- » **19 organizational partners that will implement Watts Rising projects (a full list can be found in Table 3)**
- » **Data partners (Charles R. Drew University of Medicine and Science and the Watts Community Studio)**
- » **An anti-displacement partner (Watts Century Latino Organization)**
- » **A city partner (Mayor's Office of Economic Opportunity)**
- » **Other local organizations, such as Watts Neighborhood Council, Watts Gang Taskforce, Watts Clean Air and Energy Committee, Project Fatherhood, and more**

Many of these community partnerships were formed during the TCC application process and since grant execution have now been institutionalized in the form of a (1) the Watts Rising Leadership Council and (2) Working Group Hubs.

The Watts Rising Leadership Council is the advisory body that provides oversight and facilitates coordination amongst the myriad of Watts Rising partners. In addition to the groups listed above, the Leadership Council includes Watts residents, businesses, and other community-based organizations. Starting with the first kickoff meeting in May 2019, the Leadership Council holds monthly meetings open to the public.

The Working Group Hubs are organized around the following similar project themes: (1) sustainable housing, (2) urban greening, (3) active transportation, and (4) low carbon transportation. Members focus on implementing one or more projects in those four thematic areas.

Beginning Outreach and Community Engagement Efforts

Outreach and community engagement efforts commenced both site-wide and at the project level. A key component of the Watts Rising initiative is involving community members in projects. The Watts Community Engagement

Plan (CEP) and each TCC funded project specifies activities taken to involve the community throughout the grant period. These include hosting events, organizing educational workshops, and recruiting residents as volunteers, trainees, or as hired staff. Beyond the community engagement that occurred during the application process, outreach and engagement have been key parts of initial work post-grant signing. Community engagement events that have occurred since the grant was signed include:

- » **1 bicycle education and safety class through the affordable housing and sustainable communities project**
- » **1 community gardening day for the Watts Community Healing Tech Garden at Markham Middle School**
- » **1 community tour at the Watts Community Healing Tech Garden at Markham Middle School**
- » **3 bilingual community events for the Freedom Tree Park**

These events had almost 200 attendees combined. In addition, 415 Watts residents, including 30 youth residents, have been contacted through project-specific outreach.

Completing the Implementation of One Leverage Project

On September 28, 2018 the Century Boulevard Complete Streets project, led by the City of Los Angeles Bureau of Street Services was completed. This leveraged project maximized over \$10 million in funding to make bicyclist and pedestrian improvements. Along a half a mile stretch of Century Boulevard in Watts, street lights, signals, sidewalks, and parkways were installed and 155 trees were planted.

This project is one of seven leveraged projects included in the Watts Rising project proposal. These projects are funded by leveraged dollars and contribute to achieving goals in the project area. Four other leverage projects and four TCC funded projects will make additional bicyclist and pedestrian improvements as part of the Watts Rising initiative over the next few years. These improvements will occur on over a combined six miles of streets in the Watts TCC site.



Jordan High School marching band at the grand opening of the Century Boulevard Complete Street, a leverage project completed in September 2018. Photo credit: Housing Authority of Los Angeles

Baseline Trends for Evaluating Project Impacts

The first step in evaluation is to establish baseline data for indicators in treatment and control settings prior to an intervention. In the case of the Watts Rising initiative, this report characterizes baseline conditions in the TCC project boundary area and a set of similar, but nonadjacent census tracts prior to TCC investments. In addition to looking at baseline conditions in the TCC sites and control tracts, this report includes baseline conditions at the scale of Los Angeles County and the State of California in order to understand how TCC investments are addressing equity gaps at broader geographic scales. See Table 1 for a summary of key trends at these four geographic scales. A discussion of these findings and additional details can be found in the final chapter of this report.⁴

Demographics

The population in the TCC project area in Watts is growing, a trend that is consistent with the rest of Los Angeles County and California. Across all three geographic scales, there has been an increase in the Hispanic and non-Hispanic Asian populations and a decrease in the non-Hispanic Black population. Unlike the county and state, non-Hispanic other groups are decreasing, while non-Hispanic White and foreign-born populations are increasing in the TCC project area as a share of the total population.

Economy

Economic conditions in the TCC project area in Watts appear to have improved according to multiple American Community Survey (ACS) indicators during the decade that followed the recession: median household income, high-income attainment, educational attainment, and the employment rate increased, while poverty levels decreased, consistent with trends at both the county and state level. Only the employment rate and educational attainment, however, show a statistically significant improvement at the TCC site level.

Energy

There is a limited set of energy-related indicators that can be tracked at the census tract scale or smaller given the regional nature of electricity generation and transmission. However, several useful indicators can be obtained at an appropriate geographic scale useful for tracking trends in local energy resources, such as reliance on fossil fuels for heating purposes and solar PV adoption. With respect to heating fuels, it appears that Watts TCC site residents are increasingly using electricity to heat their home, while decreasingly using utility gas and other fossil fuels. The Watts

TCC site shows a lower solar PV adoption rate relative to the rest of the county and state.

Environment

Like energy indicators, there is a limited set of environmental quality indicators that can be tracked at the neighborhood scale from secondary sources. Thus, many of the environmental effects of TCC on awarded sites must be measured directly. During baseline data collection, the TCC evaluation team was able to use satellite data to classify the TCC project boundary area by land type. Based on the most recent set of available satellite imagery for 2016, it appears that the TCC project area has a high percentage of impervious surfaces (62% of total land area) and low percentage of vegetative cover (12%) relative to urbanized communities across California.

Health

Health data are highly sensitive information and are not generally available from secondary sources at a temporal and geographic scale appropriate for measuring neighborhood-level transformations. Nonetheless, there are two health related indicators that can be tracked at a geographic scale that is appropriate for evaluating the effects of Watts Rising: health insurance coverage and vehicle collisions involving a cyclist or pedestrian. The former indicator experienced a statistically significant increase during the analyzed years, which could be explained by the rollout of the Affordable Care Act in 2010. This latter indicator increased by 42% from 2013 to 2018 for collisions involving a bicyclist (33 to 47 collisions, respectively) and by 43% for collisions involving a pedestrian (14 to 20 collisions respectively).

Housing

Among the various housing indicators tracked for the TCC project area, none of the trends were statistically significant. In other words, there was no dramatic improvement or diminishment of housing conditions during the five year period preceding TCC investment.

Transportation

Unlike trends seen at the county and state levels, commutes by public transit and by bike increased in the Watts TCC site. However, consistent with state and county trends, the share of households commuting to work by car alone increased, while commutes by carpool decreased. The adoption of EVs in the TCC project area appears to be trending downward, opposite the county trends. Compared to Los Angeles County, the Watts TCC site has fewer EV charging stations per 1,000 residents.

⁴Additional information related to indicator tracking can also be found in the appendices.

Table 1. Summary Table of Key Baseline Trends⁵

Indicator	Growth Rate From 2013 to 2018			
	Watts TCC Census Tracts	Control Census Tracts	Los Angeles County	California
Total population	+7.5%*	+9.9%*	+2.1%*	+4.0%*
Percent Hispanic, all races	+3.2%	+3.2%*	+1.1%*	+2.6%*
Percent Non-Hispanic, Asian	+123.7%*	+29.0%	+4.9%*	+7.6%*
Percent Non-Hispanic, Black	-12.3%	-11.2%	-3.1%	-3.3%
Percent Non-Hispanic, White	+25.3%	+18.7%	-4.3%	-5.4%
Percent Non-Hispanic, other groups	-9.6%*	-9.3%*	+2.2%*	9.1%*
Percent Foreign born	+3.6%	-5.8%	-2.5%	-0.4%
Median household income	+14.0%	+18.1%	+14.9%*	+16.6%*
Percent living below poverty	-10.6%	-15.1%	-10.4%	-10.4%
Percent high income (\$125k+)	+16.4%	+85.2%*	+29%*	+31.0%*
Percent employed within civilian labor force	+11.7%*	+6.7%*	+4.4%*	+4.4%*
Percent with less than high school education	-6.9%	-8.6%	-8.8%	-9.0%
Percent with bachelor's degree or higher	+34.5%*	+7.8%	+7.1%*	+8.4%*
Percent renters**	-3.9%	+2.6%*	+2.0%*	+1.5%*
Percent homeowners**	+8.0%	-6.3%	-2.3%	-1.2%
Percent renters paying ≥50% of income on rent**	-1.1%	-6.3%	-3.8%	-4.6%
Percent homeowners paying ≥50% of income on mortgage**	-20.7%	-21.1%	-23.5%	-25.7%
Percent renters with more than one occupant per room**	-31.1%	-18.7%	-4.1%	+1.4%*
Percent homeowners with more than one occupant per room**	+1.7%	-14.3%	-10.5%	-3.9%
Percent of renters in same house 1 year ago**	+6.5%	+8.8%*	+9.1%*	+9.4%*
Percent of homeowners in same house 1 year ago**	+12.0%	-3.9%	-2.0%	-1.3%
Percent commuting to work by car (alone)	+7.7%*	+13.2%*	+2.1%*	+0.8%*
Percent commuting to work by transit	+8.5%	-28.2%	-14.6%	-1.6%
Percent commuting to work by bike	+12.3%	+2.1%	-2.7%	-3.3%
Percent commuting to work by foot	-0.6%	-13.6%	-5.6%	-5.9%

*Statistically significant at the 95% confidence level. Significance tests were conducted in accordance with methods described by the U.S. Census Bureau in *Understanding and Using American Community Survey Data: What All Data Users Need to Know* (2018).

**Refers to households rather than individuals.

⁵These growth rates are based on data from the American Community Survey (ACS) using five-year samples for 2009-2013 and 2014-2018. See Appendix 6 for the following details: (1) the ACS table numbers that were sourced for each indicator; (2) estimates (rather than percentage changes) for 2009-2013 through 2014-2018 samples; and (3) the margins of error for each estimate.



Governor Jerry Brown in Fresno signs a package of climate change bills in September of 2016, including Assembly Bill 2722, which was authored by Assemblymember Autumn R. Burke (at right) and established the Transformative Climate Communities Program. Photo credit: The Fresno Bee

The Vision Behind TCC

THE TRANSFORMATIVE CLIMATE COMMUNITIES PROGRAM (TCC) was authorized in 2016 by Assembly Bill 2722 (authored by Assemblymember Burke). The bill's intent is to fund the development and implementation of neighborhood-level transformative climate community plans that include multiple, coordinated greenhouse gas (GHG) emissions reduction projects that provide local economic, environmental, and health benefits to disadvantaged communities.⁶ The program is part of California's broader suite of programs, referred to as California Climate Investments, that use revenues from the state's Cap-and-Trade Program to fund projects that reduce GHG emissions. TCC is novel because of three signature elements: (1) its place-based and community-driven approach toward transformation; (2) robust, holistic programming via the integration of diverse strategies, and (3) cross-sector partnerships. The authors of this report are not aware of such a comprehensive, community-driven, and place-based climate action program anywhere else in the world.

⁶ AB 2722, Transformative Climate Communities. 2016. Web. February 2017. Retrieved from: https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160AB2722

As a place-based program, all grant applicants must identify a project area that will be the focus of the TCC proposal. Proposals must be borne out of a robust community engagement process that brings together residents and stakeholders towards the development of a shared vision of how to invest TCC funds. The program's emphasis on comprehensive community engagement helps ensure that proposals are based on a deep understanding of a community's needs and assets, thereby maximizing the benefits that TCC dollars bring to existing residents in a selected site.

As a holistic program, TCC integrates a wide variety of GHG reduction strategies, such as sustainable land use, low carbon transportation, renewable energy generation, urban greening, and waste diversion. With these strategies in mind, TCC grantees develop site-specific projects, such as transit-oriented affordable housing, expanded bus service, rooftop solar installations, tree planting, and food waste recovery. These GHG reduction projects are modeled after existing California Climate Investment (CCI) project types, but TCC is novel in that it unifies them into a single, place-based initiative. In addition to integrating various CCI project types, TCC also requires TCC sites to incorporate crosscutting transformative plans, ensuring that TCC investment is underpinned by meaningful community engagement, provides direct economic benefits to existing residents and businesses, and enables these stakeholders to remain in their neighborhood. Moreover, grant recipients are expected to use TCC dollars in concert with other sources of funding that could complement the TCC investment to implement the community vision.

Lastly, the program emphasizes cross-sector partnerships by requiring applicants to form a coalition of organizations that would carry the implementation of the community vision. To assure that the implementation will deliver the community vision, all applicants are required to have an oversight committee that consists of project partners, community members, and local community-based organizations. The diverse partnerships, robust governance, and aforementioned transformative plans help ensure transparency and accountability for the investments, all while building the capacity of communities historically underinvested in, thereby helping to reverse that trend.

Program Administration

SGC awards TCC grants and administers the program in partnership with the California Department of Conservation (DOC), with collaboration by other state agencies. SGC staff coordinate efforts with partnering state agencies and work with the California Air Resources Board (CARB) and DOC on program guidelines, evaluating applications, preparing agreements, monitoring agreement implementation, and program reporting.

There are two types of grants administered through TCC: implementation grants and planning grants. SGC awards implementation grants to sites that have demonstrated a clear, community-led vision for how they can use TCC dollars to achieve program objectives in their communities. SGC also awards planning grants to fund planning activities in disadvantaged communities that may be eligible for future TCC implementation grants and other California Climate Investment programs. The implementation grants are funded through California's Cap-and-Trade auction proceeds while the planning grants are funded through Proposition 84 funds.

Program Awards

Since the launch of the program in 2016, there have been two rounds of awards. During Round 1, which was tied to the state's FY 2016-2017 budget, a total of \$133 million was allocated to implementation grants and \$1 million was allocated to planning grants. For Round 2, which was tied to FY 2018-2019 funding, a total of \$46 million was allocated to implementation grants, and a total of \$0.8 million was allocated to planning grants. Round 3 will be tied to FY 2019-2020 funding, with a total of \$56 million available in funding for implementation grants and \$0.6 million for planning grants. Table 2 provides an overview of the implementation and planning grants that have been distributed through FY 2018-2019.

Table 2: Overview of TCC Implementation and Planning Grants Through FY 2018-2019

Site Location	Round (Fiscal Year)	Grant Type	Funding Amount
Fresno	Round 1 (FY 2016-2017)	Implementation	\$66.5 million
Ontario	Round 1 (FY 2016-2017)	Implementation	\$33.25 million
Los Angeles - Watts	Round 1 (FY 2016-2017)	Implementation	\$33.25 million
Coachella Valley	Round 1 (FY 2016-2017)	Planning	\$170k
East Los Angeles	Round 1 (FY 2016-2017)	Planning	\$170k
East Oakland	Round 1 (FY 2016-2017)	Planning	\$170k
Gateway Cities	Round 1 (FY 2016-2017)	Planning	\$170k
Moreno Valley	Round 1 (FY 2016-2017)	Planning	\$94k
Richmond	Round 1 (FY 2016-2017)	Planning	\$170k
Riverside	Round 1 (FY 2016-2017)	Planning	\$170k
Sacramento - Franklin	Round 1 (FY 2016-2017)	Planning	\$170k
Stockton	Round 1 (FY 2016-2017)	Planning	\$170k
West Oakland	Round 1 (FY 2016-2017)	Planning	\$170k
Los Angeles - Pacoima	Round 2 (FY 2018-2019)	Implementation	\$23 million
Sacramento - Twin Rivers District	Round 2 (FY 2018-2019)	Implementation	\$23 million
Bakersfield	Round 2 (FY 2018-2019)	Planning	\$200k
Indio	Round 2 (FY 2018-2019)	Planning	\$200k
McFarland	Round 2 (FY 2018-2019)	Planning	\$200k
South Los Angeles	Round 2 (FY 2018-2019)	Planning	\$200k
Tulare County	Round 2 (FY 2018-2019)	Planning	\$200k



Central Avenue, which will receive a number of pedestrian improvements as a result of a leveraged project.

Photo credit: UCLA Luskin Center for Innovation

Evaluating the Impacts of TCC

In 2017, SGC contracted with the University of California, Los Angeles and the University of California, Berkeley (UCLA-UCB evaluation team) to draft an evaluation plan for assessing the progress and outcomes of Round 1 TCC implementation grants at the neighborhood level. In November 2018, the UCLA-UCB evaluation team published an evaluation plan to serve as a guide for evaluating the three TCC Round 1 sites.⁷ For Round 2 of the program, each TCC site selected a third-party evaluator from a list of qualified evaluation technical assistance providers that were pre-approved by SGC through an open application process. Evaluation plans for Round 2 are still under development, but will closely follow the Round 1 Evaluation Plan.

The Round 1 Evaluation Plan was developed in close consultation with the TCC Round 1 sites. To qualify for TCC funding, TCC applicants had to identify performance indicators associated with each proposed project type and transformative plan. The UCLA-UCB evaluation team then worked with the awarded grantees to refine their indicator tracking plans to ensure that they aligned with their project goals. To do so, the evaluator developed project-and plan-spe-

cific logic models in collaboration with the grantees. Logic models are a helpful evaluation tool that illustrate all of the interim steps that must occur for a project or plan to realize its intended goals. These steps are defined as follows:

- » **Inputs:** The investment dollars and leveraged funds that support TCC
- » **Activities:** The work of TCC grantees and co-applicants
- » **Outputs:** The products and services that TCC projects produce and deliver
- » **Short-term Outcomes:** Changes in stakeholder’s knowledge, attitude, and skills
- » **Intermediate Outcomes:** Changes in stakeholder’s behaviors, practices, or decisions
- » **Impacts:** Changes in environmental or human conditions that align with the objectives and goals of TCC

The latter four steps in the framework described above are treated as performance indicators that will be quantified and tracked over a five-year period (2019-2024) for the purposes of program evaluation. The Round 1 Evaluation

⁷The UCLA Luskin Center for Innovation and UC Berkeley Center for Resource Efficient Communities. 2018. *Transformative Climate Communities Evaluation Plan: A Road Map for Assessing Progress and Results of the Round 1 Place-based Initiatives*. Retrieved from: http://sgc.ca.gov/programs/tcc/docs/20190213-TCC_Evaluation_Plan_November_2018.pdf

Plan for TCC summarizes the final list of indicators adopted by SGC for TCC evaluation and the methods for tracking those indicators. Indicator tracking responsibilities are split among the UCLA-UCB evaluation team and the grantees. In general, all output related indicators will be tracked over time by the grantees, while most outcome and impact related indicators will be tracked by the UCLA-UCB evaluation team.

It is important to note that it could take a generation for many of the transformative impacts of TCC investment to show up in secondary data. Trees can take 40 years to grow to maturity, financial security can take decades to achieve, and affordable housing developments can take years to break ground. Thus, at the end of the relatively short five-year evaluation period, changes in the impact indicators may be too small to be distinguishable from statistical noise, thereby making it difficult to draw any statistically valid conclusions about indicator changes at the selected sites. Nonetheless, the UCLA-UCB evaluation team will assess impact indicators annually for the sake of maintaining a complete time series, which will be helpful for developing trend lines over the long run that show the directionality of impact indicators.⁸

Methods for Evaluating TCC

The TCC Evaluation Plan includes two different modes of comparison. First, the UCLA-UCB evaluation team will measure changes in indicators in the TCC sites before and after the influx of TCC investments (before and after comparison). When possible, the UCLA-UCB evaluation team constructed a five-year pre-investment trend line prior to implementation kickoff (2014-2018) and will construct a five-year post-kickoff trend line (2019-2023). Second, the UCLA-UCB evaluation team will conduct the same before and after comparison for a set of control sites to isolate the effect of TCC investment from larger social, economic, and environmental forces. These control sites are individual census tracts that are similar to their respective TCC sites along a number of dimensions, including socioeconomic demographics, climate, and pollution burden (as demonstrated by their CalEnviroScreen scores).⁹

In addition to measuring changes within the TCC sites and a set of control sites, the UCLA-UCB evaluation team will also look at changes at the county and state level for a select set of indicators that speak to social equity (e.g., income, employment, housing costs, etc.). Tracking social equity indicators in these larger surrounding geographies will allow the evaluator to assess the degree to which TCC has helped reduce the economic gaps that exist in TCC

sites relative to nearby communities.

In summary, the UCLA-UCB evaluation team is collecting data at four geographic scales to assist with evaluating the effects of TCC:

- » **TCC project area:** The neighborhood boundary identified by the TCC grantees in which all TCC investments will be located. In some cases, a cluster of census tracts that have more than 10% areal overlap with the TCC project boundary area will be used for indicator tracking purposes instead of the actual project boundary. This is the case for all indicators that rely on American Community Survey (ACS) data, which can not reliably be apportioned to fit the actual TCC project boundary area. See Appendix 4 for a list of census tracts that will be used as a proxy for Watts' TCC project boundary area.
- » **TCC control sites:** A cluster of census tracts that match TCC census tracts along a number of dimensions, including socioeconomic demographics, climate, and pollution burden, but that did not receive TCC investment. Collecting before and after data for the control sites will help control for external forces such as broader trends that could also explain the changes in environmental, health, and economic conditions observed in the three awarded TCC sites. See Appendix 4 for a list of census tracts that will be used as control sites for evaluating the impacts of TCC investment in Watts.
- » **County:** The county in which TCC sites are situated (Los Angeles County in this report). County-scale measurements are helpful for understanding the degree to which TCC investments are addressing social equity concerns.
- » **State:** The state in which TCC sites are situated (California). Like county-scale measurements, statewide measurements are helpful for understanding the degree to which TCC investments are addressing social equity concerns, but at a broader scale.

Whenever possible, the UCLA-UCB evaluation team will track indicators for the TCC project area and at the scale of the control sites, county, and state. However, a number of indicators do not easily lend themselves to measurement for the latter three geographies. Many of the indicators tracked by the UCLA-UCB evaluation team rely on primary data (e.g., transit ridership, business retention, compost production, etc.) that would be cost-prohibitive or technically infeasible to obtain at the same level detail for control sites, the county, or the state. Even when secondary data are available, it may not be prudent to use limited eval-

⁸ Ibid.

⁹ See Appendix 3.2 of the TCC Round 1 Evaluation Plan for a summary of the methods used to identify control sites: http://sgc.ca.gov/programs/tcc/docs/20190213-TCC_Evaluation_Plan_November_2018.pdf

uation resources to analyze indicators at all four scales. For example, accessibility indicators will be tracked for both TCC sites and control sites, but not at the county and state scale because of the processing time associated with running network analyses in ArcGIS. Furthermore, there are some indicators that must be estimated because they are tied to specific project activities and cannot be reliably obtained from either primary or secondary data (e.g., GHG reductions, energy and travel cost-savings, indirect and induced jobs, etc.). In these cases, estimates will be provided only for the TCC sites.

Evaluation Summary Through June 2019

During the first year of program implementation, the UCLA-UCB evaluation team worked with TCC grantees to operationalize indicator tracking protocols. More specifically, the UCLA-UCB evaluation team developed reporting forms to streamline tracking activities and trained TCC project leads on how to use those forms. On an annual basis, TCC grantees will complete and submit these reporting forms to the UCLA-UCB evaluation team. Each submission reflects the grantee's activities during the previous fiscal year. Many of the key accomplishments described in this document are pulled directly from the grantees' reporting forms for the first year that includes the post award period and the three months of implementation after grant execution.

The UCLA-UCB evaluation team also completed baseline data collection during the first year of program implementation, the results of which are summarized in the final chapter of this annual report. For most indicators, baseline

data will be updated on an annual basis through the end of 2023. A complete accessibility analysis and vegetative cover analysis, however, will not be updated until the end of the five-year evaluation period due to the labor-intensiveness of these two particular activities.

Upcoming Evaluation Activities

During the second year of program implementation, the UCLA-UCB evaluation will begin collecting qualitative data about the rollout of the grantees' three transformative plans (i.e., the community engagement plan, displacement avoidance plan, and workforce development plan). The qualitative data will be collected through a mix of surveys, interviews, and focus groups among a limited sample of TCC residents, job trainees, and other project stakeholders.

For each upcoming year of TCC grant implementation, the UCLA-UCB evaluation team will issue an updated annual report culminating in a total of five annual reports. Following the fifth year of implementation, grantees are expected to have completed all of their projects, and will enter a two-year performance period in which they continue to report on how projects are progressing. At the close of the performance period, the UCLA-UCB evaluation will issue a closeout report in which baseline indicators are updated one last time. At this time, there will be two five-year non-overlapping samples of ACS data, one before program implementation and one following implementation, from which the UCLA-UCB evaluation will examine early impacts of TCC.



Watts Rising participants. Photo credit: California Climate Investments

Watts Rising: Looking Back and Forward

Watts Rising builds on years of community efforts to address challenges by soliciting resident input through meetings and other community engagement processes. Examples of previous work include the 1995 Watts Corridors Redevelopment Plan, the 2008 Central Avenue Master Plan, and, more recently, Watts Greenstreets, Watts Re:Imagined, Wilmington Avenue Great Streets, MudTown Farms, and other projects. The Watts Labor Community Action Committee, Watts Century Latino, and Grant HEDC were part of the Community Advisory Committee for the Watts Corridors Redevelopment Plan, and all became a part of Watts Rising. Over the past 15 years, Watts community engagement efforts have included the use of a diverse set of communications materials including flyers, door-to-door canvassing, emails, social media posting, and more in both English and Spanish. Efforts are made to ensure community meetings, workshops, and forums are bilingual and accessible. These methods were also used in community engagement around the Watts Rising application.

In 2013, Charles R. Drew University led the Watts Community Studio, which trained and hired youth to administer a survey to 700 households in Watts. The result of these efforts, in part, was the identification of community priorities. These later helped to inform project design and

selection for Watts Rising. Charles R. Drew University of Medicine and Science will conduct an annual survey during the grant period to track the evolution of resident perceptions throughout project implementation.

After the launch of TCC and call for proposals in 2016, HACLA hosted three workshops with over 100 attendees to support development of their application. Through this process, Watts residents had the opportunity to identify their priority projects for investing TCC dollars. HACLA also hosted additional working groups in 2017 focused on developing specific aspects of the transformative plans.

The result of these engagement efforts is Watts Rising, a suite of projects and plans aimed at reducing GHGs while also providing local environmental, health, and economic co-benefits for Watts residents. Per the TCC guidelines for Round 1 applicants, Watts Rising includes the following elements: (1) TCC funded projects that have a direct impact on GHG reductions; (2) leveraged projects that further the broad goals of TCC and only use matching funds; and (3) transformative plans to ensure that the suite of projects are bolstered by meaningful community engagement, workforce development, and displacement avoidance activities.

In early 2018, Watts Rising was selected by SGC for a TCC grant of \$33.25 million. Watts Rising will also leverage \$168 million in outside funds towards this vision. The TCC award

not only brings a significant influx of financial resources to the community, but also reinforces the cross-sector partnerships that were built before and during the TCC application process. Table 3 provides a summary of the Watts Rising projects, plans, and partners involved with implementation. Appendix 1 provides a detailed map of where all of the TCC and leveraged projects are located within the 2.6 square miles of the TCC Watts Rising boundary area.

The next three sections of this report provide summary profiles on the various transformative plans, TCC fund-

ed projects, and leveraged projects that comprise Watts Rising. Each profile includes an overview of the project or plan’s goals, the roles of various partners involved with implementation, and key accomplishments that have occurred following the announcement of Watts’ TCC award through the end of FY 2018-2019. This baseline and initial evaluation period overlaps with about one year of post-award consultation and three months of program implementation.

Table 3: Summary of Watts Rising Projects and Plans

Project/Plan Type	Project/Plan Name	Partners	TCC Funding	Leveraged Funding
Community Engagement Plan	N/A	Housing Authority of the City of Los Angeles*	\$1,850,915	\$565,200
Displacement Avoidance Plan	N/A	Housing Authority of the City of Los Angeles*	\$0	\$190,000
Workforce Development Plan	N/A	Green Commuter;* Restore Neighborhoods LA*	\$327,386	\$5,300
Affordable Housing and Sustainable Communities	Jordan Downs Phase 2A	Housing Authority of Los Angeles;* Michaels Development Company	\$13,250,000	\$26,446,312
Low Carbon Transit Operations Program	DASH Bus Electrification	Los Angeles Department of Transportation*	\$1,700,000	\$6,893,075
Low Carbon Transportation	Mega Watts Electric Vehicle Car Share	Watts Labor and Community Action Committee;* Green Commuter	\$1,833,862	\$519,120
Low Income Weatherization Program	Solar Watts	Restore Neighborhoods LA*	\$1,315,152	\$81,338
	Energy Efficiency	Restore Neighborhoods LA*	\$1,802,955	\$148,374
Urban Greening	WalkBike Watts	Los Angeles Department of Transportation;* Department of Cultural Affairs;* Urban Peace Institute; We Care Outreach	\$3,511,260	\$13,110
	Wilmington Avenue Great Streets	Grant Housing and Economic Development Corporation*	\$868,000	\$0
	Weigand Elementary Urban Trees / Rain Garden	From Lot to Spot*	\$124,439	\$10,038
	Watts Cool Schools - Green Schools	Los Angeles Unified School District;* TreePeople*	\$621,861	\$0
	Greening the Blue Line	TreePeople*	\$305,179	\$0
	Century Gateway Park	BRIDGE Housing Corporation*	\$428,575	\$260,683
	Freedom Tree Park	Housing Authority of the City of Los Angeles*	\$1,157,900	\$0

Table 3 continues next page>

Project/Plan Type	Project/Plan Name	Partners	TCC Funding	Leveraged Funding
Urban and Community Forestry	Community Healing Tech Garden	Community Healing Gardens;* Los Angeles Cleantech Incubator*	\$364,000	\$0
	Watts Yardeners	Watts Labor Community Action Committee*	\$523,549	\$50,000
	Greening Public Housing	North East Trees*	\$255,870	\$64,500
	Greening Watts	North East Trees;* TreePeople*	\$1,055,918	\$91,575
Food Waste Prevention and Rescue Program	MudTown Farms	Watts Labor Community Action Committee;* Food Forward	\$392,110	\$4,579,393
Leveraged Projects	Jordan Downs Phase 1B	Michaels Development Corporation*	\$0	\$67,682,777
	103rd Street Trees	From Lot to Spot*	\$0	\$104,166
	Central Avenue Streetscape	City of Los Angeles Bureau of Street Services; Grant Housing and Economic Development Corporation	\$0	\$4,127,890
	103rd Street Streetscape	City of Los Angeles Bureau of Street Services*	\$0	\$836,700
	Century Boulevard	City of Los Angeles Bureau of Street Services*	\$0	\$10,689,780
	Jordan Downs Retail Center	Primestor Development, Inc.*	\$0	\$44,314,118
	Success Avenue Green Streets	Grant Housing and Economic Development Corporation*	\$0	\$500,000
Total**			\$31,688,930	\$168,173,450

*Project lead

**TCC funding subtotal here does not include additional grant money provided for grant administration and other related activities. Funding amounts are correct as of June 2019. Grant agreements may have been amended since..



Watts residents examine photos of proposed projects at a community event. Photo Credit: UCLA Luskin Center for Innovation

THE COUPLING OF TRANSFORMATIVE PLANS alongside GHG reduction projects is one of the central elements of TCC that separates it from all other California Climate Investments. For Round 1 of TCC, applicants were required to develop three transformative plans: a community engagement plan, displacement avoidance plan, and workforce development plan. Together, these three plans are designed to ensure that TCC investments reflect the community’s vision and goals, bring economic opportunities to disadvantaged and low-income communities, and minimize the risk of gentrification and displacement of existing residents and businesses. Applicants were provided a menu of strategies for developing their plans and encouraged to choose those that spoke to the site’s priorities and strengths. The following section provides an overview of how Watts Rising structured their three transformative plans and what progress has been made towards plan implementation.

Community Engagement Plan



Los Angeles Mayor Eric Garcetti at a Watts Rising tree event. Photo credit: Mayor Eric Garcetti, @MayorOfLA

THE WATTS RISING COMMUNITY ENGAGEMENT PLAN builds on a long history of community leadership and engagement. Community engagement is an integral component in all phases of the Watts Rising initiative. The community engagement plan is an overarching process to ensure robust community involvement for the entire Watts Rising TCC initiative and complements multiple project-specific outreach activities. In addition to project-specific outreach and engagement (described in each project’s respective profile), HACLA will lead site-wide community engagement efforts. This centers around the creation around a Watts Rising Leadership Council, the advisory body for the Watts Rising initiative, as well as multimedia communications and an annual community survey.

Project Details

Anticipated completion date
Project-based throughout grant term

TCC grant funds
\$1,850,915

Leveraged funds
\$565,200

The Watts Rising Leadership Council is composed of representatives of key stakeholders in the initiative, as well as Watts residents, business owners, and community leaders. The Leadership Council meets monthly to discuss relevant topics, and meetings are open to the public. The Leadership Council will also host an annual open house.

Given the collaborative nature of the initiative, Watts Rising will also organize the 19 project partners into four Working Group Hub Groups around the following similar project themes: (1) Sustainable Housing, (2) Urban Greening, (3) Active Transportation,

and (4) Low Carbon Transportation. Members focus on implementing one or more projects in those four thematic areas. Community engagement events often plan to involve multiple projects both within and among hubs.

HACLA will also lead the development of messaging and avenues for communications. This includes the development and maintenance of a website and various social media accounts. Finally, with Charles R. Drew University of Medicine and Science and the Watts Community Studio (the data partner) the Watts Rising Initiative will issue an annual community survey.

Key Accomplishments*

- The Leadership Council had its kickoff meeting in May and met again in June 2019.

*through fiscal year 2018-'19

Displacement Avoidance Plan



Attendees at a Watts Rising Collaborative Community Event examining design plans. Photo credit: HACLA

THE WATTS RISING DISPLACEMENT AVOIDANCE PLAN directly supports one of Watts Rising’s key identified goals: to prevent displacement and its impact on physical and mental health. Led by HACLA, the Watts Rising Displacement Avoidance Plan focuses on six key areas: (1) production of affordable housing, (2) preservation of affordable housing, (3) tenant protections and support, (4) neighborhood stabilization and well-being, (5) protections for small business, and (6) business stabilization and wealth building.

HACLA will apply for funding opportunities and support relevant ordinance revisions that support the production and preservation of affordable housing. With outreach and marketing through Watts Rising communication channels and at events, HACLA also plans to promote Los Angeles’s Accessory Dwelling Unit ordinance. This program enables the utilization of part of a primary residence, such as a room detached from the primary dwelling, as additional living space often to be rented out.

Project Details

Anticipated completion date

April 2022

TCC grant funds

\$0

Leveraged funds

\$190,000

To support focus areas, HACLA will provide a number of workshops and trainings. These workshops will include legal services, tenant resources, tenants' rights, resident organization, homeownership, foreclosure prevention, financial education, and financial literacy for residents. Additionally, tenant case management, advocacy, and legal services will be available to residents. Workshops for small busi-

nesses will cover contracting opportunities, available services and opportunities like the Watts Entrepreneur Business Accelerator's micro-lending opportunities. HACLA's trainings will include tenant leadership training for residents, annual training for project partners on business contracting requirements, and a microenterprise and entrepreneurial training program for at least five businesses annually.

Key Accomplishments*

- Two funding opportunities were applied for: the California Department of Housing and Community Development Affordable Housing Sustainable Communities Grants

*through fiscal year 2018-'19

Workforce Development Plan



Stakeholders examining progress at Jordan Downs affordable housing development. Photo credit: Ben J. Winter, @Ben_J_Winter

IN SUPPORT OF WATTS RISING'S identified economic goals of “access to training, high quality jobs and careers, and helping youth identify and prepare for careers in GHG reduction fields, Green Commuter, Inc. and Restore Neighborhoods LA, Inc. are leading the workforce development plan through their respective programs. Combined, they expect to train 70 Watts residents with the skills needed to be employed in green jobs. Green Commuter will lead the Mega Watts Electric Vehicle Car Share Workforce Development and Job Creation Program. Residents will be recruited through Jordan Downs Forward and the three Watts Los Angeles WorkSource Centers.

Green Commuter will offer free training to 30 Watts residents in a course on electric vehicles. Out of their pool of trainees, Green Commuter plans to hire six residents in support of their Mega Watts project. The three operations associates will ensure electric vehicles are “charged and in the right location” while three customer service associates will provide customer support and assist with outreach and marketing.

Project Details

Anticipated completion date

December 2020

TCC grant funds

\$327,386

Leveraged funds

\$5,300

Restore Neighborhoods LA will recruit five cohorts of eight Watts residents for the Solar Watts Workforce Development Program. These residents will complete 20 hours of classroom training, 162 hours of in-field training, and 10 hours of OSHA training. Through these trainings, participants will receive a comprehensive education about electricity, solar photovoltaic installation, and worksite hazards.

Key Accomplishments*

Plan implementation pending

*through fiscal year 2018-'19



Electric vehicle demonstration at a Watts Rising community event. Photo credit: UCLA Luskin Center for Innovation

TCC APPLICANTS CHOSE FROM A WIDE ARRAY OF PROJECT TYPES in their effort to achieve the three objectives of TCC, namely: (1) reductions in GHGs; (2) improvements in public health and environmental benefits, and (3) expanded economic opportunity and shared prosperity. These various project types align with the suite of California Climate Investments overseen by various state agencies.¹ This alignment was built into TCC to streamline the proposal and indicator tracking process. For example, the California Air Resources Board (CARB) has developed GHG reduction quantification methodologies and co-benefit assessment methodologies for each project type under the existing suite of California Climate Investments. These methodologies can then be used by TCC grantees (and technical assistance providers, such as the UCLA-UCB evaluation team) to estimate the benefits of each project. The following section provides an overview of the Watts Rising projects, aggregated by project type, that will be using TCC dollars to achieve the aims of the program.

¹For more information about California Climate Investments, visits: <http://www.caclimateinvestments.ca.gov/>

Affordable Housing and Sustainable Communities Project



Rendering of Jordan Downs Redevelopment Source. Photo credit: HACLA

INCREASING THE DENSITY OF AFFORDABLE HOUSING aims to reduce vehicle miles traveled (VMT), along with lowering housing and travel costs for Watts residents.² An affordable housing and community center, called Jordan Downs Phase S2, will be constructed by the Michaels Development Company with support from the City of Los Angeles and the Housing Authority of the City of Los Angeles. It will include 81 affordable housing units and serve as a center for community education and engagement. The American League of Bicyclists will facilitate educational sessions at the facility, including a Bicycle Education and Safety Training and the League of Cycling Instructors trainings, in addition to hosting community bike rides. These will promote clean modes of transportation, with the aim to further decrease VMT. This project will also plant trees, which sequester carbon and provide shading benefits.

² For a definition of affordable, see Appendix A of the FY 2017-18 AHSC Program Guidelines.

Project Details

Anticipated
completion date

January 2022

TCC grant funds

\$13,250,000

Leveraged funds

\$26,446,312

Project lifetime

30 years

Estimated Benefits Over Project Lifetime

GHG emissions reductions
8,169 MTCO₂e

VMT reductions
21,416,643 miles

Travel cost savings
\$12,421,653

Trees planted
25

Direct jobs from TCC dollars
84 FTEs

Indirect jobs from TCC dollars
48 FTEs

Induced jobs from TCC dollars
65 FTEs

Key Accomplishments*

» **Bicycle Education and Safety Training classes kicked off with about 40 attendees at the first event.**

*through fiscal year 2018-'19

Food Waste Prevention and Rescue Project



WLCAC team on launch day of their collaboration with Food Forward. Photo credit: Food Forward

THE WATTS LABOR COMMUNITY ACTION COMMITTEE will lead the Mudtown Farms food rescue project, which reduces food waste while increasing local access to fresh produce. As part of this project Food Forward, a nonprofit, will rescue 108 short tons of food from the LA Produce Mart annually. This food will be sorted by trained volunteers and distributed to residents at regularly occurring events. Food that cannot be redistributed will be composted. This compost can be used by other Watts Rising projects, or by residents. Thirty volunteers will be recruited and trained to assist with food distribution and composting efforts. This process helps to divert the amount of organic material that is sent to landfills, where it decomposes in the absence of oxygen and releases methane, a potent GHG.

Project Details

Anticipated completion date
April 2022

TCC grant funds
\$392,110

Leveraged funds
\$4,579,393

Project lifetime
3 years

Estimated Benefits Over Project Lifetime

GHG emissions reductions

879 MTCO₂e

Short tons of edible food
rescued and donated

324

Direct jobs from TCC dollars

4 FTEs

Indirect jobs from TCC dollars

1 FTE

Induced jobs from TCC dollars

7 FTEs

Key Accomplishments*

Project Implementation pending

*through fiscal year 2018-'19

Low Carbon Transit Operations Project



LADOT Electric DASH Bus. Photo credit: LADOT

LED BY THE LOS ANGELES DEPARTMENT OF TRANSPORTATION, the DASH Bus Electrification project will replace 10 clean natural gas or propane-fueled buses with battery electric buses. This will reduce the emission of local air pollutants and greenhouse gases. Five electric chargers will be installed to support these buses. Additionally, the Los Angeles Department of Transportation plans to increase the frequency of service from every 20 minutes to every 15 minutes, thereby improving local mobility options.

Project Details

Anticipated completion date
November 2020

TCC grant funds
\$1,700,000

Leveraged funds
\$6,893,075

Project lifetime
10 years

Estimated Benefits Over Project Lifetime

GHG emissions reductions
36,435 MTCO₂e

VMT reductions
1,624,630 miles

Travel cost savings
\$310,025

Direct jobs from TCC dollars
3 FTEs

Indirect jobs from TCC dollars
3 FTEs

Induced jobs from TCC dollars
3 FTEs

Key Accomplishments*

» LADOT provided a service plan for new battery-electric buses

» LADOT issued an RFP to procure 10 battery-electric DASH buses

*through fiscal year 2018-'19

Low Carbon Transportation Project



Watts Vehicles and Veggies Community Event. Photo credit: UCLA Luskin Center for Innovation

THE WATTS LABOR COMMUNITY ACTION COMMITTEE and the Green Commuter are partnering on the Mega Watts Electric Vehicle Care Share project. This project will deploy 15 electric vehicles (EVs) in the community as part of a car share program, as well as 24 EV charging stations. Increasing the fleet of EVs for use can result in a reduction in the need for cars that run on fossil fuels. This project also plans to train and hire Watts residents (see the Workforce Development Plan section for more information on the training program).

The Mega Watts community engagement efforts will center around events and communication aimed at education and member recruitment. They plan to host annual Earth Day, National Drive Electric Week, and Ride Share Week, as well as a total of six Ride and Drive events throughout the grant period. They will also host educational events, including: “What’s Under the Hood” information sessions and driver’s license training workshops. This project will also conduct outreach, in the form of door-to-door and online, to recruit members for their car share service.

Project Details

Anticipated completion date

March, 2020

TCC grant funds

\$1,833,862

Leveraged funds

\$519,120

Project lifetime

3 years

Estimated Benefits Over Project Lifetime

GHG emissions reductions
2,618 MTCO₂e

Direct jobs from TCC dollars
8 FTEs

Indirect jobs from TCC dollars
4 FTEs

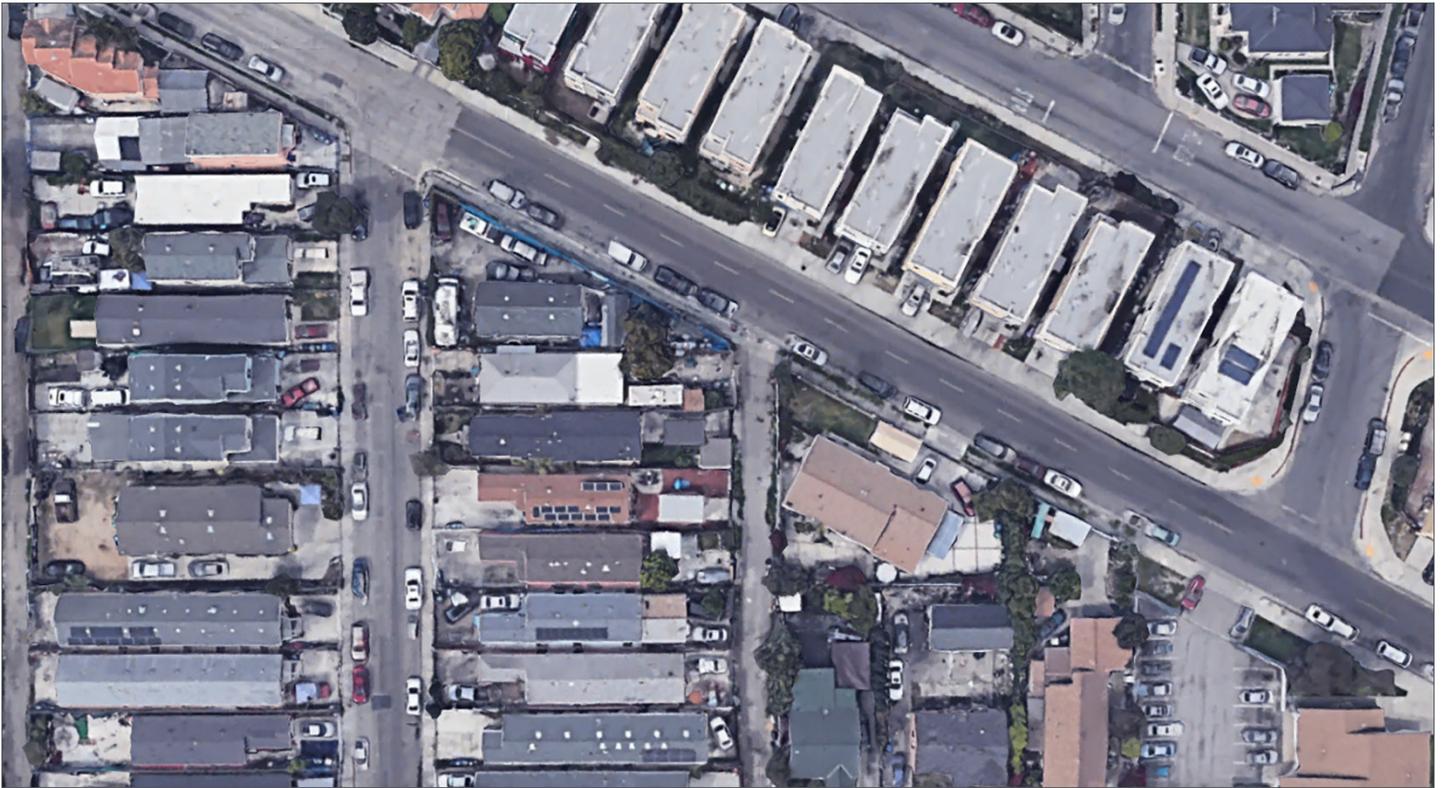
Induced jobs from TCC dollars
4 FTEs

Key Accomplishments*

» EV site assessments and host agreement execution began

*through fiscal year 2018-'19

Rooftop Solar and Energy Efficiency Projects



Rooftops with solar panels in the Watts Rising site. Photo credit: Google Earth 2020

RESTORE NEIGHBORHOODS LA (RNLA) is leading the two low-income weatherization programs, which will provide energy cost savings to residents while avoiding GHGs associated with electricity generation in part from fossil fuels. RNLA will install approximately 154 kilowatts of solar panels on 48 residences in the site area, for an average project size of 3.2 kilowatts. RNLA will also provide energy efficiency upgrades for 300 homes. These energy efficiency improvements could include low-flow faucets and shower heads, LED lighting, window unit HVAC system replacement, smart thermostats, and more. Both projects will reduce energy costs for residents.

These projects will develop an online Solar Watts and Energy Efficiency portal for residents, which will enable them to sign up for an assessment, as well as reach online customer support. The Solar Watts and Energy Efficiency projects plan to conduct outreach via direct mail to all single-family homes in the TCC site, via digital advertisements and social media, as well as through multiple outreach events each year.

Project Details

Anticipated completion date

April 2022

TCC grant funds

\$3,118,107

Leveraged funds

\$229,713

Project lifetime

30 years

Estimated Benefits Over Project Lifetime

GHG emissions reductions

4,298 MTCO₂e

Renewable energy generation

23 gigawatt hours

Energy cost savings

\$3,602,265

Direct jobs from TCC dollars

16 FTEs

Indirect jobs from TCC dollars

7 FTEs

Induced jobs from TCC dollars

12 FTEs

Key Accomplishments*

Project Implementation pending

**through fiscal year 2018-'19*

Urban Community Forestry Projects



LACI Day of Service with Community Healing Gardens. Photo credit: LACI

THE FOUR WATTS RISING URBAN COMMUNITY FORESTRY projects focus on planting a combined 2,250 trees, which provide shade and cooling benefits, as well as the planting of edible landscaping that will improve the availability of local, fresh produce to Watts residents. As the trees mature, they will sequester carbon. Their shading benefits should reduce the demand for electricity for cooling purposes. The additional tree coverage will also reduce the urban heat island effect on hot days and absorb stormwater on rainy days. These projects also include local training in tree care and maintenance, with a particular focus on training and hiring local youth. These projects are led by Community Healing Gardens, Los Angeles Cleantech Incubator, Watts Labor Community Action Committee, North East Trees, and TreePeople.

The Watts Healing Tech Garden is expanding on the existing garden at Edwin Markham Middle School and adding water and energy efficient technologies. The project is led by Community Healing Gardens (CHG) in partnership with Los Angeles Cleantech Incubator (LACI). Middle school students can take course electives that use the garden as an educational laboratory. Both the middle school and local high school students volunteer in the garden, and multiple high school students are part of a CHG paid intern training program. The garden’s frequent community events like the Annual Community Harvest Festival and Commu-

Project Details

Anticipated completion date

April 2022
through
March 2024

TCC grant funds

\$2,199,337

Leveraged funds

\$206,075

Project lifetime

40 years

community Gardening Days provide an opportunity for community members to take home some of the organic produce as well as plant seeds for the upcoming season. The garden also offers community tours which include culinary workshops and lessons on urban community gardening. Additionally, 100 shade trees grown by students through the current program will be given away to Watts residents at the quarterly community volunteer days.

To further add to the supply of local, fresh food, the **Watts Yardners Program** will create 50 urban minifarms to be planted in residents' yards. These farms will include 150 fruit trees. Youth "Yardners" trained as part of this project will assist with outreach, as well as tree maintenance. Five cohorts will be recruited for the 20 hour Watts Growers Certification program. Informational workshops will also be provided for those interested in learning about urban sustainability and green infrastructure. The **Greening Public Housing** project will result in the planting of 200 trees at three HACLA Public Housing Properties to increase the tree canopy. Up to 10 local youth will be hired as a part of the project and will participate in an Urban Forestry Curriculum for Youth to learn about tree planting and maintenance. The youth team will then teach resident vol-

unteers how to plant and care for the trees planted in their community. Events associated with the project will include community meetings, workshops, and a planting day.

The **Greening Watts** project will result in a total of 1,800 trees planted throughout the Watts project area. This includes 950 trees planted along streets, in parks, schools, parking lots, or other open spaces. North East Trees will work with the City of Los Angeles and Watts residents through community planning meetings to determine locations to plant trees. An additional 850 trees will be distributed to local residents, who can learn how to care for their tree at Tree Care Workshops. North East Trees will also utilize the youth trained as a part of Greening Watts to help maintain trees. Additionally, project leads will host 25 tree planting events, 15 tree distribution events, and 18 tree care events with the help of recruited volunteers.

Estimated Benefits Over Project Lifetime

GHG emissions reductions
4,735 MTCO₂e
 Trees planted
2,250

Direct jobs from TCC dollars
22 FTEs

Indirect jobs from TCC dollars
5 FTEs

Induced jobs from TCC dollars
9 FTEs

Key Accomplishments*

- » The Watts Community Healing Tech Garden planted 10,890 square feet of garden, distributed 250 pounds of food, held their first Community Gardening Day with 25 attendees, and gave their first community tour for city and Watts Rising staff with 20 attendees.
- » The Watts Yardners Program distributed over 200 flyers in English and Spanish to outreach to

Watts residents.

- » The Greening Public Housing project contacted 30 local youth through outreach (English) and contacted 80 residents through outreach (English and Spanish).
- » The Greening Watts project contacted 80 residents through outreach (English and Spanish).

*through fiscal year 2018-'19

STORIES FROM THE COMMUNITY

Students grow while helping a garden grow

RUDY is a junior at David Starr Jordan High School. He has lived in Watts his whole life with his parents and younger sister. Of his high school, he says “all my teachers want the best for me. They pour their heart and soul into everything that they teach, and I’m grateful for that.” When he’s not hanging out with his friends, he’s working in the Community Healing Tech Garden.

He first became involved with the garden as a student at Markham Middle School. He took an elective class in sixth grade that taught him and the other students about topics including photosynthesis and plant life cycles. Then in ninth grade, Rudy began volunteering with the garden through a program called College Track, which provides participating students with scholarship money for college expenses. Inspired by his experience in the garden, Rudy is interested in studying fields such as botany, agriculture, and ornithology in college. The scholarship money he earned through work in the garden will help pay for college.

“The garden gives me an opportunity to just breathe in that fresh air and do something, put my hands into the dirt. School is stressful. But every time I go to the garden, it’s like, ‘Okay, school aside, let’s focus on the garden.’ And then when I focus on the garden, my stress would go away.”



Rudy (left) and Nicole Landers (second from right) at a community engagement event at the garden in September 2019. Photo credit: UCLA Luskin Center for Innovation

The summer after his sophomore year, Nicole Landers, co-founder and executive director of Community Healing Gardens, hired Rudy as an intern to take on additional duties in the garden. Rudy collaborates with his coworkers on his expanded responsibilities maintaining the garden. “[The experience] taught me leadership skills ... I gained ownership and accountability,” said Rudy. He also has a new role model. “Nicole inspires me so much because the garden helps the community by giving them fresh produce and making the kids open up their eyes into, ‘Oh, I can eat this instead of that,’” he added.

A major perk of working in an edible garden is the accessibility of fresh produce. Rudy sometimes brings home some of the fresh produce grown in the garden, where his parents cook with it. Recently, Rudy brought home

some squash that his mom added to a chicken vegetable soup. The produce varies seasonally, but Rudy noted that the cucumbers are his favorite. “We did a successful planting of strawberry,” he added, “that was a very good hit with the little kids.”

Rudy will continue to be involved as the garden expands and installs water and energy efficient technologies through the Watts Rising initiative.

“The garden is just growing and growing. And I’m also growing with the garden. Everyone who associates with the garden is growing with it.”

Urban Greening Projects



103rd Street/Watts Towers Blue Line Station. Photo credit: UCLA Luskin Center for Innovation

THE URBAN GREENING PROJECTS IN WATTS will result in the planting of plants and 475 trees, the creation of parks, and pedestrian and bicycle improvements throughout the site area. As the trees mature, they will sequester carbon and shade nearby buildings, which should reduce the demand for electricity for cooling purposes. The additional tree coverage will also reduce the urban heat island effect on hot days and absorb stormwater on rainy days. Bicycle and pedestrian improvements aim to reduce car travel by improving alternative mobility options. For these projects, leads include: Los Angeles Department of Transportation, Grant Housing and Economic Development Corporation, From Lot to Spot, Los Angeles Unified School District, Tree People, BRIDGE Housing Corporation, and Housing Authority of Los Angeles. Project leads will be responsible for tree maintenance and care during the grant term. After the grant term, the City of Los Angeles Bureau of Street Services will assume maintenance responsibilities.

Project Details

Anticipated completion date

July 2020
through
April 2022

TCC grant funds

\$7,017,214

Leveraged funds

\$283,831

Project lifetime

40 years

The Los Angeles Department of Transportation and the City of Los Angeles Department of Cultural Affairs are leading the **WalkBike Watts** project, which involves pedestrian and bicyclist improvements, the development of a cultural trail, and the establishment of a Safe Passage Program for schools. The pedestrian and bicyclist improvements include the construction of 3.8 miles of bicycle sharrows and 1.4 miles of buffered bicycle lines, as well as the installation of nine crossing beacons, four new signals and one signal modification, five leading pedestrian intervals, eight curb extensions, bus pads, and ADA landings, two curb ramps, and the planting of 10 trees. The cultural trail, which will include wayfinding signage, will be designed and implemented through a community engagement process, with a goal of soliciting input from the local artist community specifically. The Urban Peace Institute and We Care Outreach will lead the creation of the Safe Passage Program, which will create safer routes for 112th Street Elementary School, Fournoy Elementary School, and Florence Griffith Joyner Elementary School, and Markham Middle School. Local adults will be trained to help ensure the safety of students as they commute to and from school each day along the identified passages.

On a half mile stretch of Wilmington Avenue, 40 trees and 3,750 square feet of plants will be planted, and eight landscaped bump outs will be installed to improve pedestrian areas as part of the **Wilmington Avenue Great Streets** project. The **Weigand Elementary Urban Trees/Rain Gardens** project will result in the planting of 450 native plants, 43 native trees, and installation of 2,400 square feet of pervious rain gardens near Weigand Elementary School. The **Watts Cool Schools - Green Schools** project aims to provide cooling benefits to four local elementary schools through painting playgrounds with a cool coat, installing 80,000 square feet of cool pavement, removing asphalt, and planting 112 trees. Volunteer five-person “green teams”

will support tree planting, care, and maintenance and will participate in 16 tree care events. The Greening the Blue Line project will result in the planting of 200 trees in the first and last mile radius of the 103rd Street stop of the Blue Line Metro. The project will include 10 tree planting events and 19 tree care events.

Century Gateway Park and **Freedom Tree Park** will develop a 0.62-acre and one-acre park, respectively. The Century Gateway Park will have 35 trees, local and drought tolerant plants near the intersection of East Century Boulevard and Grape Street, while the Freedom Tree Park will be located across from the Century Gateway Park with 100 plants and 35 trees.

Urban Greening projects will coordinate on community engagement that focuses on recruiting and educating community members through regular events. **Weigand Elementary Urban Trees/Rain Gardens** will host community tree care meetings to educate attendees about the project and to recruit tree adopters, who will be responsible for tree watering during the grant period. Additional tree adopters will be recruited via phone, bilingual flyers, and door-to-door canvassing. The project also plans to develop three Jordan High School lesson plans. At each elementary school, **Watts Cool Schools - Green Schools** will facilitate the development of an Eco-club to help engage and educate students on urban greening. At each school, the project partner will host a public presentation on the project and a community sustainability workshop. **Greening the Blue Line** will recruit community volunteers to assist with 10 tree planting activities and events and 19 tree care activities and events. **Century Gateway Park** and **Freedom Tree Park** will host community meetings to solicit resident input on how to prioritize park components and uses, as well as keep the community updated on park plans and progress.

Estimated Benefits Over Project Lifetime

GHG emissions reductions
4,598 MTCO₂e

VMT reduction
436,866 miles

Trees planted
475

Energy cost savings
\$15,263

Travel cost savings
\$4,595,005

Direct jobs from TCC dollars
41 FTEs

Indirect jobs from TCC dollars
14 FTEs

Induced jobs from TCC dollars
29 FTEs

Key Accomplishments*

- » WalkBike Watts - Project implementation pending
- » Wilmington Avenue Great Streets - Project implementation pending
- » Weigand Elementary Urban Trees/Rain Gardens - Project implementation pending
- » Watts Cool Schools - Green Schools - Project implementation pending
- » Greening the Blue Line - Project implementation pending
- » Century Gateway Park - Project implementation pending
- » Freedom Tree Park held three community events for Jordan Downs residents, park users, and Watts families, with over 100 attendees across three events in English and Spanish

*through fiscal year 2018-'19



Watts Rising Collaborative Community Event. Photo credit: HACLA

IN ADDITION TO THE 17 WATTS RISING PROJECTS that are receiving TCC funding, HACLA has also included seven leveraged projects as part of their Watts Rising package. These leveraged projects are independently funded and help further the objectives of TCC. In Watts, these leveraged projects include: (1) Jordan Downs Phase 1B, (2) 103rd St Urban Trees/Rain Garden, (3) Central Avenue Streetscape, (4) 103rd Street Streetscape, (5) Century Boulevard Complete Streets, (6) Jordan Downs Retail Center, and (7) Success Avenue Green Street. These projects include the planting of trees and plants, pedestrian improvements, and the construction of more affordable housing units and a grocery store.

The TCC grant will allow the HACLA to augment their existing efforts by funding more affordable housing, skilled employment opportunities, safer biking and walking infrastructure, and cooler conditions during extreme heat events. The following section provides an overview of the seven leveraged projects currently underway in Watts.

103rd Street Streetscape



Rendering of 103rd Street Streetscape improvements. Photo credit: LA County Department of Public Works

THE CITY OF LOS ANGELES Bureau of Street Services is installing pedestrian lighting and ADA ramps, replacing curbs, gutters, and sidewalks, along with the planting of 50 trees on a 0.4 mile stretch of 103rd Street. Pedestrian improvements promote alternatives to driving cars, while trees will sequester carbon and provide cooling benefits.

Project Details

Anticipated completion date

October 2019

TCC grant funds

\$0

Leveraged funds

\$836,700

Key Accomplishments*

- » This project broke ground May 20th, 2019 and is currently underway
- » 3,500 square feet of pedestrian pathways was completed from Grape Street to Weigand
- » 6 ADA standard ramps were installed at Grape and 103rd Streets

*through fiscal year 2018-'19

103rd Street Urban Trees/Rain Garden



Heart of Watts Community Garden Opening Event. Photo credit: From Lot to Spot

FROM LOT TO SPOT will plant 600 native plants and 50 native trees, as well as install 2,800 square feet of pervious rain gardens. Associated events will include two community tree care meetings and a planting day. This project will also design related lesson plans for Jordan High School students. Trees and plants sequester carbon, while the additional vegetative coverage reduces the urban heat island effect on hot days and absorbs stormwater on rainy days.

Project Details

Anticipated completion date
December 2020

TCC grant funds
\$0

Leveraged funds
\$104,166

Key Accomplishments*

Project implementation pending

**through fiscal year 2018-'19*

Central Avenue Streetscape



Ground breaking ceremony for Central Avenue Streetscape improvements. Photo credit: Watts Neighborhood Council

THE CITY OF LOS ANGELES Bureau of Street Services and Grant Housing and Economic Development Corporation are collaborating to make transit and pedestrian improvements along a quarter mile of Central Avenue between 103rd Street and the Imperial Highway and along a quarter mile between 108th and 104th Streets. These pedestrian improvements include the construction and installation of three median islands, six bump outs, three signal modifications, four roadway lights, five bus pads, 12 accessible gutter ramps, and the planting of 81 trees. The bicycle and pedestrian improvements aim to reduce car travel by improving alternative mobility options. This project will also include the replacement of 58,000 square feet of sidewalk and 2,500 square feet of curbs and gutters, as well as the addition of tree wells, rain gardens, and permeable pavement. These changes will help to reduce the urban heat island effect and improve stormwater capture.

Project Details

Anticipated completion date
November 2020

TCC grant funds
\$0

Leveraged funds
\$4,127,890

Key Accomplishments*

Project implementation pending

**through fiscal year 2018-'19*

Century Boulevard Complete Streets



Century Boulevard on its Grand Opening Day after improvements were complete. Photo credit: Mayor Eric Garcetti, @MayorOfLA

THE CITY OF LOS ANGELES Bureau of Street Services constructed a half mile Complete Street on Century Boulevard. According to the City of Los Angeles Complete Street Design Guide, the aim of a Complete Street is “to ensure that the safety, accessibility, and convenience of all transportation users – pedestrians, bicyclists, transit riders, and motorists – is accommodated.” The improvements for this project include the installation of street lights, signals, sidewalks, and parkways, and 155 planted trees. These pedestrian and bicyclist improvements promote alternative mobility options to cars. The planted trees sequester carbon, reduce the urban heat island effect, and absorb stormwater on rainy days.

Project Details

Anticipated completion date
August 2018

TCC grant funds
\$0

Leveraged funds
\$10,689,780

Key Accomplishments

This project was completed
in August 2018.

Success Avenue Green Streets



Green Street example. Photo credit: Natural Resources Defense Council

GRANT HOUSING AND ECONOMIC DEVELOPMENT CORPORATION is supporting pedestrian improvements for 500 feet of Success Avenue between 103rd and 107th Streets, adjacent to the Gonzaque Village public housing. This will include the planting of 10 trees and installing stormwater treatment features such as 250 square feet of permeable pavement, 250 square feet of understory, and subsurface storm water collection. Pedestrian improvements promote mobility alternatives to cars.

Project Details

Anticipated completion date

June 2020

TCC grant funds

\$0

Leveraged funds

\$500,000

Key Accomplishments*

Project implementation pending.

**through fiscal year 2018-'19*

Jordan Downs Phase 1B



Rendering of Jordan Downs Phase 1B. Photo credit: SVA Architects

MICHAELS DEVELOPMENT COMPANY

is leading the construction of 135 affordable multifamily housing units on Century Boulevard. This project includes the planting of 300 trees. This development increases the density of the neighborhood, which should result in a reduction in the vehicle miles traveled, along with lowering housing costs for Watts residents. The trees will sequester carbon and shade nearby buildings, which should reduce the demand for electricity for cooling purposes, reduce the urban heat island effect, and absorb stormwater.

Project Details

Anticipated completion date

May 2020

TCC grant funds

\$0

Leveraged funds

\$67,682,777

Key Accomplishments*

» **Housing units currently under construction**

*through fiscal year 2018-'19

Jordan Downs Retail Center



Rendering of Jordan Downs Phase 1B. Photo credit: SVA Architects

PRIMESTOR DEVELOPMENT, INC. is constructing a 31,299 square foot grocery store, which will include the planting of 80 trees. This will help to increase the density of the neighborhood and accessibility of local shopping options, which aim to reduce the vehicle miles traveled. Furthermore, the additional trees will sequester carbon and provide cooling benefits.

Project Details

Anticipated completion date
September 2019

TCC grant funds
\$0

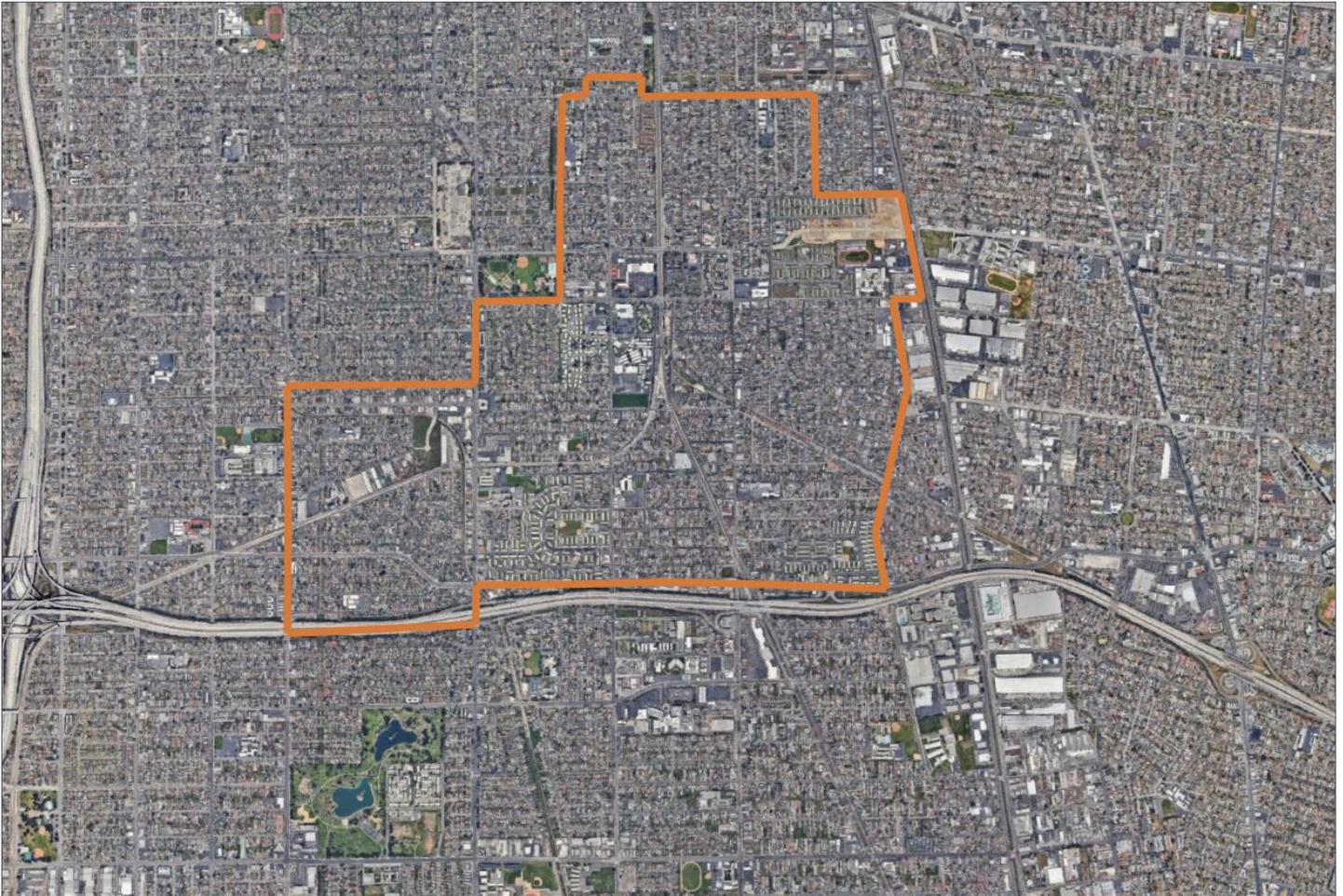
Leveraged funds
\$44,314,118

Key Accomplishments*

» Nike, Inc., Smart & Final Extra!, Ross Stores, Inc., and Blink Fitness have all signed leases at Primestor Development Inc.'s Jordan Downs Plaza.

*through fiscal year 2018-'19

INDICATOR TRACKING: BASELINE DATA



Aerial view of the Watts TCC site boundary; the site is 2.6 square miles and measures 2.15 miles from west to east and 1.85 miles from north to south at the farthest points. Photo Credit: Google Earth 2020

THE FIRST STEP IN EVALUATION is to establish baseline data for indicators in treatment and control settings prior to an intervention. In the case of Watts Rising, baseline data reflects conditions in the project boundary area and a set of similar, but nonadjacent census tracts that did not receive a TCC award prior to the rollout of Watts Rising. In addition to looking at baseline conditions in the project boundary area and control tracts the UCLA-UCB evaluation team will also be looking at baseline conditions at the scale of Los Angeles County and the State of California in order to understand how TCC investments are addressing equity gaps at broader geographic scales.

Ideally, baseline data will reflect a five-year trend period prior to program implementation (2014-2018). However, many indicators lack a publicly available archive from which to draw a five-year pre-investment trend line (e.g., solar PV systems, EV registrations, etc.). For these indicators, a pre-investment snapshot or truncated trend line is provided. The following section provides a high-level summary of the baseline conditions for the indicators that the UCLA-UCB will be tracking over the five-year evaluation period. More detailed data are provided in the Appendix.

Demographics

The population in the TCC project area in Watts is growing, a trend that is consistent with the rest of Los Angeles County and California. Furthermore, across all three geographic scales, there has been an increase in the Hispanic and non-Hispanic Asian populations and a decrease in the non-Hispanic Black population. Unlike the county and

state, non-Hispanic other groups are decreasing, while non-Hispanic White and foreign-born populations are increasing in the TCC project area as a share of the total population. See Table 4 for an overview of the trends discussed here.

Table 4: ACS Demographic Indicators¹³

Indicator	ACS Five-year Sample	Watts TCC Census Tracts	Control Census Tracts	Los Angeles County	California
Total population	2014-2018	57,757	178,719	10,098,052	39,148,760
	2009-2013	53,716	162,558	9,893,481	37,659,181
	% Change	+7.5%	+9.9%	+2.1%	+4.0%*
Percent Hispanic, all races	2014-2018	73.6%	74.1%	48.5%	38.9%
	2010-2014	71.3%	71.8%	47.9%	37.9%
	% Change	+3.2%	+3.2%	+1.1%	+2.6%*
Percent Non-Hispanic, Asian	2014-2018	0.5%	0.7%	14.4%	14.1%
	2009-2013	0.2%	0.6%	13.7%	13.1%
	% Change	+123.7%	+29.0%	+4.9%	+7.6%*
Percent Non-Hispanic, Black	2014-2018	23.6%	22.6%	7.9%	5.5%
	2009-2013	26.9%	25.5%	8.1%	5.7%
	% Change	-12.3%	-11.2%	-3.1%	-3.3%
Percent Non-Hispanic, White	2014-2018	0.9%	1.4%	26.3%	37.5%
	2009-2013	0.7%	1.1%	27.5%	39.7%
	% Change	+25.3%	+18.7%	-4.3%	-5.4%
Percent Non-Hispanic, others (Pacific Islander, American Indian, two or more races, and other)	2014-2018	25.2%	23.9%	23.0%	3.9%
	2009-2013	27.9%	26.4%	22.5%	3.6%
	% Change	-9.6%	-9.3%	+2.2%	+9.1%*
Percent foreign-born population	2014-2018	32.7%	37.8%	34.2%	26.9%
	2009-2013	31.5%	40.1%	35.1%	27.0%
	% Change	+3.6%	-5.8%	-2.5%	-0.4%

* Statistically significant at the 95% confidence level. Significance tests were conducted in accordance with methods described by the U.S. Census Bureau in *Understanding and Using American Community Survey Data: What All Data Users Need to Know* (2018).

¹³ See Appendix 5 for the following details: (1) the ACS table numbers that were sourced for each indicator; (2) additional estimates for 2010-2014, 2011-2015, 2012-2016, and 2013-2017; and (3) the margins of error for all estimates.

Economy

Economic conditions in the TCC project area in Watts appear to have improved according to multiple ACS indicators during the decade that followed the recession: median household income, high income attainment, educational attainment, and the employment rate increased, while poverty levels decreased, consistent with trends at both

the county and state level. Only educational attainment and the employment rate, however, show a statistically significant improvement at the TCC site level. See Table 5 for an overview of the trends discussed here.

Table 5: ACS Economic Indicators¹⁴

Indicator	ACS Five-year Sample	Watts TCC Census Tracts	Control Census Tracts	Los Angeles County	California
Median household income ¹⁵	2014-2018	\$31,508	\$35,188	\$64,251	\$71,228
	2009-2013	\$27,634	\$29,801	\$55,909	\$61,094
	% Change	+14.0%*	+18.1%*	+14.9%*	+16.6%*
% of individuals living below poverty	2014-2018	37.4%	31.7%	16%	14.3%
	2009-2013	41.8%	37.4%	17.8%	15.9%
	% Change	-10.6%	-15.1%	-10.4%	-10.4%
% high income (\$125k +)	2014-2018	3.6%	5.7%	22.8%	26.1%
	2009-2013	3.1%	3.1%	17.6%	19.9%
	% Change	+16.4%	+85.2%*	+29%*	+31.0%*
% with less than high school education	2014-2018	46.6%	46%	21.3%	17.1%
	2009-2013	50.0%	50.1%	23.4%	18.8%
	% Change	-6.9%	-8.6%	-8.8%	-9.0%
% with bachelor's degree or higher	2014-2018	5.4%	7.2%	31.8%	33.3%
	2009-2013	4.0%	6.7%	29.7%	30.7%
	% Change	+34.5%*	+7.8%	+7.1%*	+8.4%*
% employed within civilian labor force	2014-2018	50.9%	54.6%	60.0%	58.9%
	2009-2013	45.6%	51.2%	57.5%	56.4%
	% Change	+11.7%*	+6.7%*	+4.4%*	+4.4%*

* Statistically significant at the 95% confidence level. Significance tests were conducted in accordance with methods described by the U.S. Census Bureau in *Understanding and Using American Community Survey Data: What All Data Users Need to Know* (2018).

¹⁴ Ibid.

¹⁵ Median incomes for the TCC project area and TCC control tracts are not true medians because the evaluator did not have access to the underlying survey data. So to construct a representative median for the TCC project area and TCC control tracts, the evaluator aggregated the number of households in each income range in Table B19001 for selected census tracts, calculated cumulative shares for each range, and used linear interpolation to determine the median. This approach assumes an even distribution of incomes within the range that contains the midpoint. This approach yields a comparable figure to the median income within the aggregated tracts, but it overestimates margin of error compared to methods that rely on actual survey data. Given these limitations, the evaluator only estimated the median for this indicator and did not conduct a test for statistical significance. More details about the methodology can be found in California Department of Finance (2011) *Re-calculating Medians and their Margin of Errors for Aggregated ACS Data*.

Energy

There is a limited set of energy-related indicators that can be tracked at the census tract scale or smaller given the regional nature of electricity generation and transmission. Additionally, utility data on electricity and gas consumption at the address level are not publicly available for privacy reasons. However, several useful indicators can be obtained at an appropriate geographic scale useful for tracking trends in local energy resources. In particular, ACS data can be used to examine the reliance of different communities on fossil fuels for heating purposes. Additionally, satellite data processed and maintained by the DeepSolar Project at Stanford University can be used to examine the prevalence of solar PV systems among households in different communities.

Within the TCC project area in Watts, it appears that residents are increasingly using electricity to heat their home, while decreasingly using utility gas and other fossil fuels. These trends, however, were not statistically significant, and could be due to sampling error. With respect to solar PV installations, data were not available for different points in time, but was available at different geographic scales, showing a much lower solar PV adoption rate among Watts TCC residents relative to the rest of the county and state. See Table 6 and 7 for a summary of the energy related indicators discussed here.

Table 6: ACS Energy Indicators¹⁶

Indicator	ACS Five-year Sample	Watts TCC Census Tracts	Control Tracts	Los Angeles County	California
Percent of households heating home with electricity	2014-2018	21.8%	19.7%	25.9%	26.4%
	2009-2013	19.0%	25.1%	25.0%	25.5%
	% Change	+14.5%	-21.5%	+3.4%*	+3.7%*
Percent of households heating home with utility gas	2014-2018	61.5%	65.4%	65.9%	64.3%
	2009-2013	61.3%	61.3%	67.7%	66.0%
	% Change	+0.3%	+6.7%*	-2.7%	-2.6%
Percent of households heating home with other fossil fuels (bottled, tank, or liquefied petroleum gas; fuel oil, kerosene, etc.; coal or coke)	2014-2018	0.9%	0.7%	1.4%	3.5%
	2009-2013	1.2%	1%	1.2%	3.5%
	% Change	-23.1%	-29.1%	+14.7%*	+0.5%
Percent of houses with no fuel used	2014-2018	15.1%	14%	6.2%	3.4%
	2009-2013	18.4%	12.2%	5.6%	2.9%
	% Change	-17.9%	+14.7%*	+10.7%*	+18.8%*

*Statistically significant at the 95% confidence level. Significance tests were conducted in accordance with methods described by the U.S. Census Bureau in *Understanding and Using American Community Survey Data: What All Data Users Need to Know* (2018).

Table 7: Solar PV Systems per 1,000 Households¹⁷

Indicator	Dataset Year	Watts TCC Census Tracts	Control Tracts	Los Angeles County	California
Solar PV systems for all building types	2018	17.7	12.0	28.4	49.4

¹⁶ See Appendix 5 for the following details: (1) the ACS table numbers that were sourced for each indicator; (2) additional estimates for 2010-2014, 2011-2015, 2012-2016, and 2013-2017; and (3) the margins of error for all estimates.

¹⁷ Solar PV system data were sourced from *The DeepSolar Project*, a product of Stanford Engineering. For TCC census tracts and control tracts, a weighted average was applied, as based on the number of households within each census tract (using 2011-2015 ACS data).

Environment

Like energy indicators, there is a limited set of environmental quality indicators that can be tracked at the neighborhood scale from secondary sources. The California Environmental Protection Agency and the Office of Environmental Health Hazard Assessment publish a number of environmental metrics at the census tract scale (e.g., air pollutants, pesticide use, drinking water contaminants, etc.) through the CalEnviroScreen tool, but these metrics are derived from a sample of data that represent a more coarse geographic scale, and then modeled or estimated at the census tract scale.¹⁸ The resulting data are helpful for ranking census tracts according to their likely pollution burden, but are not a reliable source for measuring the effects of the Watts Rising initiative over time.

Satellite data, however, is regularly updated and can be used to measure changes in land cover at small geographic

scales. The National Agriculture Imagery Program administered by the United States Department of Agriculture’s Farm Service Agency, provides satellite imagery at a one-meter ground sample distance with an infrared band that allows researchers to classify imagery according to the spectral wavelengths of different land-cover types. Using 2016 imagery (the most recent year imagery was available in California), it appears that the TCC project area is dominated by impervious surfaces (62.4% of total land area). This percentage is much higher than the average percentage for urban land across California (43%).¹⁹ Moreover, green vegetation in the TCC project area (11.7% of total area) is well below the average area covered by trees (not even including other vegetation cover) for urban land across California (32%).²⁰ See Table 8 for a summary of baseline land-cover indicators for the TCC project area.

Table 8: Land-Cover Indicators²¹

Indicator	Dataset Year	Percent area for TCC Project Area	Square Miles
Impervious / buildings	2016	62.4%	1.6
Dry vegetation / barren	2016	14.0%	0.4
Green vegetation	2016	11.7%	0.3
Shadow	2016	11.9%	0.3
Unclassified	2016	<0.1%	<0.1
Water	2016	0%	0

¹⁸ CalEPA and OEHHA, 2017. CalEnviroScreen 3.0.

¹⁹ Nowak, D.J., and E.J. Greenfield, 2018. “Declining urban and community tree cover in the United States.” *Urban Forestry & Urban Greening* 32: 32-55.

²⁰ Ibid.

²¹ Land-cover indicators were derived from satellite imagery maintained by the National Agriculture Imagery Program.

Health

Health data are highly sensitive information and are not generally available from secondary sources at a temporal and geographic scale appropriate for measuring neighborhood-level transformations. Many of the indicators of interest to TCC stakeholders, such as changes in the prevalence of asthma, obesity, diabetes, and heart disease, are only available at the zip code level or are not released annually. Watts' TCC project boundary area, however, is much smaller than the zip code boundaries that it bisects (see Appendix 1 for an overlap between the TCC project boundary area and zip code boundaries). Nonetheless, there are two health-related indicators that can be tracked at a geographic scale that is appropriate for evaluating the effects of Watts Rising: health insurance coverage and vehicle collisions involving a cyclist or pedestrian.

While enrolling individuals in health insurance programs is not an explicit objective of Watts Rising, it could be an indirect effect of the initiative. Workforce development components of Watts Rising could provide workers with access to employer sponsored health insurance packages or provide the supplemental income needed to purchase health insurance from the public market. Within the TCC project

area, there has already been a statistically significant trend towards increased enrollment in health insurance, which is true for Los Angeles County and California as well. This could be explained by the rollout of the Affordable Care Act in 2010. See Table 9 for a summary of these trends.

Pedestrian- and bicyclist-involved vehicle collisions continue to be a concern in California.²² The Watts Rising's investments in pedestrian and bicyclist infrastructure, such as protected bike lanes and sidewalks, should theoretically lead to a decline in vehicle collisions involving bicyclists and pedestrians. From 2013 to 2018, bicycle and pedestrian injuries and fatalities have generally become more common in both the TCC site and the control tracts. Prior to these investments, total vehicle collisions involving a bicyclist in the TCC project area increased by 42% from 2013 to 2018 (33 to 47 collisions, respectively), while collisions involving a pedestrian increased by 43% (14 to 20 collisions respectively). See Table 10 for a summary of collisions involving bicyclists and pedestrians in both the TCC project area and control sites. See Appendix 7 for additional related data.

Table 9: ACS Health Indicators²³

Indicator	ACS Five-year Sample	Watts TCC Census Tracts	Control Tracts	Los Angeles County	California
Percent with health insurance coverage	2014-2018	84.1%	82.6%	89.2%	91.5%
	2009-2013	70.2%	65.6%	77.8%	82.2%
	% Change	+19.9%*	+26%*	+14.6%*	+11.3%*
Percent with private insurance coverage	2014-2018	25.4%	29.5%	57.9%	63.4%
	2009-2013	21.8%	24.4%	54.3%	61.0%
	% Change	+16.1%*	+20.8%*	+6.5%*	+3.9%*
Percent with public insurance coverage	2014-2018	61.9%	56.9%	38%	37.2%
	2009-2013	51.3%	44.8%	29.7%	29.5%
	% Change	+20.7%*	+26.9%*	+28%*	+26.0%*

*Statistically significant at the 95% confidence level. Significance tests were conducted in accordance with methods described by the U.S. Census Bureau in *Understanding and Using American Community Survey Data: What All Data Users Need to Know* (2018).

²² CalSTA, 2019, California Office of Traffic Safety 2019 Annual Report.

²³ See Appendix 5 for the following details: (1) the ACS table numbers that were sourced for each indicator; (2) additional estimates for 2010-2014, 2011-2015, 2012-2016, and 2013-2017; and (3) the margins of error for all estimates.

Table 10: Vehicle Collisions Involving Bicyclists and Pedestrians^{24,25}

Indicator	Data range	Gross Number		Normalized per 1,000 Street Miles	
		TCC Project Boundary Area	Control Census Tracts	TCC Project Boundary Area	Control Census Tracts
Bicycle Collision at Injury Level 1: Fatal	2018	1	1	18	4
	2013	0	1	0	4
	% Change	>+100%	No change	>+100%	No change
Bicycle Collision at Injury Level 2: Severe Injury	2018	2	12	36	51
	2013	1	5	18	21
	% Change	+100%	+140%	+100%	+140%
Bicycle Collision at Injury Level 3: Visible Injury	2018	11	49	197	210
	2013	6	48	108	206
	% Change	+83%	+2%	+83%	+2%
Bicycle Collision at Injury Level 4: Complaint of Pain	2018	6	49	108	210
	2013	7	60	125	257
	% Change	-14%	-18%	-14%	-18%
Pedestrian Collision at Injury Level 1: Fatal	2018	4	19	72	81
	2013	1	17	18	30
	% Change	+300%	+171%	+300%	+171%
Pedestrian Collision at Injury Level 2: Severe Injury	2018	8	47	143	201
	2013	5	24	90	103
	% Change	+60%	+96%	+60%	+96%
Pedestrian Collision at Injury Level 3: Visible Injury	2018	12	81	216	347
	2013	15	68	269	291
	% Change	-20%	+19%	-20%	+19%
Pedestrian Collision at Injury Level 4: Complaint of Pain	2018	23	93	412	399
	2013	12	65	215	279
	% Change	+92%	+43%	+92%	+43%

²⁴ Collision data were obtained from the Transportation Injury Mapping System (TIMS). The numbers presented here are conservative in that they do not include collisions that were missing geographic coordinates in TIMS. Street mileage was obtained from OpenStreetsMap (OSM) and totaled 56 miles for the project area and 233 miles for the control tracts. See Appendix 7 for results at different buffer sizes to capture collisions with geographic coordinates that may not have perfectly overlapped with street lines within the project area and control tracts.

²⁵ Vehicle collisions involving bicycles and pedestrians are not mutually exclusive because some accidents may involve both modes.

Housing

There are a number of housing-related indicators that can be tracked using ACS data: housing cost burden, housing crowding, tenure length, and vacancies of units for rent or for sale. Taken together, these indicators provide a snapshot of displacement pressures that may be occurring in the TCC project area. High rent burdens, low vacancies, short tenures, and crowded conditions all suggest that a neighborhood is vulnerable to residential displacement or already experiencing displacement.²⁶ See Table 11 for a summary of the housing indicators tracked for renters and Table 12 for a summary of the housing indicators for homeowners in the TCC project area and comparison geographies.

Among the various housing indicators tracked for the TCC project area, none of the trends were statistically

significant. While not significant, the data suggest that the Watts TCC site saw a decrease in the share of renters, but an increase in the share of homeowners. Both of these trends are opposite the trends occurring at the county and state level. For renters, there was a decrease in the share of renters paying over 50% of their income on rent and the share of vacant housing units, while there was an increase in renter tenure.

Among homeowners, there were decreases in the share who paid more than 30% of their income on their mortgage, as well as a decrease in the number of housing units for sale that are vacant. Without more primary data on the motivations among renters and homeowners, it is difficult at this point to draw any conclusions about explanatory variables.

Table 11: ACS Housing Indicators for Renters²⁷

Indicator	ACS Five-year Sample	Watts TCC Census Tracts	Control Census Tracts	Los Angeles County	California
Percent renters**	2014-2018	64.7%	72.5%	54.2%	45.4%
	2009-2013	67.3%	70.6%	53.1%	44.7%
	% Change	-3.9%	+2.6%*	+2%*	+1.5%*
Percent of renters paying $\geq 30\%$ of income on rent**	2014-2018	68.1%	65.9%	55.5%	52.5%
	2009-2013	67.9%	68.6%	56.4%	54.1%
	% Change	+0.3%	-3.9%	-1.7%	-2.7%
Percent of renters paying $\geq 50\%$ of income on rent**	2014-2018	40.7%	40.8%	29.5%	27.0%
	2009-2013	41.1%	43.5%	30.7%	28.5%
	% Change	-1.1%	-6.34%	-3.8%	-4.6%
Percent of renters in with more than one occupant per room in their unit**	2014-2018	14.2%	17.2%	8.9%	6.0%
	2009-2013	20.5%	21.2%	9.3%	6.0%
	% Change	-31.1%	-18.7%	-4.1%	+1.4%*
Percent of renters in same house in same house one year ago**	2014-2018	56.0%	61.2%	43.9%	35.8%
	2009-2013	52.6%	56.2%	40.2%	32.7%
	% Change	+6.5%	+8.8%*	+9.1%*	+9.4%*
Percent of housing units for rent that are vacant	2014-2018	1.1%	1.9%	1.7%	1.5%
	2009-2013	3.7%	3.5%	2.3%	2.1%
	% Change	-69.4%	-46.8%	-26%	-27.4%

*Statistically significant at the 95% confidence level. Significance tests were conducted in accordance with methods described by the U.S. Census Bureau in *Understanding and Using American Community Survey Data: What All Data Users Need to Know* (2018).

**Refers to households rather than individuals.

²⁶ Zuk, M., Bierbaum, A. H., Chapple, K., Gorska, K., Loukaitou-Sideris, A., Ong, P., & Thomas, T. (2015, August). Gentrification, displacement and the role of public investment: a literature review. In Federal Reserve Bank of San Francisco (Vol. 79).

²⁷ See Appendix 5 for the following details: (1) the ACS table numbers that were sourced for each indicator; (2) additional estimates for 2010-2014, 2011-2015, 2012-2016, and 2013-2017; and (3) the margins of error for all estimates.

Table 12: ACS Housing Indicators for Homeowners²⁸

Indicator	ACS Five-year Sample	Watts TCC Census Tracts	Control Census Tracts	San Bernardino County	California
Percent homeowners**	2014-2018	35.3%	27.5%	45.8%	54.6%
	2009-2013	32.7%	29.4%	46.9%	55.3%
	% Change	+8.0%	-6.3%	-2.3%	-1.2%
Percent of homeowners paying ≥30% of income on mortgage**	2014-2018	33.2%	31.5%	26%	24.7%
	2009-2013	34.7%	30.9%	30.3%	29.7%
	% Change	-4.3%	+2.0%	-14.1%	-16.6%
Percent of homeowners paying ≥50% of income on rent**	2014-2018	9.8%	9.3%	6%	5.4%
	2009-2013	12.4%	11.8%	7.9%	7.2%
	% Change	-20.7%	-21.1%	-23.5%	-25.7%
Percent of homeowners in with more than one occupant per room in their unit**	2014-2018	7.8%	4.7%	2.6%	2.2%
	2009-2013	7.7%	5.5%	2.9%	2.3%
	% Change	+1.7%	-14.3%	-10.5%	-3.9%
Percent of homeowners in same house one year ago**	2014-2018	37.8%	30.4%	45.9%	51.6%
	2009-2013	33.7%	31.6%	46.9%	52.3%
	% Change	+12.0%	-3.9%	-2%	-1.3%
Percent of housing units for sale that are vacant	2014-2018	0.7%	0.4%	0.5%	0.6%
	2009-2013	1.5%	0.7%	0.7%	0.9%
	% Change	-50.8%	-43.0%	-31.7%	-37.6%

*Statistically significant at the 95% confidence level. Significance tests were conducted in accordance with methods described by the U.S. Census Bureau in *Understanding and Using American Community Survey Data: What All Data Users Need to Know* (2018).

**Renters refers to households rather than individuals.

²⁸Ibid.

Transportation

Unlike trends seen at the county and state levels, commutes by public transit and by bike increased in the Watts TCC site. However, consistent with state and county trends, the share of households commuting to work by car alone increased, while commutes by carpool decreased. See Table 13 for a summary of the ACS data analyzed here. Aside from the ACS data on commutes to work, there is no other secondary data that is updated on an annual basis at the census tract scale or smaller for understanding the travel behavior of TCC project area residents in relation to the comparison to other geographies.

In addition to tracking changes in work commutes, this report also provides baseline data on the adoption rate of EVs and the rollout of EV commutes. While these are not explicit objectives of Watts Rising, they could be indirect-

ly affected. For example, improved economic outcomes for TCC residents alongside community education about the environmental goals of TCC could lead to changes in consumer demand for zero-emission technologies. Prior to TCC investment, the adoption of EVs in the TCC project area appears to be trending downward, opposite the county trends.²⁹ The number of level 2 EV charging stations increased from zero to three from 2015 to 2018, with no increase in DC fast chargers. Compared to Los Angeles County, the Watts TCC site has fewer electric vehicle charging stations per 1,000 residents. The sample size for publicly available EV charging stations in the TCC project area is small, so these relative rates should be interpreted with caution. See Table 14 and Table 15 for a summary of the EV and publicly available EV charging station data collected for this baseline report.

Table 13: ACS Transportation Indicators³⁰

Indicator	ACS Five-year Sample	Value for TCC Site (average)	Value for Controls (average)	Values for the County (average)	Values for the State (Average)
Percent of workers commuting to work by car (alone)	2014-2018	69.2%	69.5%	73.9%	73.7%
	2009-2013	64.3%	61.4%	72.4%	73.2%
	% Change	+7.7%*	+13.2%*	+2.1%*	+0.8%*
Percent of workers commuting to work by carpool	2014-2018	12.8%	10.5%	9.5%	10.3%
	2009-2013	15.5%	13.6%	10.6%	11.3%
	% Change	-17.8%	-22.6%	-9.9%	-9.4%
Percent of workers commuting to work by public transit	2014-2018	13.2%	12.8%	6%	5.1%
	2009-2013	12.1%	17.8%	7.1%	5.2%
	% Change	+8.5%	-28.2%	-14.6%	-1.6%
Percent of workers commuting to work by foot	2014-2018	0.8%	1.9%	2.7%	2.7%
	2009-2013	1.9%	2.2%	2.9%	2.7%
	% Change	-59.0%	-13.6%	-5.6%	-3.3%
Percent of workers commuting to work by bike	2014-2018	0.3%	0.8%	0.8%	1.0%
	2009-2013	0.2%	0.8%	0.9%	1.1%
	% Change	+12.3%	+2.1%	-2.7%	-5.9%

* Statistically significant at the 95 percent confidence level. Significance tests were conducted in accordance with methods described by the U.S. Census Bureau in Understanding and Using American Community Survey Data: What All Data Users Need to Know (2018).

²⁹ Data were not collected for California at this time because it must be requested by county directly from CARB.

³⁰ See Appendix 5 for the following details: (1) the ACS table numbers that were sourced for each indicator; (2) additional estimates for 2010-2014, 2011-2015, 2012-2016, and 2013-2017; and (3) the margins of error for all estimates.

Table 14: Plug-in Electric Vehicle (PEV) Registrations³¹

Indicator	Dataset Year	Gross Number			Normalized per 1,000 Residents		
		TCC Census Tracts	Control Census Tracts	Los Angeles County	TCC Census Tracts	Control Census Tracts	Los Angeles County
Battery electric vehicle	2017	11	63	37,840	0.19	0.4	3.7
	2015	14	41	20,426	0.25	0.2	2.0
	% Change	-21.4%	+53.7%	+85.3%	-23.9%	+48.8%	+84.0%
Plug-in hybrid electric vehicle	2017	7	46	25,660	0.1	0.3	2.5
	2015	10	27	21,448	0.2	0.2	2.1
	% Change	-30%	+70.4%	+19.6%	-32.2%	+65.0%	+18.8%
Fuel cell vehicle	2017	0	0	174	0	0	<0.1
	2015	0	0	57	0	0	<0.1
	% Change	No Change	No Change	+205.3%	No Change	No Change	+203.2%
Total EV registrations	2017	18	109	63,674	0.3	0.6	6.3
	2015	24	68	41,931	0.4	0.4	4.2
	% Change	-25%	+60.3%	+51.9%	-27.4%	+55.2%	+50.8%

Table 15: Publicly Available Charging Infrastructure³²

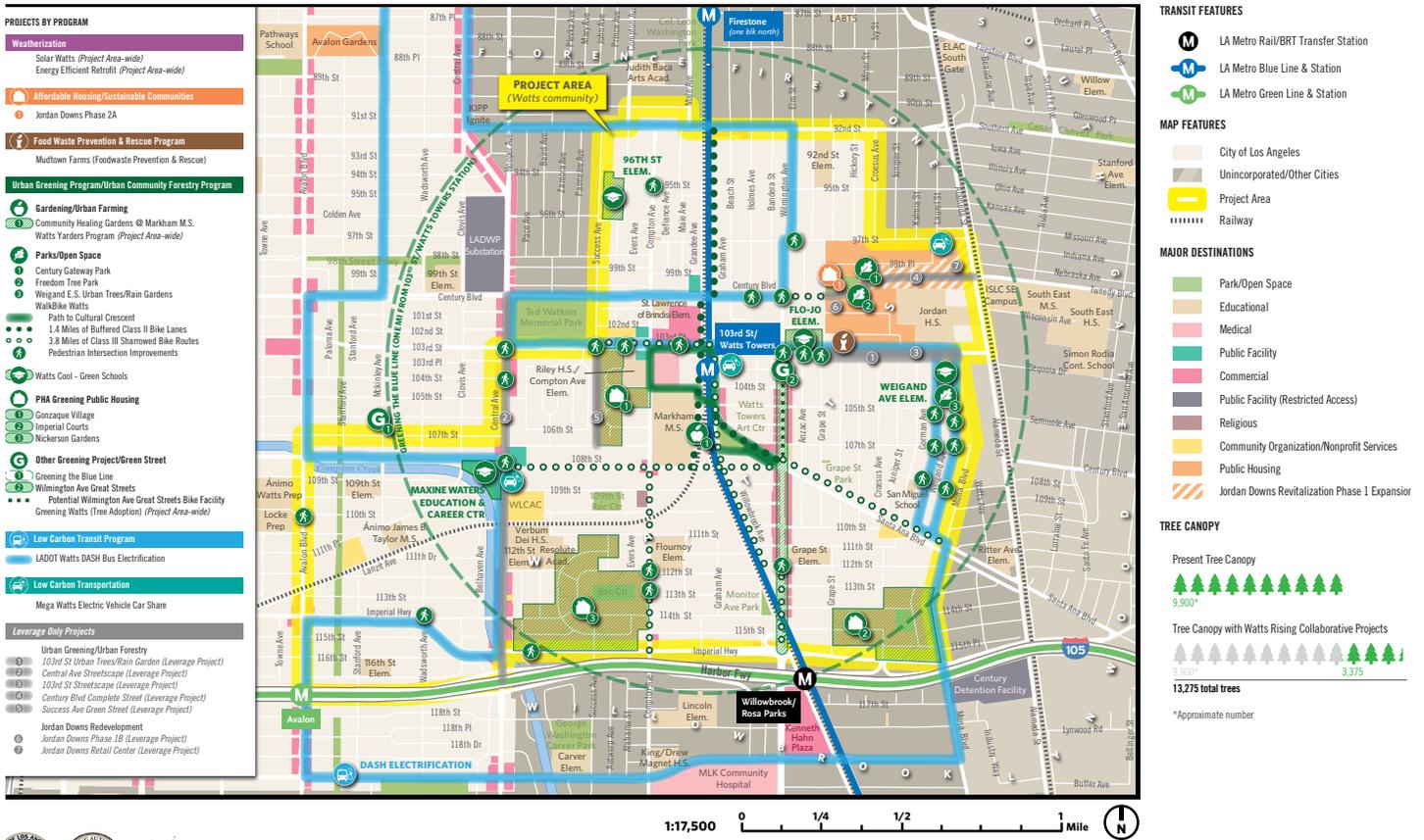
Indicator	Dataset Year	Gross Number			Normalized per 1,000 Residents		
		TCC Census Tracts	Control Census Tracts	Los Angeles County	TCC Census Tracts	Control Census Tracts	Los Angeles County
Level 2 Stations	2018	3	7	817	0.1	<0.1	0.1
	2015	0	2	505	0	0.01	0.1
	% Change	>+100%	+250%	+61.8%	>+100%	+230.8%	+60.8%
DC Fast-Charging Stations	2018	0	1	73	0	<0.1	<0.1
	2015	0	0	43	0	0	<0.1
	% Change	No change	>+100%	+69.7%	No change	>+100%	68.8%

³¹ EV registration data were obtained by request from the CARB Online Fleet Database. The EV registration data were normalized with 2017 and 2015 five-year ACS data.

³² Charging station data were obtained by request from the Alternative Fuels Data Center (AFDC), a resource administered by the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy's Vehicle Technologies Office. The 2015 and 2018 datasets include active stations and does not include stations that have previously opened and closed. The charging station data were normalized with 2015 and 2018 five-year ACS data.

APPENDICES

Appendix 1: Supplemental Maps

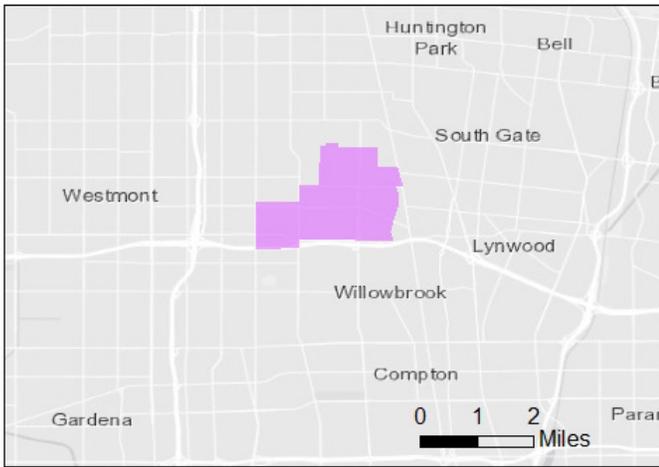


Detailed map of Watts Rising project locations. Photo credit: Watts Rising Collaborative

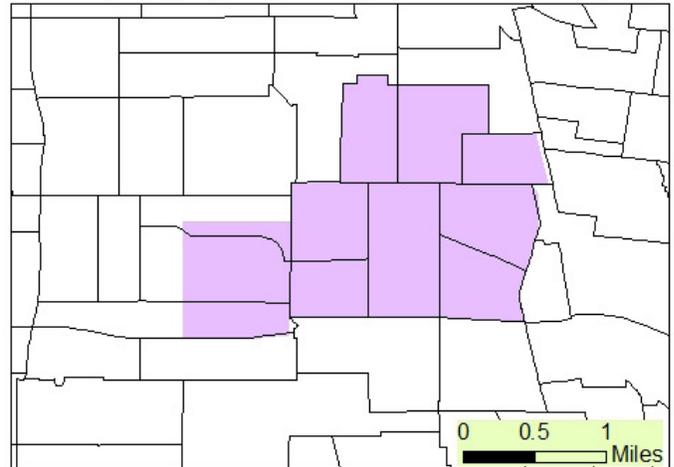
Watts Rising Collaborative
 HACLA | TCC GRANT APPLICATION | JANUARY 2019
 SUPPLEMENTAL MATERIALS 9-1: PROJECTS MAP (JANUARY, 2019 UPDATE)

Watts TCC Project Area Overlay Maps

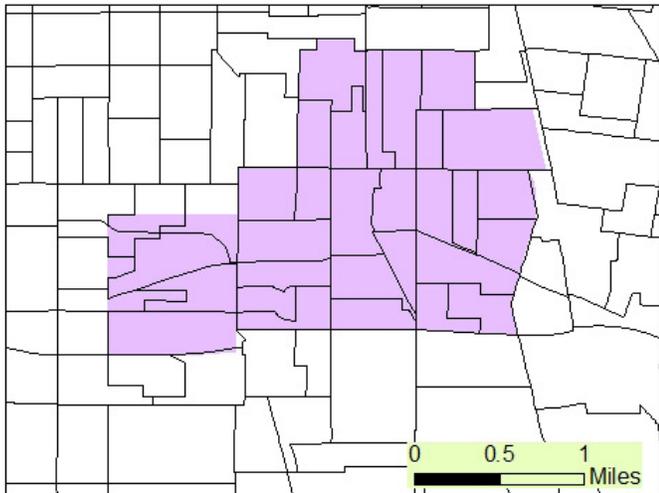
(#) = number of geographic units that intersect with TCC project area (excluding units with less than 2% of total area under TCC project area)
 Census tract, block group, and zip code maps from US Census Bureau (2016)



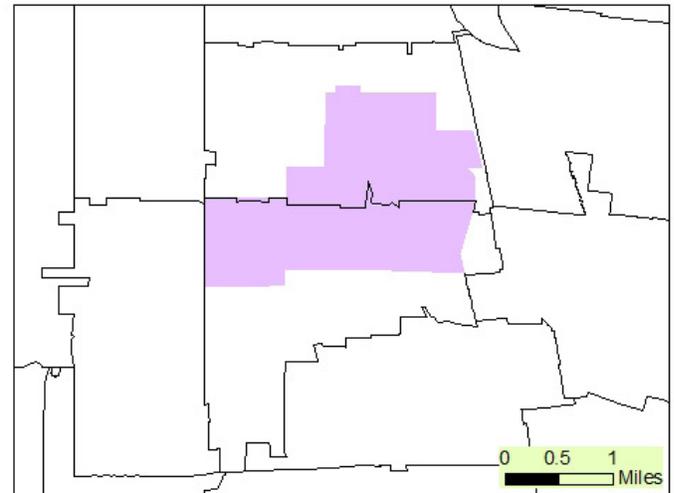
Watts TCC Project Area



Census Tracts (12)



Census Block Groups (36)



Zip Code Tabulation Areas (2)

Maps depicting the scale of the TCC project area. Photo credit: UCLA Luskin Center for Innovation

Appendix 2: Summary of Methods for Estimating Project Benefits

Benefit	Methodology
Avoided stormwater runoff	iTree Planting
Energy cost savings	California Air Resources Board (CARB) Energy and Fuel Cost Savings Co-benefit Assessment Methodology
Jobs (direct, indirect, induced)	Job Co-benefit Assessment Methodology
Greenhouse gas reductions	CARB GHG Quantification Methodologies
Travel cost savings	CARB Travel Cost Savings Co-benefit Assessment Methodology
Vehicle miles traveled reductions	CARB GHG Quantification Methodologies

Appendix 3: Watts Rising Collaborative Structure



Watts Rising Collaborative Stakeholder Structure

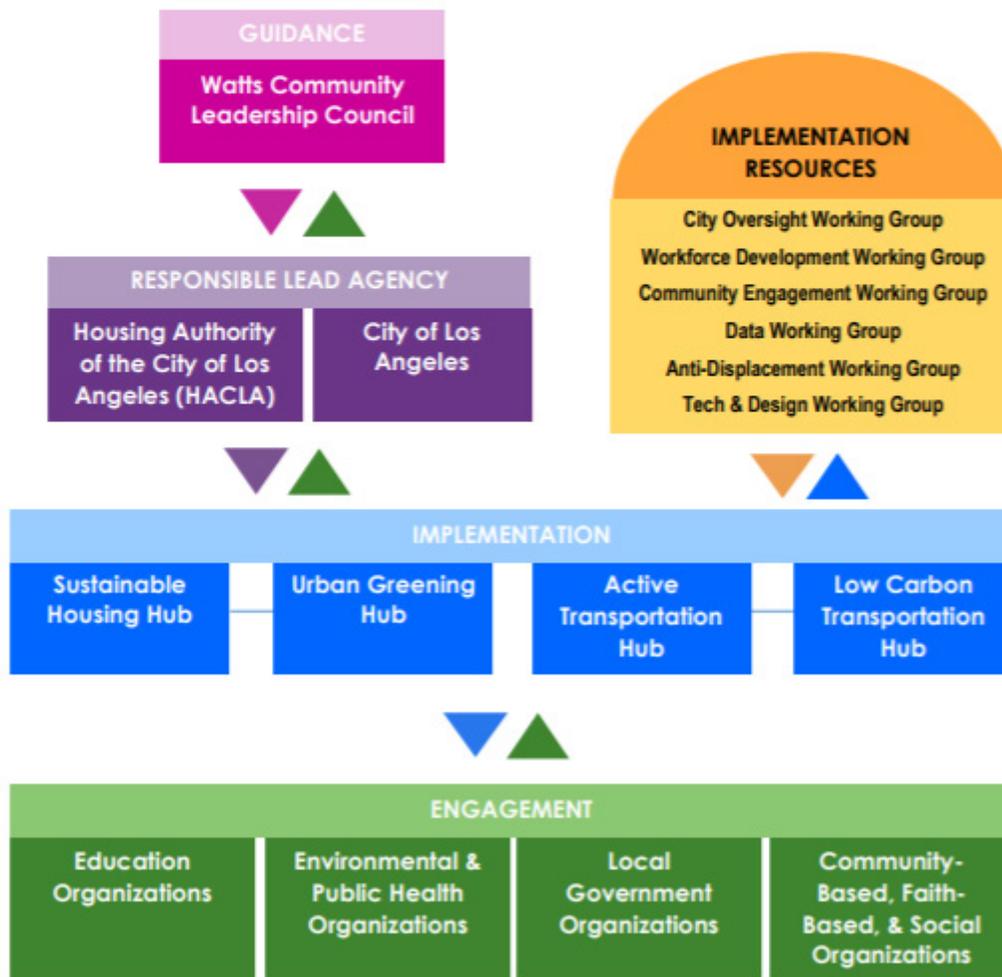


Diagram showing the Watts Rising Collaborative Structure. Photo Credit: Housing Authority of Los Angeles and Watts Rising

Appendix 4: Watts Rising TCC Census Tracts

Census Tract GeoID Number	City	Population (ACS 2011-2016 estimate)	Area (sq. mi.)	Population Density (pop./ sq.mi.)
14000US06037241001	Los Angeles	4,580	0.35	13,086
14000US06037240900	Los Angeles	5,745	0.41	13,901
14000US06037242700	Los Angeles	5,969	0.39	15,228
14000US06037242100	Los Angeles	2,911	0.18	16,404
14000US06037242000	Los Angeles	4,159	0.25	16,656
14000US06037240800	Los Angeles	4,625	0.25	18,762
14000US06037242300	Los Angeles	4,577	0.24	18,815
14000US06037242200	Los Angeles	6,366	0.31	20,274
14000US06037243000	Los Angeles	7,147	0.28	25,804
14000US06037242600	Los Angeles	4,980	0.18	27,097
14000US06037243100	Los Angeles	6,459	0.23	27,559

Appendix 5: Watts Rising Control Census Tracts

Census Tract GeoID Number	City	Population (ACS 2011-2016 estimate)	Area (sq. mi.)	Population Density (pop./ sq.mi.)
14000US06037239601	Los Angeles	3,644	0.16	22,350
14000US06037219901	Los Angeles	4,444	0.20	21,928
14000US06037232120	Los Angeles	5,715	0.20	28,363
14000US06037221500	Los Angeles	4,011	0.15	27,286
14000US06037237720	Los Angeles	3,134	0.13	24,958
14000US06037238310	Los Angeles	4,927	0.15	32,138
14000US06037238320	Los Angeles	4,133	0.18	22,859
14000US06037237710	Los Angeles	3,281	0.17	19,658
14000US06037241120	Los Angeles	5,082	0.26	19,832
14000US06037231100	Los Angeles	3,516	0.35	10,185
14000US06037231210	Los Angeles	3,509	0.12	28,341
14000US06037231300	Los Angeles	5,142	0.25	20,257
14000US06037231600	Los Angeles	6,957	0.37	18,874
14000US06037231710	Los Angeles	4,081	0.13	32,644
14000US06037240500	Los Angeles	6,509	0.31	20,748
14000US06037237500	Los Angeles	2,716	0.13	20,853
14000US06037232500	Los Angeles	4,762	0.30	16,066
14000US06037232700	Los Angeles	5,968	0.28	21,139
14000US06037240600	Los Angeles	5,685	0.26	21,786
14000US06037237101	Los Angeles	3,653	0.24	15,043
14000US06037237202	Los Angeles	4,714	0.43	11,014
14000US06037237401	Los Angeles	3,737	0.20	18,753
14000US06037239202	Los Angeles	5,347	0.49	10,856
14000US06037239501	Los Angeles	3,599	0.18	19,657
14000US06037239602	Los Angeles	3,586	0.14	25,937
14000US06037239802	Los Angeles	5,102	0.24	21,682
14000US06037239801	Los Angeles	3,524	0.14	24,617
14000US06037228500	Los Angeles	4,581	0.17	26,431
14000US06037231720	Los Angeles	4,789	0.18	26,265
14000US06037237102	Los Angeles	3,239	0.18	18,238
14000US06037241400	Los Angeles	3,377	0.22	15,196
14000US06037240010	Los Angeles	3,625	0.23	15,955
14000US06037241202	Los Angeles	4,807	0.45	10,703
14000US06037240401	Los Angeles	5,562	0.27	20,786
14000US06037541604	Compton	6,391	0.32	19,839
14000US06037535102	Unincorporated	5,055	0.23	22,150
14000US06037540901	Unincorporated	4,565	0.45	10,160
14000US06037600304	Unincorporated	3,412	0.17	19,825

Appendix 6: Margins of Error (MOE) for ACS Variables

	Time Period (ACS 5-year sample)	Estimate for TCC Site	MOE	Estimate for Controls	MOE	Estimate for Los Angeles County	MOE	Estimate for California	MOE
DEMOGRAPHIC-RELATED INDICATORS									
Total Population (B01003)	2009-2013	53,716	1,829	162,558	3,251	9,893,481	0	37,659,181	0
	2010-2014	55,008	1,854	164,136	3,143	9,974,203	0	38,066,920	0
	2011-2015	56,232	1,905	168,937	3,062	10,038,388	0	38,421,464	0
	2012-2016	57,518	1,882	169,881	2,981	10,057,155	0	38,654,206	0
	2013-2017	58,080	1,854	174,454	3,005	10,105,722	0	38,982,847	0
	2014-2018	57,757	1,884	178,719	2,976	10,098,052	0	39,148,760	0
Percent Hispanic, all races (B03002)	2009-2013	71.3	2.5	71.8	1.4	47.9	0.0	37.9	0.0
	2010-2014	71.0	2.4	72.7	1.3	48.1	0.0	38.2	0.0
	2011-2015	71.8	2.4	73.1	1.4	48.2	0.0	38.4	0.0
	2012-2016	71.6	2.4	72.9	1.3	48.3	0.0	38.6	0.0
	2013-2017	72.9	2.2	73.2	1.2	48.4	0.0	38.8	0.0
	2014-2018	73.6	2.1	74.1	1.2	48.5	0.0	38.9	0.0
Percent White, non-Hispanic (B03002)	2009-2013	11.8	1.4	12.1	0.7	32.5	0.0	39.7	0.0
	2010-2014	0.7	0.3	1.1	0.2	27.5	0.0	39.7	0.0
	2011-2015	0.7	0.4	0.9	0.2	27.2	0.0	39.2	0.0
	2012-2016	0.7	0.4	1.1	0.2	26.9	0.0	38.7	0.0
	2013-2017	0.8	0.4	1.2	0.2	26.7	0.0	38.4	0.0
	2014-2018	0.8	0.4	1.2	0.2	26.5	0.0	37.9	0.0
Percent all communities of color, non-Hispanic: Black, Asian, Pacific Islander, American Indian, other, and two or more races (B03002)	2009-2013	28.0	1.8	27.0	1.0	24.6	0.1	22.4	0.0
	2010-2014	28.3	1.7	26.4	1.0	24.7	0.1	22.7	0.0
	2011-2015	27.5	1.8	25.8	1.0	24.8	0.1	22.9	0.0
	2012-2016	27.6	1.8	25.9	1.0	24.9	0.1	23.1	0.0
	2013-2017	26.4	2.0	25.6	1.0	25.1	0.1	23.3	0.0
	2014-2018	25.5	2.0	24.5	1.0	25.2	0.1	23.6	0.0
Percent other communities of color, non-Hispanic: Pacific Islander, American Indian, other, two or more races	2009-2013	0.8	0.6	1.0	0.3	2.7	0.0	3.6	0.0
	2010-2014	0.7	0.5	1.0	0.3	2.8	0.1	3.7	0.0
	2011-2015	0.9	0.6	1.1	0.2	2.9	0.1	3.7	0.0
	2012-2016	1.2	0.7	1.2	0.2	2.9	0.0	3.8	0.0
	2013-2017	1.1	0.6	1.2	0.3	2.9	0.0	3.9	0.0
	2014-2018	1.4	0.8	1.2	0.2	3.0	0.0	3.9	0.0

	Time Period (ACS 5-year sample)	Estimate for TCC Site	MOE	Estimate for Controls	MOE	Estimate for Los Angeles County	MOE	Estimate for California	MOE
DEMOGRAPHIC-RELATED INDICATORS									
Percent Black, non-Hispanic (B03002)	2009-2013	26.9	1.7	25.4	1.0	8.1	0.0	5.7	0.0
	2010-2014	27.4	1.7	24.9	0.9	8.0	0.0	5.7	0.0
	2011-2015	26.3	1.7	24.2	1.0	8.0	0.0	5.6	0.0
	2012-2016	25.8	1.7	24.2	1.0	8.0	0.0	5.6	0.0
	2013-2017	24.6	1.9	23.8	1.0	7.9	0.0	5.5	0.0
	2014-2018	23.6	1.8	22.6	0.9	7.9	0.0	5.5	0.0
Percent Asian, non-Hispanic (B03002)	2009-2013	0.2	0.2	0.6	0.3	13.7	0.0	13.1	0.0
	2010-2014	0.3	0.2	0.5	0.2	13.8	0.0	13.3	0.0
	2011-2015	0.3	0.3	0.5	0.1	14.0	0.0	13.5	0.0
	2012-2016	0.6	0.4	0.6	0.2	14.1	0.0	13.7	0.0
	2013-2017	0.6	0.4	0.6	0.2	14.3	0.0	13.9	0.0
	2014-2018	0.5	0.3	0.7	0.2	14.4	0.0	14.1	0.0
Percent Pacific Islander, non-Hispanic (B03002)	2009-2013	0.00	0.0	0.0	0.0	0.2	0.01	0.4	0.01
	2010-2014	0.0	0.1	0.0	0.0	0.2	0.01	0.4	0.00
	2011-2015	0.1	0.1	0.0	0.0	0.3	0.01	0.4	0.00
	2012-2016	0.1	0.1	0.0	0.0	0.2	0.01	0.4	0.00
	2013-2017	0.1	0.1	0.0	0.0	0.3	0.01	0.4	0.00
	2014-2018	0.2	0.2	0.0	0.0	0.3	0.01	0.4	0.01
Percent American Indian, non-Hispanic (B03002)	2009-2013	0.4	0.3	0.1	0.1	0.2	0.01	0.4	0.01
	2010-2014	0.3	0.3	0.1	0.1	0.2	0.01	0.4	0.01
	2011-2015	0.4	0.5	0.1	0.1	0.2	0.01	0.4	0.01
	2012-2016	0.5	0.5	0.1	0.1	0.2	0.01	0.4	0.01
	2013-2017	0.5	0.5	0.1	0.1	0.2	0.01	0.4	0.01
	2014-2018	0.6	0.7	0.1	0.1	0.2	0.01	0.4	0.01
Percent two or more races, non-Hispanic (B03002)	2009-2013	0.1	0.1	0.7	0.2	2.1	0.0	2.6	0.0
	2010-2014	0.1	0.1	0.6	0.2	2.2	0.0	2.7	0.0
	2011-2015	0.2	0.1	0.6	0.2	2.2	0.0	2.8	0.0
	2012-2016	0.3	0.2	0.6	0.2	2.2	0.0	2.9	0.0
	2013-2017	0.3	0.2	0.7	0.2	2.2	0.0	2.9	0.0
	2013-2018	0.3	0.2	0.6	0.2	2.2	0.0	3.0	0.0
Percent other, non-Hispanic (B03002)	2009-2013	0.4	0.5	0.2	0.1	0.2	0.0	0.2	0.0
	2010-2014	0.3	0.4	0.3	0.1	0.2	0.0	0.2	0.0
	2011-2015	0.3	0.4	0.4	0.1	0.3	0.0	0.2	0.0
	2012-2016	0.3	0.4	0.4	0.1	0.3	0.0	0.2	0.0
	2013-2017	0.3	0.3	0.4	0.1	0.3	0.0	0.2	0.0
	2014-2018	0.3	0.3	0.4	0.1	0.3	0.0	0.2	0.0

	Time Period (ACS 5-year sample)	Estimate for TCC Site	MOE	Estimate for Controls	MOE	Estimate for Los Angeles County	MOE	Estimate for California	MOE
DEMOGRAPHIC-RELATED INDICATORS									
Percent foreign born population (B05006)	2009-2013	31.5	1.9	40.1	1.1	35.1	0.1	27.0	0.1
	2010-2014	31.4	1.8	39.5	1.0	34.9	0.1	27.0	0.1
	2011-2015	31.6	1.8	38.5	0.9	34.7	0.1	27.0	0.1
	2012-2016	32.1	1.7	37.8	0.9	34.5	0.1	27.0	0.1
	2013-2017	32.4	1.7	37.4	0.9	34.4	0.1	27.0	0.1
	2014-2018	32.7	1.8	37.8	0.9	34.2	0.1	26.9	0.1
Percent born in Asia (B05006)	2009-2013	0.2	0.2	0.5	0.2	11.9	0.1	9.8	0.0
	2010-2014	0.2	0.2	0.4	0.1	12.0	0.1	10.0	0.0
	2011-2015	0.2	0.2	0.4	0.1	12.0	0.1	10.1	0.0
	2012-2016	0.5	0.3	0.4	0.1	12.1	0.1	10.2	0.0
	2013-2017	0.5	0.3	0.5	0.1	12.1	0.1	10.4	0.0
	2014-2018	0.5	0.3	0.6	0.1	12.2	0.1	10.5	0.0
Percent born in Africa (B05006)	2009-2013	0.0	0.1	0.2	0.1	0.5	0.0	0.4	0.0
	2010-2014	0.0	0.1	0.2	0.1	0.5	0.0	0.4	0.0
	2011-2015	0.0	0.1	0.2	0.1	0.6	0.0	0.4	0.0
	2012-2016	0.0	0.1	0.2	0.1	0.5	0.0	0.5	0.0
	2013-2017	0.1	0.1	0.3	0.1	0.6	0.0	0.5	0.0
	2014-2018	0.0	0.1	0.4	0.2	0.6	0.0	0.5	0.0
Percent born in Latin America (B05006)	2009-2013	0.1	0.1	0.2	0.1	0.3	0.0	0.2	0.0
	2010-2014	0.1	0.1	0.2	0.1	0.3	0.0	0.2	0.0
	2011-2015	31.3	1.8	37.7	1.0	20.0	0.1	14.2	0.1
	2012-2016	31.4	1.7	37.1	0.9	19.8	0.1	14.0	0.0
	2013-2017	31.6	1.7	36.5	0.9	19.6	0.1	13.8	0.1
	2014-2018	32.1	1.8	36.7	0.9	19.4	0.1	13.7	0.1
ECONOMIC INDICATORS									
Median household income (B19001)	2009-2013	\$27,634	N/A	\$29,801	N/A	\$55,909	256	\$61,094	157
	2010-2014	\$28,349	N/A	\$29,000	N/A	\$55,870	244	\$61,489	154
	2011-2015	\$28,080	N/A	\$29,389	N/A	\$56,196	270	\$61,818	156
	2012-2016	\$29,543	N/A	\$29,880	N/A	\$57,952	331	\$63,783	188
	2013-2017	\$30,274	N/A	\$32,088	N/A	\$61,015	262	\$67,169	192
	2014-2018	\$31,508	N/A	\$35,188	N/A	\$64,251	247	\$71,228	217
Percent of individuals living below poverty (B17001)	2009-2013	41.8	2.9	37.4	1.6	17.8	0.2	15.9	0.1
	2010-2014	42.9	2.7	38.6	1.6	18.4	0.2	16.4	0.1
	2011-2015	44.9	2.9	39.0	1.5	18.2	0.1	16.3	0.1
	2012-2016	43.4	2.9	38.4	1.6	17.8	0.2	15.8	0.1
	2013-2017	41.2	3.0	36.1	1.5	17.0	0.2	15.1	0.1
	2014-2018	37.4	2.9	31.8	1.4	16.0	0.2	14.3	0.1

	Time Period (ACS 5-year sample)	Estimate for TCC Site	MOE	Estimate for Controls	MOE	Estimate for Los Angeles County	MOE	Estimate for California	MOE
ECONOMIC INDICATORS									
Percent high income (\$125k +) (B19001)	2009-2013	3.1	1.0	3.1	0.5	17.6	0.1	19.9	0.1
	2010-2014	3.3	1.0	2.9	0.5	18.0	0.1	20.4	0.1
	2011-2015	3.1	0.9	2.9	0.5	18.3	0.1	20.9	0.1
	2012-2016	2.8	0.9	3.2	0.5	19.4	0.1	22.1	0.1
	2013-2017	2.6	0.9	3.9	0.6	21.0	0.2	23.9	0.1
	2014-2018	3.6	1.0	5.7	0.7	22.8	0.2	26.1	0.1
Percent with less than high school education (\$1501)	2009-2013	50.0	2.6	50.3	1.3	23.4	0.1	18.8	0.1
	2010-2014	48.1	2.3	50.6	1.3	23.2	0.1	18.5	0.1
	2011-2015	47.2	2.2	48.5	1.3	22.7	0.1	18.2	0.1
	2012-2016	46.3	2.1	47.8	1.3	22.3	0.1	17.9	0.1
	2013-2017	47.2	2.1	47.0	1.3	21.8	0.1	17.5	0.1
	2014-2018	46.6	2.3	46.0	1.3	21.3	0.1	17.1	0.1
Percent with bachelor's degree or higher (\$1501)	2009-2013	4.0	0.9	6.7	0.6	29.7	0.2	30.7	0.1
	2010-2014	4.2	0.9	6.6	0.5	29.9	0.2	31.0	0.1
	2011-2015	4.8	0.9	6.6	0.5	30.3	0.2	31.4	0.1
	2012-2016	6.1	1.0	6.7	0.5	30.8	0.1	32.0	0.1
	2013-2017	5.9	0.9	6.9	0.6	31.2	0.2	32.6	0.1
	2014-2018	5.4	0.9	7.2	0.6	31.8	0.2	33.3	0.1
Percent employed for the population 16 years and over (B23025)	2009-2013	45.6	1.8	51.2	1.0	57.5	0.1	56.4	0.1
	2010-2014	45.9	1.8	51.1	1.0	57.5	0.1	56.4	0.1
	2011-2015	45.7	1.8	51.4	1.0	58.0	0.1	56.9	0.1
	2012-2016	47.8	1.9	51.7	1.0	58.6	0.1	57.5	0.1
	2013-2017	48.9	1.9	52.7	1.0	59.3	0.1	58.2	0.1
	2014-2018	50.9	2.1	54.6	1.0	60.0	0.1	58.9	0.1
ENERGY-RELATED INDICATORS									
Percent of households heating home with electricity (B25040)	2009-2013	18.9	2.2	24.4	1.3	25.2	0.1	25.8	0.1
	2010-2014	21.8	2.2	25.1	1.3	25.7	0.1	26.2	0.1
	2011-2015	21.3	2.4	22.8	1.2	25.9	0.2	26.4	0.1
	2012-2016	21.6	2.4	20.4	1.1	26.0	0.1	26.5	0.1
	2013-2017	21.8	2.3	19.7	1.1	25.9	0.2	26.4	0.1
	2014-2018	0.0	0.2	0.3	0.2	0.3	0.0	1.8	0.0
Percent of households heating home with other non-fossil fuels (B25040)	2009-2013	0.0	0.2	0.3	0.2	0.3	0.0	1.9	0.0
	2010-2014	0.0	0.2	0.2	0.1	0.3	0.0	1.9	0.0
	2011-2015	0.0	0.2	0.2	0.1	0.4	0.0	1.9	0.0
	2012-2016	0.1	0.2	0.2	0.1	0.4	0.0	2.0	0.0
	2013-2017	0.1	0.2	0.1	0.1	0.5	0.0	2.1	0.0
	2014-2018	0.2	0.2	0.6	0.2	2.0	0.1	2.1	0.0

	Time Period (ACS 5-year sample)	Estimate for TCC Site	MOE	Estimate for Controls	MOE	Estimate for Los Angeles County	MOE	Estimate for California	MOE
ENERGY-RELATED INDICATORS									
Percent of households heating home with utility gas (B25040)	2009-2013	61.3	2.8	61.3	1.5	67.7	0.2	66.0	0.1
	2010-2014	59.5	2.6	60.7	1.4	67.2	0.1	65.6	0.1
	2011-2015	54.9	2.6	59.4	1.4	66.6	0.2	65.0	0.1
	2012-2016	55.9	2.7	61.7	1.4	66.2	0.2	64.6	0.1
	2013-2017	58.1	2.6	64.6	1.3	66.0	0.1	64.4	0.1
	2014-2018	61.5	2.6	65.4	1.4	65.9	0.2	64.3	0.1
Percent of households heating home with other fossil fuels (B25040)	2009-2013	1.2	0.6	1.0	0.3	1.2	0.0	3.5	0.0
	2010-2014	1.0	0.6	0.9	0.3	1.3	0.0	3.4	0.0
	2011-2015	1.0	0.6	1.0	0.3	1.3	0.0	3.4	0.0
	2012-2016	0.9	0.5	0.8	0.2	1.3	0.0	3.4	0.0
	2013-2017	0.7	0.5	0.8	0.2	1.4	0.0	3.5	0.0
	2014-2018	0.9	0.5	0.7	0.2	1.4	0.0	3.5	0.0
Percent of houses with no fuel used (B25040)	2009-2013	18.4	2.3	12.2	1.0	5.6	0.1	2.9	0.0
	2010-2014	20.5	2.2	13.6	1.0	5.8	0.1	3.0	0.0
	2011-2015	22.1	2.3	14.1	1.0	5.9	0.1	3.2	0.0
	2012-2016	21.4	2.3	14.4	1.0	6.1	0.1	3.3	0.0
	2013-2017	19.0	2.2	13.9	0.9	6.2	0.1	3.4	0.0
	2014-2018	15.1	2.0	14.0	1.0	6.2	0.1	3.4	0.0
HEALTH-RELATED INDICATORS									
Percent with health insurance coverage (B27001)	2009-2013	70.2	1.8	65.6	1.1	77.8	0.2	82.2	0.1
	2010-2014	71.5	1.5	67.1	1.1	79.1	0.1	83.3	0.1
	2011-2015	75.1	1.3	71.1	1.0	81.6	0.1	85.3	0.1
	2012-2016	77.5	1.3	75.2	1.0	84.1	0.1	87.4	0.1
	2013-2017	80.6	1.5	79.1	1.0	86.7	0.1	89.5	0.1
	2014-2018	84.1	1.3	82.6	0.9	89.2	0.1	91.5	0.1
Percent with private health insurance coverage (B27002)	2009-2013	21.8	1.9	24.4	1.0	54.3	0.2	61.0	0.2
	2010-2014	20.2	1.8	23.6	1.0	54.1	0.2	60.8	0.2
	2011-2015	21.2	1.9	25.4	1.0	55.0	0.2	61.2	0.2
	2012-2016	22.3	1.8	26.9	1.0	55.8	0.2	61.8	0.2
	2013-2017	22.4	1.8	28.3	1.1	56.8	0.2	62.6	0.2
	2014-2018	25.4	2.0	29.5	1.1	57.9	0.2	63.4	0.2
Percent with public health insurance coverage (B27003)	2009-2013	51.3	2.3	44.8	1.3	29.7	0.1	29.5	0.1
	2010-2014	54.7	2.1	46.8	1.3	31.1	0.1	30.8	0.1
	2011-2015	57.4	1.9	49.5	1.2	32.9	0.1	32.6	0.1
	2012-2016	58.7	1.9	52.3	1.3	34.7	0.2	34.3	0.1
	2013-2017	61.4	2.1	54.7	1.3	36.4	0.1	35.8	0.1
	2014-2018	61.9	2.3	56.9	1.3	38.0	0.1	37.2	0.1

	Time Period (ACS 5-year sample)	Estimate for TCC Site	MOE	Estimate for Controls	MOE	Estimate for Los Angeles County	MOE	Estimate for California	MOE
HOUSING-RELATED INDICATORS									
Percent renters (B25003)	2009-2013	67.3	2.6	70.6	1.3	53.1	0.2	44.7	0.1
	2010-2014	66.5	2.3	72.1	1.3	53.6	0.1	45.2	0.1
	2011-2015	66.5	2.2	72.6	1.2	54.0	0.2	45.7	0.1
	2012-2016	64.5	2.4	72.8	1.2	54.3	0.2	45.9	0.2
	2013-2017	65.3	2.5	72.8	1.2	54.1	0.2	45.5	0.1
	2014-2018	64.7	2.4	72.5	1.2	54.2	0.2	45.4	0.1
Percent homeowners (B25003)	2009-2013	32.7	2.3	29.4	1.2	46.9	0.3	55.3	0.3
	2010-2014	33.5	2.3	27.9	1.2	46.4	0.3	54.8	0.3
	2011-2015	33.5	2.1	27.4	1.1	46.0	0.3	54.3	0.3
	2012-2016	35.5	2.4	27.2	1.1	45.7	0.3	54.1	0.3
	2013-2017	34.7	2.4	27.2	1.1	45.9	0.3	54.5	0.3
	2014-2018	35.3	2.2	27.5	1.1	45.8	0.3	54.6	0.3
Percent of households paying ≥30% of income on rent (B25070)	2009-2013	67.9	4.4	68.6	2.3	56.4	0.3	54.1	0.2
	2010-2014	69.4	4.4	70.1	2.2	57.0	0.3	54.2	0.1
	2011-2015	66.6	4.1	69.9	2.1	56.9	0.3	54.0	0.1
	2012-2016	67.0	4.3	70.4	2.1	56.5	0.3	53.6	0.1
	2013-2017	69.0	4.4	68.1	2.2	56.1	0.3	53.1	0.1
	2014-2018	68.1	4.6	65.9	2.2	55.5	0.3	52.6	0.2
Percent of households paying ≥50% of income on rent (B25070))	2009-2013	41.1	3.5	43.5	1.8	30.7	0.2	28.3	0.1
	2010-2014	41.2	3.3	44.9	1.8	31.0	0.2	28.5	0.1
	2011-2015	41.5	3.1	44.7	1.7	30.9	0.2	28.2	0.2
	2012-2016	40.7	3.3	44.8	1.7	30.6	0.2	27.9	0.1
	2013-2017	40.3	3.4	43.4	1.8	30.1	0.3	27.4	0.1
	2014-2018	40.7	3.5	40.8	1.7	29.5	0.2	27.0	0.2
Percent of households paying ≥30% of income on mortgage (B25091)	2009-2013	34.7	4.9	30.9	2.8	30.3	0.2	29.7	0.1
	2010-2014	32.8	4.8	31.5	2.7	29.4	0.2	28.5	0.0
	2011-2015	29.4	4.4	31.1	2.6	28.5	0.2	27.4	0.2
	2012-2016	29.6	4.3	32.5	2.7	27.5	0.2	26.2	0.2
	2013-2017	31.8	4.7	31.5	2.6	26.5	0.2	25.3	0.0
	2014-2018	33.2	4.8	31.5	2.7	26.0	0.2	24.7	0.0
Percent of households paying ≥50% of income on mortgage (B25091)	2009-2013	12.4	3.0	11.8	1.8	7.9	0.1	7.2	0.1
	2010-2014	10.9	2.9	10.6	1.7	7.4	0.1	6.7	0.0
	2011-2015	8.5	2.3	9.8	1.6	7.0	0.1	6.2	0.0
	2012-2016	9.3	2.4	9.7	1.6	6.5	0.1	5.8	0.1
	2013-2017	10.3	2.9	9.0	1.5	6.3	0.1	5.5	0.1
	2014-2018	9.8	2.9	9.3	1.6	6.0	0.1	5.4	0.1

	Time Period (ACS 5-year sample)	Estimate for TCC Site	MOE	Estimate for Controls	MOE	Estimate for Los Angeles County	MOE	Estimate for California	MOE
HOUSING-RELATED INDICATORS									
Percent of households with more than one occupant per room (B25014)	2009-2013	28.2	2.9	26.7	1.5	12.1	0.1	8.2	0.1
	2010-2014	25.9	2.7	26.4	1.4	12.1	0.1	8.2	0.1
	2011-2015	23.0	2.5	25.3	1.4	11.8	0.1	8.2	0.1
	2012-2016	21.9	2.5	23.9	1.3	11.8	0.1	8.2	0.1
	2013-2017	22.2	2.5	23.0	1.3	11.7	0.1	8.2	0.1
	2014-2018	22.0	2.5	22.0	1.3	11.4	0.1	8.2	0.1
Percent of households with more than one occupant per room (renters) (B25014)	2009-2013	20.5	2.5	21.2	1.4	9.3	0.1	6.0	0.0
	2010-2014	18.1	2.2	21.0	1.3	9.3	0.1	6.0	0.0
	2011-2015	15.5	2.0	20.2	1.2	9.2	0.1	6.0	0.1
	2012-2016	13.9	2.0	19.1	1.2	9.2	0.1	6.1	0.0
	2013-2017	14.3	2.0	18.5	1.2	9.1	0.1	6.0	0.1
	2014-2018	14.2	2.1	17.2	1.1	8.9	0.1	6.0	0.0
Percent of households with more than one occupant per room (homeowners) (B25014)	2009-2013	7.7	1.5	5.5	0.6	2.9	0.1	2.3	0.0
	2010-2014	7.7	1.5	5.4	0.6	2.8	0.1	2.2	0.0
	2011-2015	7.5	1.4	5.1	0.6	2.7	0.1	2.2	0.0
	2012-2016	8.1	1.4	4.8	0.6	2.6	0.0	2.1	0.0
	2013-2017	7.9	1.4	4.5	0.6	2.6	0.0	2.2	0.0
	2014-2018	7.8	1.4	4.7	0.6	2.6	0.0	2.2	0.0
Percent of households in same house 1 year ago (renters) (B07013)	2009-2013	52.6	3.0	56.2	1.5	40.2	0.2	32.7	0.2
	2010-2014	52.4	2.9	57.3	1.6	41.0	0.2	33.7	0.2
	2011-2015	53.8	2.9	58.4	1.4	42.0	0.3	34.7	0.2
	2012-2016	53.8	2.9	59.2	1.5	42.9	0.3	35.4	0.2
	2013-2017	56.0	3.1	60.2	1.5	43.4	0.3	35.6	0.2
	2014-2018	56.0	2.8	61.2	1.5	43.9	0.2	35.8	0.2
Percent of households in same house 1 year ago (homeowners) (B070103)	2009-2013	1.2	0.4	1.3	0.2	10.5	NA	12.1	0.1
	2010-2014	1.2	0.4	1.3	0.2	10.6	NA	12.3	0.1
	2011-2015	1.2	0.4	1.4	0.2	10.7	NA	12.4	0.1
	2012-2016	1.2	0.4	1.6	0.2	11.2	NA	13.0	0.1
	2013-2017	0.9	0.3	1.8	0.2	11.9	NA	13.8	0.1
	2014-2018	1.2	0.4	2.2	0.3	12.8	NA	14.8	0.1
Percent of households in same house 1 year ago (w/ income of <\$75k) (B07010)	2009-2013	84.7	1.4	86.7	0.8	75.9	NA	72.2	0.1
	2010-2014	84.6	1.3	86.8	0.9	76.1	NA	72.5	0.1
	2011-2015	86.4	1.1	87.2	0.9	76.5	NA	72.9	0.1
	2012-2016	88.4	0.9	87.6	0.9	76.6	NA	72.8	0.1
	2013-2017	90.5	1.3	88.3	1.0	76.5	NA	72.4	0.1
	2014-2018	92.3	1.2	88.8	1.0	76.2	NA	71.8	0.1

	Time Period (ACS 5-year sample)	Estimate for TCC Site	MOE	Estimate for Controls	MOE	Estimate for Los Angeles County	MOE	Estimate for California	MOE
HOUSING-RELATED INDICATORS									
Percent of housing units for rent that are vacant (B25002 and B25004)	2009-2013	3.7	1.1	3.5	0.6	2.3	0.1	2.1	0.1
	2010-2014	3.4	1.0	3.6	0.5	2.2	0.1	2.0	0.0
	2011-2015	2.9	1.0	3.1	0.5	1.9	0.1	1.8	0.0
	2012-2016	1.8	0.7	2.5	0.4	1.8	0.1	1.7	0.0
	2013-2017	1.3	0.6	2.1	0.4	1.7	0.1	1.6	0.0
	2014-2018	1.1	0.6	1.9	0.4	1.7	0.1	1.5	0.0
Percent of housing units for sale that are vacant (B25002 and B25004)	2009-2013	1.5	0.7	0.7	0.3	0.7	0.0	0.9	0.0
	2010-2014	1.2	0.6	0.9	0.3	0.6	0.0	0.8	0.0
	2011-2015	0.9	0.5	0.6	0.2	0.6	0.0	0.7	0.0
	2012-2016	0.6	0.4	0.4	0.2	0.5	0.0	0.6	0.0
	2013-2017	0.5	0.4	0.4	0.2	0.5	0.0	0.6	0.0
	2014-2018	0.7	0.5	0.4	0.2	0.5	0.0	0.6	0.0
TRANSPORTATION-RELATED INDICATORS									
Percent of households with a vehicle available (B08201)	2009-2013	36.9	2.8	39.7	1.5	35.1	0.1	32.3	0.1
	2010-2014	35.9	2.5	39.6	1.5	35.1	0.1	32.2	0.1
	2011-2015	35.8	2.5	39.4	1.4	35.1	0.2	32.1	0.1
	2012-2016	35.0	2.6	38.8	1.4	34.7	0.2	31.7	0.1
	2013-2017	34.9	2.5	37.3	1.4	34.3	0.2	31.2	0.1
	2014-2018	34.7	2.6	36.7	1.3	33.9	0.2	30.8	0.1
Percent of workers commuting to work alone by car (B08301)	2009-2013	64.3	2.9	61.4	1.3	72.4	0.1	73.2	0.1
	2010-2014	63.6	2.7	61.0	1.4	72.6	0.1	73.2	0.1
	2011-2015	63.5	2.7	63.7	1.3	73.0	0.2	73.4	0.1
	2012-2016	65.2	2.0	64.9	1.3	73.3	0.1	73.5	0.0
	2013-2017	67.5	2.2	66.8	1.4	73.7	0.2	73.6	0.1
	2014-2018	69.2	2.0	69.5	1.3	73.9	0.2	73.7	0.0
Percent of workers commuting to work by carpool (B08301)	2009-2013	15.5	2.3	13.6	1.2	10.6	0.1	11.3	0.1
	2010-2014	16.3	2.4	12.8	1.1	10.3	0.1	11.1	0.1
	2011-2015	16.0	2.3	11.9	1.0	9.9	0.1	10.8	0.1
	2012-2016	15.2	2.3	12.3	1.0	9.8	0.1	10.6	0.1
	2013-2017	13.4	2.0	11.1	0.9	9.6	0.1	10.4	0.1
	2014-2018	12.8	2.0	10.5	0.9	9.5	0.1	10.3	0.1
Percent of workers commuting to work by public transit (B08301)	2009-2013	12.1	1.8	17.8	1.2	7.1	0.1	5.2	0.0
	2010-2014	12.4	1.9	18.5	1.2	7.0	0.1	5.2	0.0
	2011-2015	13.7	1.9	17.0	1.2	6.8	0.1	5.2	0.0
	2012-2016	13.9	2.1	15.6	1.1	6.5	0.1	5.2	0.0
	2013-2017	13.5	2.2	14.6	1.1	6.3	0.1	5.2	0.0
	2014-2018	13.2	2.4	12.8	0.9	6.0	0.1	5.1	0.0

	Time Period (ACS 5-year sample)	Estimate for TCC Site	MOE	Estimate for Controls	MOE	Estimate for Los Angeles County	MOE	Estimate for California	MOE
TRANSPORTATION-RELATED INDICATORS									
Percent of workers commuting to work by foot (B08301)	2009-2013	1.9	0.8	2.2	0.4	2.9	0.1	2.7	0.0
	2010-2014	2.2	0.8	2.6	0.5	2.9	0.1	2.7	0.0
	2011-2015	1.8	0.7	2.9	0.5	2.8	0.1	2.7	0.0
	2012-2016	1.5	0.6	2.5	0.4	2.8	0.1	2.7	0.0
	2013-2017	1.2	0.6	2.4	0.5	2.7	0.1	2.7	0.0
	2014-2018	0.8	0.4	1.9	0.4	2.7	0.1	2.7	0.0
Percent of workers commuting to work by bike (B08301)	2009-2013	0.2	0.3	0.8	0.3	0.9	0.0	1.1	0.0
	2010-2014	0.2	0.2	1.0	0.3	0.9	0.0	1.1	0.0
	2011-2015	0.4	0.3	1.0	0.3	0.9	0.0	1.1	0.0
	2012-2016	0.4	0.3	0.9	0.3	0.9	0.0	1.1	0.0
	2013-2017	0.4	0.3	1.0	0.3	0.9	0.0	1.1	0.0
	2014-2018	0.3	0.2	0.8	0.2	0.8	0.0	1.0	0.0
Percent of workers commuting to work by other modes: taxicab, motorcycle, and other (B08301)	2009-2013	1.5	0.7	1.1	0.3	1.2	0.0	1.3	0.0
	2010-2014	1.5	0.7	1.2	0.3	1.3	0.0	1.3	0.0
	2011-2015	0.7	0.4	0.9	0.3	1.4	0.0	1.4	0.0
	2012-2016	0.6	0.4	0.9	0.3	1.4	0.0	1.4	0.0
	2013-2017	0.7	0.4	0.9	0.3	1.5	0.0	1.5	0.0
	2014-2018	0.6	0.4	1.5	0.3	1.6	0.0	1.6	0.0

Appendix 7: Expanded Results for Vehicle Collisions Involving Cyclists and Pedestrians

Indicator	Dataset Year	Gross Number of Collisions							
		Value for TCC Site by Buffer Size				Value for Controls by Buffer Size			
		0ft	50 ft	100 ft	200 ft	0ft	50 ft	100 ft	200 ft
Bicycle Collision at Injury Level 1: Fatal	2018	1	1	1	1	1	1	1	1
	2013	0	0	0	0	1	1	1	1
	% Change	>+100%	>+100%	>+100%	>+100%	None	None	None	None
Bicycle Collision at Injury Level 2: Severe Injury	2018	2	2	2	2	12	14	14	15
	2013	1	2	2	2	5	6	6	6
	% Change	+100%	0%	0%	0%	+140%	+133%	+133%	+150%
Bicycle Collision at Injury Level 3: Visible Injury	2018	11	12	1	1	49	64	65	66
	2013	6	8	4	4	48	65	71	79
	% Change	+83%	+50%	-75%	-75%	+2%	-2%	-8%	-16%
Bicycle Collision at Injury Level 4: Complaint of Pain	2018	6	6	3	3	49	63	65	68
	2013	7	10	2	2	60	80	84	86
	% Change	-14.3%	-40%	+50%	+50%	-18%	-21%	-23%	-21%
Pedestrian Collision at Injury Level 1: Fatal	2018	4	4	1	1	19	20	20	20
	2013	1	1	0	0	7	11	11	12
	% Change	+300%	+300%	+100%	+100%	+171%	+82%	+82%	+67%
Pedestrian Collision at Injury Level 2: Severe Injury	2018	8	11	1	1	47	59	59	62
	2013	5	5	1	1	24	31	21	31
	% Change	+60%	+120%	None	None	+96%	+90%	+90%	+100%
Pedestrian Collision at Injury Level 3: Visible Injury	2018	12	18	0	0	81	101	104	109
	2013	15	21	6	6	68	85	87	91
	% Change	-20%	-14%	-100%	-100%	+19%	+19%	+20%	+20%
Pedestrian Collision at Injury Level 4: Complaint of Pain	2018	23	29	1	2	93	116	118	121
	2013	12	16	1	1	65	90	93	98
	% Change	+92%	+81%	None	+100%	+43%	+29%	+27%	+23%

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