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CPLN520 – Final Project

**M E M O R A N D U M**

From: Kristin Chang, Chief Data Advisor at the *Mayor's Office of Oakland*

To: Mayor Libby Schaaf

RE: Policy Recommendations for Crime Mapping

Date: December 17, 2020

CITY OF OAKLAND

Dear Mayor Schaaf,

I am writing to you to caution against the City of Oakland's utilization of crime mapping for predictive policing because of potentially harmful biases rooted in the data collection process. While it may be impossible to completely eradicate foundational biases, I recommend policy adjustments that enforce more explicit guidelines regarding data usage as well as stricter regulations for publishing crime maps.

The National Institute of Justice under the U.S. Department of Justice recently supported the development of a reference guide for law enforcement agencies interested in predictive policing. The guide defines predictive policing as the process by which analytical techniques are used to identify likely targets for police intervention in order to predict and prevent crime[1]. The guide outlines five major pitfalls of predictive policing: Focusing on prediction accuracy instead of tactical utility, Relying on poor-quality data, Misunderstanding the factors behind the prediction,

[1] Walter L. Perry, Brian McInnis, Carter C. Price, Susan C. Smith, John S. Hollywood "Predictive Policing: The Role of Crime Forecasting in Law Enforcement Operations," RAND Corporation 2013.

Underemphasizing assessment and evaluation, and Overlooking civil and privacy rights. Upon initial review, I strongly advise that the City of Oakland's Open Data department review their crime mapping operations for each of these pitfalls. The most immediate concerns are regarding the pitfalls of Relying on poor-quality data and Underemphasizing assessment and evaluation.

The data quality of Oakland's police department is not necessarily inaccurate, but the department should be aware of biases that exist in the data collection process that may contribute to weak predictions. A clear example of bias existing in crime mapping is actually available on the City of Oakland's website in which there is inherent bias in the data collection process (map presented in *Figure 1*). This bias is due to the fact that crime mapping generally focuses on the geographic locations at which many crime events occur in order to identify hotspots of crime. The primary source of data collection for these maps is police reports. Thus, neighborhoods with more police presence, are likely to have more reports filed than neighborhoods with lower police presence simply due to the level of surveillance. The false implication in this situation is that neighborhoods with a large number of reports become criminalized and viewed as high risk areas in need of more police presence. This creates a positive feedback loop in which more police are assigned to neighborhoods with high amounts of crime reports, those officers file even more reports, and the neighborhood does not appear to improve. This is currently how the Oakland Crime Data and Crime Maps powered by the Oakland Police Department are reported on the City of Oakland website. Further, because these neighborhoods become associated with criminogenic risk, officers and other city officials begin to view this risk as the primary characteristic of the neighborhood making them biased against the communities that live there. Whether intentional or not, police departments feel inclined to keep surveillance of these areas high, which further

perpetuates bias in the resulting crime maps. This is just one illumination of the harmful effects of crime mapping.

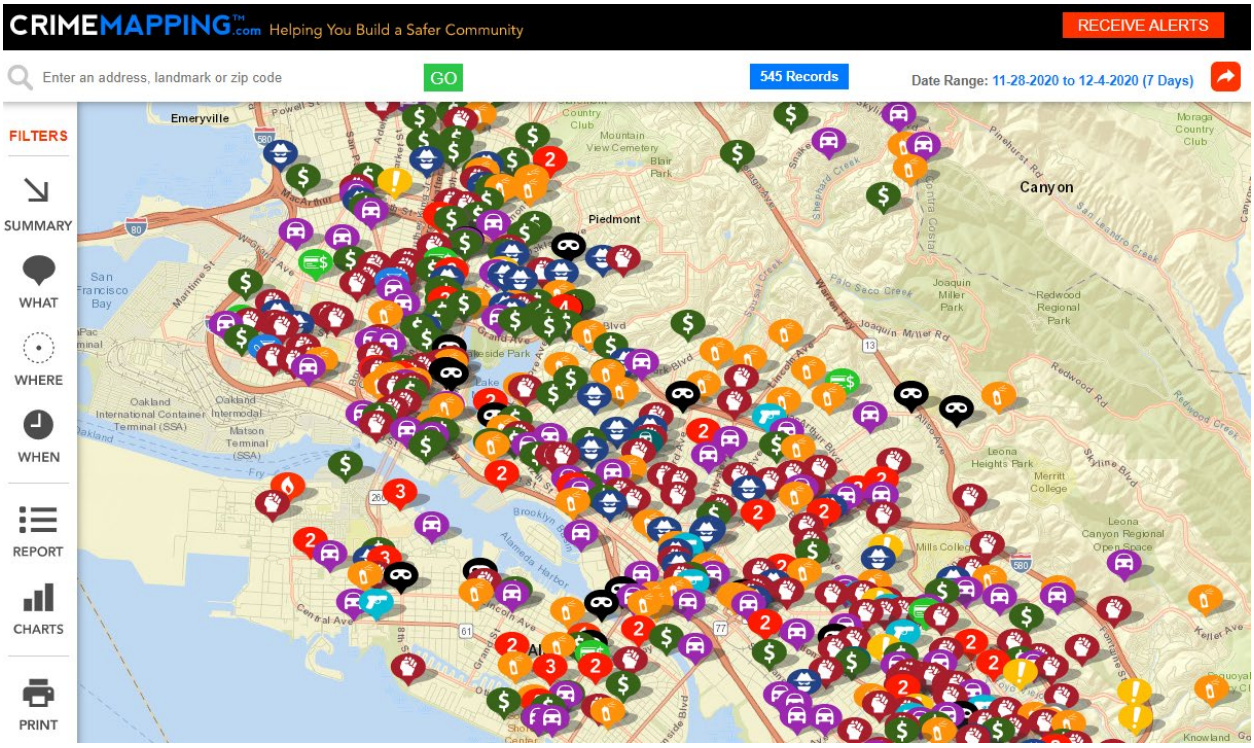
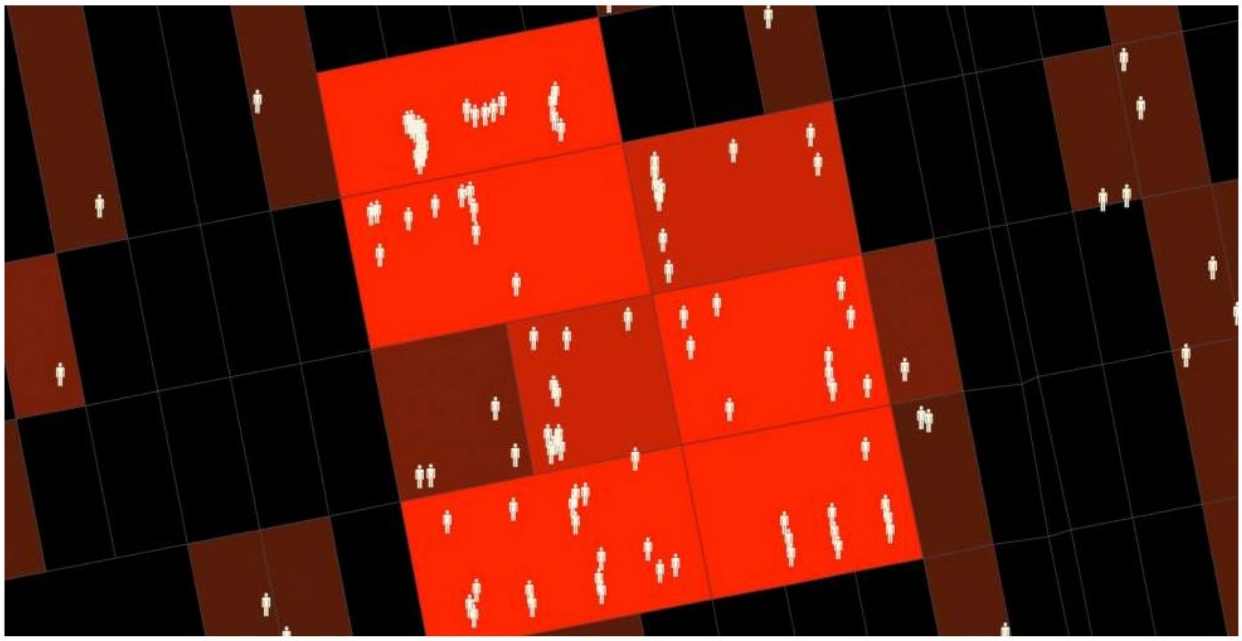



*Figure 1. Oakland Crime Map, Oakland Police Department.* https://www.crimemapping.com/map/agency/265

While the traditional crime map is most common, there are other ways to map criminal justice data. However, these maps are still subject to the pitfalls outlined above. An example of this is the "Million Dollar Block" project conducted by Columbia University's Center for Spatial Research. This two-year research and development project uses criminal justice statistics to visualize the geography of incarceration in New York, Phoenix, New Orleans, and Wichita. The maps of "million dollar blocks" were intended to show the migration flow between cities and prisons while also presenting the amount of money cities spend on mass incarceration.[2] The project is successful in

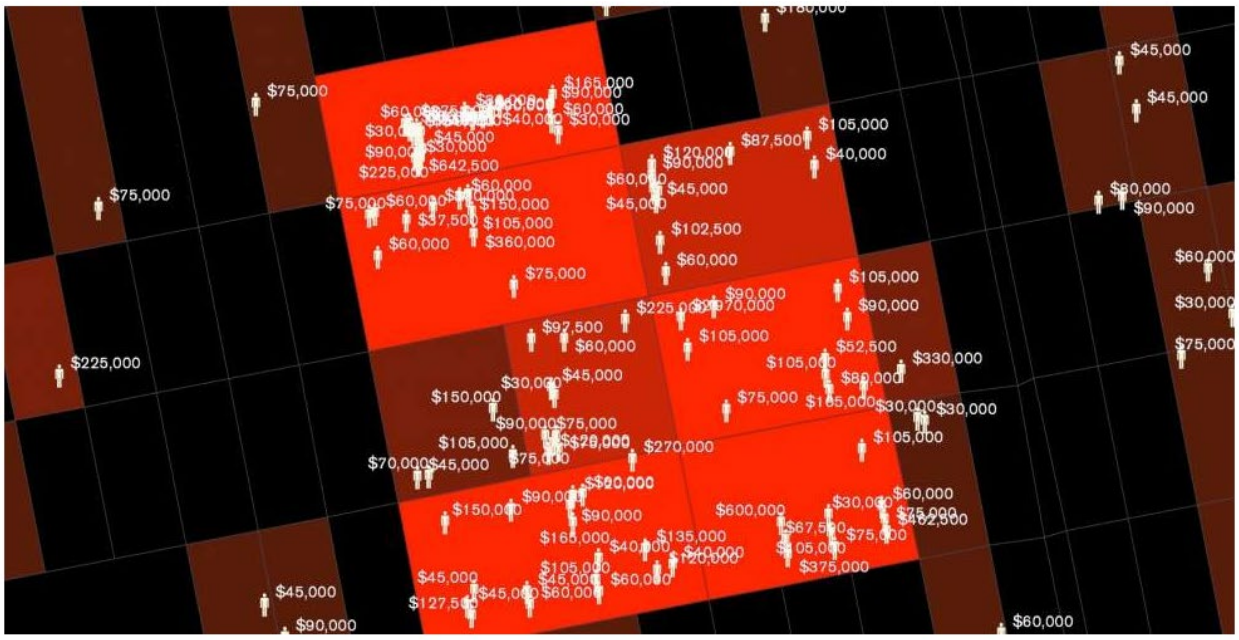
[2] Story, Brett. 2016. "The prison in the city: Tracking the neoliberal life of the 'million dollar block.'" Theoretical Criminology 20:3, pp. 257-276.

highlighting and identifying neighborhoods within the cities where there are high numbers of formerly incarcerated individuals and how these geographies differ from areas where large amounts of money are spent on incarceration. Samples of maps from the project can be seen below in *Figure 2* and *Figure 3*. However, like all data visualizations, the maps have been subjected to varied interpretations and applications when it comes to prison reform. The maps indicate that the prison population tends to cluster geographically. In other words, many formerly incarcerated individuals live in and return to the same neighborhoods. Some city officials and police departments have interpreted this to mean that some neighborhoods have higher crime rates than others, which has led to more police presence and surveillance in those neighborhoods as an attempt to lower the crime rates. Police departments justify this allocation of police officers by the belief that the exposure of crime within a neighborhood affects individual behaviors – this is also known as the neighborhood effect. In addition, the "Million Dollar Block" project indirectly encourages the decision to increase police presence in these identified neighborhoods by implicating that the city could save money by lowering the amount of crime. This interpretation of the project becomes extremely problematic because the focus is derailed from migration pattern and flow of people and money back to the traditional method of crime mapping. This project is an example of the pitfall of Underemphasizing assessment and evaluation because lack of appropriate evaluation has left room for misinterpretations of the project's applications. The City of Oakland should be wary of this pitfall because crime maps are subject to the same misinterpretations without proper assessments.



Million Dollar Blocks in Brooklyn's Community District 16

*Figure 2. Million Dollar Blocks in Brooklyn's Community District 16. The Spatial Information Design Lab and the Justice Mapping Center. https://c4sr.columbia.edu/projects/million-dollar-blocks*




Prison expenditures per capita in Brooklyn's Community District 16

*Figure 3. Prison Expenditures per capita in Brooklyn's Community District 16. The Spatial Information Design Lab and the Justice Mapping Center.*

*https://c4sr.columbia.edu/projects/million-dollar-blocks*

Although problematic, using maps and visualizations to understand crime on a geographic scale is important for cities as a way to stay accurately informed on issues pertaining to resource allocation, spending, and fairness when it comes to monitoring their police departments. Because of biases related to neighborhood effects, mapping data related to crime can reveal patterns such as uneven clustering which could mean that one neighborhood is being over-policed. A more positive interpretation of crime mapping is that it could assist cities in understanding and differentiating between genuine risk and risk that is inflated by over-reporting. Thus, the City of Oakland should not totally abandon the attempt to make data-driven decisions when it comes to crime, but rather explore other use cases and interpretations.

Because crime report data is the most readily available form of open data, it is unrealistic to say that it should be completely eradicated from the mapping process. However, I believe that stronger guidelines around usage of the data and stricter restrictions on publishing crime maps should be instilled in order to prevent faulty interpretations and incorrect victimizations as recommended by the National Institute of Justice. I recommend that the City of Oakland adopts these regulations for both internally and externally facing maps. The guidelines around data usage should include a restriction on using the data to justify an increase in surveillance. The goal of this measure is to slow or halt the feedback loop that leads to over policing. Additionally, publishers of crime maps should be required to utilize more than one data source. This will further dilute the biases present in a single entity's reports. Lastly, crime maps and any updates to crime maps should be required to undergo a series of quality assurance checks prior to being published – both internally and externally. This check will involve reviews for the new guidelines as well as evaluations for accuracy and fairness across neighborhoods. This more robust publication process

will decrease the amount that interpretations delineate from the maps' original intentions. Following these recommendations will assist the City of Oakland in avoiding the two most immediate pitfalls. To further refine predictive policing, the department should continually evaluate operations to avoid the remaining pitfalls not addressed in this memo: Focusing on prediction accuracy instead of tactical utility, Misunderstanding the factors behind the prediction, and Overlooking civil and privacy rights.

The traditional method of crime mapping that exists on the City of Oakland's website in its current form can have harmful effects on neighborhoods and strong Oakland communities. Policy adjustments that regulate the usage of crime data and publication of crime maps can reduce the negative effects of inherent biases and misinterpretations. I strongly urge consideration of these adoptions at the recommendations of the National Institute of Justice under the U.S. Department of Justice. I encourage the Mayor's Office to recognize the discrimination caused by traditional crime mapping and to pledge to view predictive policing through a lens of fairness for all of Oakland's communities.

Thank you for your time and consideration.