Methods for Analyzing Inclusive Neighborhood Development
Final Report

Prepared for: Baltimore City Department of Housing and Community Development
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Main Pitch/Summary/Abstract

This project aims to address the question of how the Baltimore City DHCD can measure the progress of housing and development initiatives. Baltimore has a long history of inequitable development along racial and income lines, which has contributed to high rates of poverty and social injustices in certain neighborhoods. In order to address this issue, the DHCD has put forward a framework based on 3 key strategies: expanding resources and capacity for community development, promoting access and equity, and investing in *all* neighborhoods[1]. Using this framework to guide our research, we have found several key methodologies that could be implemented to model and track inclusive development progress in Baltimore City neighborhoods.

Problem Statement Background + Additional Resources and Examples

In recent years, Baltimore City has seen promising development and re-investment in many key neighborhoods. These communities benefit from increased economic activity, stabilizing property values, and improved living standards. However, with these benefits comes the challenge of promoting inclusive development through protecting lower-income residents and maintaining the historical character of Baltimore neighborhoods. With these concerns in mind, the DHCD has implemented a blueprint that contains strategic interventions for promoting equitable progress. This project endeavors to develop a methodology for tracking the progress of these interventions and the overall development of Baltimore city neighborhoods.

According to the CDC, gentrification is the transformation of a neighborhood from low to high-value[2]. This process raises housing prices and may result in the displacement of long-time residents and businesses who can no longer afford the cost of living in these areas. This issue impacts the social and economic well-being of the greater community and reduces the social capital of the city as a whole. Affected cities have taken policy steps to address this issue, such as hiring community development coordinators to advise the city government, or partnering with research centers to track neighborhoods along various stages of gentrification. These actions are undertaken with the hope of gaining a better understanding of community development and how city government can facilitate equitable progress. In this report, we conduct a literature review and policy analysis of how comparable cities have monitored inclusive neighborhood

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[1] "A New Era of Neighborhood Investment: A Framework for Community Development", Baltimore City Department of Housing & Community Development, 2019.

[2] "Health Effects of Gentrification." *Healthy Places*, Centers for Disease Control and Prevention, www.cdc.gov/healthyplaces/healthtopics/gentrification.htm.

development. We analyzed the success of these measures and how they may fit into the context of Baltimore City, then used these data points to form our recommendations to the DHCD. Immediate action is essential on this matter, as inequitable community development can have dire consequences to the social and economic health of a city. We are optimistic about the ability of these methodologies to contribute to the success of the DHCD's framework for community development.

Data Findings and Interpretations

Comparing Metrics of Inclusivity		
Othering & Belonging Institute Inclusiveness Index	**Urban Institute Inclusion Map**	**The World Bank: Inclusive Cities**
Outgroup Violence	Income Segregation	Affordable Necessities
Political Representation	Housing Affordability	Equal Rights (and Representation)
Income Inequality	Share of Working Poor Residents	Job Opportunities
Anti-Discrimination Laws	High School Drop-Out Rate	
Rates of Incarceration	Racial Segregation	
Immigration / Asylum Policies	Racial Gaps in Homeownership	
	Poverty	
	Educational Attainment	
	Share of City's Population that are People of Color	

Clearly there are disparities in what measures inclusiveness. This challenge is what drives further research in how to make Baltimore a more inclusive place. Foreseeable problems with this task may be:
- Not having a concise way of measurement
  - How do you measure policies? Can you measure their effectiveness?
- Having too many/not enough metrics
  - The disparities above provide a visualization on how difficult it is to encompass everything that should be necessary to have an inclusive neighborhood

Future methods of manipulating data to create graphics of inclusiveness or lack thereof could include:

- A cluster analysis of household income
  - How much of Baltimore falls below the poverty line?
- A geospatial analysis of household income
  - Does the "black butterfly" appear? Can this be linked to the above metric of "Racial Gaps in Homeownership?"

In an effort to identify variables that make Baltimore neighborhoods more likely or less likely to change, Detroit's _Turning The Corner_ report was utilized. This report identified a "Neighborhood Change Index" that framed five indices that may make a neighborhood more vulnerable to experiencing transformational neighborhood change[3] (the green cells are available for update at least once a year). Transformational neighborhood change, in this report, is regarded as "economic or physical changes that could substantially affect the composition and culture of a community."

Index Variables

Social Advantage	Housing Stability	Crime	Business	Protective Activities
Residential Vacancy	Blight Violations	Property Crime	Commercial Addresses	Residential Addresses
Demolition Permits	Rental Count	Violent Crime	Commercial Vacancies	Construction Permits
Tax Foreclosures	Sales Count			Fire Alarm Calls
Blight Violations	Speculator Owned Properties			
Inactive DTE Agreement				
Water Shutoffs				

Turning The Corner

A negative side effect of transformational change is displacement. The quantitative research involved helped develop indices that could be measured in closer-to-real-time to see what changes are taking place.

The report explains that, "High scores on the Neighborhood Change Index… show the neighborhoods are not just anecdotally changing, but that they are experiencing a series of factors that are associated with increased likelihood of transformational neighborhood change." By identifying which of the indices causes a neighborhood to score high on the Neighborhood Change Index, efforts can be made to reduce the vulnerability of possible gentrification.

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[3] Quesnelle, Stephanie, et al. _Turning the Corner_. Data Driven Detroit, 2018, _Turning the Corner_, gallery.mailchimp.com/b36d67ed7981fa59dcfcf0d8a/files/1c462a7a-b9cb-4182-93fb-481c9daa2724/D3_TTC_Neighborhood_Change_Report_20180320.pdf.

Turning the Corner suggests that if a neighborhood has housing instability it could benefit from targeted policies that stabilize residential change. Baltimore may benefit from a similar identification process due to the abstract nature of "inclusiveness." This report provides examples of quantitative metrics that measure which neighborhoods and populations are more at risk of displacement. Combining these indices with the above metrics of inclusivity will provide a more in-depth dataset that will provide real-time data on how to implement housing and development initiatives without displacing current residents.

Data/Business Answers

In addition to the resources listed above, there are several other cities that have implemented successful ways to interpret data associated with neighborhood inclusivity. An important first step has been to identify a variety of metrics that would be the most useful in identifying potential solutions and tracking progress. Most of these variables have been listed above, but in cities such as San Francisco a few variables have stuck out: education, race, employment, and rent. Using these metrics we can see how correlations can be implemented in Baltimore City. Resources such as Urban Displacement gives a visual map on how these variables correlate on a per neighborhood basis. You can see which neighborhoods are most affected by a variable (ex: median rent) and then see how other variables (race, education, etc.) are different in the same neighborhood. A similar analysis/tool for Baltimore City would allow officials to see what specific variables can be addressed to create the most inclusive environment.

The most interesting points about the data center around the change in median rent for specific neighborhoods. As we see which neighborhoods have been most heavily impacted by gentrification and other factors that promote exclusivity, change in median rent appears to be the driving force. Large changes in median rent happen across all different neighborhoods with various socioeconomic makeups in the inner city. Having these metrics has proven that displacement is happening to different groups of people and change in median rent plays arguably the biggest role in displacement. Various strategies for how to efficiently address problems specific to Baltimore will be addressed below, but knowing which variable to focus on provides an overarching goal to help address inclusivity.

However, it needs to be addressed that there are strong sociological differences between Baltimore and the cities in California mentioned above. Baltimore's population is over 60% African-American and roughly 5% Hispanic/Latino, while Los Angeles' population is only 11% African-American but over 40% Hispanic/Latino. Employment type and wages are different, and the racial makeup of the cities is also a key difference that will need to be addressed in order to do any type of analysis on the subject of inclusivity. Baltimore City will need to further research and analyze what causes displacement for specific racial groups in order to be more effective in addressing Baltimore's neighborhoods than what we have seen in other studies. This will include some of the other variables mentioned above: incarceration, inequality, and segregation. Focusing on how these variables impact the most affected groups in Baltimore will prove more

effective than focusing on the variables that affected those in San Francisco and Southern California.

DHCD has prioritized improving home ownership access amongst the low income population. In order to address this concern, we examined the current research surrounding affordable home ownership programs. A 2017 paper from Christopher Herbert of the Harvard Joint Center for Housing Studies, titled *Expanding Access to Homeownership as a Means of Fostering Residential Integration and Inclusion*, explores the barriers to home ownership and what steps have been taken to overcome them. Herbert concludes that "a lack of savings to meet down payment requirements and pay closing costs is by far the most significant financial barrier to buying a home"[4]. In order to approach this obstacle, it is important to develop affordable housing policies which assist potential homeowners with down payments. The paper also explains that low-income and minority households tend to be limited by weaker credit histories, unstable employment records, and higher levels of debt. There have been attempts to confront this inequality through duty-to-serve provisions, but there has been little empirical evidence to support any definitive results. The final obstacle presented in this paper is "a lack of information and knowledge about the homebuying process, including searching for a home, negotiating the purchase, and qualifying for a mortgage". This could be addressed through counseling services made available in low-income neighborhoods to help households navigate the often daunting process of home-buying. Given this information, we recommend further research into how these problems fit into the context of Baltimore City, and what programs could be implemented to help low income households overcome these obstacles.

Concrete Recommendations and Impact for Baltimore City/Department
As shown above in this executive summary, there are large disparities on how to measure inclusivity in neighborhoods. However, after analyzing a literature review and policy analysis of similar cities in the United States, we have come up with a list of important statistics and recommendations to help better evaluate the effectiveness of Baltimore City DHCD interventions.

Neighborhood Change Index
- Follow Detroit's initiative in collecting and analyzing Neighborhood Change Index variables: social advantage, housing stability, crime, business, protective activities.
  - Focusing on the variables identified in the Index Variables chart will allow the Baltimore City DHCD to identify key neighborhoods that are more vulnerable to change and to allocate more resources to reduce the effect of gentrification in these neighborhoods.
  - Neighborhoods that score high on the Neighborhood Change Index need to be given special attention; these metrics will help the DHCD implement targeted housing and development initiatives instead of a broad blanket approach.

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[4] Herbert, Christopher E, et al. "Expanding Access to Homeownership as a Means of Fostering Residential Integration and Inclusion." *A Shared Future: Fostering Communities of Inclusion in an Era of Inequality*, Harvard Joint Center for Housing Studies, 2017.

Monitoring Baltimore's Racial Makeup
- Baltimore's racial makeup makes it unique from other cities, so collecting and monitoring metrics while focusing on race will result in a greater impact.
  - Breaking down annual metrics such as incarceration, racial segregation, and poverty by race can allow the DHCD to understand if certain groups of people are disporportionately affected and vulnerable compared to other groups.
  - This is important as breaking down these common metrics through the lens of race will allow the DHCD to understand which groups are more vulnerable to displacement.

Core Metric: Median Rent
- Median Rent Data is available from the open data source Opportunity Atlas.
  - This data originally comes from the American Community Survey.
- Although there are many possible metrics to analyze regarding inclusivity, one of the key metrics is median rent per neighborhood.
  - Measuring this metric on an annual basis will allow the DHCD to track the change in a neighborhood's median rent over time. Essentially, having a record of this information will allow the DHCD to monitor areas that are at risk for gentrification.
  - Since gentrification poses the risk of the displacement of long-time residents due to the higher housing prices and cost of living, this metric of rising median rent will act as a warning sign and allow the DHCD to dedicate needed resources in locations particularly vulnerable to displacement.
  - Although gentrification is not defined by an exact percent increase in median rent, the DHCD must monitor if the median rent has risen over consecutive years. For comparison, an article by the New York Times[5] reports that recently gentrified neighborhoods in New York City saw rent increases of around 40% and higher over the last eight years. The DHCD can use this as a reference.
    - The methodology can be found in the "How We Did It Section" of the original report by Street Easy[6].
- Coupled with this, the DHCD can also monitor if the percentage that median rent increases far exceeds the percentage increase of median income in a neighborhood. If the percentage increase of median rent far exceeds the percentage increase in median income, this would raise a situation for future investigation.

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[5]Velsey, Kim. "The New High-Rent Districts." *The New York Times*, The New York Times, 24 Aug. 2018, www.nytimes.com/2018/08/24/realestate/the-new-high-rent-districts.html

[6]"Uneven Burdens: How Rising Rents Impact Families and Low-Income New Yorkers." *Streeteasy.com*, Aug. 2018, www.streeteasy.com/blog/nyc-rent-affordability-2018/

Core Metric: Affordability Index - Rent

Eight Year Percent Change in Rent Affordibility and Median Household Income
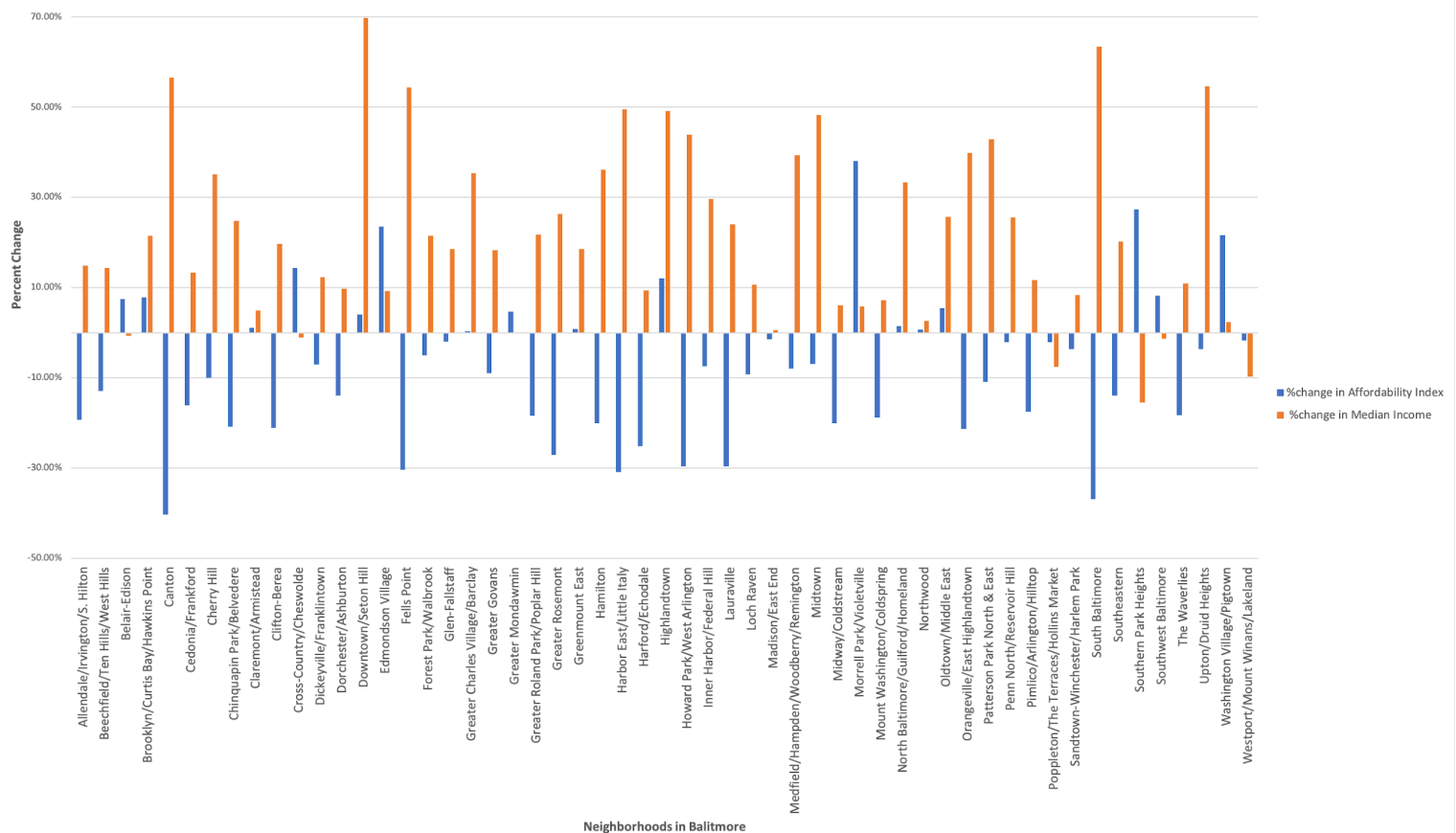
- The Affordability Index data is available from the Vital Signs Open Data Portal[7] by the Baltimore Neighborhood Indicators Alliance.
  - This data originally comes from the American Community Survey.
  - The neighborhood boundaries used in this data set and the chart are the 55 Community Statistical Areas. These areas are clusters of neighborhoods that are combined along census tract boundaries.
- This Index is the percentage of households that pay more than 30% of their total household income on rent.
- By comparing the percentage change in the Affordability Index and the percentage change in median household income, the DHCD can isolate neighborhoods that are at risk of gentrification.
  - For example, if there is a positive percent change in median income (an increase) along with a positive percent change in the Affordability Index (an

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[7]"Census Demographics." *Vital Signs Open Data Portal*, www.vital-signs-bniajfi.hub.arcgis.com/app/ae0159ba368b4fd6b235f205cf988a34 .

increase in the percentage of households who pay more than 30% of total income on rent), then we can possibly conclude that rent is rising faster than the increase in income.

- In the graph above, some areas where this is the case are Brooklyn/Curtis Bay/Hawkins Point, Claremont/Armistead, Downtown/Seton Hill, Edmondston Village and Highlandtown.
  - Rent rising faster than median income is a warning sign for gentrification as residents can no longer afford to live in that area.

Appendix

Excel Data Manipulations

Using the Affordability Index - Rent Data and the Median Household Income Data from the Vital Signs Open Data Portal by the Baltimore Neighborhood Indicators Alliance, we analyzed the relationship between percent change in the Affordability Index and percent change in median household income in Baltimore neighborhoods.

After merging the data together, we calculated the percentage change over eight years by taking the difference between the value from the most recent year and the value from eight years ago and dividing that by the value from eight years ago. We chose to look at the percentage change over eight years because that is how far the data spanned. After calculating the percentage change for the Affordability Index and for the median household income for each neighborhood, we created a bar chart displaying the percentage change of the two metrics.

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