



Image: Abandoned vehicle spray painted with the words "Tow Me." Taken by the author on Foothill Ave, East Oakland.

“A real patriot is the fellow who gets a parking ticket, and rejoices that the system works.”

-Bill Vaughan

Parking Enforcement in the City of Oakland: An Equity Analysis

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Background

In the five years since its launch, the City of Oakland's Department of Transportation (OakDOT) [has become a national model](#) for incorporating equity into transportation planning, policy, and operations. In the interest of holding ourselves accountable to this standard, we periodically evaluate our own operations to identify potential areas of inequity and opportunities to better serve the people of Oakland, especially those people making up the City's underserved and disadvantaged communities.

One of OakDOT's core responsibilities is managing parking across the city. Parking enforcement is one of the department's most important tools and provides many benefits. Studies show lack of enforcement leads to [more accidents, increased congestion, double parking, and sidewalk parking](#). Non-compliance can hurt public safety by impeding roads for emergency vehicles, hurting pedestrians, and limiting options for disabled persons. Parking enforcement supports street sweeping protects the Bay from [harmful pollutant run-off into the water supply](#) and to help keep Oakland streets litter free. Effective enforcement also ensures availability of on-street parking in commercial districts, supporting local businesses while [saving hundreds of tons of CO-2 emissions](#) by reducing circling for parking spots.

However, parking enforcement can disproportionately impact low income and minority communities. For example, a 2015 Department of Justice report found that parking enforcement was part of a larger [predatory enforcement culture in Ferguson, Missouri which led to increased fines, loss of licenses, and jail time for the city's African-American community](#). A survey conducted as part of an OakDOT/Civic Design Lab (CDL) initiative focused on parking found that [24% of Oaklanders who received tickets were not financially able to pay the fine](#), placing them at risk of having a necessary mode of transportation for work, healthcare, and school immobilized or impounded.

Equitable parking management is a delicate balance between ensuring that streets and sidewalks are safe, clean, and accessible while ensuring that enforcement is fair, easy to understand, and does not impose undue economic harm on registered vehicle owners. OakDOT uses a variety of methods to accomplish these goals including programs such as variable-rate pricing, affordable e-bike rentals, and transit subsidies for low-income residents via a pilot program known as [Universal Basic Mobility](#). Most importantly, however, the difficult task of parking enforcement is supported by a team of highly skilled and dedicated Parking Control Technicians.

Recently, OakDOT has received concerns from residents and elected officials that not enough enforcement resources are allocated to certain communities. Lack of sufficient enforcement may lead to less clean streets and potential hoarding of on-street parking spots. This report evaluates our parking enforcement across the city. Specifically we ask:

- **How effective is parking enforcement at increasing public health, safety, economic vitality?**
- **What factors drive increased enforcement in a community?**
- **And, are these factors equitable across racial and socioeconomic lines?**

Quick Summary

- Lower rates of homeownership, income, & available parking, coupled with higher rates of crime & 311 reports significantly predict parking enforcement in residential neighborhoods.
- Street sweeping tickets represent the majority of overall tickets issued and the vast majority of residential tickets. These tickets are additionally predicted by higher black populations, and lower white & educated populations. As these communities tend to be denser, more urban, and possess a higher ratio of vehicles to parking, the greater number of tickets may be a result of higher need for enforcement. However, because the environmental benefit of street sweeping tickets is shared across the entire region, this may place undue financial harm on underprivileged communities.
- A department wide focus on street sweeping and meter (economic vitality) tickets may leave underprivileged communities with more need for public safety (curb/sidewalk violations, driveways, time-limit) tickets underserved. Potential improvements to equity might include placing more emphasis on this category of tickets, with some lost revenue being recouped from graduated parking fines on repeat, high-income offenders.
- Most communities receive an appropriate share of enforcement resources, according to our equity model. It is possible that some neighborhoods in North Oakland/Adams Point and Fruitvale/Eastlake may receive a greater share, and some neighborhoods in East Oakland and North Oakland may receive a slightly lesser share. Over/under predictions do not appear to be geographically clustered; many areas of the city contain side-by-side over and under predictions.
- Even if enforcement resources are distributed equitably, underprivileged communities may still experience higher rates of illegal parking, due to factors including higher density, household sizes, renter rates, and crime rates. While more affluent communities experience the benefits of both well-controlled parking and low ticket rates, underprivileged communities may experience a “catch-22.” Should they receive less enforcement, they suffer the negatives of illegal parking, whereas should they receive higher enforcement, they suffer the financial burden of higher ticketing.

Study

Technical information and address lookup: <https://jtinker.org/oaklandstats/>

Parking Enforcement was evaluated over the calendar year 2019 (one year period). While more recent data is available, stay at home orders during the Covid-19 pandemic greatly affected enforcement during 2020 and 2021, and policies largely remain the same. The one-year timeframe follows similar studies, including Brazil et. al (2016).

Citation data was collected from Oakland's publically available Data Portal, and aggregated at the Census Block Group level and grouped by OakDOT's Planning areas. Block Groups are smaller subdivisions of census tracts that more closely model neighborhoods. Over 100 metrics, including **racial makeup, income, education, 311 reports, road paving quality, home ownership, parking availability, and vehicle ownership** were analyzed to determine their effect on enforcement.

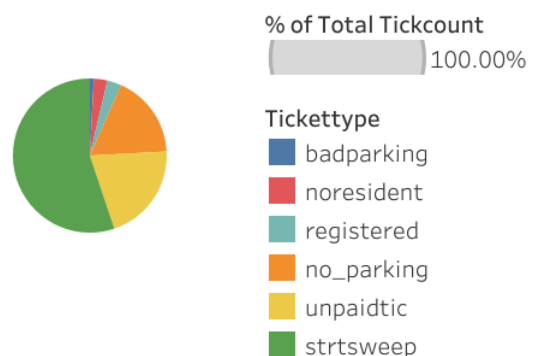
If you'd like to discover how your neighborhood compares to the rest of Oakland for any of these statistics, we have created a tool to view these statistics by address. To use the tool or view more detailed information about datasets and methodologies, [please visit here](#).

Results

Roughly 313,000 parking tickets were issued in the City of Oakland in 2019.

- 55.2% were for street sweeping (public health) violations
- 20.7% were for meter (economic vitality) violations
- 17.5% for curb, driveway, and other illegal parking (public safety) violations
- The remaining 6.6% includes unregistered vehicles and residential permit (quality of life) violations, among others.

Ticket Type
Percentages
2019

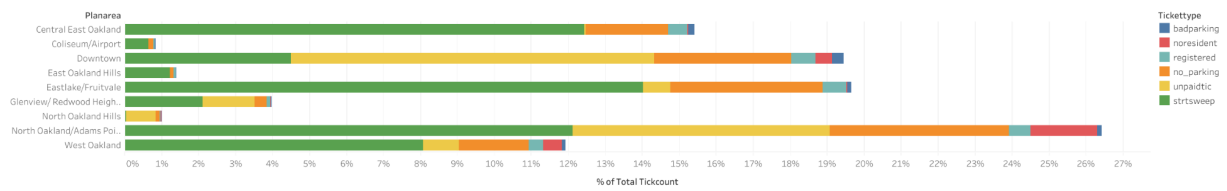


Organized by Plan Area, East Oakland, Fruitvale, Downtown and North Oakland receive the majority of tickets, with meter (economic vitality) violations driving the latter two.

Sheet 2

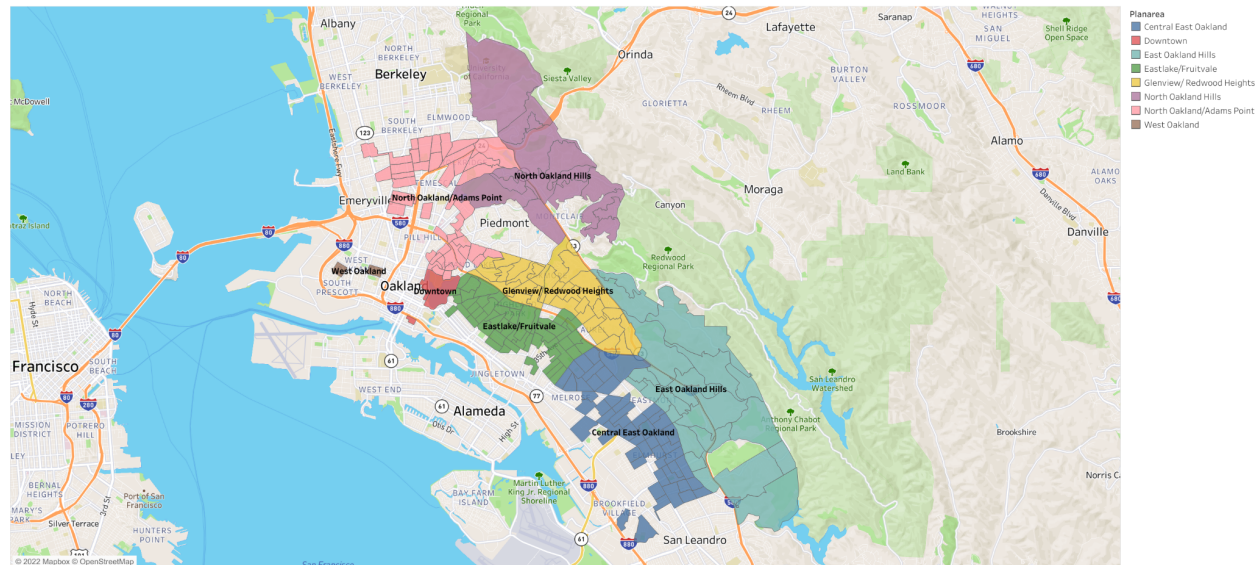


Total Ticket Count in 2019

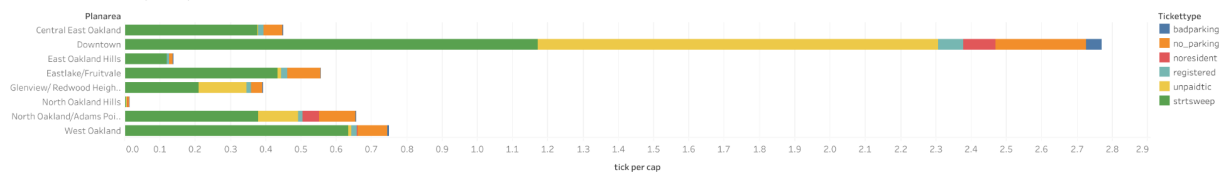


For public health and public safety, it's common to focus on residential neighborhoods. We evaluate tickets per capita using Brazil et al. (2016)'s definition of a residential neighborhood: having 90% of parcels dedicated to housing. Note that most of Downtown, Airport (commercial) and West Oakland (industrial) is excluded.

Sheet 6



Residential Tickets per Capita 2019



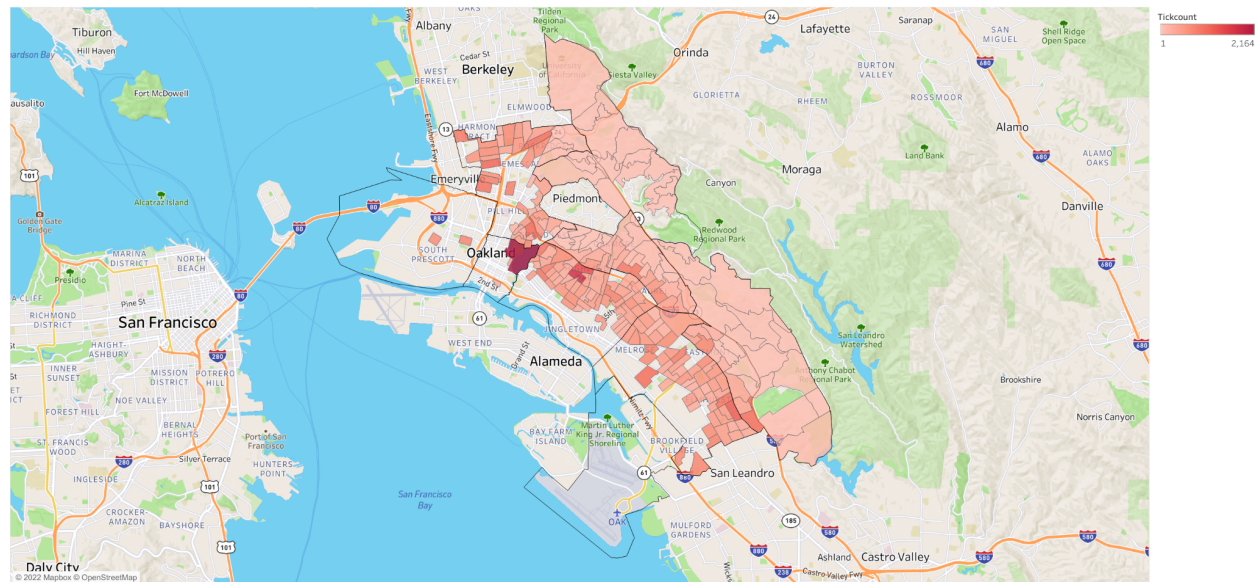
Overall ticket counts are relatively even, aside from Downtown (likely explained by the high number of non-residents parking in neighborhoods) and the North & East Oakland Hills, located in areas harder for technicians to reach, and with an abundance of private, non-monetized parking space.

For the remainder, we separate by ticket purpose.

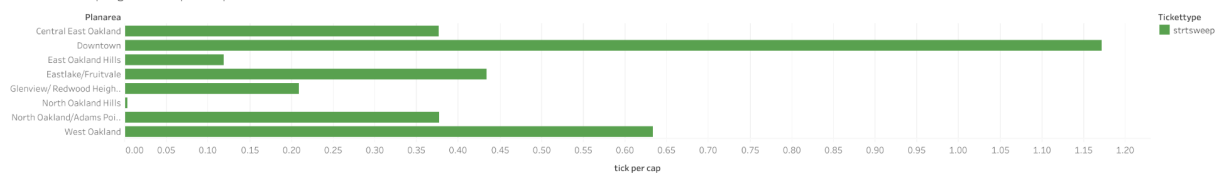
Street Sweeping (Public Health) Tickets

Street sweeping represents the largest swath of tickets, overall (55%) and in residential neighborhoods (80%). Street sweeping ticket rates tend to be the lowest in larger, affluent communities deep in the suburbs.

Sheet 6 (2)



Street Sweeping Tickets per Capita 2019



We find street sweeping ticket rates increase in neighborhoods with¹

- less homeownership
- more overall crime
- lo
- wer income (< \$75,000)
- lower education (< Bachelor's degree),
- higher black populations, lower white populations
- less on street & free parking
- more 311 reports about road quality and signage
- higher population
- less miles of paved road.

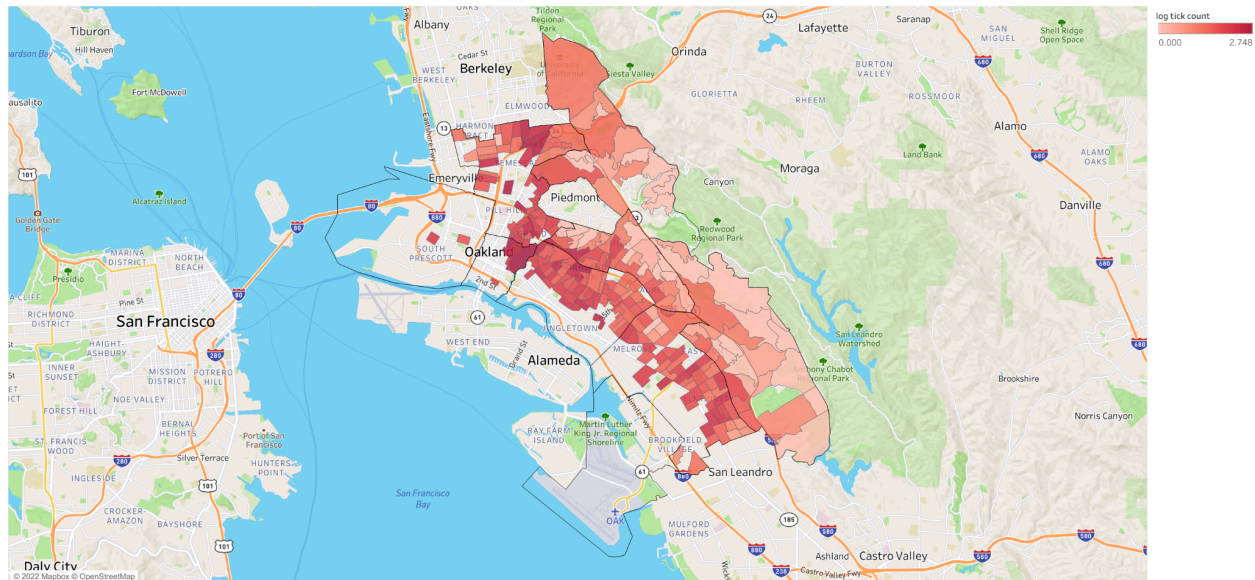
We note that while street sweeping has in-neighborhood benefits, such as beautification, that primary benefit (pollution) serves the greater Bay Area. Street sweeping is also enforced overnight, which may be more difficult for working families.

¹ Statistical significance $p < 0.01$ for all. Overall model r-squared: .566

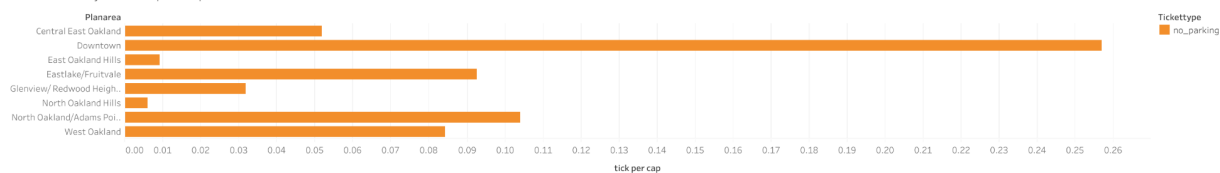
Curb, Driveway, and Illegal Parking (Public Safety) Tickets

Public safety represents the third largest swath of tickets overall (17.5%) and second largest in residential neighborhoods (13.6%). Public safety tickets also skew towards urban neighborhoods with similar factors, though unlike street sweeping they do not have statistically significant racial, education, or population predictors.

Public Safety Tickets



Public Safety Tickets per Capita 2019



We find public safety ticket rates increase in neighborhoods with²

- less homeownership,
- more overall crime,
- lower income (< \$75,000)
- less on street & free parking
- more 311 reports about parking and signage
- less miles of paved road.

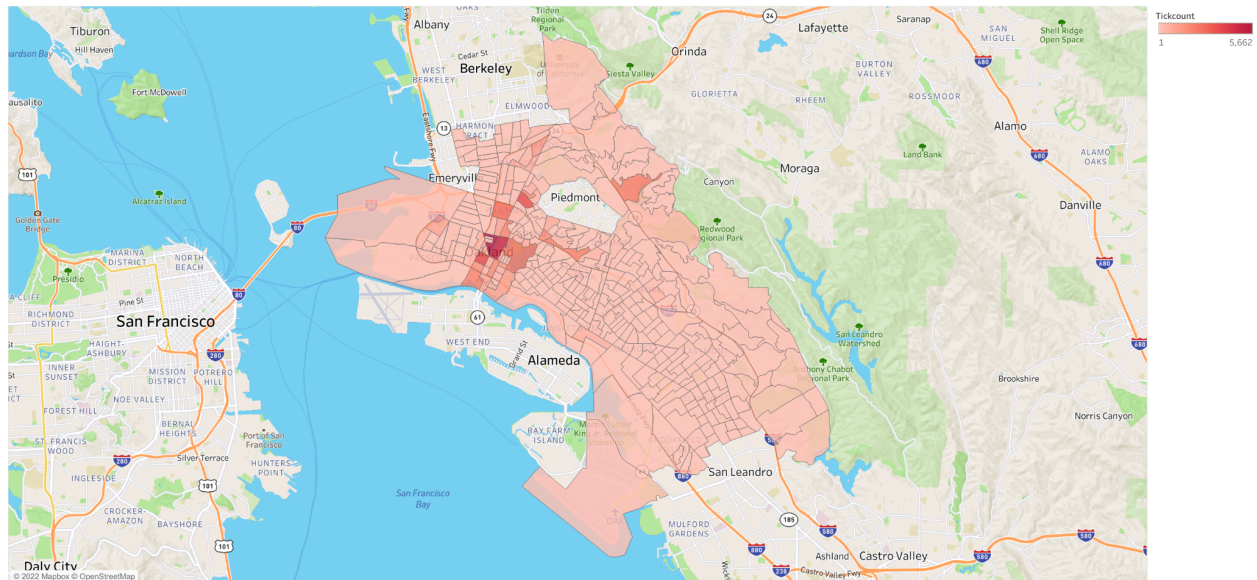
Public Safety tickets predominantly benefit residents in their respective neighborhoods. Ideally we would rather see racial and education indicators here than for street sweeping tickets, which have equal benefit to those outside the community. Public Safety tickets receive, by far, the most requests for enforcement by residents. We theorize that more affluent suburban neighborhoods have less need for enforcement due to availability of free parking, therefore less attention to these tickets, compared to economic vitality and street sweeping, predominantly affect low income residents in more urban areas.

² Statistical significance $p < 0.01$ for all listed. Population $0.05 < p < 0.1$. All others $p > 0.1$. Overall model r-squared: .400

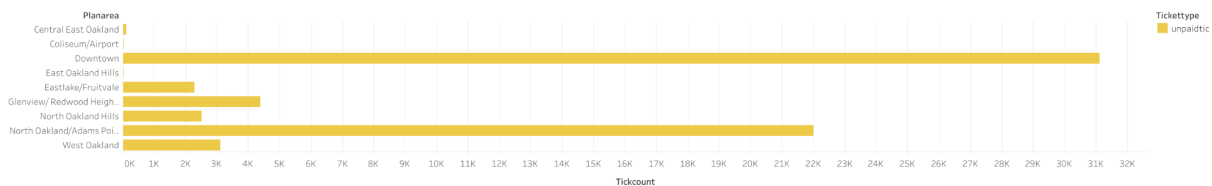
Meter (Economic Vitality) Tickets

Meter violations (economic vitality) represent the second largest swath of tickets overall (20.7%) and third largest in residential neighborhoods (11.2%). Meter tickets are largely found in non-residential areas. Note that these graphs are city-wide, and not per capita as offenders are less likely to live in the neighborhoods.

Meter Tickets



Meter Ticket Count in 2019



We find public safety ticket rates increase in neighborhoods with³

- more overall crime,
- higher education (< Bachelor's degree)
- Higher white and asian populations
- Lower black populations
- More off-street parking
- Better paved roads
- more 311 reports about parking and signage
- More rentorship

We note that nearly all of these indicators also overlap with urban city centers, which are likely the main driver. We suggest that attention may be diverted away from these highly focused areas to better serve public safety concerns.

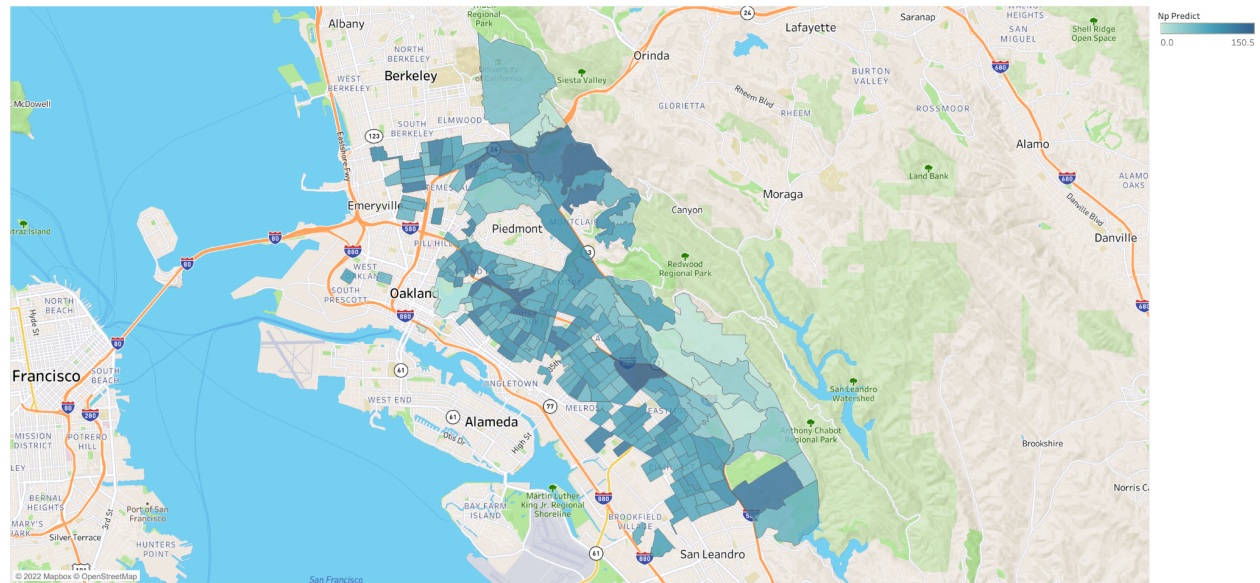
³ Statistical significance $p < 0.01$ for all listed. Overall model r-squared: .411

Suggested Model

We propose that in an ideal, equitable world parking tickets are predicted solely by demand & rates of violations. In an oversimplified model, we use free parking spaces per capita as a proxy for demand, and total 311 reports as a proxy for rates of violation.⁴

In the following map, darker areas should receive more tickets according to the model.

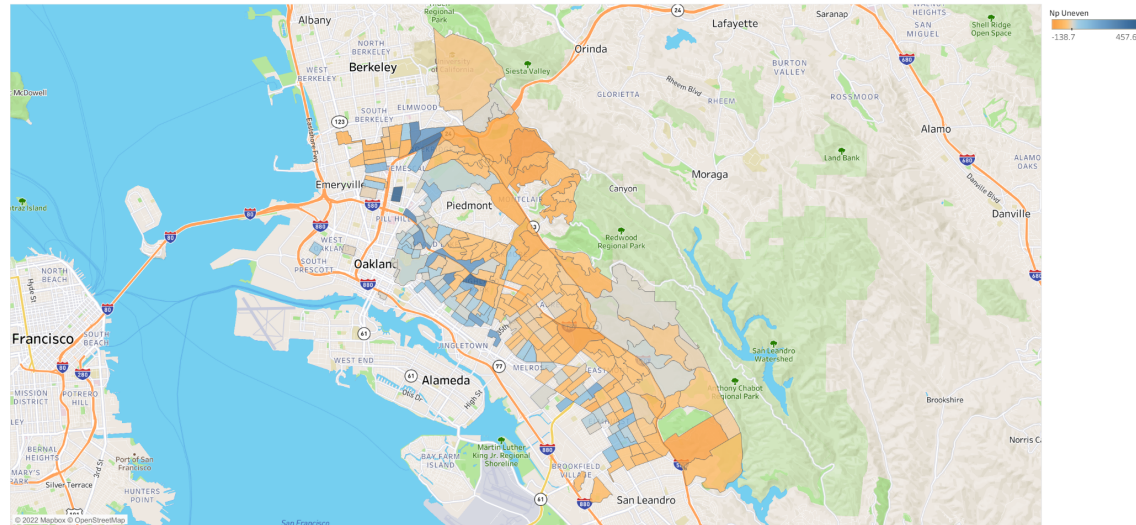
Modeled Parking Enforcement



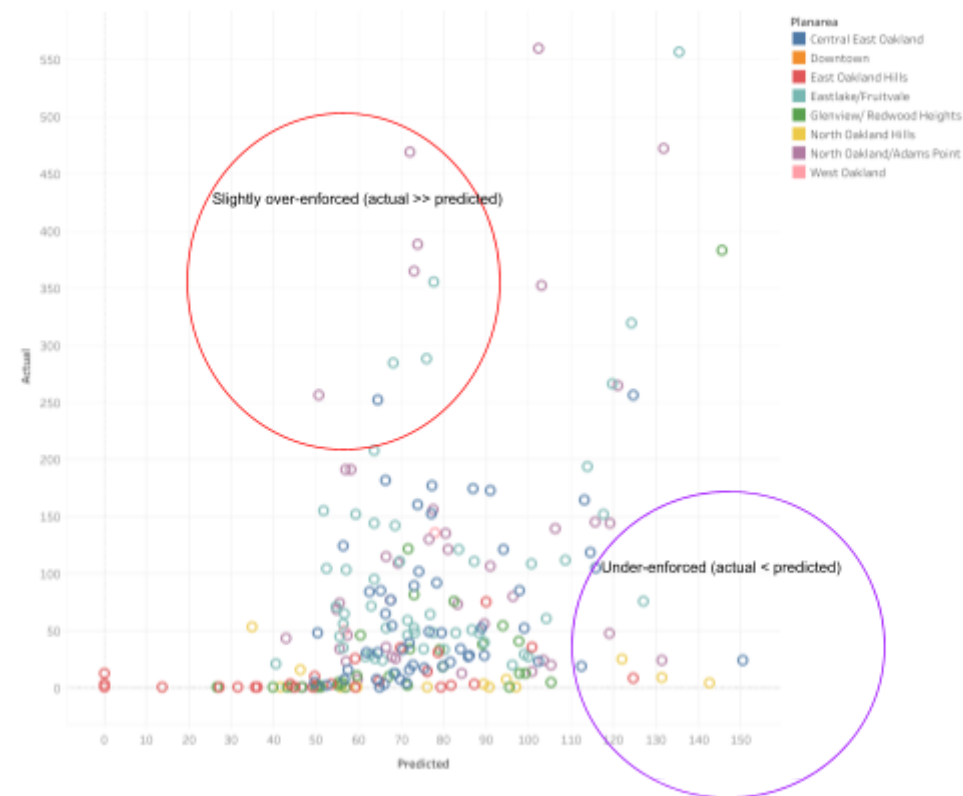
⁴ Both fields are statistically significant ($p \leq .001$). R-squared: 0.093

The following map represents the difference between actual tickets issued in 2019, and the amount we would expect to be issued, if enforcement depended only on demand & number of 311 reports. Darker orange indicators areas potentially requiring more enforcement, while darker blue indicates areas potentially requiring less enforcement. Note that many neighborhoods within the city center, East Oakland, and North Oakland fall on both sides of the spectrum.

Over and Underenforcement for Public Safety



Sheet 15



The map above is a scatter plot. Each circle represents a neighborhood. Notice areas over-enforced (red circle) are largely in North Oakland/Adams Point and Eastlake/Fruitvale. Under-enforced areas exist across most planning areas.